ESSAYS ON FINANCIAL INCLUSION OF INDIVIDUALS AND SMALL FIRMS

by

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ABSTRACT

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This dissertation consists of three chapters on the financial inclusion of individuals and small firms. Chapter 1 examines the impact of financial openness, which measures a country's level of capital account openness, on its degree of financial inclusion, which refers to the accessibility and utilization of financial services, particularly among individuals from low-income, marginalized, and disadvantaged communities. Using country and time fixed effects regression estimation in a panel data set of up to 102 countries for the largest sample from 2004 to 2017, I find that a higher degree of de facto capital account openness, measured by the Lane and Milesi-Ferretti index, has a limited positive impact on financial inclusion, as measured by the number of loan accounts, number of household loan accounts and number of household deposit accounts. While these results are sensitive to the sample, and using different sets of controls changes these samples, and perhaps to the methodology, there is still evidence that LMF has a positive and significant effect on inclusion. Other measures of financial inclusion, namely number of borrowers and number of depositors, show no response to greater financial openness. The Chinn-Ito KAOPEN measure of financial openness tends to show neither a positive or a negative impact on financial inclusion. This finding suggests that greater financial openness does not

reduce financial inclusion in most cases, and potentially de facto financial openness may increase it for particular measures, perhaps indicating an increased ability of savers to diversify their funds more, across different types of deposit accounts, and with an increased number of loan accounts for borrowers to better suit their financial needs. These results hold after controlling for the domestic degree of financial development, which is the overall size of the financial sector, and after controlling for the domestic level of institutional quality. While the Lane and Milesi-Ferretti index has a positive impact on the number of accounts, particularly at the household level, institutional quality appears to affect the number of borrowers and number of depositors.

In light of several events of high uncertainty in recent years, such as the US-China trade tensions and Brexit, it is important to examine how uncertainty may impact country borrowing. Chapter 2 investigates the link between country level uncertainty using the World Uncertainty Index (WUI) developed by Ahir et. Al (2022) and small and medium enterprise (SME) outstanding loans as a percentage of total loans. Using a sample of 50 countries from 2004 to 2019 and fixed effects estimation, this paper shows that higher macroeconomic uncertainty measured by the WUI is associated with a lower percentage of SME outstanding loans in total outstanding loans, with a stronger impact in higher income countries. I hold constant several important supply side variables. Thus, this effect likely operates through the demand side channel, decreasing either SME's desire or their ability to borrow due to firm characteristics, relatively more than for large firms and households. Previous literature has shown that a lower proportion of SME loans in total loans is detrimental for banking sector stability, while a higher proportion improves financial sector stability. The findings of this paper suggest that policies targeting the promotion of SME investment, coupled with assistance for SMEs during periods of uncertainty, could reduce the

decline in the SME share, and thus improve financial sector stability during periods of higher uncertainty.

Chapter 3 examines the impact of financial development, economic development and macroeconomic uncertainty on the micro, small and medium enterprises (MSMEs) finance gap. The MSME finance gap is constructed by the International Finance Corporation (IFC), and it is the difference between the amount of finance MSMEs desire and the amount these firms receive. IFC also provides data on the demand and supply sides separately, as well as decomposed into micro versus small and medium enterprises, which allows for additional analyses. As this data is available for 2017 only, this study is cross-sectional for several developing countries. I find that the level of domestic financial development is important for diminishing the MSME finance gap, through its positive impact on the supply side, effects which are driven by SMEs. Higher levels of economic development are also important for the finance of MSMEs, as they increase both the supply and demand for finance for MSMEs. These offsetting effects translate into no impact of economic development on the MSME finance gap. There is some evidence that a higher WUI diminishes the SME finance gap in richer countries, and this effect is due to a decrease in demand of SMEs during periods of high uncertainty.

To my parents.

TABLE OF CONTENTS

ABSTRACT ii
LIST OF FIGURES ix
LIST OF TABLES x
ACKNOWLEDGEMENTS xv
Chapter 1: The Impact of Financial Openness on Financial Inclusion 1
I. Introduction 1
II. Literature Review 7
A. Determinants of Measures of Financial Inclusion 7
B. Impact of Financial Development on Financial Inclusion 11
C. Impact of Financial Openness on Financial Development 12
D. Indirect Effect of Financial Openness on Financial Inclusion 13
III. Methodology 15
A. Hypotheses Development 15
B. Model and Data 18
IV. Results 25
A. Effect of Financial Openness on Financial Inclusion 25
B. Institutional Quality Effects on Financial Inclusion 33
V. Robustness 58
VI. Conclusion 68
References 70
Chapter 2: Macroeconomic Uncertainty and the SME Share in Total Borrowing 73
I. Introduction 73
II. Literature Review and Hypothesis Development 80
III. Methodology 86
IV. Data 92
V. Results 97
A. Overall Effect of WUI on The SME Share 97
B. Effect of WUI on SME Share by Country Income Group 101

C. Effect of Country Level Uncertainty on Amounts of SME, Large Firm, and Household Outstanding Loans as a Percentage of GDP 106
D. Effect of Country Level Uncertainty in Unstable versus Stable Countries 111
VI. Robustness 114
VII. Conclusion 121
References 122
Chapter 3: Drivers of the MSME Finance Gap: Financial Development, Economic Development and Macroeconomic Uncertainty 128
I. Introduction 128
II. Literature Review and Hypotheses Development 132
III. Methodology and Data 140
IV. Results 149
A. Overall Effects on the Finance Gap, Potential Demand and Finance Supply for MSMEs 149
B. Overall Effects on the Finance Gap, Potential Demand and Finance Supply for SMEs and Micro Firms 153
C. Effects on the Finance Gap, Potential Demand and Finance Supply for MSMEs in Samples Divided by Median Income Level 156
D. Effects on the Finance Gap, Potential Demand and Finance Supply for SMEs and Micro Firms in Samples Divided by Median Income Level 159
V. Robustness 163
VI. Conclusion 176
References 178
Appendix to Chapter 1 181
Appendix to Chapter 2 193
Appendix to Chapter 3 201

LIST OF FIGURES

Figure 2.1: Global WUI……96

LIST OF TABLES

Table 1.1: Summary Statistics 24
Table 1.2: Correlation Matrix 24
Table 1.3: Regressions for Number of Depositors 29
Table 1.4: Regressions for Number of Deposit Accounts 30
Table 1.5: Regressions for Number of Borrowers 30
Table 1.6: Regressions for Number of Loan Accounts 31
Table 1.7: Regressions for Number of Household Depositors 31
Table 1.8: Regressions for Number of Household Deposit Accounts 32
Table 1.9: Regressions for Number of Household Borrowers 32
Table 1.10: Regressions for Number of Household Loan Accounts 33
Table 1.11: Institutional Quality Summary Statistics 38
Table 1.12: Institutional Quality Correlation Matrix 38
Table 1.13: Regressions with Institutional Quality Index for Number of Depositors 39
Table 1.14: Regressions with Institutional Quality Index for Number of Deposit Accounts 39
Table 1.15: Regressions with Institutional Quality Index for Number of Borrowers 40
Table 1.16: Regressions with Institutional Quality Index for Number of Loan Accounts 40
Table 1.17: Regressions with Institutional Quality Index for Number of Household Depositors 41
Table 1.18: Regressions with Institutional Quality Index for Number of Household Deposit Accounts 41
Table 1.19: Regressions with Institutional Quality Index for Number of Household Borrowers . 42
Table 1.20: Regressions with Institutional Quality Index for Number of Household Loan Accounts 42
Table 1.21: Regressions by Institutional Quality Indicator for Number of Depositors 43
Table 1.22: Regressions by Institutional Quality Indicator for Number of Deposit Accounts 45
Table 1.23: Regressions by Institutional Quality Indicator for Number of Borrowers 47
Table 1.24: Regressions by Institutional Quality Indicator for Number of Loan Accounts 49
Table 1.25: Regressions by Institutional Quality Indicator for Number of Household Depositors 51
Table 1.26: Regressions by Institutional Quality Indicator for Number of Household Deposit Accounts 53
Table 1.27: Regressions by Institutional Quality Indicator for Number of Household Borrowers 55
Table 1.28: Regressions by Institutional Quality Indicator for Number of Household Loan Accounts 57
Table 1.29: Regressions without Bank Concentration for Number of Depositors 60
Table 1.30: Regressions without Bank Concentration for Number of Deposit Accounts 60
Table 1.31: Regressions without Bank Concentration for Number of Borrowers 61
Table 1.32: Regressions without Bank Concentration for Number of Loan Accounts 61

Table 1.33: Regressions without Bank Concentration for Number of Household Depositors..... 61
Table 1.34: Regressions without Bank Concentration for Number of Household Deposit Accounts..... 61
Table 1.35: Regressions without Bank Concentration for Number of Household Borrowers 62
Table 1.36: Regressions without Bank Concentration for Number of Household Loan Accounts62
Table 1.37: GMM Results for Number of Depositors 64
Table 1.38: GMM Results for Number of Deposit Accounts 64
Table 1.39: GMM Results for Number of Borrowers..... 65
Table 1.40: GMM Results for Number of Loan Accounts 65
Table 1.41: GMM Results for Number of Household Depositors..... 66
Table 1.42: GMM Results for Number of Household Deposit Accounts 66
Table 1.43: GMM Results for Number of Household Borrowers 67
Table 1.44: GMM Results for Number of Household Loan Accounts..... 67
Table 2.1: Summary Statistics..... 97
Table 2.2: Correlation Matrix..... 97
Table 2.3: Full Sample Regressions..... 104
Table 2.4: Regressions by Income Group: Specification 1..... 104
Table 2.5: Regressions by Income Group: Specification 2..... 105
Table 2.6: Summary Statistics for Amounts of Loans per GDP (%)..... 108
Table 2.7: SME Outstanding Loans as a percentage of GDP..... 109
Table 2.8: Large Firm Outstanding Loans as a Percentage of GDP..... 109
Table 2.9: Household Outstanding Loans as a Percentage of GDP 110
Table 2.10: Total Outstanding Loans as a Percentage of GDP..... 110
Table 2.11: SME Share by Country Instability Level 112
Table 2.12: SME Outstanding Loans as a Percentage of GDP by Country Instability Level..... 113
Table 2.13: Large Firm Outstanding Loans as a Percentage of GDP by Country Instability Level 113
Table 2.14: Household Outstanding Loans as a Percentage of GDP by Country Instability Level 114
Table 2.15: Total Outstanding Loans as a Percentage of GDP by Country Instability Level..... 114
Table 2.16: Summary Statistics Including the Interest Rate Spread..... 116
Table 2.17: Correlation Matrix Including the Interest Rate Spread 116
Table 2.18: Full Sample Regressions with Interest Rate Spread..... 116
Table 2.19: Regressions by Income Group with Interest Rate Spread: Specification 1 117
Table 2.20: Regressions by Income Group with Interest Rate Spread: Specification 2 118
Table 2.21: SME Outstanding Loans as a Percentage of GDP Regressions with Interest Rate Spread 119
Table 2.22: Large Firm Outstanding Loans as a Percentage of GDP Regressions with Interest Rate Spread..... 119
Table 2.23: Household Outstanding Loans as a Percentage of GDP Regressions with Interest Rate Spread..... 120

Table 2.24: Total Outstanding Loans as a Percentage of GDP Regressions with Interest Rate Spread 120
Table 3.1: Summary Statistics 147
Table 3.2: Correlation Matrix 148
Table 3.3: MSMEs: Finance Gap as a Percentage of GDP 152
Table 3.4: MSMEs: Potential Demand as a Percentage of GDP 152
Table 3.5: MSMEs: Finance Supply as a Percentage of GDP 153
Table 3.6: SMEs: Finance Gap as a Percentage of GDP 154
Table 3.7: SMEs: Potential Demand as a Percentage of GDP 154
Table 3.8: SMEs: Finance Supply as a Percentage of GDP 155
Table 3.9: Micro Firms: Finance Gap as a Percentage of GDP 155
Table 3.10: Micro Firms: Potential Demand as a Percentage of GDP 156
Table 3.11: Micro Firms: Finance Supply as a Percentage of GDP 156
Table 3.12: Summary Statistics for Above/Below Median GDP per Capita Samples 158
Table 3.13: MSMEs: Finance Gap as a Percentage of GDP - Split by Median GDP per Capita ... 158
Table 3.14:MSMEs: Potential Demand as a Percentage of GDP - Split by Median GDP per Capita 158
Table 3.15: MSMEs: Finance Supply as a Percentage of GDP - Split by Median GDP per Capita159
Table 3.16: SMEs: Finance Gap as a Percentage of GDP - Split by Median GDP per Capita 161
Table 3.17: SMEs: Potential Demand as a Percentage of GDP - Split by Median GDP per Capita 162
Table 3.18: SMEs: Finance Supply as a Percentage of GDP - Split by Median GDP per Capita .. 162
Table 3.19: Micro Firms: Finance gap as a Percentage of GDP - Split by Median GDP per Capita 162
Table 3.20: Micro Firms: Potential Demand as a Percentage of GDP - Split by Median GDP per Capita 163
Table 3.21: Micro Firms: Finance supply as a Percentage of GDP - Split by Median GDP per Capita 163
Table 3.22: Summary Statistics with Financial Inclusion 165
Table 3.23: Correlation Matrix with Financial Inclusion 165
Table 3.24: MSME Finance Gap as a Percentage of GDP - Regressions with Financial Inclusion 166
Table 3.25: MSME Potential Demand as a Percentage of GDP with Financial Inclusion 167
Table 3.26: MSME Finance Supply as a Percentage of GDP with Financial Inclusion 167
Table 3.27: SME Finance Gap as a Percentage of GDP with Financial Inclusion 168
Table 3.28: SME Potential Demand as a Percentage of GDP with Financial Inclusion 168
Table 3.29: SME Finance Supply as a Percentage of GDP with Inclusion 169
Table 3.30: Micro Firm Finance Gap as a Percentage of GDP with Inclusion 169
Table 3.31: Micro Firm Potential Demand as a Percentage of GDP with Inclusion 170
Table 3.32: Micro Finance Supply as a Percentage of GDP with Inclusion 170

Table 3.33: MSME Finance Gap as a Percentage of GDP - Split by Median GDP per Capita with Financial Inclusion 172
Table 3.34: MSME Potential Demand as a Percentage of GDP - Split by Median GDP per Capita with Financial Inclusion 172
Table 3.35: MSME Finance Supply as a Percentage of GDP - Split by Median GDP per Capita with Financial Inclusion 173
Table 3.36: SME Finance Gap as a Percentage of GDP - Split by Median GDP per Capita with Financial Inclusion 173
Table 3.37: SME Potential Demand as a Percentage of GDP - Split by Median GDP per Capita with Financial Inclusion 174
Table 3.38: SME Finance Supply as a Percentage of GDP - Split by Median GDP per Capita with Financial Inclusion 174
Table 3.39: Micro Firm Finance Gap as a Percentage of GDP - Split by Median GDP per Capita with Financial Inclusion 175
Table 3.40: Micro Firm Potential Demand as a Percentage of GDP - Split by Median GDP per Capita with Financial Inclusion 175
Table 3.41: Micro Firm Finance Supply as a Percentage of GDP - Split by Median GDP per Capita with Financial Inclusion 176
Table 1.45: No Lags Common Sample Regressions for Number of Depositors 181
Table 1.46: No Lags Common Sample Regressions for Number of Deposit Accounts 181
Table 1.47: No Lags Common Sample Regressions for Number of Borrowers 182
Table 1.48: No Lags Common Sample Regressions for Number of Loan Accounts 182
Table 1.49: No Lags Common Sample Regressions for Number of Household Depositors 183
Table 1.50: No Lags Common Sample Regressions for Number of Household Deposit Accounts 183
Table 1.51: No Lags Common Sample Regressions for Number of Household Borrowers 184
Table 1.52: No Lags Common Sample Regressions for Number of Household Loan Accounts . 184
Table 1.53: Mixed Lags Common Sample Regressions for Number of Depositors 185
Table 1.54: Mixed Lags Common Sample Regressions for Number of Deposit Accounts 185
Table 1.55: Mixed Lags Common Sample Regressions for Number of Borrowers 186
Table 1.56: Mixed Lags Common Sample Regressions for Number of Loan Accounts 186
Table 1.57: Mixed Lags Common Sample Regressions for Number of Household Depositors .. 187
Table 1.58: Mixed Lags Common Sample Regressions for Number of Household Deposit Accounts 187
Table 1.59: Mixed Lags Common Sample Regressions for Number of Household Borrowers .. 188
Table 1.60: Mixed Lags Common Sample Regressions for Number of Household Loan Accounts 188
Table 1.61: All Lags Common Sample Regressions for Number of Depositors 189
Table 1.62: All Lags Common Sample Regressions for Number of Deposit Accounts 189
Table 1.63: All Lags Common Sample Regressions for Number of Borrowers 190
Table 1.64: All Lags Common Sample Regressions for Number of Loan Accounts 190

Table 1.65: All Lags Common Sample Regressions for Number of Household Depositors 191
Table 1.66: All Lags Common Sample Regressions for Number of Household Deposit Accounts 191
Table 1.67: All Lags Common Sample Regressions for Number of Household Borrowers 192
Table 1.68: All Lags Common Sample Regressions for Number of Household Loan Accounts .. 192
Table 2.25: Summary Statistics by Income Group 193
Table 2.26: Data Sources 193
Table 2.27: Means by Country – SME Share, WUI, Bank Overhead Cost 194
Table 2.28: SME Outstanding Loans as a Percentage of GDP: 50 Country Sample 195
Table 2.29: SME Share (%): 44 Country Sample 195
Table 2.30: Large Firm Share (%): 44 Country Sample 196
Table 2.31: Household Share (%): 44 Country Sample 196
Table 2.32: SME Outstanding Loans as a Percentage of GDP by Country Instability Level: 50 Country Sample Split 197
Table 2.33: SME Share by Country Instability Level: 44 Country Sample Split 197
Table 2.34: Large Firm Share by Country Instability Level: 44 Country Sample Split 197
Table 2.35: Household Share by Country Instability Level: 44 Country Sample Split 198
Table 2.36: SME Outstanding Loans as a Percentage of GDP Regressions with Interest Rate Spread: 36 Country Sample 198
Table 2.37: SME Share Regressions with Interest Rate Spread: 32 Country Sample 199
Table 2.38: Large Firm Share Regressions with Interest Rate Spread: 32 Country Sample 199
Table 2.39: Household Share Regressions with Interest Rate Spread: 32 Country Sample 200
Table 3.42: MSME Finance Gap as a Percentage of GDP with Additional Specification in Column (2) 201
Table 3.43: MSME Finance Gap as a Percentage of GDP for 78 Country Sample 201
Table 3.44: MSME Potential Demand as a Percentage of GDP for 78 Country Sample 202
Table 3.45: MSME Finance Supply as a Percentage of GDP for 78 Country Sample 202
Table 3.46: SME Finance Gap as a Percentage of GDP for 78 Country Sample 203
Table 3.47: SME Potential Demand as a Percentage of GDP for 78 Country Sample 203
Table 3.48: SME Finance Supply as a Percentage of GDP for 78 Country Sample 204

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Chapter 1: The Impact of Financial Openness on Financial Inclusion

I. **Introduction**

Financial inclusion is defined as "the proportion of individuals and firms that use financial services," (World Bank, 2014, page 1), and it refers to the ease of access and use of financial services, especially by the low income, disadvantaged and underprivileged segments of the population. This paper examines the impact of financial openness, which measures a country's degree of capital account openness, on financial inclusion. Researchers have shown that an increase in international capital flows is associated with both benefits and costs, such as long run economic growth and financial crises (Mussa et al, 1998). In terms of its impact on financial inclusion, financial openness may benefit inclusion by making financial services easier and cheaper to access, as banks benefit from more risk diversification and economies of scale and scope. Conversely, greater financial openness may exacerbate inequalities that reduce financial inclusion further. Financial inclusion is also impacted by the depth of domestic financial markets, which I account for in my study. Financial development or depth refers to the overall size of the financial sector, often measured by private credit as a percentage of GDP, while financial inclusion is concerned with the distribution, affordability, and access of funds and financial services to a wide variety of economic agents.

Financial inclusion has become a central concern for policy makers in many countries and for the relevant international organizations. According to the World Bank (2022), more than 60 countries have been developing and implementing policies aimed to promote financial inclusion since 2010. According to Demirgüç-Kunt (2018), progress has been made: account ownership share was 54% in 2014, and it increased to 63% in 2017 for the developing countries. Globally, it

has increased from 62% to 69% within the same timeframe. However, there were still 1.7 billion unbanked adults worldwide in 2017. Measures to promote financial inclusion have been taken in view of its importance for reducing poverty, income inequality and banks' risk, as well as for increasing economic growth. Neaime and Gaysset (2017) find that financial inclusion reduces income inequality measured by the GINI coefficient in the eight MENA countries in their sample ranging from 2002-2015. They show that financial inclusion is associated with less instability, measured by the standard deviation of the growth rate of deposits. Other studies present evidence for a positive relationship between financial inclusion and poverty reduction (Bruhn and Love, 2014; Burgess and Pande, 2005; Diniz et. al., 2012). There is also extensive research that provides evidence for a positive relationship between financial inclusion and economic growth (Anarfo, et al., 2019; Sharma, 2016; Sethi and Acharya, 2018; Apergis et al., 2007; Sahay et al., 2015).

Given the positive impacts of financial inclusion, researchers have recognized the importance of determining the factors that may promote financial inclusion, so that policy makers could effectively target those areas. There are some studies highlighting variables that may have an impact on financial inclusion, both at the micro-level and at the macro-level. Researchers have found several individual characteristics to positively affect financial inclusion, such as age, educational level and income (Allen et al., 2012). In terms of country-level data, variables such as economic development and political stability have been shown to be positively associated with inclusion (Allen et al., 2012; Kabakova and Plaksenkow, 2018). Owen and Pereira (2018) found that a higher level of banking sector concentration has a positive effect on financial inclusion, as long as the banking sector remains contestable.

As an additional unexplained factor, this paper considers the effect of financial openness on financial inclusion. Financial openness could have a direct effect on financial inclusion, which is either positive or negative. Financial openness could also have an indirect effect on financial inclusion through a financial development channel, as, all else equal, a higher volume of savings or loans is expected to be associated with more inclusion. I hold constant the domestic level of financial development to focus on the direct relationship between openness and inclusion. Financial openness is measured by the de facto Lane and Milesi-Feretti (LMF) variable and by the de jure Chinn-Ito KAOPEN index. Financial inclusion is measured by number of depositors, number of deposit accounts, number of borrowers, number of loan accounts, as well as their corresponding household level variables. I employ country and year fixed effects regression estimation using cross-country data for years 2004 to 2015 in the regressions with LMF, and for 2004 to 2017 in the regressions with KAOPEN.

Financial openness could have a positive or negative effect on financial inclusion. On the savings side, holding the level of financial depth constant (thus for the same overall amount of savings in domestic banks), higher levels of financial openness could lead to a higher number of depositors and deposit accounts. In order to keep funds at home, existing banks would offer a wider variety of services, which allows savers to diversify more, and thus they would have more accounts, and smaller amounts of savings in each account. This higher diversity of available services could be a result of the threat of foreign competition among existing domestic banks induced by financial openness, possibly combined with more banks entering the domestic market. Higher levels of financial openness could also reduce financial inclusion on the savings side. If domestic banks incur considerable losses due to foreign competition, they may decide to

cut costs, offering fewer services, and reducing the number of ATMs and bank branches, which would discourage individuals from opening and using deposit accounts. Foreign capital may also flow only to the richest countries, which would exacerbate inequalities and reduce financial inclusion.

Similarly, on the borrowing side of financial inclusion, higher financial openness could have either a positive or a negative impact on financial inclusion. Holding the level of financial development constant, as a result of more financial openness, banks that participate in international activities are able to better diversify their risk, which could lead to not only economies of scale, but also to economies of scope (Owen and Pereira, 2018). As a result, domestic banks would be able to offer more diverse services, addressing the needs of a larger number of borrowers, who could open more loan accounts to better suit their needs. Countries could also become more financially exclusive in response to higher levels of financial openness. If domestic banks' profits fall considerably in response to more competition from abroad, banks could become riskier, seeking greater returns (Giannetti, 2007; Ashraf, 2018). These high risk-high return strategies could lead to less diversification in banks' lending portfolios, and thus less inclusion.

Consistent with the arguments for a positive openness-inclusion relationship, using fixed effects estimation, I find evidence for a positive direct effect of financial openness on variables measuring financial inclusion, when financial openness is measured by the de facto LMF variable. Specifically, LMF has a positive impact on the number of household deposit accounts, the number of loan accounts, and the number of household loan accounts. These results are sensitive to the number of countries in the sample and are less consistent when using GMM estimation, but

overall there is still evidence of a positive significant effect of LMF on some measures of financial inclusion. There is no relationship between LMF and number of depositors or number of borrowers, however. Therefore, this likely indicates that agents who were initially banked expand their number of accounts as a result of higher financial openness, while there is little evidence that more people become banked, either as savers or as borrowers.

The impact of the de jure, or regulation based, measure of financial openness represented by the Chinn-Ito KAOPEN index is less strong than the effect of LMF. In the fixed effects regression analysis, KAOPEN is positive and significant for number of household depositors only. These results are also sensitive to the methodology and number of countries, but overall, KAOPEN tends to have neither a positive or negative effect on inclusion. LMF has a stronger impact on several measures of financial inclusion. This is likely due to LMF representing the actual cross border capital flows determined by a larger variety of factors such as tax policies, geographical location and political relationships, rather than only the effect of changes in de jure regulations associated with cross border movement of capital. A country may have less restrictive regulations that result in more de jure financial openness, with no real effects as measured by LMF. It is possible that agents do not expect much actual change in capital movement as a result of more permissive regulations regarding cross-border capital movement and households may not be sufficiently informed about changes in regulations to react. This paper shows that an increase in financial openness related to regulations alone, as measured by KAOPEN, is not sufficient to trigger changes in financial inclusion, but a higher volume of capital flows as measured by LMF lead to a higher number of bank accounts with commercial banks. Importantly, financial openness does not appear to reduce financial inclusion in most cases.

I show that the level of domestic financial development is important for financial inclusion. Higher levels of domestic financial development, measured by private credit as a percentage of GDP and M3/GDP, are associated with more financial inclusion, both on the deposits and on the loans side. As banks increase their overall amount of loans and deposits, they also increase the breadth of their customers, possibly offering a wider variety of services to accommodate more diverse needs.

The effect of LMF on financial inclusion could also capture institutional quality effects. LMF could be correlated with institutional quality, since countries with better institutional quality tend to attract external capital inflows (Alfaro et al, 2008). Institutional quality may also be positively related to financial inclusion: for example, banks would be more willing to accommodate a wider variety of clients in an environment which ensures the enforcement of laws and regulations. Thus, I consider the impact of institutional quality on the relationship between financial inclusion and financial openness. I find a positive relationship between institutional quality and financial inclusion, especially for rule of law. Importantly, the significance of LMF for financial inclusion remains after controlling for institutional quality.

The rest of the paper is organized as follows. Section II provides an overview of related literature. Section III presents the methodology and data, with the results in Section IV. Section V contains robustness checks, and Section VI concludes.

II. **Literature Review**

A. Determinants of Measures of Financial Inclusion

Financial inclusion is a concept that involves both households and firms, and which can encompass several categories: availability of financial services, account ownership and use, and affordability of financial services. The availability of financial services aspect of financial inclusion is measured by variables such as number of bank branches per 100,000 adults, number of ATMs per 100,000 adults and number of banks per 100,000 adults. The account ownership and use side of financial inclusion is measured as an aggregate by variables such as number of borrowers per 1,000 adults, number of depositors per 1,000 adults, number of loan accounts per 1,000 adults, number of deposit accounts per 1,000 adults, and the percentage of firms with a line of credit or with a bank loan to total firms. These variables are further divided into sub-groups such as households, females, males, as well as small and medium enterprises. The affordability side of financial inclusion is represented by variables such as the cost of opening or maintaining a bank account. The focus of this paper is on the account ownership and use aspect of financial inclusion, using measures referring to the number of loan and deposit accounts, as well as number of borrowers and depositors, both as a whole and for the household sub-group. By focusing on the aspect of account ownership and usage, one can obtain a more precise evaluation of the effectiveness of outreach initiatives in promoting wider engagement with financial services. This approach directly assesses the involvement of individuals and businesses with financial services, rather than analyzing indirect factors, such as costs and ATM or bank branch accessibility, that might not fully translate into more actual interactions with banking services. Data availability for these financial inclusion variables also allows for wide country coverage over time, while the

focus on relationships with commercial banks lends itself to more specific policy implications. Even though widespread availability of data on financial inclusion is relatively new, a few other studies focus on the factors that influence the account ownership and use aspect of financial inclusion. Researchers utilize micro-level data focused on individual characteristics and macro-level data on country level factors that impact the account ownership and use measures of financial inclusion.

Allen et al. (2012) seek to disentangle the effects of individual characteristics from the country level impacts on the account ownership aspect of financial inclusion, with a focus on certain segments of the population, such as the poor, female, youth, and people who live in rural areas. In their sample of adults from 140 countries, the authors find that married, more educated, employed, richer, older, and individuals who live in urban areas are more likely to own a bank account and more likely to use a bank account to save. Married, more educated, male, older and richer people are also more likely to use the account frequently, defined as three or more withdrawals per month. In terms of country level characteristics, Allen et al. (2012) find that, in countries where the costs associated with opening and maintaining an account are higher, where there is a low level of ATM or bank branch penetration, low levels of legal rights index, lack of tax incentive schemes, low political stability ranking and more necessary disclosure of information, individuals are less likely to hold a bank account. They find that the cost of opening a bank account is linked to the likelihood of owning a bank account, but not with the likelihood of using it to save, while maintenance costs are negatively associated with the likelihood of using the account to save. Further, they show that savings-promoting tax incentives are not associated with the likelihood to save. Lastly, the cost of opening an account is negatively related to the

probability of using the account frequently, while the legal rights index, political stability, tax incentives and other measures to promote savings are positively related to the likelihood of using the account frequently.

Kabakova and Plaksenkow (2018) also aim to better understand the determinants of financial inclusion, which they measure by the percentage of the population with a formal bank account. They examine the overall environment, including socio-demographic factors measured by a combination of a socio-demographic index, urbanization, and financial literacy; technological determinants, measured by mobile and internet usage, as well as e-Government prevalence; economic determinants, characterized by GDP per capita, as well as economic and business freedom; and political factors, described by regulation of the electronic payments, government support and regulatory capacity. Their goal is to find different configurations that would be sufficient to promote financial inclusion. In their sample of 43 low-income and emerging economies, they find that financial inclusion could be promoted in three types of environments: high quality of the social and political environment, without necessarily having advanced economic factors; high quality of the social environment with advanced economic indicators and technological factors without high political factors, and high economic and political indicators, without high values of the social and technological factors. They emphasize the importance of socio-demographic factors, such as high levels of financial literacy and urbanization, which are required in two out of the three configurations to promote financial inclusion.

Using panel country level data, Owen and Pereira (2018) focus on banking variables and find that banking concentration has a positive impact on financial inclusion. Their measures of inclusion are number of commercial bank depositors, borrowers, deposit and loan accounts, all

per 1,000 adults, as well as their corresponding household level variables. They further control for the level of domestic financial development. The authors emphasize the intricate nature of competition in the banking industry, where higher banking concentration is one facet associated with lower levels of competition. Another dimension of competition is represented by market contestability, and thus depends on entry and exit conditions. Studies have found conflicting effects of competition on firms' access to finance depending on the variables used to measure competition. Market structure variables such as concentration ratios yielded a positive effect on inclusion, and thus a negative relationship between competition and inclusion. Non-structural variables such as the Lerner index, which measures pricing above marginal cost, yielded a positive relationship between competition and inclusion (Carbo-Valverde et. al, 2009). Similarly, Owen and Pereira (2018) find that the positive effect of banking sector concentration on financial inclusion holds as long as the banking sector remains contestable, as measured by the Lerner index.

Since financial inclusion is a concept closely related to financial development or depth, Beck, Demirguc-Kunt and Peria (2007) investigate whether financial inclusion measured by several variables including number of loan and deposit accounts per capita, as well as the average sizes of loan and deposits relative to GDP, has the same determinants as financial depth, measured as private credit to GDP. The authors find that institutional quality, economic development and the level of physical infrastructure are some of the variables that positively impact both financial inclusion and financial depth, while a higher share of foreign ownership of banks leads to lower levels of financial inclusion and depth. Higher costs of enforcing contracts negatively affect financial depth, but only on the deposits side of financial inclusion. The degree

of protection of creditor's rights has a positive impact on financial depth but no impact on almost all inclusion measures, except ATM geographic density.

B. Impact of Financial Development on Financial Inclusion

The level of domestic financial development could act as a channel of transmission of macroeconomic shocks to financial inclusion, with a higher overall amount of private credit to GDP leading to a higher number of borrowers or loan accounts per 1,000 adults, for example. In my analysis, I control for the level of financial development to analyze the effect of financial openness on financial inclusion. Therefore, a strand of related literature concerns the impact of financial development on financial inclusion, where researchers show evidence for a positive relationship between financial development and financial inclusion. For instance, Chithra and Selvam (2013) find that financial development measured by deposit and credit penetration has a positive effect on financial inclusion measured by a financial inclusion index developed by Sarma (2008) in a sample of Indian states. Anarfo et al. (2019) reveal evidence for a two-way causal relationship between their financial inclusion index and financial development represented by private credit per GDP for a sample of 48 Sub-Saharan African countries, which follows the pattern of their world sample of 217 countries. Anarfo et. al. (2019) develop a financial inclusion index called FINDEX, which consists of total number of bank accounts per 1,000 adults, number of borrowers per 100 adults, number of depositors per 1,000 adults, both with commercial banks, as well as bank branches, commercial bank branches and ATMs per 100,000 adults. Their finding suggests that, as banks offer more credit, this leads to developments in the financial system that enables them to do so to a wider range of firms and individuals, possibly offering more diverse

banking services. This further helps with the deepening or development of the financial sector, possibly reducing banking sector instability.

C. Impact of Financial Openness on Financial Development

Another relevant strand of literature concerns the effect of financial openness on financial development, since I consider financial development a potential channel of transmission of financial openness effects to financial inclusion. Researchers analyzing the determinants of financial development usually measure this variable as private credit as a percent of GDP. Thus, the focus of this literature is on the borrowing side. Researchers provide conflicting results on the impact of financial openness on financial development, but there is consensus on the importance of the level of domestic banking sector competition. Fischer and Valenzuela (2013) find a positive impact of financial openness on financial development in countries with high banking sector competition measured by the bank concentration ratio and the net interest margin. This effect is diminished and may even became negative with low banking sector competition. However, Law and Azman-Saini (2012) find a negative effect of financial openness on private credit. Chen et al. (2016) aims to provide some clarity on these conflicting results by separating the short run from the long run effects, and they find that in the short run, the effect of financial openness on financial development is negative, while in the long run, there is a positive effect of financial openness on financial development. The authors also find that higher pre-existing banking competition helps diminish the negative short run effects of financial openness on financial development. A potential explanation would be the increased instability that financial integration brings in the short run (Demirgüc-Kunt and Detragiache, 2000;

Dell'Ariccia and Marquez, 2004; Neaime and Gaysset, 2017), while in the long run, there is more time for adjustment. To summarize, these findings reveal that higher competition in the domestic banking sector and a longer time horizon bring more financial development as countries become more financially open.

D. Indirect Effect of Financial Openness on Financial Inclusion

Due to the effects of financial openness on financial development described in Section II C and to the connection between financial development and financial inclusion outlined in Section II B, there is an expected indirect effect of financial openness on financial inclusion through the financial development channel. In order to analyze this indirect effect, the first step is to consider the impact of financial openness on financial development, which could be positive or negative, as described in Section II C. To align with the separation of financial inclusion variables according to deposits and loans, there are financial development variables that focus on the deposits side, such as M3/GDP, and financial development variables related to the borrowing side, such as private credit/GDP, as in Owen and Pereira (2018).

As far as the deposits side of financial development is concerned, higher levels of financial openness could increase the volume of deposits because of the increase in international banking sector competition for funds, which could translate into better rate offers for depositors, as well as greater ease and affordability to open, maintain and use checking and savings accounts, along with greater diversity of financial services available. However, if initial domestic banking competition is very low and there is significant repression, some savers could deposit their funds abroad or buy foreign assets in response to financial openness, seeking better returns and a safer

institutional environment abroad. This would especially apply in the short run if the domestic banking sector was not yet sophisticated enough to effectively compete for funds with its foreign counterparts, due in part to limited domestic levels of competition.

On the borrowing side, the effect of financial openness on financial development could be positive if domestic banks could efficiently borrow funds from abroad and offer them at home to domestic borrowers. If domestic banking sector competition and trust in the domestic institutional quality are strong, the substitution effect would be weak, meaning that borrowers would have little incentive to borrow from abroad. However, the effect of financial openness on financial development could be negative if the substitution effect is strong and domestic borrowers prefer to borrow from abroad rather than using domestic financial institutions. This could be the case if the level of domestic competition in the financial sector was low, because borrowers could obtain a lower interest rate abroad, or if domestic borrowers trusted the quality of foreign institutions more, such as the foreign contract enforcement regulations. There is extensive research on the effect of financial openness on financial development on the loans side, as mentioned in Section II C, with conflicting results. Overall, this research indicates that financial openness leads to higher financial development as long as there is enough time for adjustment and the level of domestic banking sector competition is high. As Fischer and Valenzuela (2013) point out, low domestic banking sector competition can lead to financial repression, with banks charging high interest rates on loans and offering low rates to depositors.

The second step in determining the indirect impact of financial openness on financial inclusion through the financial development channel is to analyze the effect of financial development on financial inclusion. As described in Section II B, previous literature finds a

positive relationship between these variables (Evans, 2015; Anarfo et. al., 2019). This means that, as banks offer more credit, they do so to a wider range of firms and individuals, possibly offering more diverse banking services, which further helps with the deepening of the financial sector. Overall, if the impact of financial openness on financial development is positive, this would indirectly lead to greater financial inclusion, but if financial openness has a negative impact on financial development, it would result in lower levels of financial inclusion.

III. **Methodology**

A. Hypotheses Development

In light of the expected indirect effect of financial openness on financial inclusion through the financial development channel, I hold constant the level of domestic financial development to focus on the direct effect of financial openness on financial inclusion. For a fixed level of domestic financial development, a higher degree of capital account openness could lead to changes in the level of competition experienced by domestic banks, as well as changes in profits for financial institutions, which could lead to changes in the distribution of loans and deposits, directly impacting financial inclusion. I use both a de facto measure of financial openness represented by the LMF index based on Lane and Milesi-Ferretti (Lane and Milessi-Ferretti, 2017), as well as a de jure measure represented by the Chinn-Ito KAOPEN index. LMF reflects the value of actual cross-border financial transactions, while KAOPEN is based on official restrictions on cross-country financial transactions, so a higher KAOPEN does not necessarily translate to a higher volume of international asset transactions. LMF could be influenced by a wide variety of factors in addition to official regulations, such as countries' institutional quality and political environment, that could encourage or discourage actual cross-border financial transactions.

Therefore, the direct effect of financial openness on financial inclusion could vary depending on the measure of financial openness considered.

On the deposits side of financial inclusion, holding financial development, or the overall amount of deposits fixed, a higher degree of de facto financial openness could be associated with higher or lower levels of financial inclusion. The effect of financial openness on financial inclusion is expected to be positive if, faced with competition from abroad, banks in the home country develop effective strategies to keep savers. This response could be compounded by the entry of new banks into the domestic market. For the purpose of my analysis, these changes would not fall under the financial development channel, since I define financial development or depth strictly as the size of the financial sector, which could be held constant as competition or the number of commercial banks increases. Domestic banks could also benefit from acquiring knowledge from foreign banks and they could offer a wider variety of services. Individuals would be able to diversify their deposits more, for example opening a savings account in addition to their checking account. Looser de jure restrictions on cross border financial transactions as measured by KAOPEN could open the possibility for international asset purchases and encourage individuals to open more deposit accounts in order to use them to buy stocks and other foreign assets. Since it is possible for a high degree of de jure financial openness to not lead to actual significant changes in external financial transactions that would be conducive of economies of scale and scope, as well as competition, I expect the effect of KAOPEN on the deposit side of financial inclusion to be weaker than the impact of LMF. Higher financial openness is expected to have a negative impact on financial inclusion if, in response to international competition, banks suffer losses and decide to cut costs by reducing the availability of services, as well as ATMs and

bank branches, which would discourage deposits. If foreign capital flows primarily towards the wealthiest nations, greater levels of financial openness may worsen inequalities and hinder financial inclusion.

On the borrowing side of financial inclusion, the direct effect of financial openness on financial inclusion could be either positive or negative. On the one hand, holding the level of financial development constant, as a result of more financial openness, banks that participate in international activities are able to better diversify their risk, which could lead to not only economies of scale, but also to economies of scope (Owen and Pereira, 2018), meaning they would be able to offer more diverse services, reaching more people. Due to this larger variety of financial services, customers could choose smaller and more diverse types of loans to better suit their needs, for example multiple credit cards with different types of rewards. As a result of higher financial openness, agents might also be incentivized to start or develop businesses, opening more loan accounts. On the other hand, countries could become more financially exclusive in response to higher levels of financial openness. Due to increased international banking sector competition, banks would face lower profits, and decide to engage in higher risk-taking behaviors, seeking higher returns (Giannetti, 2007). Ashraf (2018) shows that banks do take more risks in response to higher levels of financial openness. This could mean less diversification, and thus less financial inclusion on the borrowing side. Indeed, Morgan and Pontines (2018) find a negative relationship between financial inclusion and banks' probability of insolvency. Again, since these effects operate through higher actual banking sector competition and through banks' access to larger markets due to financial openness, it is expected that the impact of the LMF measure of financial openness is stronger than the impact of KAOPEN.

These arguments lead me to my two main hypotheses:

H1: On the deposits side, the effect of financial openness on financial inclusion is expected to be positive if banks respond to foreign competition by providing a greater range of services for depositors to retain funds domestically. If foreign competition causes banks to incur losses, they may reduce service availability for depositors as a cost-cutting measure, resulting in a negative impact of financial openness on financial inclusion.

H2: On the borrowing side, the effect of financial openness on financial inclusion could be positive if banks' profits remain unaffected by foreign competition, and they use openness as an opportunity for diversification. Conversely, financial openness can negatively impact financial inclusion if banks experience reduced profits and adopt high-risk strategies, becoming more exclusive.

B. Model and Data

In order to test these hypotheses concerning the direct effect of financial openness on financial inclusion, in addition to the indirect effect through the financial development channel, I investigate the impact of financial openness on financial inclusion, holding the level of financial development constant. Equation 1.1 below presents the main model:

$$financial\ inclusion_{i,t} = \beta_0 + \beta_1 financial\ openness_{i,t} + \beta_2 financial\ development_{i,t} + \beta_3 concentration_{i,t} + \beta_4 GDP_{i,t} + \alpha_i + \sigma_t + \varepsilon_{i,t} \qquad \textit{Equation 1.1}$$

In equation 1.1, $financial\ inclusion_{i,t}$ is measured by the following variables related to commercial banks: number of depositors, number of deposit accounts, number of borrowers,

number of loan accounts, followed by their corresponding household variables: number of household depositors, number of household deposit accounts, number of household borrowers and number of household loan accounts, each per 1,000 adults. $Financial\ openness_{i,t}$ is either the Lane and Milesi-Ferretti (LMF) financial openness index or the Chinn-Ito index (KAOPEN). The LMF index based on Lane and Milesi-Ferretti (2017) is the sum of foreign assets and liabilities divided by GDP, with higher values indicating a greater stock of international assets and liabilities and thus more openness. The KAOPEN index developed by Chinn-Ito (2006) is based on restrictions regarding international financial transactions from IMF's *Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER).* KAOPEN is measured on a scale from 0 to 1, with a value closer to 1 indicating more openness. $Financial\ development_{i,t}$ measures the level of financial development using M3/GDP in regressions with deposit related variables for financial inclusion, and private domestic credit as a percentage of GDP in regressions with loan related variables for financial inclusion, as in Owen and Pereira (2018). $Concentration_{i,t}$ is a measure of bank concentration indicating the shares of assets of the top three or the top five banks. $GDP_{i,t}$is the natural logarithm of per capita real GDP. α_i are country fixed effects and σ_t are time fixed effects. This model is parsimonious while still taking into account important supply side variables that determine the level of financial inclusion, accounting for global shocks that could impact the demand side over time and country level characteristics that could influence demand by including time and country fixed effects. My approach is similar to Owen and Pereira's (2018) approach, since I use fixed effects regressions with the level of financial development held constant and I cover several measures of financial inclusion both on the deposits and on the loans side. My aim, however, is to study the effect of financial openness on financial inclusion, while they focused on

the impact of bank concentration on inclusion. In Section V, which presents robustness checks, I also consider lagging the financial openness and bank asset concentration ratio variables by one year instead of using contemporaneous values, following an approach similar to Owen and Pereira's (2018), as well as another specification involving all regressors lagged by one year, which could facilitate a causal interpretation of their effects on financial inclusion. In Section V, I show that results are not sensitive to the lag structure of the regressors. I also include a sensitivity analysis using GMM estimation is Section V.

For the measures of financial inclusion based on deposits, β_1 could be either positive or negative. β_1 is expected to be positive if banks offer a wider diversity of services for depositors, as they compete for funds when financial openness is higher. More depositors would be able to diversify their savings, holding smaller amounts in different accounts or saving instruments. β_1 is expected to be negative if banks' profits are negatively impacted by foreign competition, and domestic banks decide to reduce service availability to cut costs. For the measures of financial inclusion based on borrowing, $\beta_1$could be either positive or negative, depending on which effect dominates. The impact of financial openness on financial inclusion could be positive if domestic banks do not suffer reductions in profits as a result of financial openness, but use financial openness as an opportunity for diversification and for competing through offering a wider variety of services. Holding the overall amount of credit measured by financial development constant, I anticipate that the effect of financial openness on financial inclusion is negative if banks engage in more risk-taking behaviors as a response to higher competition, thus becoming more exclusive and diversifying less. Borrowers could also have a lower confidence in domestic banks due to the expected increase in banks' risk taking (Ashraf, 2018; Jutasompakorn, 2014). I expect the impact

of LMF on financial inclusion to be stronger than the effect of KAOPEN because LMF represents actual cross border financial transactions resulting from a wide variety of economic and political factors rather than being only due to changes in regulations related to the movement of capital among countries as measured by KAOPEN. Even if official regulations are more permissive, it is possible for countries to not be exposed to a high volume of cross border capital movement, and thus KAOPEN is expected to have less of an impact on agents' decision making if they do not expect actual changes.

For the control variables, I anticipate a positive β_2, especially on the borrowing side, and thus a positive relationship between financial development and financial inclusion, as in Chithra and Selvam (2013). As banks have the ability to offer a higher volume of credit, it is likely that they accept more borrowers and offer more loan accounts in order to diversify risk, all else equal. Consistent with previous studies, I also expect a positive relationship between bank concentration and financial inclusion, meaning a positive β_3 (Owen and Pereira, 2018). A possible explanation concerns the advantage associated with economies of scale and scope that larger banks could benefit from, which could enable them to better diversify their portfolios. I include additional estimations with the square of bank concentration ratio to be consistent with Owen and Pereira (2018), who found a negative and significant coefficient for the square of bank concentration ratio.[1] Researchers have also hypothesized that a higher level of banking sector competition is harmful for relationship based lending (Peterson and Rajan, 1995; Dell'Ariccia and

[1] Owen and Pereira (2018) find a positive overall marginal effect of the bank concentration ratio on financial inclusion due to the magnitude of the coefficients for bank concentration ratio and bank concentration ratio squared.

Marquez, 2004), so a lower level of competition as reflected by a higher bank asset concentration could mean more financial inclusion. β_4 should also be positive, with richer countries having more financial inclusion, which is also supported by previous literature (Evans, 2015). This could be because governments in the more economically developed countries have the financial means to implement policies that incentivize banks to become more inclusive, for example. Individuals and businesses could also have a higher degree of trust in the domestic financial sector due to more banking sector stability, and thus more people would be banked. Richer countries experience more entrepreneurial activity than poor countries, and individuals, as well as small firms in developed countries are likely less risky for financial institutions, on average, relative to agents in developing countries. This wider range of economic activities could also lead to more diverse lending motives and savings goals, which translates to a higher level of financial inclusion.

The eight variables for financial inclusion come from the International Monetary Fund's Financial Access Survey. Data on M3/GDP, private domestic credit/GDP and the bank asset concentration ratios are obtained from the World Bank's Global Financial Development Database. The LMF financial openness measure is retrieved from Lane and Milesi-Ferretti (2017) External Wealth of Nations Mark II Database, and the KAOPEN measure of financial openness comes from Chinn-Ito (2006). I use annual data from 2004 to 2015 in the regressions with LMF, and from 2004 to 2017 in the regressions with KAOPEN. The sample size varies according to data availability for the measures of financial inclusion used. The largest country coverage is 102 countries. Sample sizes are noted in each table.

Table 1.1 shows the summary statistics and reveals that there is a large variance for the financial inclusion variables for the countries in this sample. For example, the mean number of

depositors is 589.59 depositors per 1,000 adults, while the standard deviation is 554.88 depositors per 1,000 adults. There is also high variation for the LMF variable, which is significantly higher than variation for KAOPEN. This suggests that, even though countries are similar in terms of their regulations regarding financial openness, the level at which this de jure openness translates into actual cross-border financial transactions varies greatly among countries. Table 1.2 presents the correlation matrix. As expected, the two measures of financial openness, KAOPEN and LMF are positively correlated, but the correlation is moderate: higher levels of LMF can occur if restrictions measured by KAOPEN are low (corresponding to a high KAOPEN index), but a high KAOPEN index does not necessarily have to be matched by a high level of actual cross border capital movement measured by LMF because more conditions, such as good institutional quality, would also have to be met. Consistent with my hypothesis of a stronger connection between financial openness and financial inclusion when financial openness is measured by LMF rather than by KAOPEN, the correlations between LMF and financial inclusion are stronger than the corresponding correlations between KAOPEN and financial inclusion for each of the eight measures of financial inclusion. Correlations between financial openness and financial inclusion are stronger on the borrowing side than on the deposits side. Variables on the deposits side of financial inclusion are closely connected, and there is a similar pattern on the borrowing side, with variables measuring total amounts very highly correlated with their corresponding household level variables.

Table 1.1: Summary Statistics

	Obs	Mean	Std. Dev.	Min	Max
KAOPEN	2,616.00	0.53	0.38	0.00	1.00
LMF	2,277.00	16.19	159.08	0.10	2,746.07
Number of depositors	1,188.00	589.59	554.88	0.47	3,379.81
Number of household depositors	554.00	509.35	536.11	0.83	3,352.94
Number of deposit accounts	1,576.00	1,165.65	1,169.73	1.28	7,987.93
Number of household deposit accounts	739.00	1,235.23	1,355.31	0.88	7,779.56
Number of borrowers	1,211.00	188.18	213.97	0.02	1,233.00
Number of household borrowers	679.00	187.15	181.16	0.04	785.49
Number of loan accounts	1,270.00	312.47	349.61	0.40	2,909.29
Number of household loan accounts	810.00	330.35	356.89	0.00	2,598.10
LN(M3/GDP)	2,436.00	-14.56	0.97	-17.16	1.63
LN(Private credit/GDP)	2,448.00	3.51	1.02	-1.06	6.88
Three bank concentration	2,161.00	68.95	19.62	17.16	100.00
Five bank concentration	1,862.00	79.95	15.75	26.14	100.00
LN(GDP/capita)	2,827.00	8.57	1.49	5.35	12.19

Table 1.2: Correlation Matrix

	Financial Openness		Financial Inclusion								Financial Development		Bank Concentration		Economic Development
	KAOPEN	LMF	Number of depositors	Number of household depositors	Number of deposit accounts	Number of household deposit accounts	Number of borrowers	Number of household borrowers	Number of loan accounts	Number of household loan accounts	LN(M3/GDP)	LN(Private credit/GDP)	Three bank concentration	Five bank concentration	LN(GDP/capita)
KAOPEN	1.00														
LMF	0.60	1.00													
Number of depositors	0.37	0.62	1.00												
Number of household depositors	0.33	0.61	0.99	1.00											
Number of deposit accounts	0.30	0.57	0.92	0.92	1.00										
Number of household deposit accounts	0.28	0.55	0.91	0.92	0.99	1.00									
Number of borrowers	0.59	0.77	0.75	0.73	0.75	0.73	1.00								
Number of household borrowers	0.60	0.78	0.75	0.73	0.75	0.74	1.00	1.00							
Number of loan accounts	0.59	0.66	0.67	0.67	0.75	0.74	0.92	0.92	1.00						
Number of household loan accounts	0.58	0.64	0.68	0.68	0.77	0.76	0.92	0.92	0.99	1.00					
LN(M3/GDP)	-0.16	0.24	0.22	0.22	0.22	0.21	0.26	0.25	0.13	0.12	1.00				
LN(Private credit/GDP)	0.18	0.61	0.68	0.69	0.68	0.66	0.70	0.68	0.62	0.60	0.28	1.00			
Three bank concentration	0.04	0.16	-0.03	-0.03	0.01	0.01	0.10	0.11	0.15	0.16	0.02	-0.31	1.00		
Five bank concentration	0.02	0.10	-0.10	-0.08	-0.06	-0.05	-0.02	0.00	0.05	0.06	-0.12	-0.32	0.92	1.00	
LN(GDP/capita)	0.55	0.81	0.63	0.63	0.58	0.56	0.73	0.72	0.70	0.66	0.25	0.69	-0.03	0.00	1.00

Note: Tables 1.1 and 1.2 are based on all available data. The household-level financial inclusion variables are a subset of their corresponding overall measures of financial inclusion that include all types of bank customers. The mean for the overall financial inclusion variables can be smaller than the mean for their corresponding household-level financial inclusion variables due to the fact that data for each variable is not available for the same years.

IV. **Results**

A. Effect of Financial Openness on Financial Inclusion

Tables 1.3-1.10 below present results for the effect of financial openness on financial inclusion organized by the different measures of financial inclusion. I start with variables measuring overall financial inclusion (which includes households and other participants, such as firms) which have larger sample sizes. Table 1.3 provides results for number of depositors, Table 1.4 for number of deposit accounts, Table 1.5 for number of borrowers, and Table 1.6 for number of loan accounts. Then I focus on variables measuring just the household level of financial inclusion. Table 1.7 presents results for number of household depositors, Table 1.8 for number of household deposit accounts, Table 1.9 for number of household borrowers, and Table 1.10 for number of household loan accounts.

Overall, there is only a limited impact of financial openness on financial inclusion, with the impact confined to the number of accounts. Neither measure of financial inclusion is significant for the number of depositors or borrowers. These findings suggests that, holding the level of financial development fixed, as countries experience a higher volume of cross-border financial transactions, there is a higher number of loan and deposit accounts. However, there is no significant effect on the number of depositors or borrowers, which suggests that new adults are not likely to become banked as a result of higher levels of financial openness. Instead, existing commercial bank depositors and borrowers increase their number of accounts, being better able to pursue different financial objectives. This is consistent with the economies of scale and scope argument. When financial openness is measured by LMF, financial openness enters with a positive and significant coefficient for number of household deposit accounts, number of

loan accounts, and number of household loan accounts. When financial openness is measured by KAOPEN, there is a positive effect on financial openness on financial inclusion for household deposit accounts only. As hypothesized, LMF shows more of an impact on financial inclusion than KAOPEN. Thus, changes in the de jure level of financial openness may not impact financial inclusion unless there are also actual de facto changes in financial openness. A higher degree of de facto capital account openness is more likely to influence changes in the behavior of economic agents than looser regulations alone: even though capital is free to move among countries in terms of legislation, this does not necessarily translate into actual movement if the rest of the economic and political environment is not favorable. For the account measures of inclusion, the first parts of H1 and H2, hypothesizing a positive openness-inclusion relationship, appear to hold. This could be because banks may respond to foreign competition by increasing service variety and portfolio diversification. While there is only limited evidence of a positive impact of financial openness on financial inclusion, it is important to note that in most cases, higher levels of financial openness do not appear to negatively impact financial inclusion. In most instances, there is no support for the second parts of H1 and H2, stating that banks reducing service availability to cut costs and engaging in high-risk strategies, becoming more exclusive, in response to greater financial openness.

On the deposits side, there is a positive relationship between financial openness, using both the LMF and the KAOPEN measures, and number of household deposit accounts. In an effort to keep funds at home, domestic banks could diversify the variety of services they offer, so people would be able to open savings in addition to checking accounts, for instance. Since I hold financial development measured as M3/GDP constant, meaning the overall level of funds

stays the same, for the same number of depositors, more deposit accounts indicates that people can diversify their savings more, across multiple accounts, depositing lower amounts in each account, possibly at different banks in order to reduce risk. There is no evidence for a relationship between financial openness and the other deposit related measures of financial inclusion.

On the loans side, there is a positive relationship between financial openness measured by LMF and the number of loan accounts and the number of household loan accounts. This suggests that openness allows borrowers to choose a wider range of loan accounts to suit their specific needs: for example, customers could open multiple credit cards with different types of reward programs. A higher level of financial openness could also encourage entrepreneurs to further pursue business goals with more access to international markets, opening more loan accounts. Financial openness may enable banks to better diversify their risk, thus enjoying economies of scale and scope, offering a larger variety of services with better rates, also induced by foreign competition.

As described in more detail in Section V where I perform a sensitivity analysis using GMM estimation as in Owen and Pereira (2018), these results are sensitive to the sample and perhaps to the methodology. Results indicating a positive significant effect of LMF on the number of loan accounts measure of financial inclusion still hold in the largest samples with the three bank asset concentration ratio in the GMM estimation, so overall there is still evidence of a positive effect of LMF on some measures of financial inclusion. Results involving the KAOPEN effect are also sensitive in the GMM analysis, but overall, financial integration does not appear to negatively impact financial inclusion in most cases.

As far as the control variables are concerned, a higher degree of financial development measured by private credit or M3/GDP, is associated with greater financial inclusion, both on the deposits and on the loans side. The results are consistent with the idea that more depth of the financial sector also brings more financial breadth. This result is also supported in previous studies (Anarfo et al, 2018). The level of economic development is also strongly associated with financial inclusion, as the coefficient for GDP per capita enters with a significant positive sign in many cases, particularly for the deposits side, but not consistently for the borrowing side. The five bank asset concentration ratio shows limited positive significance for number of borrowers, number of loan accounts, number of household deposit accounts, number of household borrowers and number of household loan accounts. Since this control variable exhibits less statistical significance than in Owen and Pereira (2018), I include a more in-depth discussion in Section V, where I show that the effects of financial openness on financial inclusion found in the main model specification are robust to the exclusion of the bank asset concentration control.

Table 1.3: Regressions for Number of Depositors

VARIABLES	Number of Depositors							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LN(M3/GDP)	86.30**	88.99**	89.23	90.23*	64.68***	67.40***	57.35	57.66
	(37.47)	(38.47)	(54.72)	(54.06)	(24.43)	(24.42)	(36.50)	(35.45)
LN(GDP/Capita)	463.76**	479.44**	485.11**	521.19**	324.08**	336.43**	364.92**	392.90**
	(179.61)	(190.00)	(203.06)	(221.95)	(140.58)	(144.63)	(171.84)	(181.44)
KAOPEN	-50.61	-52.24	-37.04	-59.01				
	(75.44)	(74.26)	(79.50)	(80.19)				
LMF					-35.06	-33.74	-26.32	-23.40
					(24.54)	(24.90)	(25.55)	(26.83)
3 Bank Asset Concentration	1.28	7.90			1.12	8.23		
	(1.16)	(9.31)			(1.03)	(8.05)		
3 Bank Asset Concentration Squared		-0.05				-0.05		
		(0.06)				(0.05)		
5 Bank Asset Concentration			2.48	18.50			2.27	16.72
			(2.03)	(19.77)			(1.78)	(17.58)
5 Bank Asset Concentration Squared				-0.11				-0.10
				(0.12)				(0.11)
Observations	866	866	741	741	740	740	627	627
R-squared	0.28	0.29	0.29	0.30	0.27	0.28	0.27	0.29
Number of Countries	79	79	72	72	77	77	71	71
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Table 1.4: Regressions for Number of Deposit Accounts

VARIABLES	Number of Deposit Accounts							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LN(M3/GDP)	91.57***	89.69***	41.22	40.80	73.87***	72.81***	23.34	22.24
	(32.38)	(32.93)	(44.36)	(44.08)	(27.05)	(26.90)	(35.40)	(35.44)
LN(GDP/Capita)	941.31***	928.94***	1,161.40***	1,169.62***	856.68***	848.85***	1,094.00***	1,102.94***
	(207.47)	(207.66)	(244.24)	(245.52)	(190.73)	(189.52)	(225.92)	(225.84)
KAOPEN	241.41	249.80*	227.26	224.13				
	(146.41)	(147.16)	(139.02)	(140.43)				
LMF					2.81	2.78	2.40	2.35
					(1.93)	(1.97)	(2.02)	(2.01)
3 Bank Asset Concentration	0.66	-4.07			-0.19	-3.87		
	(1.19)	(8.13)			(1.08)	(7.28)		
3 Bank Asset Concentration Squared		0.04				0.03		
		(0.06)				(0.05)		
5 Bank Asset Concentration			2.37	6.31			1.49	6.74
			(1.63)	(11.48)			(1.34)	(9.91)
5 Bank Asset Concentration Squared				-0.03				-0.04
				(0.07)				(0.06)
Observations	1,187	1,187	1,060	1,060	1,016	1,016	904	904
R-squared	0.36	0.36	0.37	0.37	0.37	0.37	0.38	0.38
Number of Countries	102	102	94	94	101	101	93	93
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Table 1.5: Regressions for Number of Borrowers

VARIABLES	Number of Borrowers							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LN(Private Credit/GDP)	46.76*	47.03*	55.09**	55.20**	47.81**	47.30*	54.93**	55.15**
	(23.99)	(24.08)	(24.02)	(24.25)	(23.67)	(23.87)	(25.79)	(25.79)
LN(GDP/Capita)	55.50	54.53	106.86	100.36	34.02	35.04	64.23	60.27
	(71.94)	(71.96)	(73.07)	(74.98)	(81.12)	(81.74)	(103.47)	(104.80)
KAOPEN	-8.18	-7.94	0.70	4.05				
	(38.27)	(38.31)	(39.12)	(38.55)				
LMF					-14.42	-14.36	-20.08	-20.20
					(12.57)	(12.65)	(17.31)	(17.27)
3 Bank Asset Concentration	0.71	0.20			0.86*	1.63		
	(0.49)	(2.21)			(0.46)	(2.36)		
3 Bank Asset Concentration Squared		0.00				-0.01		
		(0.02)				(0.02)		
5 Bank Asset Concentration			1.17**	-1.81			1.36**	-0.69
			(0.57)	(4.11)			(0.55)	(3.89)
5 Bank Asset Concentration Squared				0.02				0.01
				(0.03)				(0.02)
Observations	887	887	767	767	781	781	672	672
R-squared	0.29	0.29	0.35	0.35	0.29	0.29	0.35	0.36
Number of Countries	83	83	75	75	83	83	76	76
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Table 1.6: Regressions for Number of Loan Accounts

VARIABLES	Number of Loan Accounts							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LN(Private Credit/GDP)	120.29*	119.21*	173.48**	177.60**	104.66*	100.24*	148.40**	151.87**
	(69.63)	(69.80)	(76.81)	(74.20)	(56.01)	(56.09)	(62.72)	(60.49)
LN(GDP/Capita)	168.31	178.86	277.94*	297.11*	204.24	222.19	320.18**	341.25**
	(143.49)	(144.00)	(159.57)	(157.12)	(132.59)	(135.93)	(153.31)	(144.54)
KAOPEN	-105.88	-111.26	-106.48	-122.12				
	(161.57)	(165.55)	(173.03)	(173.69)				
LMF					1.48***	1.54***	1.22**	1.03**
					(0.41)	(0.38)	(0.50)	(0.50)
3 Bank Asset Concentration	2.26	6.59			2.27	9.34		
	(1.84)	(5.52)			(1.92)	(5.86)		
3 Bank Asset Concentration Squared		-0.03				-0.05		
		(0.03)				(0.03)		
5 Bank Asset Concentration			3.22	17.47*			3.03	20.50*
			(2.49)	(10.46)			(2.12)	(10.30)
5 Bank Asset Concentration Squared				-0.10				-0.12*
				(0.07)				(0.07)
Observations	897	897	780	780	764	764	662	662
R-squared	0.16	0.16	0.19	0.20	0.17	0.18	0.21	0.22
Number of Countries	86	86	78	78	83	83	75	75
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Table 1.7: Regressions for Number of Household Depositors

VARIABLES	Number of Household Depositors							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LN(M3/GDP)	86.61**	88.73*	101.39	102.33	65.99**	70.67**	71.11	72.62
	(41.75)	(44.23)	(70.20)	(71.09)	(31.12)	(33.84)	(52.95)	(53.43)
LN(GDP/Capita)	420.75*	427.65*	463.54*	476.55	388.05**	391.66**	399.39**	421.06**
	(236.15)	(244.29)	(269.38)	(287.85)	(143.27)	(146.66)	(178.83)	(188.50)
KAOPEN	-56.41	-55.46	-98.07	-103.22				
	(215.98)	(213.30)	(230.07)	(231.79)				
LMF					21.72	19.34	6.07	6.73
					(38.24)	(39.75)	(47.25)	(46.47)
3 Bank Asset Concentration	0.06	3.06			0.75	7.25		
	(1.48)	(6.56)			(1.37)	(7.61)		
3 Bank Asset Concentration Squared		-0.02				-0.05		
		(0.04)				(0.05)		
5 Bank Asset Concentration			0.69	4.69			1.58	10.89
			(1.82)	(8.97)			(1.83)	(14.09)
5 Bank Asset Concentration Squared				-0.03				-0.06
				(0.06)				(0.09)
Observations	386	386	320	320	328	328	265	265
R-squared	0.26	0.26	0.26	0.26	0.24	0.24	0.24	0.24
Number of Countries	41	41	37	37	39	39	35	35
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Table 1.8: Regressions for Number of Household Deposit Accounts

VARIABLES	Number of Household Deposit Accounts							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LN(M3/GDP)	167.79***	167.08***	98.06*	96.15**	140.57***	143.92***	75.81*	75.69**
	(33.81)	(39.77)	(51.22)	(47.38)	(32.33)	(39.06)	(38.62)	(34.59)
LN(GDP/Capita)	1,428.19***	1,422.68***	1,871.86***	2,055.29***	1,305.68***	1,327.72***	1,839.69***	2,008.08***
	(347.61)	(353.89)	(346.99)	(337.72)	(373.30)	(391.41)	(378.24)	(385.07)
KAOPEN	407.58*	409.09*	408.93*	333.21*				
	(236.11)	(229.34)	(231.81)	(196.77)				
LMF					4.90***	4.94***	3.49*	3.18*
					(1.55)	(1.49)	(1.74)	(1.75)
3 Bank Asset Concentration	1.99	1.05			1.68	5.76		
	(3.78)	(19.57)			(3.14)	(17.08)		
3 Bank Asset Concentration Squared		0.01				-0.03		
		(0.13)				(0.12)		
5 Bank Asset Concentration			4.38	42.25*			5.07	47.03**
			(4.64)	(22.63)			(3.56)	(21.67)
5 Bank Asset Concentration Squared				-0.27*				-0.30**
				(0.15)				(0.15)
Observations	512	512	450	450	445	445	384	384
R-squared	0.42	0.42	0.47	0.48	0.42	0.42	0.49	0.51
Number of Countries	48	48	44	44	47	47	42	42
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Table 1.9: Regressions for Number of Household Borrowers

VARIABLES	Number of Household Borrowers							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LN(Private Credit/GDP)	60.92	61.02	105.15***	105.09***	53.55	52.94	108.58***	108.83***
	(37.61)	(37.20)	(35.94)	(36.08)	(33.22)	(32.80)	(30.98)	(31.23)
LN(GDP/Capita)	-13.68	-17.96	35.88	31.01	56.69	58.82	37.79	39.92
	(75.97)	(76.11)	(68.13)	(69.77)	(80.44)	(82.29)	(84.98)	(84.67)
KAOPEN	6.07	8.99	-15.59	-13.60				
	(44.51)	(45.72)	(42.37)	(41.41)				
LMF					9.10	9.69	-14.48	-14.82
					(18.88)	(19.00)	(17.57)	(17.46)
3 Bank Asset Concentration	0.97	-0.96			1.55*	2.22		
	(0.85)	(2.70)			(0.78)	(2.72)		
3 Bank Asset Concentration Squared		0.02				-0.01		
		(0.02)				(0.02)		
5 Bank Asset Concentration			1.35*	-0.94			1.73**	3.43
			(0.74)	(4.24)			(0.67)	(4.26)
5 Bank Asset Concentration Squared				0.02				-0.01
				(0.03)				(0.03)
Observations	468	468	413	413	404	404	351	351
R-squared	0.42	0.42	0.53	0.53	0.43	0.43	0.54	0.54
Number of Countries	49	49	44	44	50	50	45	45
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Table 1.10: Regressions for Number of Household Loan Accounts

VARIABLES	Number of Household Loan Accounts							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LN(Private Credit/GDP)	131.65	131.74	217.70**	224.40**	130.23*	128.08*	218.86***	229.62***
	(85.89)	(85.89)	(88.76)	(86.44)	(73.93)	(74.40)	(76.32)	(73.59)
LN(GDP/Capita)	130.89	130.53	244.18	257.66*	202.75	207.87	318.78**	331.92**
	(159.37)	(159.91)	(155.81)	(149.30)	(144.56)	(148.39)	(147.41)	(130.61)
KAOPEN	-126.38	-126.08	-123.97	-150.44				
	(265.18)	(269.17)	(259.94)	(260.78)				
LMF					2.56***	2.56***	2.35***	2.06***
					(0.60)	(0.60)	(0.63)	(0.61)
3 Bank Asset Concentration	1.93	1.70			2.15	5.66		
	(2.72)	(7.15)			(2.67)	(6.47)		
3 Bank Asset Concentration Squared		0.00				-0.03		
		(0.04)				(0.04)		
5 Bank Asset Concentration			2.38	17.68			2.42	21.83*
			(3.07)	(14.47)			(2.51)	(12.76)
5 Bank Asset Concentration Squared				-0.11				-0.13
				(0.10)				(0.09)
Observations	585	585	527	527	502	502	446	446
R-squared	0.17	0.17	0.22	0.23	0.20	0.20	0.26	0.28
Number of Countries	55	55	52	52	54	54	50	50
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

B. Institutional Quality Effects on Financial Inclusion

Since results show some positive effect of financial openness as measured by LMF on the number of accounts at commercial banks, in this section I test whether this result could be affected by institutional quality. It is possible that the quality of domestic institutions beyond the depth/size of financial markets, has an influence on the volume of actual cross border capital flows and on the level of financial inclusion. A better institutional quality is likely to lead to more external inflows, as investments are safer in these countries. Alfaro et al (2008) find that high levels of institutional quality are the main drivers of international capital inflows, as they show poor institutional quality to be the main explanation for why capital does not flow from rich to poor countries, which is known as the "Lucas Paradox." Better institutional quality could also lead to more financial inclusion, as more trust in banking sector stability due to better control of corruption, political stability and trust in the judicial system, could encourage more

individuals and businesses to open and use banking services. Better institutions may also reduce banks' risk when offering loans, possibly lowering the level of asymmetric information. Therefore, the effect of LMF could capture some of the positive impact of institutional quality on financial inclusion. In order to investigate this issue, I introduce institutional quality variables to my model:

$$\begin{aligned} financial\ inclusion_{i,t} \\ &= \beta_0 + \beta_1 financial\ openness_{i,t} \\ &+ \beta_2 financial\ development_{i,t} + \beta_3 concentration_{i,t} + \beta_4 GDP_{i,t} \\ &+ \beta_5 Institutional\ Quality_{i,t} + \alpha_i + \sigma_t + \varepsilon_{i,t} \end{aligned}$$

Equation 1.2

The institutional quality variable used here comes from the Worldwide Governance Indicators from Kaufmann, Kraay and Mastruzzi (2010) and is measured as an overall index, which is an average across the six measures of institutional quality, and as the individual measures for each country for each year. The six indicators are "Voice and Accountability" (VA), "Political Stability and the Absence of Violence/Terrorism" (PSNV), "Government Effectiveness" (GE), "Regulatory Quality" (RQ), "Rule of Law" (RL) and "Control of Corruption" (CC).[2] VA measures perceptions about issues such as people's ability to choose their desired political leaders and freedom of press, PSNV concerns perceptions about the likelihood of violent

[2] These indicators were constructed by Kaufmann, Kraay and Mastruzzi (2010) to approximate a standard normal variable with mean zero and a standard deviation of 1. According to the authors, the indexes for individual measures run from approximately -2.5 to 2.5. A few values are higher in the negative direction for PSNV, such as the minimum value of -3.31 for PSNV in Table 1.11.

political unrest and terrorism, GE measures perceptions about government's ability to design and implement policies effectively, as well as people's trust in government's consistency regarding those policies, RQ is concerned with people's views about government's effectiveness creating and implementing policies that promote growth of the private sector, RL represents issues such as opinions about the effective enforcement of laws and contracts, as well as trust in the judicial system, and CC captures perceptions about the likelihood of state officials to engage in corrupt activities.

The summary statistics presented in Table 1.11 show that there is variation in the quality of institutions across countries. The most extreme values in the negative direction are registered for PSNV. Table 1.12, which presents the correlation matrix including the institutional quality variables, indicates high positive correlations between LMF and institutional quality. The corresponding correlations for KAOPEN and institutional quality are lower for almost all measures of institutional quality, except VA. RQ, GE and RL show the strongest positive correlations with the measures of financial inclusion, and these correlations are higher on the borrowing side than on the deposit side of financial inclusion. RL is highly correlated with RQ, GE and CC.

Tables 1.13-1.20 present results for regressions with the institutional quality index, and Tables 1.21-1.28 show results for regressions with each of the six institutional quality indicators for each of the eight measures of financial inclusion. For Tables 1.21-1.28, Panels A and B present results for regressions with KAOPEN as a measure of financial openness with three and five bank asset concentration ratio, respectively, and Panels C and D show regression results with LMF as a measure of financial openness, with three and five bank asset concentration, respectively. In

regressions with the overall institutional quality index, as well as in those with each of the six indicators of institutional quality, LMF retains its significance, having a positive impact on number of household deposit accounts, number of loan accounts and number of household loan accounts. There remains no evidence for a relationship between LMF and number of depositors and number of borrowers. KAOPEN is no longer significant when including the overall institutional quality index but retains some significance for number of deposit accounts and number of household deposit accounts in regressions with the individual institutional quality indicators. Overall, these results suggest that, even after controlling for the level of institutional quality, financial openness as measured by LMF continues to have a positive effect on the number of deposit and loan account measures of financial inclusion, particularly at the household level.

In terms of the impact of institutional quality on financial inclusion, the institutional quality index enters with a positive and significant coefficient for number of depositors only when financial openness is measured by KAOPEN, number of household depositors and, less consistently, for number of household borrowers. Some individual indicators show significantly positive effects, as well. RL, which focuses on reliable contract enforcement, and which promotes trust in the financial sector, exhibits the most consistent significance overall, for number of household depositors, number of borrowers, number of loan accounts, number of household borrowers and number of household loan accounts. This finding is consistent with Klapper et. al (2021), who develop an index aggregating six aspects of consumer protection regulations, with a higher score meaning more favorable regulations for financial inclusion and found that Sub-Saharan countries with high scores in this index display higher numbers of money market accounts. VA is positive and significant for number of depositors, perhaps indicating free media

and higher confidence of citizens in their ability to influence government decisions can lead to more trust in the financial sector. GE is positive and significant for number of household borrowers and number of household loan accounts; since effective economic policies could lead to better borrowing terms. CC is positive and significant for number of household depositors and number of household borrowers, possibly indicating an increase in trust about the safety of deposited funds and more opportunities for business development in a less corrupt environment. Overall, institutional quality appears to mostly affect the number of depositors and borrowers, while financial openness measured by LMF affects the number of deposit and loan accounts, particularly at the household level.

Table 1.11: Institutional Quality Summary Statistics

	Obs	Mean	Std. Dev.	Min	Max
VA	2,888.00	-0.05	1.01	-2.31	1.80
RQ	2,850.00	-0.07	0.99	-2.65	2.26
PSNV	2,886.00	-0.06	0.99	-3.31	1.63
GE	2,850.00	-0.07	0.99	-2.48	2.44
CC	2,852.00	-0.07	1.00	-1.87	2.47
RL	2,878.00	-0.07	0.99	-2.61	2.10
Institutional Quality Index	2,889.00	-0.06	0.91	-2.45	1.96

Table 1.12: Institutional Quality Correlation Matrix

	Financial Openness		Financial Inclusion								Financial Development		Bank Concentration		Economic Development	Institutional Quality						
	KAOPEN	LMF	Number of depositors	Number of household depositors	Number of deposit accounts	Number of household deposit accounts	Number of borrowers	Number of household borrowers	Number of loan accounts	Number of household loan accounts	LN (M3/GDP)	LN (Private credit/GDP)	Three bank asset concentration	Five bank asset concentration	LN(GDP/capita)	VA	RQ	PSNV	GE	CC	RL	Institutional Quality Index
KAOPEN	1.00																					
LMF	0.60	1.00																				
Number of depositors	0.37	0.62	1.00																			
Number of household depositors	0.33	0.61	0.99	1.00																		
Number of deposit accounts	0.30	0.57	0.92	0.92	1.00																	
Number of household deposit account	0.28	0.55	0.91	0.92	0.99	1.00																
Number of borrowers	0.59	0.77	0.75	0.73	0.75	0.73	1.00															
Number of household borrowers	0.60	0.78	0.75	0.73	0.75	0.74	1.00	1.00														
Number of loan accounts	0.59	0.66	0.67	0.67	0.75	0.74	0.92	0.92	1.00													
Number of household loan accounts	0.58	0.64	0.68	0.68	0.77	0.76	0.92	0.92	0.99	1.00												
LN (M3/GDP)	-0.16	0.24	0.22	0.22	0.22	0.21	0.26	0.25	0.13	0.12	1.00											
LN (Private credit/GDP)	0.18	0.61	0.68	0.69	0.68	0.66	0.70	0.68	0.62	0.60	0.28	1.00										
Three bank asset concentration	0.04	0.16	-0.03	-0.03	0.01	0.01	0.10	0.11	0.15	0.16	0.02	-0.31	1.00									
Five bank asset concentration	0.02	0.10	-0.10	-0.08	-0.06	-0.05	-0.02	0.00	0.05	0.06	-0.12	-0.32	0.92	1.00								
LN(GDP/capita)	0.55	0.81	0.63	0.63	0.58	0.56	0.73	0.72	0.70	0.66	0.25	0.69	-0.03	0.00	1.00							
VA	0.35	0.29	0.41	0.42	0.43	0.43	0.49	0.49	0.54	0.54	-0.19	0.33	0.24	0.15	0.27	1.00						
RQ	0.67	0.79	0.73	0.73	0.73	0.71	0.82	0.82	0.82	0.82	-0.08	0.68	0.07	0.06	0.75	0.61	1.00					
PSNV	0.43	0.56	0.19	0.19	0.22	0.19	0.36	0.38	0.35	0.33	0.00	0.18	0.39	0.38	0.52	0.55	0.52	1.00				
GE	0.60	0.80	0.67	0.67	0.67	0.64	0.83	0.83	0.78	0.78	0.08	0.74	0.02	0.02	0.79	0.50	0.94	0.52	1.00			
CC	0.59	0.75	0.54	0.53	0.55	0.53	0.71	0.71	0.69	0.69	0.03	0.51	0.28	0.26	0.70	0.54	0.85	0.71	0.88	1.00		
RL	0.65	0.83	0.67	0.66	0.63	0.60	0.76	0.76	0.69	0.68	0.08	0.65	0.17	0.16	0.77	0.58	0.90	0.70	0.91	0.92	1.00	
Institutional Quality Index	0.63	0.76	0.60	0.60	0.61	0.58	0.75	0.75	0.73	0.72	-0.02	0.58	0.23	0.21	0.72	0.73	0.91	0.78	0.90	0.93	0.95	1.00

Note: Tables 1.11 and 1.12 are based on all available data.

Table 1.13: Regressions with Institutional Quality Index for Number of Depositors

VARIABLES	Number of Depositors							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LN(M3/GDP)	88.73**	90.70**	87.64*	88.67*	65.61***	67.71***	57.54*	57.77*
	(33.76)	(35.13)	(47.58)	(47.86)	(21.47)	(21.98)	(31.80)	(31.65)
LN(GDP/Capita)	350.03**	370.05**	363.40*	406.92*	227.23*	247.46*	252.06	292.15*
	(160.07)	(175.15)	(183.61)	(208.48)	(130.78)	(135.02)	(155.68)	(166.67)
KAOPEN	-77.62	-77.12	-60.32	-77.35				
	(76.75)	(75.94)	(77.93)	(80.30)				
LMF					-35.05	-33.99	-27.59	-24.95
					(24.80)	(25.09)	(26.06)	(27.00)
3 Bank Asset Concentration	1.39	6.63			1.27	7.00		
	(1.15)	(8.78)			(1.06)	(7.35)		
3 Bank Asset Concentration Squared		-0.04				-0.04		
		(0.06)				(0.05)		
5 Bank Asset Concentration			2.48	16.55			2.28	14.43
			(1.97)	(18.93)			(1.72)	(16.43)
5 Bank Asset Concentration Squared				-0.10				-0.08
				(0.12)				(0.10)
Institutional Quality Index	165.01*	154.01*	183.81*	165.91*	144.87	129.56	168.55	143.81
	(93.70)	(82.81)	(106.29)	(90.70)	(103.02)	(90.01)	(125.27)	(101.92)
Observations	866	866	741	741	740	740	627	627
R-squared	0.30	0.30	0.31	0.32	0.28	0.28	0.29	0.29
Number of Countries	79	79	72	72	77	77	71	71
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Table 1.14: Regressions with Institutional Quality Index for Number of Deposit Accounts

VARIABLES	Number of Deposit Accounts							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LN(M3/GDP)	91.59***	89.84**	40.93	40.55	74.64**	73.68**	23.70	22.62
	(34.52)	(35.04)	(43.59)	(43.40)	(28.92)	(28.70)	(36.50)	(36.61)
LN(GDP/Capita)	940.84***	924.90***	1,144.35***	1,153.55***	837.11***	823.91***	1,066.78***	1,078.59***
	(236.88)	(231.83)	(290.63)	(290.63)	(211.58)	(206.63)	(262.74)	(262.02)
KAOPEN	241.29	248.85	223.94	221.18				
	(152.17)	(153.44)	(146.46)	(147.73)				
LMF					2.80	2.76	2.37	2.33
					(1.93)	(1.96)	(2.00)	(2.00)
3 Bank Asset Concentration	0.66	-4.10			-0.18	-4.16		
	(1.19)	(7.79)			(1.10)	(6.98)		
3 Bank Asset Concentration Squared		0.04				0.03		
		(0.05)				(0.05)		
5 Bank Asset Concentration			2.36	6.15			1.47	6.38
			(1.60)	(11.09)			(1.31)	(9.27)
5 Bank Asset Concentration Squared				-0.03				-0.03
				(0.07)				(0.06)
Institutional Quality Index	0.86	7.19	31.59	29.19	36.34	45.10	48.19	42.05
	(190.31)	(186.36)	(215.48)	(214.03)	(156.07)	(152.96)	(185.68)	(181.57)
Observations	1,187	1,187	1,060	1,060	1,016	1,016	904	904
R-squared	0.36	0.36	0.37	0.37	0.37	0.37	0.38	0.38
Number of Countries	102	102	94	94	101	101	93	93
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Table 1.15: Regressions with Institutional Quality Index for Number of Borrowers

VARIABLES	Number of Borrowers							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LN(Private Credit/GDP)	43.42*	43.72*	50.50**	50.58**	44.09*	43.80*	49.24**	49.38**
	(22.33)	(22.46)	(21.66)	(21.88)	(22.34)	(22.60)	(23.65)	(23.56)
LN(GDP/Capita)	28.33	26.69	66.02	58.96	9.58	10.71	24.85	19.28
	(73.70)	(73.42)	(80.85)	(82.99)	(83.67)	(83.83)	(114.34)	(115.67)
KAOPEN	-16.40	-16.20	-9.41	-6.01				
	(37.96)	(37.96)	(38.74)	(38.14)				
LMF					-13.18	-13.16	-19.17	-19.29
					(12.10)	(12.16)	(16.51)	(16.43)
3 Bank Asset Concentration	0.70	0.03			0.87*	1.41		
	(0.48)	(2.21)			(0.45)	(2.31)		
3 Bank Asset Concentration Squared		0.01				-0.00		
		(0.02)				(0.02)		
5 Bank Asset Concentration			1.14**	-1.94			1.34**	-1.07
			(0.56)	(4.06)			(0.54)	(3.83)
5 Bank Asset Concentration Squared				0.02				0.02
				(0.03)				(0.02)
Institutional Quality Index	45.23	45.83	66.70	67.20	46.16	45.33	68.63	70.21
	(46.32)	(46.02)	(54.60)	(54.37)	(51.58)	(51.15)	(65.51)	(65.45)
Observations	887	887	767	767	781	781	672	672
R-squared	0.29	0.29	0.36	0.36	0.29	0.29	0.36	0.36
Number of Countries	83	83	75	75	83	83	76	76
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Table 1.16: Regressions with Institutional Quality Index for Number of Loan Accounts

VARIABLES	Number of Loan Accounts							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LN(Private Credit/GDP)	118.04*	117.75*	168.16**	174.14**	101.44*	98.17*	143.05**	148.24**
	(69.87)	(70.16)	(80.46)	(77.41)	(56.20)	(56.33)	(64.55)	(62.57)
LN(GDP/Capita)	154.76	169.67	245.29*	275.98**	171.79	198.62	268.34*	306.54**
	(109.02)	(112.72)	(124.48)	(134.02)	(114.14)	(121.94)	(141.48)	(146.14)
KAOPEN	-108.93	-113.17	-111.59	-124.95				
	(152.32)	(155.93)	(163.98)	(165.66)				
LMF					1.46***	1.52***	1.17**	1.00*
					(0.42)	(0.40)	(0.52)	(0.52)
3 Bank Asset Concentration	2.29	6.52			2.36	9.08		
	(1.78)	(5.75)			(1.86)	(6.04)		
3 Bank Asset Concentration Squared		-0.03				-0.05		
		(0.03)				(0.04)		
5 Bank Asset Concentration			3.26	17.14			3.09	19.87*
			(2.41)	(10.30)			(2.05)	(10.04)
5 Bank Asset Concentration Squared				-0.10				-0.12*
				(0.07)				(0.07)
Institutional Quality Index	22.22	14.69	53.47	33.79	52.99	37.21	83.54	54.62
	(113.43)	(117.03)	(152.23)	(148.62)	(101.35)	(104.41)	(138.79)	(133.53)
Observations	897	897	780	780	764	764	662	662
R-squared	0.16	0.16	0.19	0.20	0.17	0.18	0.21	0.22
Number of Countries	86	86	78	78	83	83	75	75
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Table 1.17: Regressions with Institutional Quality Index for Number of Household Depositors

VARIABLES	Number of Household Depositors							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LN(M3/GDP)	94.63**	95.82**	106.43*	106.33*	71.58**	75.05**	80.38	80.83
	(36.85)	(38.78)	(59.30)	(59.86)	(27.23)	(29.68)	(48.11)	(48.64)
LN(GDP/Capita)	256.31	261.70	272.24	270.16	213.09	220.74	163.12	179.04
	(204.21)	(213.65)	(236.52)	(251.20)	(132.28)	(135.94)	(194.66)	(196.97)
KAOPEN	-85.78	-84.98	-133.82	-133.28				
	(196.68)	(195.07)	(202.89)	(203.99)				
LMF					14.06	12.43	-11.91	-11.15
					(37.11)	(38.56)	(49.13)	(48.27)
3 Bank Asset Concentration	0.39	2.16			1.32	6.33		
	(1.37)	(6.18)			(1.45)	(7.16)		
3 Bank Asset Concentration Squared		-0.01				-0.04		
		(0.04)				(0.05)		
5 Bank Asset Concentration			1.03	0.54			2.16	6.36
			(1.76)	(7.98)			(1.99)	(13.02)
5 Bank Asset Concentration Squared				0.00				-0.03
				(0.05)				(0.08)
Institutional Quality Index	231.77**	229.91**	266.99**	267.67***	239.15*	232.50**	286.87*	279.46*
	(88.44)	(87.40)	(100.66)	(96.21)	(119.09)	(113.91)	(160.08)	(151.34)
Observations	386	386	320	320	328	328	265	265
R-squared	0.29	0.29	0.30	0.30	0.27	0.27	0.28	0.28
Number of Countries	41	41	37	37	39	39	35	35
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Table 1.18: Regressions with Institutional Quality Index for Number of Household Deposit Accounts

VARIABLES	Number of Household Deposit Accounts							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LN(M3/GDP)	164.79***	164.41***	95.28	92.57*	145.15***	147.40***	79.71*	78.09**
	(37.75)	(42.89)	(57.84)	(54.07)	(30.99)	(37.55)	(41.61)	(38.00)
LN(GDP/Capita)	1,465.00***	1,460.98***	1,913.78***	2,110.52***	1,219.07***	1,239.59***	1,772.06***	1,964.85***
	(434.22)	(439.02)	(470.87)	(467.94)	(435.63)	(456.19)	(469.61)	(485.23)
KAOPEN	418.53	419.25	421.69	348.88				
	(257.76)	(252.41)	(258.50)	(226.79)				
LMF					4.88***	4.91***	3.49*	3.18*
					(1.56)	(1.49)	(1.76)	(1.76)
3 Bank Asset Concentration	1.98	1.41			1.67	4.68		
	(3.79)	(19.35)			(3.14)	(17.20)		
3 Bank Asset Concentration Squared		0.00				-0.02		
		(0.13)				(0.12)		
5 Bank Asset Concentration			4.37	42.57*			5.03	46.57**
			(4.64)	(22.73)			(3.56)	(21.95)
5 Bank Asset Concentration Squared				-0.28*				-0.30*
				(0.16)				(0.15)
Institutional Quality Index	-57.85	-56.79	-65.22	-83.47	136.37	129.70	97.57	59.86
	(276.77)	(273.77)	(307.71)	(306.56)	(199.74)	(199.46)	(237.14)	(234.50)
Observations	512	512	450	450	445	445	384	384
R-squared	0.42	0.42	0.47	0.48	0.43	0.43	0.49	0.51
Number of Countries	48	48	44	44	47	47	42	42
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Table 1.19: Regressions with Institutional Quality Index for Number of Household Borrowers

VARIABLES	Number of Household Borrowers							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LN(Private Credit/GDP)	49.30	49.06	91.42***	91.17***	38.71	38.80	92.79***	92.96***
	(34.93)	(34.58)	(31.43)	(31.53)	(33.45)	(33.20)	(29.07)	(29.06)
LN(GDP/Capita)	-58.60	-64.91	-23.42	-30.14	-5.61	-6.31	-45.91	-44.73
	(64.47)	(66.21)	(55.91)	(58.22)	(73.71)	(74.22)	(70.34)	(68.29)
KAOPEN	-4.06	-0.98	-31.16	-28.91				
	(41.67)	(43.07)	(38.87)	(38.14)				
LMF					6.10	5.96	-21.27	-21.35
					(18.33)	(18.20)	(15.36)	(15.34)
3 Bank Asset Concentration	1.00	-1.24			1.63**	1.48		
	(0.82)	(2.75)			(0.76)	(2.46)		
3 Bank Asset Concentration Squared		0.02				0.00		
		(0.02)				(0.02)		
5 Bank Asset Concentration			1.41*	-1.39			1.78***	2.35
			(0.72)	(3.96)			(0.64)	(3.68)
5 Bank Asset Concentration Squared				0.02				-0.00
				(0.03)				(0.03)
Institutional Quality Index	71.44	73.58	95.38	96.57	96.61	96.93	112.37*	111.76*
	(59.46)	(59.83)	(57.87)	(57.73)	(60.16)	(59.43)	(66.45)	(65.17)
Observations	468	468	413	413	404	404	351	351
R-squared	0.44	0.44	0.55	0.55	0.46	0.46	0.56	0.56
Number of Countries	49	49	44	44	50	50	45	45
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Table 1.20: Regressions with Institutional Quality Index for Number of Household Loan Accounts

VARIABLES	Number of Household Loan Accounts							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LN(Private Credit/GDP)	126.26	126.31	209.88**	219.85**	121.29	120.29	212.26**	228.48***
	(85.29)	(85.21)	(90.53)	(87.50)	(77.00)	(77.43)	(86.36)	(83.93)
LN(GDP/Capita)	107.39	106.23	206.96*	236.54*	158.52	167.32	284.99*	326.37*
	(115.36)	(119.69)	(119.28)	(131.16)	(136.20)	(144.86)	(159.34)	(163.59)
KAOPEN	-130.65	-130.17	-131.14	-153.69				
	(250.65)	(254.87)	(244.41)	(248.05)				
LMF					2.50***	2.52***	2.31***	2.05***
					(0.57)	(0.56)	(0.61)	(0.60)
3 Bank Asset Concentration	1.99	1.56			2.26	5.30		
	(2.63)	(7.40)			(2.58)	(6.65)		
3 Bank Asset Concentration Squared		0.00				-0.02		
		(0.04)				(0.04)		
5 Bank Asset Concentration			2.48	17.30			2.48	21.71*
			(2.91)	(14.59)			(2.38)	(12.65)
5 Bank Asset Concentration Squared				-0.10				-0.13
				(0.10)				(0.09)
Institutional Quality Index	34.38	35.09	53.79	29.97	66.68	60.13	48.56	7.85
	(142.67)	(146.73)	(151.52)	(150.21)	(129.99)	(132.33)	(158.32)	(151.27)
Observations	585	585	527	527	502	502	446	446
R-squared	0.17	0.17	0.22	0.23	0.20	0.20	0.26	0.28
Number of Countries	55	55	52	52	54	54	50	50
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Table 1.21: Regressions by Institutional Quality Indicator for Number of Depositors

Panel A

VARIABLES	Number of Depositors											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LN(M3/GDP)	86.47**	89.05**	73.27***	75.27**	89.00**	91.56**	86.41**	89.14**	84.12**	86.47**	96.24**	98.46**
	(36.79)	(37.98)	(27.72)	(28.58)	(35.05)	(36.09)	(38.42)	(39.50)	(36.72)	(37.42)	(37.18)	(38.00)
LN(GDP/Capita)	436.28**	455.22**	349.29***	362.54***	427.98**	444.59**	467.83**	484.30**	486.06**	506.62**	437.93**	453.48**
	(193.51)	(207.48)	(129.46)	(133.22)	(198.23)	(210.54)	(218.54)	(229.84)	(216.16)	(230.75)	(172.13)	(183.35)
KAOPEN	-59.96	-60.25	-47.71	-48.71	-67.93	-68.97	-49.83	-51.32	-42.16	-42.17	-57.17	-58.50
	(77.37)	(75.87)	(77.00)	(76.42)	(79.85)	(78.18)	(75.94)	(74.27)	(78.73)	(76.82)	(72.08)	(71.23)
3 Bank Asset Concentration	1.29	7.68	1.39	4.95	1.42	7.92	1.29	7.92	1.30	8.12	1.44	7.65
	(1.15)	(9.42)	(1.15)	(6.76)	(1.10)	(9.21)	(1.22)	(9.44)	(1.18)	(9.53)	(1.17)	(9.12)
3 Bank Asset Concentration Squared		-0.05		-0.03		-0.05		-0.05		-0.05		-0.05
		(0.06)		(0.04)		(0.06)		(0.06)		(0.06)		(0.06)
VA											89.27**	86.46**
											(35.30)	(33.44)
RQ									-28.47	-34.11		
									(72.65)	(76.16)		
GE							-6.97	-8.26				
							(86.88)	(87.72)				
CC					53.42	51.65						
					(52.37)	(54.34)						
PSNV			94.99	90.99								
			(79.50)	(73.97)								
RL	45.49	39.21										
	(61.45)	(63.54)										
Observations	866	866	866	866	866	866	866	866	866	866	866	866
R-squared	0.28	0.29	0.31	0.31	0.29	0.29	0.28	0.29	0.28	0.29	0.29	0.30
Number of Countries	79	79	79	79	79	79	79	79	79	79	79	79
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Panel B

VARIABLES	Number of Depositors											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LN(M3/GDP)	88.56	89.66*	73.87*	75.49*	90.14*	90.93*	89.93	90.93	87.56	88.39	95.11*	95.79*
	(53.96)	(53.55)	(41.25)	(41.83)	(52.45)	(52.11)	(56.43)	(55.69)	(56.11)	(55.59)	(52.68)	(51.83)
LN(GDP/Capita)	459.53**	499.32**	321.07**	356.37**	458.81**	499.47**	504.08**	540.13**	524.92**	566.27**	464.28**	499.66**
	(221.28)	(243.36)	(145.75)	(149.23)	(219.27)	(245.63)	(241.48)	(259.15)	(250.42)	(272.37)	(193.83)	(213.83)
KAOPEN	-45.13	-65.46	-17.06	-33.80	-49.09	-68.05	-33.34	-55.31	-22.74	-43.54	-48.04	-68.49
	(80.59)	(79.92)	(80.91)	(77.21)	(82.14)	(80.31)	(80.85)	(78.96)	(82.95)	(79.10)	(76.56)	(77.60)
5 Bank Asset Concentration	2.48	18.28	2.20	13.56	2.62	18.23	2.53	18.55	2.51	18.87	2.63	17.90
	(2.03)	(19.97)	(1.67)	(15.13)	(1.94)	(19.91)	(2.10)	(19.64)	(2.05)	(19.95)	(2.03)	(19.39)
5 Bank Asset Concentration Squared		-0.11		-0.08		-0.11		-0.11		-0.11		-0.10
		(0.13)		(0.10)		(0.13)		(0.12)		(0.13)		(0.12)
VA											104.45***	99.57***
											(37.77)	(36.23)
RQ									-52.33	-58.29		
									(85.30)	(89.38)		
GE							-37.41	-37.38				
							(102.15)	(99.19)				
CC					45.16	35.80						
					(54.82)	(62.69)						
PSNV			121.28	114.06								
			(92.67)	(82.90)								
RL	44.81	37.43										
	(73.34)	(76.71)										
Observations	741	741	741	741	741	741	741	741	741	741	741	741
R-squared	0.29	0.31	0.34	0.34	0.29	0.31	0.29	0.31	0.29	0.31	0.30	0.31
Number of Countries	72	72	72	72	72	72	72	72	72	72	72	72
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Panel C

VARIABLES	Number of Depositors											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LN(M3/GDP)	64.62***	67.31***	57.30***	59.88***	67.20***	69.66***	64.35**	67.14***	64.00**	66.35***	71.74***	74.04***
	(24.13)	(24.31)	(21.39)	(21.22)	(22.37)	(22.60)	(24.96)	(25.17)	(24.97)	(24.93)	(24.14)	(24.25)
LN(GDP/Capita)	308.91**	327.57**	253.42**	268.36**	281.31*	295.71*	314.71*	329.43*	334.33**	353.58**	300.15**	312.77**
	(143.34)	(150.55)	(123.20)	(122.67)	(145.73)	(151.77)	(165.98)	(172.69)	(155.12)	(163.33)	(131.52)	(136.11)
LMF	-35.03	-33.75	-30.62	-30.07	-35.05	-33.78	-35.84	-34.33	-34.94	-33.52	-35.24	-33.98
	(24.68)	(24.96)	(25.39)	(25.78)	(24.46)	(24.84)	(23.96)	(24.53)	(24.60)	(24.99)	(24.45)	(24.77)
3 Bank Asset Concentration	1.14	8.10	1.29	6.32	1.29	8.11	1.11	8.18	1.12	8.39	1.25	7.97
	(1.03)	(8.06)	(1.11)	(6.15)	(1.03)	(7.89)	(1.07)	(8.28)	(1.03)	(8.11)	(1.04)	(7.79)
3 Bank Asset Concentration Squared		-0.05		-0.04		-0.05		-0.05		-0.06		-0.05
		(0.05)		(0.04)		(0.05)		(0.06)		(0.06)		(0.05)
VA											85.06**	81.76**
											(42.46)	(39.29)
RQ									-12.89	-21.20		
									(62.59)	(63.77)		
GE							13.96	10.34				
							(70.69)	(72.88)				
CC					65.44	61.57						
					(44.75)	(46.00)						
PSNV			67.33	61.45								
			(67.76)	(62.36)								
RL	27.07	15.39										
	(57.02)	(56.27)										
Observations	740	740	740	740	740	740	740	740	740	740	740	740
R-squared	0.27	0.28	0.29	0.29	0.27	0.28	0.27	0.28	0.27	0.28	0.28	0.28
Number of Countries	77	77	77	77	77	77	77	77	77	77	77	77
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Panel D

VARIABLES	Number of Depositors											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LN(M3/GDP)	57.14	57.58	51.28	52.10	58.59*	58.67*	57.60	57.94	56.50	56.38	62.08*	62.07*
	(36.10)	(35.33)	(32.41)	(32.06)	(33.85)	(33.28)	(37.16)	(36.11)	(37.55)	(36.80)	(34.84)	(33.87)
LN(GDP/Capita)	351.63**	387.35**	254.31*	285.51*	330.58*	363.20*	376.67*	405.81*	388.13**	429.26**	345.88**	373.16**
	(174.56)	(189.03)	(149.89)	(148.15)	(173.04)	(188.70)	(197.57)	(208.23)	(188.89)	(206.65)	(157.67)	(169.07)
LMF	-26.62	-23.54	-21.13	-19.48	-26.12	-23.37	-25.06	-22.01	-25.49	-22.02	-25.74	-23.05
	(25.31)	(26.46)	(27.55)	(28.77)	(26.00)	(27.20)	(24.59)	(26.40)	(25.33)	(26.77)	(25.84)	(27.00)
5 Bank Asset Concentration	2.27	16.62	2.17	12.79	2.43	16.17	2.30	16.79	2.28	17.28	2.36	15.81
	(1.78)	(17.68)	(1.58)	(14.00)	(1.76)	(17.45)	(1.85)	(17.63)	(1.79)	(17.72)	(1.75)	(16.97)
5 Bank Asset Concentration Squared		-0.10		-0.07		-0.09		-0.10		-0.10		-0.09
		(0.11)		(0.09)		(0.11)		(0.11)		(0.11)		(0.11)
VA											105.29**	98.50**
											(48.52)	(42.92)
RQ									-27.00	-41.08		
									(66.15)	(69.53)		
GE							-18.59	-20.33				
							(81.93)	(80.30)				
CC					62.42	51.56						
					(49.65)	(51.73)						
PSNV			90.40	81.69								
			(82.89)	(72.57)								
RL	23.24	9.38										
	(68.33)	(70.34)										
Observations	627	627	627	627	627	627	627	627	627	627	627	627
R-squared	0.27	0.29	0.30	0.31	0.28	0.29	0.27	0.29	0.27	0.29	0.29	0.30
Number of Countries	71	71	71	71	71	71	71	71	71	71	71	71
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Table 1.22: Regressions by Institutional Quality Indicator for Number of Deposit Accounts

Panel A

VARIABLES	Number of Deposit Accounts											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LN(M3/GDP)	92.92***	90.91***	95.23***	93.23***	91.71***	89.97**	92.32***	90.67***	95.12***	93.44**	76.21*	75.18*
	(33.94)	(34.41)	(28.88)	(28.88)	(34.67)	(35.28)	(33.44)	(34.05)	(35.74)	(36.19)	(38.46)	(38.96)
LN(GDP/Capita)	892.39***	877.53***	959.22***	946.53***	966.35***	951.01***	900.11***	890.05***	923.78***	903.51***	999.95***	988.37***
	(218.03)	(216.67)	(210.08)	(207.23)	(234.79)	(235.00)	(244.86)	(245.35)	(247.88)	(247.75)	(212.08)	(210.86)
KAOPEN	213.47	221.80	242.79*	250.40*	241.67*	249.52*	228.27	235.97	231.29	239.12	249.62*	256.04*
	(154.65)	(155.77)	(144.54)	(145.02)	(145.41)	(146.63)	(146.46)	(147.08)	(148.45)	(149.66)	(148.51)	(148.73)
3 Bank Asset Concentration	0.72	-4.42	0.69	-3.65	0.62	-3.87	0.51	-3.46	0.66	-4.28	0.60	-3.16
	(1.19)	(8.07)	(1.17)	(7.54)	(1.23)	(8.23)	(1.18)	(8.23)	(1.19)	(8.18)	(1.20)	(7.86)
3 Bank Asset Concentration Squared		0.04		0.03		0.03		0.03		0.04		0.03
		(0.06)		(0.05)		(0.06)		(0.06)		(0.06)		(0.05)
VA											-152.65	-148.09
											(137.64)	(135.00)
RQ									36.97	42.68		
									(102.82)	(101.83)		
GE							99.28	95.66				
							(115.24)	(115.07)				
CC					-15.06	-12.42						
					(115.58)	(115.01)						
PSNV			-34.39	-31.83								
			(102.86)	(102.00)								
RL	112.94	116.16										
	(128.53)	(126.65)										
Observations	1,187	1,187	1,187	1,187	1,177	1,177	1,177	1,177	1,177	1,177	1,187	1,187
R-squared	0.37	0.37	0.36	0.37	0.36	0.36	0.37	0.37	0.36	0.37	0.37	0.37
Number of Countries	102	102	102	102	101	101	101	101	101	101	102	102
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Panel B

VARIABLES	Number of Deposit Accounts											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LN(M3/GDP)	38.16	37.75	44.39	44.11	41.10	40.68	40.93	40.47	42.26	41.83	36.29	35.68
	(44.99)	(44.75)	(38.69)	(38.69)	(45.26)	(45.00)	(45.16)	(44.91)	(46.00)	(45.73)	(46.12)	(45.79)
LN(GDP/Capita)	1,092.30***	1,100.31***	1,177.82***	1,188.18***	1,159.67***	1,168.54***	1,104.87***	1,113.84***	1,127.91***	1,137.41***	1,215.70***	1,226.93***
	(260.78)	(261.79)	(252.35)	(251.63)	(268.81)	(270.33)	(283.26)	(284.56)	(290.87)	(293.13)	(253.89)	(255.79)
KAOPEN	190.81	187.84	226.96	223.38	225.95	222.76	217.35	213.55	219.28	216.67	235.98*	232.11
	(148.14)	(149.16)	(137.10)	(137.92)	(138.92)	(140.37)	(138.75)	(140.15)	(141.66)	(142.84)	(141.36)	(142.57)
5 Bank Asset Concentration	2.42	6.21	2.43	6.91	2.38	6.39	2.24	6.78	2.37	6.02	2.36	7.38
	(1.64)	(11.31)	(1.54)	(10.48)	(1.65)	(11.48)	(1.67)	(11.59)	(1.63)	(11.47)	(1.63)	(11.76)
5 Bank Asset Concentration Squared		-0.03		-0.03		-0.03		-0.03		-0.02		-0.03
		(0.07)		(0.07)		(0.07)		(0.07)		(0.07)		(0.07)
VA											-179.50	-182.05
											(165.68)	(166.04)
RQ									41.03	39.20		
									(110.71)	(110.70)		
GE							100.47	101.92				
							(130.94)	(130.15)				
CC					8.10	7.70						
					(125.59)	(125.89)						
PSNV			-27.04	-28.73								
			(116.26)	(113.38)								
RL	165.12	164.88										
	(134.41)	(134.74)										
Observations	1,060	1,060	1,060	1,060	1,054	1,054	1,054	1,054	1,054	1,054	1,060	1,060
R-squared	0.38	0.38	0.37	0.38	0.37	0.37	0.38	0.38	0.37	0.37	0.38	0.38
Number of Countries	94	94	94	94	93	93	93	93	93	93	94	94
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Panel C

VARIABLES	Number of Deposit Accounts											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LN(M3/GDP)	75.52***	74.27***	74.86***	73.68***	73.68**	72.78**	73.77***	72.78***	78.28**	77.24**	59.96**	59.50**
	(28.29)	(27.95)	(26.32)	(26.03)	(28.89)	(28.87)	(27.75)	(27.69)	(30.14)	(29.81)	(28.67)	(28.77)
LN(GDP/Capita)	804.96***	792.44***	864.21***	855.43***	890.35***	879.83***	815.00***	807.06***	808.01***	790.81***	923.41***	916.15***
	(196.77)	(194.29)	(196.16)	(193.14)	(217.29)	(216.59)	(221.54)	(221.53)	(220.09)	(218.55)	(194.98)	(193.24)
LMF	2.92	2.89	2.78	2.76	2.84	2.82	2.54	2.52	2.54	2.48	2.68	2.66
	(1.87)	(1.91)	(1.94)	(1.98)	(1.95)	(1.98)	(1.94)	(1.97)	(1.92)	(1.96)	(1.96)	(1.99)
3 Bank Asset Concentration	-0.09	-4.70	-0.17	-3.68	-0.25	-3.52	-0.30	-3.49	-0.16	-4.44	-0.24	-2.93
	(1.08)	(7.22)	(1.06)	(6.75)	(1.15)	(7.38)	(1.07)	(7.35)	(1.08)	(7.43)	(1.08)	(7.09)
3 Bank Asset Concentration Squared		0.03		0.03		0.02		0.02		0.03		0.02
		(0.05)		(0.05)		(0.05)		(0.05)		(0.05)		(0.05)
VA											-159.09	-155.45
											(108.70)	(107.09)
RQ									73.14	79.44		
									(84.41)	(83.99)		
GE							105.00	103.90				
							(96.34)	(95.95)				
CC					-26.37	-23.47						
					(103.31)	(103.30)						
PSNV			-14.95	-12.32								
			(90.95)	(90.31)								
RL	126.81	133.42										
	(104.43)	(102.60)										
Observations	1,016	1,016	1,016	1,016	1,006	1,006	1,006	1,006	1,006	1,006	1,016	1,016
R-squared	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
Number of Countries	101	101	101	101	100	100	100	100	100	100	101	101
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Panel D

VARIABLES	Number of Deposit Accounts											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LN(M3/GDP)	22.68	21.82	24.00	22.92	22.69	21.58	23.01	21.92	25.50	24.53	15.61	14.07
	(36.68)	(36.78)	(34.36)	(34.57)	(35.93)	(35.93)	(35.97)	(36.05)	(37.41)	(37.51)	(36.05)	(35.90)
LN(GDP/Capita)	1,023.03***	1,031.01***	1,104.78***	1,116.29***	1,106.64***	1,116.53***	1,035.74***	1,045.19***	1,016.97***	1,027.68***	1,167.40***	1,180.06***
	(235.86)	(236.14)	(235.94)	(234.78)	(248.44)	(248.59)	(256.59)	(257.21)	(259.48)	(261.09)	(235.69)	(236.34)
LMF	2.51	2.46	2.37	2.31	2.43	2.37	2.12	2.07	2.06	2.04	2.28	2.21
	(1.92)	(1.92)	(2.03)	(2.02)	(2.02)	(2.01)	(2.01)	(2.00)	(1.98)	(1.98)	(2.05)	(2.04)
5 Bank Asset Concentration	1.53	5.65	1.53	7.20	1.47	6.83	1.37	6.69	1.50	5.74	1.53	8.07
	(1.34)	(9.70)	(1.23)	(8.67)	(1.36)	(9.92)	(1.39)	(10.22)	(1.32)	(9.97)	(1.31)	(10.26)
5 Bank Asset Concentration Squared		-0.03		-0.04		-0.04		-0.04		-0.03		-0.04
		(0.06)		(0.06)		(0.06)		(0.06)		(0.06)		(0.07)
VA											-202.72	-206.93
											(135.84)	(135.53)
RQ									82.88	79.54		
									(88.68)	(89.00)		
GE							100.44	100.47				
							(110.13)	(109.65)				
CC					-21.98	-22.68						
					(116.04)	(116.25)						
PSNV			-16.15	-18.97								
			(107.14)	(103.58)								
RL	175.63	173.24										
	(113.78)	(113.59)										
Observations	904	904	904	904	898	898	898	898	898	898	904	904
R-squared	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.39
Number of Countries	93	93	93	93	92	92	92	92	92	92	93	93
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Table 1.23: Regressions by Institutional Quality Indicator for Number of Borrowers

Panel A

VARIABLES	Number of Borrowers											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LN(Private Credit/GDP)	44.01*	44.32*	46.83*	47.16*	34.06*	34.41*	33.24*	33.57*	29.99	30.33	46.48*	46.73*
	(22.57)	(22.67)	(23.89)	(24.00)	(18.93)	(19.11)	(19.52)	(19.71)	(18.56)	(18.79)	(23.45)	(23.57)
LN(GDP/Capita)	29.56	28.21	49.99	48.56	108.69**	107.13*	94.99	93.72	86.53	84.27	54.51	53.47
	(72.34)	(72.17)	(75.11)	(75.05)	(52.93)	(54.27)	(57.56)	(58.41)	(52.82)	(53.20)	(68.95)	(68.88)
KAOPEN	-21.40	-21.18	-9.18	-8.94	-8.67	-8.39	-12.18	-11.88	-15.42	-15.19	-8.30	-8.06
	(38.40)	(38.40)	(38.74)	(38.77)	(35.34)	(35.37)	(38.12)	(38.19)	(36.66)	(36.70)	(38.19)	(38.23)
3 Bank Asset Concentration	0.69	0.05	0.72	0.10	0.75	0.17	0.72	0.18	0.72	0.01	0.71	0.19
	(0.47)	(2.19)	(0.49)	(2.21)	(0.51)	(2.34)	(0.47)	(2.29)	(0.47)	(2.29)	(0.50)	(2.20)
3 Bank Asset Concentration Squared		0.00		0.00		0.00		0.00		0.01		0.00
		(0.01)		(0.02)		(0.02)		(0.02)		(0.02)		(0.01)
VA											3.24	3.40
											(25.47)	(25.34)
RQ									21.95	22.44		
									(33.14)	(32.95)		
GE							21.27	21.10				
							(26.67)	(26.52)				
CC					-1.95	-1.83						
					(33.72)	(33.78)						
PSNV			7.65	8.02								
			(14.38)	(14.17)								
RL	50.02	50.29										
	(34.07)	(33.79)										
Observations	887	887	887	887	877	877	877	877	877	877	887	887
R-squared	0.30	0.30	0.29	0.29	0.32	0.32	0.33	0.33	0.33	0.33	0.29	0.29
Number of Countries	83	83	83	83	82	82	82	82	82	82	83	83
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Panel B

VARIABLES	Number of Borrowers											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LN(Private Credit/GDP)	50.75**	50.90**	55.06**	55.17**	45.39**	45.50**	45.16**	45.26**	38.24*	38.30*	54.22**	54.33**
	(21.39)	(21.60)	(23.92)	(24.14)	(20.67)	(20.82)	(20.67)	(20.82)	(19.71)	(19.85)	(23.87)	(24.10)
LN(GDP/Capita)	69.91	64.65	101.12	93.15	154.85***	151.17**	152.24***	148.43**	119.42**	115.00**	103.03	96.60
	(74.88)	(76.53)	(79.24)	(81.83)	(56.94)	(57.48)	(57.17)	(57.57)	(57.40)	(56.67)	(70.82)	(72.86)
KAOPEN	-16.53	-13.40	0.50	3.98	-3.42	-1.50	-4.14	-2.24	-13.73	-11.75	-0.50	2.83
	(38.67)	(38.12)	(39.40)	(38.87)	(36.27)	(35.56)	(38.67)	(38.15)	(37.43)	(37.22)	(38.57)	(37.99)
5 Bank Asset Concentration	1.12**	-1.48	1.17**	-1.96	1.20**	-0.45	1.16**	-0.49	1.11*	-0.68	1.17**	-1.78
	(0.54)	(3.79)	(0.57)	(4.20)	(0.58)	(3.82)	(0.56)	(3.79)	(0.56)	(3.72)	(0.58)	(4.04)
5 Bank Asset Concentration Squared		0.02		0.02		0.01		0.01		0.01		0.02
		(0.02)		(0.03)		(0.02)		(0.02)		(0.02)		(0.03)
VA											19.66	19.52
											(23.36)	(23.40)
RQ									42.87	43.10		
									(36.03)	(35.94)		
GE							12.86	12.71				
							(30.62)	(30.50)				
CC					7.06	6.75						
					(37.39)	(37.31)						
PSNV			5.97	7.14								
			(16.60)	(16.71)								
RL	72.10*	71.26*										
	(37.92)	(37.47)										
Observations	767	767	767	767	761	761	761	761	761	761	767	767
R-squared	0.36	0.36	0.35	0.35	0.38	0.38	0.38	0.38	0.39	0.39	0.35	0.35
Number of Countries	75	75	75	75	74	74	74	74	74	74	75	75
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Panel C

VARIABLES	Number of Borrowers											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LN(Private Credit/GDP)	44.92**	44.63*	47.51**	47.11*	29.38*	28.76*	29.07*	28.45*	26.90	26.47	48.27**	47.75**
	(22.57)	(22.82)	(23.54)	(23.77)	(15.91)	(16.38)	(16.37)	(16.85)	(16.33)	(16.84)	(23.57)	(23.77)
LN(GDP/Capita)	16.27	17.19	26.95	28.09	123.56**	125.62**	115.20*	117.19*	104.85*	107.02*	35.29	36.32
	(81.43)	(81.68)	(84.56)	(85.02)	(56.89)	(58.42)	(61.70)	(63.08)	(60.00)	(60.76)	(78.95)	(79.57)
LMF	-13.71	-13.69	-13.78	-13.76	2.80	2.98	2.13	2.33	2.20	2.37	-14.60	-14.55
	(12.20)	(12.25)	(12.38)	(12.46)	(8.04)	(8.06)	(7.04)	(7.07)	(7.08)	(7.09)	(12.69)	(12.77)
3 Bank Asset Concentration	0.86*	1.37	0.87*	1.48	0.98**	1.74	0.95**	1.70	0.96**	1.57	0.86*	1.63
	(0.45)	(2.30)	(0.46)	(2.29)	(0.47)	(2.45)	(0.44)	(2.41)	(0.44)	(2.37)	(0.46)	(2.36)
3 Bank Asset Concentration Squared		-0.00		-0.00		-0.01		-0.01		-0.00		-0.01
		(0.02)		(0.02)		(0.02)		(0.02)		(0.02)		(0.02)
VA											-5.40	-5.46
											(23.59)	(23.73)
RQ									20.61	20.00		
									(30.89)	(30.58)		
GE							17.59	17.46				
							(28.12)	(28.25)				
CC					3.89	3.67						
					(33.87)	(34.00)						
PSNV			10.32	9.84								
			(17.12)	(16.69)								
RL	41.56	40.95										
	(37.34)	(36.98)										
Observations	781	781	781	781	771	771	771	771	771	771	781	781
R-squared	0.29	0.29	0.29	0.29	0.33	0.33	0.33	0.33	0.33	0.33	0.29	0.29
Number of Countries	83	83	83	83	82	82	82	82	82	82	83	83
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Panel D

VARIABLES	Number of Borrowers											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LN(Private Credit/GDP)	49.47**	49.70**	54.54**	54.76**	38.47**	38.54**	38.71**	38.78**	34.28*	34.34*	54.83**	55.09**
	(23.94)	(23.91)	(25.60)	(25.57)	(18.69)	(18.72)	(19.01)	(19.04)	(18.94)	(18.92)	(25.88)	(25.90)
LN(GDP/Capita)	32.99	28.83	54.54	49.09	169.24**	168.18**	168.60**	167.39**	133.93*	130.86*	64.06	60.15
	(106.39)	(107.39)	(112.05)	(113.82)	(64.65)	(64.56)	(67.42)	(67.31)	(70.96)	(69.52)	(102.38)	(103.81)
LMF	-20.30	-20.42	-19.61	-19.70	0.57	0.51	-0.08	-0.15	-1.49	-1.65	-20.04	-20.17
	(16.76)	(16.72)	(16.85)	(16.78)	(9.11)	(9.13)	(8.36)	(8.36)	(7.99)	(7.95)	(17.51)	(17.49)
5 Bank Asset Concentration	1.31**	-0.80	1.36**	-0.94	1.46***	1.00	1.43***	0.93	1.40***	0.41	1.36**	-0.69
	(0.52)	(3.70)	(0.54)	(3.88)	(0.55)	(3.45)	(0.53)	(3.39)	(0.52)	(3.22)	(0.55)	(3.88)
5 Bank Asset Concentration Squared		0.01		0.02		0.00		0.00		0.01		0.01
		(0.02)		(0.02)		(0.02)		(0.02)		(0.02)		(0.02)
VA											1.38	0.99
											(24.78)	(24.68)
RQ									35.68	36.37		
									(35.05)	(34.50)		
GE							7.44	7.51				
							(31.99)	(31.94)				
CC					8.80	8.75						
					(38.11)	(38.17)						
PSNV			10.08	11.13								
			(20.73)	(20.75)								
RL	67.60	67.75										
	(46.29)	(45.99)										
Observations	672	672	672	672	666	666	666	666	666	666	672	672
R-squared	0.37	0.37	0.36	0.36	0.39	0.39	0.39	0.39	0.39	0.39	0.35	0.36
Number of Countries	76	76	76	76	75	75	75	75	75	75	76	76
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Table 1.24: Regressions by Institutional Quality Indicator for Number of Loan Accounts

Panel A

VARIABLES	Number of Loan Accounts											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LN(Private Credit/GDP)	106.21	105.97	120.23*	119.10*	128.26*	127.37*	116.45*	115.23	116.94*	116.48*	122.32*	122.02*
	(66.06)	(66.38)	(69.84)	(70.03)	(68.51)	(68.57)	(69.30)	(69.45)	(67.95)	(68.20)	(66.35)	(66.40)
LN(GDP/Capita)	101.93	112.05	175.29	187.95	211.12	223.79*	141.11	151.11	149.20	162.85	172.53	185.17
	(121.31)	(120.17)	(138.73)	(141.04)	(129.08)	(131.70)	(130.26)	(131.57)	(114.90)	(116.36)	(131.08)	(130.77)
KAOPEN	-132.94	-135.77	-106.09	-111.70	-86.20	-91.29	-108.08	-113.65	-110.00	-114.50	-104.37	-109.34
	(164.64)	(167.29)	(161.87)	(166.17)	(141.59)	(145.48)	(161.09)	(165.04)	(155.92)	(159.55)	(159.23)	(163.19)
3 Bank Asset Concentration	2.46	5.57	2.23	6.69	2.07	6.69	2.23	6.67	2.27	6.49	2.24	6.73
	(1.82)	(5.26)	(1.78)	(5.70)	(1.76)	(5.57)	(1.84)	(5.49)	(1.82)	(5.61)	(1.82)	(5.59)
3 Bank Asset Concentration Squared		-0.02		-0.03		-0.03		-0.03		-0.03		-0.03
		(0.03)		(0.03)		(0.03)		(0.03)		(0.03)		(0.03)
VA											-14.23	-19.98
											(72.23)	(73.17)
RQ									20.11	16.54		
									(62.99)	(63.79)		
GE							46.22	47.57				
							(50.51)	(50.43)				
CC					-71.29	-73.65						
					(94.77)	(96.31)						
PSNV			-9.95	-12.49								
			(35.30)	(37.03)								
RL	127.22*	122.33*										
	(72.80)	(71.35)										
Observations	897	897	897	897	897	897	897	897	897	897	897	897
R-squared	0.17	0.17	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Number of Countries	86	86	86	86	86	86	86	86	86	86	86	86
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Panel B

VARIABLES	Number of Loan Accounts											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LN(Private Credit/GDP)	151.44**	156.62**	174.16**	178.51**	177.42**	181.70**	171.20**	176.42**	165.08**	170.55**	168.43**	173.21**
	(71.45)	(68.10)	(77.61)	(75.02)	(79.54)	(76.87)	(79.47)	(76.67)	(75.74)	(72.82)	(77.06)	(73.97)
LN(GDP/Capita)	191.24	214.01	302.68**	326.34**	305.67**	325.89**	266.65*	291.27**	220.78	249.64*	269.81*	289.80*
	(122.13)	(128.99)	(149.57)	(150.28)	(151.33)	(149.00)	(141.89)	(144.94)	(134.74)	(142.03)	(148.42)	(147.60)
KAOPEN	-134.02	-144.56	-109.76	-126.36	-95.18	-110.60	-106.95	-122.26	-116.89	-129.68	-112.41	-126.88
	(174.11)	(174.56)	(176.33)	(177.35)	(153.62)	(154.51)	(172.30)	(173.32)	(168.25)	(169.23)	(167.85)	(169.01)
5 Bank Asset Concentration	3.36	15.01	3.19	17.83*	3.07	17.45	3.19	17.37*	3.26	16.70	3.28	17.25*
	(2.41)	(9.17)	(2.45)	(10.56)	(2.33)	(10.57)	(2.54)	(10.43)	(2.46)	(10.42)	(2.44)	(10.23)
5 Bank Asset Concentration Squared		-0.08		-0.10		-0.10		-0.10		-0.09		-0.10
		(0.07)		(0.08)		(0.08)		(0.07)		(0.07)		(0.07)
VA											51.30	43.82
											(83.47)	(78.71)
RQ									60.28	48.91		
									(66.68)	(65.69)		
GE							18.05	9.13				
							(67.12)	(65.60)				
CC					-54.18	-55.91						
					(119.79)	(120.06)						
PSNV			-27.83	-32.29								
			(49.40)	(48.43)								
RL	163.24**	149.89**										
	(77.56)	(70.58)										
Observations	780	780	780	780	780	780	780	780	780	780	780	780
R-squared	0.20	0.21	0.19	0.20	0.19	0.20	0.19	0.20	0.19	0.20	0.19	0.20
Number of Countries	78	78	78	78	78	78	78	78	78	78	78	78
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Panel C

VARIABLES	Number of Loan Accounts											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LN(Private Credit/GDP)	95.97*	93.16*	105.04*	100.63*	107.78*	103.49*	102.53*	98.23*	101.97*	98.49*	107.73*	103.80*
	(52.77)	(52.97)	(55.48)	(55.52)	(55.90)	(55.88)	(55.01)	(55.11)	(56.10)	(56.13)	(55.05)	(54.95)
LN(GDP/Capita)	136.73	156.52	190.29	212.19	232.71*	253.73*	178.43	197.11	184.11	208.17*	216.25*	237.37*
	(108.61)	(111.88)	(130.96)	(136.75)	(128.44)	(133.33)	(125.70)	(130.26)	(118.58)	(124.67)	(123.77)	(127.78)
LMF	1.62***	1.66***	1.53***	1.57***	1.47***	1.53***	1.35***	1.42***	1.39***	1.48***	1.47***	1.53***
	(0.38)	(0.37)	(0.40)	(0.37)	(0.40)	(0.37)	(0.45)	(0.43)	(0.52)	(0.52)	(0.40)	(0.37)
3 Bank Asset Concentration	2.56	8.16	2.30	9.14	2.12	9.39	2.26	9.25	2.30	9.22	2.22	9.52
	(1.93)	(5.53)	(1.91)	(5.98)	(1.80)	(5.92)	(1.92)	(5.89)	(1.90)	(6.00)	(1.89)	(5.91)
3 Bank Asset Concentration Squared		-0.04		-0.05		-0.06		-0.05		-0.05		-0.06
		(0.03)		(0.03)		(0.03)		(0.03)		(0.03)		(0.03)
VA											-34.79	-42.15
											(65.15)	(66.33)
RQ									22.12	15.05		
									(64.46)	(65.63)		
GE							46.46	44.81				
							(48.95)	(49.89)				
CC					-47.47	-51.63						
					(85.07)	(86.52)						
PSNV			18.23	12.36								
			(29.35)	(30.27)								
RL	135.32*	124.27*										
	(73.89)	(71.07)										
Observations	764	764	764	764	764	764	764	764	764	764	764	764
R-squared	0.19	0.19	0.17	0.18	0.17	0.18	0.17	0.18	0.17	0.18	0.17	0.18
Number of Countries	83	83	83	83	83	83	83	83	83	83	83	83
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Panel D

VARIABLES	Number of Loan Accounts											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LN(Private Credit/GDP)	132.38**	137.19**	148.19**	151.83**	149.00**	152.48**	146.32**	151.09**	143.59**	148.59**	148.37**	152.23**
	(58.30)	(56.06)	(63.23)	(60.98)	(63.98)	(61.73)	(64.06)	(61.99)	(62.59)	(60.72)	(64.61)	(62.13)
LN(GDP/Capita)	234.27**	262.07**	311.81**	339.68**	334.82**	355.83**	306.69**	336.15**	271.13*	308.34**	320.09**	342.36**
	(115.53)	(117.74)	(151.30)	(147.02)	(156.60)	(148.48)	(147.09)	(145.36)	(147.17)	(149.03)	(147.12)	(140.64)
LMF	1.36***	1.19***	1.24**	1.03**	1.22**	1.03**	1.16**	1.01*	1.01*	0.90	1.22**	1.03**
	(0.43)	(0.45)	(0.47)	(0.48)	(0.50)	(0.50)	(0.57)	(0.57)	(0.58)	(0.58)	(0.50)	(0.50)
5 Bank Asset Concentration	3.27	17.64*	3.02	20.48**	2.94	20.42*	3.00	20.38*	3.07	19.81*	3.03	20.52**
	(2.06)	(9.22)	(2.14)	(10.25)	(1.96)	(10.42)	(2.17)	(10.32)	(2.10)	(10.40)	(2.05)	(10.30)
5 Bank Asset Concentration Squared		-0.10		-0.12*		-0.12*		-0.12*		-0.11		-0.12*
		(0.06)		(0.07)		(0.07)		(0.07)		(0.07)		(0.07)
VA											0.46	-5.56
											(85.91)	(80.87)
RQ									51.45	33.61		
									(67.41)	(67.56)		
GE							22.72	8.37				
							(63.38)	(62.41)				
CC					-29.08	-28.97						
					(107.62)	(107.20)						
PSNV			8.45	1.55								
			(39.91)	(37.42)								
RL	176.72**	155.25**										
	(78.83)	(70.11)										
Observations	662	662	662	662	662	662	662	662	662	662	662	662
R-squared	0.23	0.23	0.21	0.22	0.21	0.22	0.21	0.22	0.21	0.22	0.21	0.22
Number of Countries	75	75	75	75	75	75	75	75	75	75	75	75
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Table 1.25: Regressions by Institutional Quality Indicator for Number of Household Depositors

Panel A

VARIABLES	Number of Household Depositors											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LN(M3/GDP)	89.87**	91.60**	71.16**	70.41**	97.02**	102.03**	84.77**	86.74*	86.43**	88.39**	95.18**	96.65**
	(39.49)	(41.81)	(31.59)	(32.66)	(37.29)	(39.52)	(41.76)	(44.51)	(40.23)	(42.04)	(41.84)	(43.76)
LN(GDP/Capita)	344.97	351.53	234.94	231.56	363.59	369.18	360.88	368.24	422.20	430.65	411.82*	417.84*
	(236.00)	(245.70)	(166.44)	(166.75)	(253.75)	(257.31)	(294.72)	(305.96)	(281.43)	(293.84)	(232.85)	(241.72)
KAOPEN	-79.96	-78.91	-28.35	-28.44	-107.74	-112.08	-58.05	-57.15	-56.16	-54.94	-68.13	-66.95
	(209.23)	(206.88)	(191.10)	(191.82)	(212.70)	(207.85)	(216.55)	(213.97)	(215.94)	(213.16)	(211.43)	(209.23)
3 Bank Asset Concentration	0.04	2.52	0.96	0.05	0.36	5.74	-0.01	2.72	0.07	3.08	0.17	2.65
	(1.40)	(6.46)	(1.62)	(5.54)	(1.34)	(5.81)	(1.49)	(6.90)	(1.54)	(6.92)	(1.52)	(6.48)
3 Bank Asset Concentration Squared		-0.02		0.01		-0.04		-0.02		-0.02		-0.02
		(0.04)		(0.03)		(0.04)		(0.05)		(0.04)		(0.04)
VA											61.22	59.18
											(49.78)	(49.03)
RQ									-1.78	-3.64		
									(113.16)	(114.85)		
GE							84.16	82.64				
							(109.68)	(111.82)				
CC					107.45	120.09						
					(78.07)	(75.37)						
PSNV			121.01	121.84								
			(81.39)	(81.08)								
RL	146.56**	144.94**										
	(69.28)	(69.80)										
Observations	386	386	386	386	386	386	386	386	386	386	386	386
R-squared	0.27	0.27	0.31	0.31	0.27	0.27	0.26	0.26	0.26	0.26	0.26	0.26
Number of Countries	41	41	41	41	41	41	41	41	41	41	41	41
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Panel B

VARIABLES	Number of Household Depositors											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LN(M3/GDP)	102.64	103.08	86.41	85.45	111.57*	112.36*	99.96	100.76	101.05	101.82	106.84	107.38
	(65.16)	(66.04)	(56.05)	(56.22)	(64.98)	(65.75)	(69.26)	(70.50)	(69.52)	(70.32)	(67.92)	(68.61)
LN(GDP/Capita)	373.18	380.35	196.34	182.27	410.85	422.73	409.86	422.15	467.76	483.32	466.56*	475.94*
	(270.35)	(291.15)	(189.46)	(184.59)	(280.13)	(297.45)	(344.39)	(372.37)	(346.00)	(371.12)	(262.62)	(281.32)
KAOPEN	-135.38	-137.54	-65.24	-60.64	-157.91	-162.21	-100.02	-104.01	-97.26	-102.06	-108.89	-112.34
	(217.76)	(219.19)	(195.63)	(194.70)	(222.69)	(223.90)	(231.27)	(233.53)	(227.87)	(229.52)	(220.79)	(222.02)
5 Bank Asset Concentration	0.67	2.61	1.13	-2.09	1.44	5.01	0.62	3.78	0.70	4.78	0.78	3.69
	(1.75)	(9.17)	(1.87)	(5.44)	(1.55)	(8.31)	(1.89)	(10.40)	(1.93)	(9.66)	(1.87)	(9.25)
5 Bank Asset Concentration Squared		-0.01		0.02		-0.02		-0.02		-0.03		-0.02
		(0.06)		(0.04)		(0.06)		(0.07)		(0.06)		(0.06)
VA											72.19	70.18
											(60.12)	(63.07)
RQ									-4.83	-7.48		
									(138.42)	(141.29)		
GE							72.14	69.41				
							(129.29)	(134.66)				
CC					124.68	124.05						
					(78.51)	(79.34)						
PSNV			147.30	149.26								
			(94.73)	(93.68)								
RL	185.45**	183.73**										
	(80.40)	(81.62)										
Observations	320	320	320	320	320	320	320	320	320	320	320	320
R-squared	0.28	0.28	0.33	0.33	0.27	0.27	0.26	0.26	0.26	0.26	0.27	0.27
Number of Countries	37	37	37	37	37	37	37	37	37	37	37	37
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Panel C

VARIABLES	Number of Household Depositors											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LN(M3/GDP)	67.51**	71.53**	53.36**	55.83**	75.33**	83.36**	64.33**	68.95*	70.14**	74.17**	74.58**	78.50**
	(29.65)	(32.39)	(23.60)	(25.07)	(28.84)	(32.00)	(31.71)	(34.83)	(29.63)	(32.00)	(31.91)	(34.35)
LN(GDP/Capita)	327.78**	334.31**	248.65*	253.83**	318.26**	310.31**	336.15*	342.97*	341.02**	349.61**	364.10**	368.67**
	(135.49)	(140.79)	(124.71)	(124.88)	(140.82)	(141.60)	(177.72)	(185.10)	(151.03)	(160.33)	(139.80)	(143.62)
LMF	21.18	19.12	35.92	34.46	13.04	8.23	16.53	14.56	18.18	16.29	14.52	12.67
	(35.85)	(37.56)	(31.72)	(32.28)	(36.42)	(38.35)	(33.87)	(35.52)	(36.38)	(38.14)	(38.85)	(40.03)
3 Bank Asset Concentration	0.79	6.48	1.54	4.51	1.22	10.09	0.76	7.04	0.68	6.92	1.00	7.03
	(1.36)	(7.52)	(1.63)	(5.91)	(1.35)	(7.85)	(1.37)	(8.01)	(1.39)	(7.70)	(1.45)	(7.47)
3 Bank Asset Concentration Squared		-0.04		-0.02		-0.07		-0.05		-0.05		-0.05
		(0.05)		(0.04)		(0.05)		(0.05)		(0.05)		(0.05)
VA											77.16	73.25
											(55.44)	(52.25)
RQ									54.88	48.90		
									(78.12)	(79.50)		
GE							62.93	58.89				
							(84.15)	(86.55)				
CC					109.98**	130.19**						
					(52.64)	(56.32)						
PSNV			108.02	105.29								
			(74.78)	(72.90)								
RL	127.61**	120.47**										
	(56.91)	(53.06)										
Observations	328	328	328	328	328	328	328	328	328	328	328	328
R-squared	0.25	0.25	0.29	0.29	0.25	0.26	0.24	0.24	0.24	0.24	0.24	0.25
Number of Countries	39	39	39	39	39	39	39	39	39	39	39	39
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Panel D

VARIABLES	Number of Household Depositors											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LN(M3/GDP)	73.18	74.23	64.27	64.90	82.73	83.75	71.15	72.56	77.19	77.91	78.76	79.58
	(50.96)	(51.57)	(44.70)	(45.09)	(50.66)	(51.13)	(52.52)	(53.19)	(51.84)	(52.24)	(52.38)	(52.77)
LN(GDP/Capita)	323.04*	344.29*	167.00	177.99	325.31*	346.49*	342.07	370.70	315.49*	344.75*	389.94**	408.58**
	(168.08)	(183.27)	(191.57)	(184.35)	(167.65)	(177.89)	(225.65)	(248.86)	(184.58)	(201.17)	(165.34)	(177.18)
LMF	1.56	2.33	11.60	11.74	-3.15	-2.32	-1.37	0.34	-4.34	-2.58	-0.96	0.00
	(44.12)	(43.56)	(41.25)	(41.19)	(46.25)	(45.41)	(40.95)	(39.63)	(40.70)	(39.06)	(48.67)	(47.60)
5 Bank Asset Concentration	1.60	8.79	1.99	5.20	2.54	10.74	1.59	10.25	1.55	10.10	1.81	9.57
	(1.84)	(14.42)	(1.91)	(10.61)	(1.89)	(13.70)	(1.86)	(15.21)	(1.88)	(14.43)	(1.90)	(14.08)
5 Bank Asset Concentration Squared		-0.05		-0.02		-0.06		-0.06		-0.06		-0.05
		(0.09)		(0.07)		(0.09)		(0.10)		(0.09)		(0.09)
VA											106.46	100.19
											(71.87)	(72.63)
RQ									77.07	68.47		
									(86.18)	(86.62)		
GE							60.15	51.27				
							(98.74)	(104.96)				
CC					141.69**	137.81**						
					(66.47)	(64.09)						
PSNV			129.14	127.18								
			(89.35)	(86.39)								
RL	156.17*	146.97*										
	(81.69)	(80.77)										
Observations	265	265	265	265	265	265	265	265	265	265	265	265
R-squared	0.25	0.25	0.30	0.30	0.25	0.26	0.24	0.24	0.24	0.24	0.25	0.25
Number of Countries	35	35	35	35	35	35	35	35	35	35	35	35
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Table 1.26: Regressions by Institutional Quality Indicator for Number of Household Deposit Accounts

Panel A

VARIABLES	Number of Household Deposit Accounts											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LN(M3/GDP)	169.67***	168.66***	166.50***	165.31***	165.97***	165.27***	169.09***	168.31***	150.59***	149.50***	126.15***	126.64**
	(34.01)	(39.81)	(32.65)	(38.44)	(36.83)	(43.29)	(33.42)	(39.41)	(37.03)	(41.65)	(46.42)	(49.95)
LN(GDP/Capita)	1,402.66***	1,393.33***	1,416.40***	1,407.01***	1,439.50***	1,433.99***	1,316.54***	1,310.47***	1,568.50***	1,561.00***	1,544.31***	1,549.39***
	(384.11)	(389.74)	(373.52)	(377.32)	(403.81)	(405.00)	(404.51)	(406.13)	(397.92)	(408.93)	(350.16)	(357.06)
KAOPEN	393.13	394.84	404.75	406.61*	410.13*	411.63*	357.84	359.47	450.10*	452.44*	409.79*	408.49*
	(257.51)	(253.00)	(245.85)	(239.50)	(242.55)	(236.30)	(243.13)	(237.60)	(246.31)	(239.01)	(234.14)	(226.37)
3 Bank Asset Concentration	2.01	0.60	2.01	0.66	1.96	1.03	1.57	0.55	2.25	0.89	1.67	2.47
	(3.77)	(19.48)	(3.84)	(19.21)	(3.80)	(19.62)	(3.68)	(19.12)	(3.82)	(19.23)	(3.70)	(18.61)
3 Bank Asset Concentration Squared		0.01		0.01		0.01		0.01		0.01		-0.01
		(0.13)		(0.13)		(0.13)		(0.13)		(0.13)		(0.13)
VA											-271.17	-271.99
											(184.46)	(183.81)
RQ									-157.73	-158.27		
									(142.44)	(141.34)		
GE							182.27	182.36				
							(150.35)	(150.19)				
CC					-18.08	-18.05						
					(169.06)	(168.95)						
PSNV			14.22	15.90								
			(132.52)	(130.66)								
RL	58.96	61.30										
	(198.31)	(194.58)										
Observations	512	512	512	512	512	512	512	512	512	512	512	512
R-squared	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.43	0.43
Number of Countries	48	48	48	48	48	48	48	48	48	48	48	48
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Panel B

VARIABLES	Number of Household Deposit Accounts											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LN(M3/GDP)	99.69*	97.70*	95.20**	94.02**	94.94	90.97	100.21*	97.96**	77.76	76.29	70.16	69.54
	(52.26)	(48.70)	(46.04)	(41.97)	(59.14)	(54.31)	(51.60)	(47.62)	(55.43)	(51.74)	(59.15)	(55.79)
LN(GDP/Capita)	1,834.47***	2,019.14***	1,833.96***	2,025.06***	1,890.79***	2,088.88***	1,792.70***	1,986.61***	2,068.49***	2,246.10***	1,939.33***	2,113.45***
	(405.37)	(398.42)	(392.43)	(381.79)	(427.43)	(421.22)	(435.57)	(426.79)	(423.53)	(417.78)	(348.69)	(344.78)
KAOPEN	384.53	310.30	400.70	327.79	413.04*	339.04	377.87	308.77	467.93*	391.70*	411.12*	337.93*
	(259.23)	(228.75)	(248.39)	(214.15)	(237.52)	(204.77)	(240.10)	(210.27)	(245.15)	(211.16)	(228.36)	(198.53)
5 Bank Asset Concentration	4.40	42.14*	4.34	41.85*	4.30	42.59*	4.15	41.42*	4.45	41.96*	4.08	40.65*
	(4.60)	(22.52)	(4.63)	(22.51)	(4.64)	(22.80)	(4.59)	(22.49)	(4.66)	(21.76)	(4.48)	(21.57)
5 Bank Asset Concentration Squared		-0.27*		-0.27*		-0.28*		-0.27*		-0.27*		-0.27*
		(0.15)		(0.15)		(0.16)		(0.15)		(0.15)		(0.15)
VA											-286.55	-274.03
											(211.18)	(209.40)
RQ									-204.62	-200.37		
									(146.86)	(140.73)		
GE							108.08	89.52				
							(175.89)	(176.30)				
CC					-32.95	-54.44						
					(186.63)	(185.67)						
PSNV			39.51	29.63								
			(152.86)	(150.35)								
RL	94.83	90.07										
	(218.74)	(217.80)										
Observations	450	450	450	450	450	450	450	450	450	450	450	450
R-squared	0.47	0.48	0.47	0.48	0.47	0.48	0.47	0.48	0.48	0.49	0.48	0.50
Number of Countries	44	44	44	44	44	44	44	44	44	44	44	44
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Panel C

VARIABLES	Number of Household Deposit Accounts											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LN(M3/GDP)	144.27***	145.96***	133.91***	135.65***	142.74***	145.98***	138.51***	141.41***	141.21***	144.53***	117.88***	121.48***
	(31.25)	(38.05)	(31.19)	(38.69)	(32.80)	(39.51)	(32.72)	(39.31)	(30.36)	(36.54)	(36.29)	(41.59)
LN(GDP/Capita)	1,245.20***	1,258.95***	1,243.93***	1,255.91***	1,291.82***	1,314.21***	1,176.73***	1,196.81***	1,297.55***	1,319.88***	1,402.35***	1,429.64***
	(390.85)	(408.41)	(386.83)	(405.60)	(416.28)	(432.81)	(414.27)	(430.37)	(411.08)	(436.04)	(386.56)	(407.36)
LMF	5.60***	5.60***	5.02***	5.04***	4.92***	4.96***	3.90**	3.94**	4.86***	4.91***	4.58***	4.62***
	(1.57)	(1.57)	(1.57)	(1.52)	(1.54)	(1.49)	(1.86)	(1.80)	(1.40)	(1.35)	(1.64)	(1.59)
3 Bank Asset Concentration	1.67	3.87	1.66	3.55	1.75	5.78	1.38	4.90	1.67	5.74	1.53	6.31
	(3.08)	(16.74)	(3.16)	(17.37)	(3.21)	(17.13)	(3.05)	(16.71)	(3.22)	(17.22)	(3.05)	(16.61)
3 Bank Asset Concentration Squared		-0.02		-0.02		-0.03		-0.03		-0.03		-0.04
		(0.12)		(0.12)		(0.12)		(0.12)		(0.12)		(0.12)
VA											-194.08	-196.90
											(156.85)	(156.75)
RQ									8.85	8.50		
									(98.90)	(99.26)		
GE							189.60	188.06				
							(115.02)	(115.69)				
CC					24.81	23.86						
					(154.30)	(154.39)						
PSNV			77.18	74.96								
			(110.09)	(110.75)								
RL	169.95	164.69										
	(128.68)	(118.40)										
Observations	445	445	445	445	445	445	445	445	445	445	445	445
R-squared	0.43	0.43	0.43	0.43	0.42	0.42	0.43	0.43	0.42	0.42	0.43	0.43
Number of Countries	47	47	47	47	47	47	47	47	47	47	47	47
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Panel D

VARIABLES	Number of Household Deposit Accounts											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LN(M3/GDP)	79.30**	78.56**	71.87*	72.26**	74.15*	72.75*	77.22*	76.64**	72.12*	70.42*	55.72	57.27
	(39.10)	(35.52)	(35.92)	(32.36)	(43.72)	(38.95)	(38.53)	(34.33)	(38.86)	(35.09)	(41.99)	(38.36)
LN(GDP/Capita)	1,779.11***	1,952.69***	1,729.69***	1,906.49***	1,848.72***	2,024.72***	1,753.09***	1,946.58***	1,890.97***	2,083.39***	1,917.38***	2,073.77***
	(407.09)	(416.96)	(413.24)	(424.80)	(431.86)	(442.04)	(447.06)	(450.17)	(424.47)	(430.61)	(393.89)	(406.59)
LMF	4.32**	3.87*	3.55*	3.25*	3.45*	3.12*	2.98	2.84	3.66**	3.42**	3.05	2.79
	(1.92)	(1.96)	(1.77)	(1.78)	(1.75)	(1.76)	(2.03)	(1.99)	(1.54)	(1.56)	(1.87)	(1.86)
5 Bank Asset Concentration	4.96	45.53**	4.82	45.45**	5.02	47.10**	4.87	46.02**	5.13	47.62**	4.88	45.47**
	(3.49)	(21.41)	(3.57)	(22.08)	(3.58)	(21.81)	(3.52)	(21.60)	(3.62)	(21.72)	(3.41)	(20.84)
5 Bank Asset Concentration Squared		-0.29*		-0.29*		-0.30**		-0.29*		-0.30**		-0.29**
		(0.15)		(0.15)		(0.15)		(0.15)		(0.15)		(0.14)
VA											-243.37	-223.20
											(187.51)	(181.95)
RQ									-47.00	-67.19		
									(98.36)	(92.38)		
GE							103.64	69.39				
							(132.19)	(124.99)				
CC					-19.01	-33.70						
					(172.06)	(173.09)						
PSNV			97.83	85.50								
			(129.13)	(125.19)								
RL	193.09	158.58										
	(153.89)	(150.67)										
Observations	384	384	384	384	384	384	384	384	384	384	384	384
R-squared	0.49	0.51	0.49	0.52	0.49	0.51	0.49	0.51	0.49	0.51	0.50	0.52
Number of Countries	42	42	42	42	42	42	42	42	42	42	42	42
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Table 1.27: Regressions by Institutional Quality Indicator for Number of Household Borrowers

Panel A

VARIABLES	Number of Household Borrowers											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LN(Private Credit/GDP)	50.18	50.04	60.07	60.09	52.96	53.28	54.21	54.34	54.35*	54.27*	62.78*	62.70*
	(34.90)	(34.48)	(37.14)	(36.54)	(36.33)	(35.79)	(36.13)	(35.68)	(31.89)	(31.52)	(34.06)	(33.87)
LN(GDP/Capita)	-50.20	-56.16	-27.35	-34.20	-51.60	-53.65	-50.74	-54.68	-31.25	-36.16	-11.59	-15.95
	(71.18)	(72.43)	(76.34)	(75.67)	(64.47)	(65.96)	(72.22)	(72.89)	(65.97)	(67.25)	(70.66)	(70.69)
KAOPEN	-9.60	-6.51	2.11	5.12	3.00	5.28	-0.77	2.06	2.08	4.98	6.38	9.18
	(41.19)	(42.58)	(43.31)	(44.33)	(42.59)	(43.73)	(45.36)	(46.65)	(43.14)	(44.52)	(44.73)	(45.91)
3 Bank Asset Concentration	0.96	-1.33	1.03	-1.29	1.07	-0.38	0.87	-0.99	0.93	-1.06	0.97	-0.91
	(0.77)	(2.69)	(0.85)	(2.81)	(0.87)	(2.97)	(0.78)	(2.56)	(0.81)	(2.70)	(0.85)	(2.67)
3 Bank Asset Concentration Squared		0.02		0.02		0.01		0.02		0.02		0.02
		(0.02)		(0.02)		(0.02)		(0.02)		(0.02)		(0.02)
VA											-8.75	-7.93
											(26.20)	(25.91)
RQ									21.77	22.38		
									(46.19)	(46.12)		
GE							60.57**	60.29**				
							(29.45)	(29.02)				
CC					50.09	48.55						
					(51.84)	(52.00)						
PSNV			15.36	17.28								
			(15.54)	(16.03)								
RL	78.12*	80.00*										
	(44.83)	(44.88)										
Observations	468	468	468	468	468	468	468	468	468	468	468	468
R-squared	0.44	0.45	0.43	0.43	0.44	0.44	0.44	0.44	0.42	0.43	0.42	0.43
Number of Countries	49	49	49	49	49	49	49	49	49	49	49	49
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Panel B

VARIABLES	Number of Household Borrowers											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LN(Private Credit/GDP)	90.87***	90.80***	104.45***	104.31***	98.51***	98.52***	97.02***	96.93***	93.93***	93.49***	104.69***	104.66***
	(31.38)	(31.51)	(35.56)	(35.68)	(34.54)	(34.63)	(33.61)	(33.72)	(28.93)	(28.93)	(35.09)	(35.22)
LN(GDP/Capita)	-8.61	-13.58	12.89	4.68	-7.53	-10.34	3.18	-1.89	7.52	0.88	36.24	31.40
	(59.02)	(61.33)	(68.92)	(70.50)	(59.12)	(60.87)	(64.19)	(66.37)	(59.55)	(61.32)	(69.39)	(71.16)
KAOPEN	-36.38	-34.37	-19.77	-17.51	-23.82	-22.46	-20.30	-18.27	-22.78	-20.68	-16.11	-14.10
	(38.57)	(37.73)	(42.17)	(41.30)	(38.55)	(37.11)	(43.66)	(42.78)	(40.99)	(40.33)	(41.42)	(40.42)
5 Bank Asset Concentration	1.33*	-1.00	1.38*	-1.60	1.64**	0.15	1.27*	-1.07	1.33*	-1.36	1.36*	-0.91
	(0.68)	(3.79)	(0.72)	(4.38)	(0.77)	(4.33)	(0.72)	(4.07)	(0.73)	(4.10)	(0.74)	(4.22)
5 Bank Asset Concentration Squared		0.02		0.02		0.01		0.02		0.02		0.02
		(0.03)		(0.03)		(0.03)		(0.03)		(0.03)		(0.03)
VA											4.36	4.13
											(24.97)	(25.16)
RQ									36.39	37.57		
									(41.20)	(41.07)		
GE							47.50*	47.61*				
							(24.42)	(24.36)				
CC					71.45	70.88						
					(48.81)	(49.42)						
PSNV			18.01	19.47								
			(15.91)	(15.46)								
RL	96.10**	96.16**										
	(39.79)	(40.01)										
Observations	413	413	413	413	413	413	413	413	413	413	413	413
R-squared	0.55	0.56	0.53	0.53	0.55	0.55	0.54	0.54	0.53	0.53	0.53	0.53
Number of Countries	44	44	44	44	44	44	44	44	44	44	44	44
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Panel C

VARIABLES	Number of Household Borrowers											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LN(Private Credit/GDP)	42.71	42.98	48.99	48.95	44.18	42.97	49.66	49.28	46.19	45.95	56.06*	55.43*
	(32.17)	(31.83)	(33.14)	(32.76)	(33.64)	(33.03)	(32.63)	(32.30)	(31.64)	(31.53)	(30.91)	(30.62)
LN(GDP/Capita)	18.11	15.96	37.04	37.28	8.72	11.86	9.12	10.65	27.01	28.54	59.64	62.08
	(73.00)	(74.36)	(82.64)	(84.37)	(63.25)	(64.10)	(76.81)	(78.23)	(75.48)	(75.71)	(77.28)	(78.95)
LMF	6.28	5.81	10.85	10.90	7.68	8.70	1.96	2.36	6.20	6.56	8.99	9.64
	(17.90)	(17.72)	(19.23)	(19.27)	(17.49)	(17.53)	(18.13)	(18.24)	(19.01)	(18.90)	(18.90)	(19.07)
3 Bank Asset Concentration	1.56**	1.08	1.57**	1.64	1.82**	3.01	1.50**	1.93	1.53*	1.89	1.53*	2.27
	(0.73)	(2.49)	(0.77)	(2.55)	(0.81)	(3.01)	(0.74)	(2.56)	(0.76)	(2.50)	(0.79)	(2.71)
3 Bank Asset Concentration Squared		0.00		-0.00		-0.01		-0.00		-0.00		-0.01
		(0.02)		(0.02)		(0.02)		(0.02)		(0.02)		(0.02)
VA											-13.99	-14.26
											(24.96)	(24.92)
RQ									32.13	31.71		
									(43.23)	(42.50)		
GE							59.23**	59.03**				
							(29.17)	(29.13)				
CC					73.08	74.04						
					(46.04)	(47.08)						
PSNV			24.68	24.63								
			(20.91)	(20.78)								
RL	80.64*	81.92*										
	(42.08)	(41.66)										
Observations	404	404	404	404	404	404	404	404	404	404	404	404
R-squared	0.45	0.45	0.44	0.44	0.46	0.46	0.45	0.45	0.44	0.44	0.43	0.43
Number of Countries	50	50	50	50	50	50	50	50	50	50	50	50
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Panel D

VARIABLES	Number of Household Borrowers											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LN(Private Credit/GDP)	94.77***	94.92***	105.12***	105.31***	100.33***	100.61***	103.18***	103.44***	97.56***	97.78***	110.64***	110.86***
	(29.56)	(29.62)	(30.69)	(30.86)	(30.42)	(30.76)	(30.00)	(30.23)	(28.03)	(27.98)	(29.90)	(30.16)
LN(GDP/Capita)	-16.26	-15.33	2.24	4.06	-5.28	-2.50	-8.16	-5.98	-21.60	-20.13	35.66	37.76
	(65.64)	(64.52)	(93.41)	(92.11)	(62.00)	(60.40)	(78.19)	(77.38)	(76.32)	(74.34)	(88.30)	(88.11)
LMF	-21.00	-21.07	-14.81	-14.99	-14.95	-15.48	-21.50	-21.71	-22.68	-22.70	-14.92	-15.24
	(15.02)	(15.01)	(17.32)	(17.23)	(14.81)	(14.64)	(17.03)	(16.90)	(16.74)	(16.75)	(18.00)	(17.88)
5 Bank Asset Concentration	1.66***	2.17	1.71***	2.62	2.19***	4.84	1.67**	3.06	1.70**	2.30	1.72**	3.37
	(0.61)	(3.70)	(0.63)	(3.78)	(0.69)	(4.24)	(0.64)	(4.10)	(0.63)	(3.77)	(0.66)	(4.28)
5 Bank Asset Concentration Squared		-0.00		-0.01		-0.02		-0.01		-0.00		-0.01
		(0.03)		(0.03)		(0.03)		(0.03)		(0.03)		(0.03)
VA											-14.58	-14.43
											(23.01)	(22.93)
RQ									52.70	52.06		
									(40.64)	(39.51)		
GE							46.85*	46.41*				
							(24.92)	(24.69)				
CC					92.71**	93.89**						
					(44.00)	(44.84)						
PSNV			24.06	23.60								
			(22.61)	(21.62)								
RL	95.65**	95.15**										
	(44.01)	(42.67)										
Observations	351	351	351	351	351	351	351	351	351	351	351	351
R-squared	0.56	0.56	0.55	0.55	0.58	0.58	0.55	0.55	0.55	0.55	0.54	0.54
Number of Countries	45	45	45	45	45	45	45	45	45	45	45	45
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Table 1.28: Regressions by Institutional Quality Indicator for Number of Household Loan Accounts

Panel A

VARIABLES	Number of Household Loan Accounts											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LN(Private Credit/GDP)	104.41	104.66	131.70	131.82	143.57*	143.59*	119.47	119.52	134.86	134.92	141.15*	141.13*
	(80.40)	(80.14)	(85.65)	(85.55)	(81.70)	(81.56)	(84.06)	(83.99)	(85.04)	(84.95)	(76.23)	(76.36)
LN(GDP/Capita)	30.19	25.85	126.85	126.20	187.78	187.67	75.11	74.95	140.48	140.11	146.37	146.68
	(126.31)	(124.85)	(157.38)	(159.35)	(142.86)	(146.23)	(137.40)	(138.58)	(109.36)	(111.36)	(142.32)	(141.82)
KAOPEN	-147.30	-145.32	-125.79	-125.37	-109.86	-109.79	-139.18	-139.03	-123.52	-123.27	-119.90	-120.06
	(258.89)	(262.18)	(269.12)	(273.97)	(244.77)	(248.95)	(261.60)	(265.56)	(245.10)	(249.25)	(262.84)	(266.70)
3 Bank Asset Concentration	2.23	0.51	1.94	1.66	1.70	1.64	1.89	1.78	1.93	1.73	1.82	1.97
	(2.65)	(6.81)	(2.67)	(7.38)	(2.61)	(7.00)	(2.70)	(6.92)	(2.73)	(7.23)	(2.70)	(7.17)
3 Bank Asset Concentration Squared		0.01		0.00		0.00		0.00		0.00		-0.00
		(0.04)		(0.04)		(0.04)		(0.04)		(0.04)		(0.04)
VA											-41.77	-41.96
											(77.59)	(77.49)
RQ									-11.44	-11.38		
									(105.71)	(106.17)		
GE							102.76*	102.74*				
							(57.45)	(57.06)				
CC					-70.80	-70.78						
					(115.49)	(116.33)						
PSNV			4.24	4.43								
			(39.88)	(41.80)								
RL	170.54*	173.25*										
	(100.65)	(100.63)										
Observations	585	585	585	585	585	585	585	585	585	585	585	585
R-squared	0.19	0.19	0.17	0.17	0.18	0.18	0.18	0.18	0.17	0.17	0.17	0.17
Number of Countries	55	55	55	55	55	55	55	55	55	55	55	55
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Panel B

VARIABLES	Number of Household Loan Accounts											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LN(Private Credit/GDP)	185.64**	193.73**	217.80**	224.31**	226.11**	233.12**	206.70**	215.30**	215.96**	227.09**	213.50**	221.93***
	(81.30)	(77.10)	(88.48)	(86.35)	(89.90)	(87.93)	(90.88)	(88.53)	(92.63)	(88.78)	(86.12)	(82.47)
LN(GDP/Capita)	133.22	153.67	241.16	261.60*	292.62*	307.59**	205.42	226.10	238.81*	265.89**	238.93	254.53*
	(106.09)	(113.87)	(149.33)	(148.73)	(157.33)	(150.25)	(134.03)	(136.88)	(120.90)	(127.61)	(144.31)	(140.48)
KAOPEN	-147.93	-166.44	-123.62	-151.00	-109.18	-135.56	-132.83	-156.14	-125.73	-148.10	-128.13	-152.49
	(254.37)	(255.25)	(263.79)	(265.66)	(240.31)	(241.44)	(254.80)	(256.66)	(240.86)	(244.21)	(253.64)	(255.77)
5 Bank Asset Concentration	2.67	14.59	2.39	17.74	2.14	17.61	2.37	16.88	2.39	17.85	2.45	17.54
	(2.93)	(12.62)	(3.03)	(14.65)	(2.87)	(14.32)	(3.07)	(14.48)	(3.03)	(14.44)	(3.01)	(14.33)
5 Bank Asset Concentration Squared		-0.08		-0.11		-0.11		-0.10		-0.11		-0.10
		(0.09)		(0.10)		(0.10)		(0.10)		(0.10)		(0.10)
VA											26.74	15.17
											(84.39)	(79.91)
RQ									6.44	-9.69		
									(103.68)	(99.81)		
GE							63.83	50.83				
							(62.25)	(60.83)				
CC					-63.97	-65.73						
					(117.18)	(118.24)						
PSNV			2.63	-3.38								
			(44.05)	(45.51)								
RL	182.03*	165.75*										
	(100.09)	(89.27)										
Observations	527	527	527	527	527	527	527	527	527	527	527	527
R-squared	0.24	0.24	0.22	0.23	0.23	0.23	0.23	0.23	0.22	0.23	0.22	0.23
Number of Countries	52	52	52	52	52	52	52	52	52	52	52	52
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Panel C

VARIABLES	Number of Household Loan Accounts											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LN(Private Credit/GDP)	110.20	109.65	129.85*	128.05*	136.02*	133.94*	119.29	117.34	132.53	130.98	141.46**	139.63**
	(70.31)	(70.62)	(73.45)	(73.78)	(72.13)	(72.58)	(72.32)	(72.82)	(79.67)	(80.06)	(68.96)	(69.57)
LN(GDP/Capita)	118.32	122.55	171.49	178.27	235.84	242.10	151.54	156.87	210.15	217.42	228.05*	234.94*
	(113.11)	(118.11)	(150.26)	(157.38)	(145.82)	(150.30)	(136.58)	(141.62)	(138.53)	(144.54)	(130.59)	(134.63)
LMF	3.09***	3.08***	2.67***	2.67***	2.60***	2.61***	2.01***	2.02***	2.60***	2.62***	2.54***	2.55***
	(0.63)	(0.63)	(0.63)	(0.63)	(0.58)	(0.57)	(0.58)	(0.57)	(0.56)	(0.55)	(0.62)	(0.61)
3 Bank Asset Concentration	2.40	4.01	2.21	5.17	1.98	5.62	2.15	5.48	2.15	5.72	2.00	5.85
	(2.61)	(5.91)	(2.65)	(6.61)	(2.52)	(6.43)	(2.65)	(6.34)	(2.66)	(6.62)	(2.59)	(6.42)
3 Bank Asset Concentration Squared		-0.01		-0.02		-0.03		-0.03		-0.03		-0.03
		(0.03)		(0.04)		(0.04)		(0.04)		(0.04)		(0.04)
VA											-64.45	-67.63
											(81.76)	(81.74)
RQ									-8.90	-11.39		
									(108.31)	(108.95)		
GE							97.00	96.13				
							(60.58)	(61.90)				
CC					-45.83	-47.13						
					(105.81)	(106.46)						
PSNV			31.39	28.94								
			(35.70)	(36.90)								
RL	165.29*	161.63*										
	(90.10)	(88.22)										
Observations	502	502	502	502	502	502	502	502	502	502	502	502
R-squared	0.22	0.22	0.20	0.20	0.20	0.20	0.21	0.21	0.20	0.20	0.20	0.20
Number of Countries	54	54	54	54	54	54	54	54	54	54	54	54
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Panel D

VARIABLES	Number of Household Loan Accounts											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LN(Private Credit/GDP)	195.26**	208.72***	218.96***	229.49***	222.90***	234.08***	211.45**	226.74***	225.04**	245.21***	222.68***	235.33***
	(73.38)	(69.81)	(76.61)	(74.06)	(79.62)	(77.44)	(83.23)	(81.27)	(92.95)	(90.54)	(80.44)	(76.96)
LN(GDP/Capita)	228.50**	256.98**	283.10*	305.09**	351.54**	367.27**	295.64**	323.25**	338.44**	380.06**	325.15**	341.36**
	(97.90)	(100.27)	(152.42)	(142.95)	(170.08)	(157.39)	(146.55)	(142.74)	(164.13)	(164.49)	(143.09)	(130.27)
LMF	2.89***	2.54***	2.43***	2.13***	2.36***	2.07***	2.13***	1.98***	2.46***	2.31***	2.33***	2.03***
	(0.68)	(0.58)	(0.67)	(0.64)	(0.63)	(0.60)	(0.62)	(0.62)	(0.64)	(0.65)	(0.65)	(0.62)
5 Bank Asset Concentration	2.58	18.50*	2.41	21.45*	2.23	21.82*	2.41	21.53	2.40	23.14*	2.34	22.06*
	(2.37)	(10.98)	(2.50)	(12.73)	(2.31)	(12.88)	(2.51)	(12.92)	(2.48)	(12.89)	(2.37)	(12.86)
5 Bank Asset Concentration Squared		-0.11		-0.13		-0.14		-0.13		-0.14		-0.14
		(0.08)		(0.09)		(0.09)		(0.09)		(0.09)		(0.09)
VA											-28.78	-41.58
											(95.14)	(89.65)
RQ									-22.59	-54.27		
									(116.54)	(114.02)		
GE							38.99	14.27				
							(74.23)	(74.21)				
CC					-48.36	-51.97						
					(111.44)	(111.56)						
PSNV			27.90	20.78								
			(38.91)	(37.67)								
RL	169.44*	136.26*										
	(94.05)	(74.36)										
Observations	446	446	446	446	446	446	446	446	446	446	446	446
R-squared	0.27	0.28	0.26	0.28	0.26	0.28	0.26	0.28	0.26	0.28	0.26	0.28
Number of Countries	50	50	50	50	50	50	50	50	50	50	50	50
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Note: For Tables 1.3-1.28, standard errors are clustered at the country level.

V. **Robustness**

In this section, I perform sensitivity analyses. First, I test whether the effect of financial openness on financial inclusion is affected by the exclusion of the bank asset concentration ratio control variable. I also test whether results are sensitive to the lag structure of the regressors.

Lastly, I check whether results are robust to the inclusion of a lagged dependent variable using the Arellano and Bond (1991) GMM estimator as in Owen and Pereira (2018).

The first sensitivity analysis involves removing the bank asset concentration ratio control variable from the analysis. Bank concentration was expected to have a positive effect on financial inclusion due to the potential benefits that larger banks may enjoy through economies of scale and scope, allowing them to enhance portfolio diversification and the variety of services banks offer. Additionally, I include bank concentration in the main specification for consistency with Owen and Pereira (2018), who find a positive effect of bank asset concentration ratio on the same measures of financial inclusion I consider. However, I find limited significance for bank asset concentration on financial inclusion. It is possible that the significance of the bank asset concentration variable found in Owen and Pereira (2018) arises due to the lack of robust standard errors in their analysis.[3] If bank asset concentration is not relevant in explaining the variation in financial openness, including this control may reduce the precision of the financial openness coefficient estimates.

Tables 1.29-1.36 below show regression results for each of the eight indicators of financial openness.[4] LMF remains significant and positive for number of loan accounts, number of household deposit accounts and number of household loan accounts. There is still no effect of

[3] Without robust standard errors, the bank asset concentration ratio control exhibits significance in many cases in my models. Estimations available upon request.

[4] Excluding the institutional quality index does not affect these results. I include institutional quality index for completeness. The sample sizes are larger in Tables 1.29-1.36 compared with the samples in Tables 1.3-1.10 because the samples in Tables 1.29-1.36 were not restricted by bank concentration ratio data availability. Results are qualitatively similar for regressions where I drop bank concentration but use the smaller samples from Tables 1.3-1.10.

LMF on the other measures of financial inclusion in regressions without the bank asset concentration ratio control. KAOPEN does not show an impact on financial inclusion once I drop bank asset concentration. Thus, the effects of financial openness, particularly as measured by LMF, on financial inclusion are not sensitive to the exclusion of the bank concentration control in my analysis. Further, excluding this control does not appear to add more precision to the financial openness coefficient estimates of interest.

Table 1.29: Regressions without Bank Concentration for Number of Depositors

VARIABLES	Number of Depositors	
	(1)	(2)
LN(M3/GDP)	24.77*	17.21**
	(13.32)	(7.92)
LN(GDP/Capita)	320.87**	286.33**
	(132.46)	(110.32)
KAOPEN	45.32	
	(146.83)	
LMF		7.71
		(27.04)
Institutional Quality Index	112.45	92.88
	(87.10)	(90.52)
Observations	1,009	874
R-squared	0.28	0.25
Number of Countries	90	90
Robust standard errors in parentheses		
*** p<0.01, ** p<0.05, * p<0.1		

Table 1.30: Regressions without Bank Concentration for Number of Deposit Accounts

VARIABLES	Number of Deposit Accounts	
	(1)	(2)
LN(M3/GDP)	40.89**	28.83**
	(17.08)	(12.16)
LN(GDP/Capita)	862.59***	736.25***
	(194.96)	(175.08)
KAOPEN	202.79	
	(135.49)	
LMF		3.00
		(1.92)
Institutional Quality Index	1.47	0.67
	(161.90)	(126.88)
Observations	1,365	1,184
R-squared	0.35	0.35
Number of Countries	115	117
Robust standard errors in parentheses		
*** p<0.01, ** p<0.05, * p<0.1		

Table 1.31: Regressions without Bank Concentration for Number of Borrowers

VARIABLES	Number of Borrowers	
	(1)	(2)
LN(Private Credit/GDP)	24.75*	25.36*
	(14.81)	(14.48)
LN(GDP/Capita)	94.77**	57.30
	(41.87)	(62.69)
KAOPEN	-7.86	
	(33.31)	
LMF		-6.34
		(8.97)
Institutional Quality Index	29.40	42.16
	(39.76)	(44.68)
Observations	997	884
R-squared	0.25	0.24
Number of Countries	91	92
Robust standard errors in parentheses		
*** p<0.01, ** p<0.05, * p<0.1		

Table 1.32: Regressions without Bank Concentration for Number of Loan Accounts

VARIABLES	Number of Loan Accounts	
	(1)	(2)
LN(Private Credit/GDP)	61.71	57.46*
	(38.56)	(33.43)
LN(GDP/Capita)	194.74**	202.61**
	(76.36)	(82.39)
KAOPEN	-86.98	
	(122.75)	
LMF		1.43***
		(0.44)
Institutional Quality Index	4.17	25.99
	(95.96)	(88.55)
Observations	1,058	918
R-squared	0.13	0.14
Number of Countries	98	98
Robust standard errors in parentheses		
*** p<0.01, ** p<0.05, * p<0.1		

Table 1.33: Regressions without Bank Concentration for Number of Household Depositors

VARIABLES	Number of Household Depositors	
	(1)	(2)
LN(M3/GDP)	83.26***	56.18***
	(29.76)	(18.08)
LN(GDP/Capita)	223.03	221.63*
	(157.19)	(116.27)
KAOPEN	-232.29	
	(266.38)	
LMF		49.23
		(31.48)
Institutional Quality Index	171.56	144.92
	(106.02)	(109.56)
Observations	480	421
R-squared	0.30	0.28
Number of Countries	49	49
Robust standard errors in parentheses		
*** p<0.01, ** p<0.05, * p<0.1		

Table 1.34: Regressions without Bank Concentration for Number of Household Deposit Accounts

VARIABLES	Number of Household Deposit Accounts	
	(1)	(2)
LN(M3/GDP)	128.81***	105.93***
	(37.17)	(30.71)
LN(GDP/Capita)	1,072.26***	805.77**
	(344.00)	(321.33)
KAOPEN	372.28	
	(253.25)	
LMF		4.55***
		(1.46)
Institutional Quality Index	-43.98	99.77
	(249.35)	(174.68)
Observations	619	549
R-squared	0.37	0.37
Number of Countries	56	58
Robust standard errors in parentheses		
*** p<0.01, ** p<0.05, * p<0.1		

Table 1.35: Regressions without Bank Concentration for Number of Household Borrowers

VARIABLES	Number of Household Borrowers	
	(1)	(2)
LN(Private Credit/GDP)	19.76	16.19
	(24.75)	(23.23)
LN(GDP/Capita)	17.99	63.53
	(47.90)	(53.10)
KAOPEN	-1.58	
	(40.89)	
LMF		14.57
		(13.17)
Institutional Quality Index	60.77	74.66
	(55.81)	(54.85)
Observations	544	481
R-squared	0.37	0.37
Number of Countries	56	59
Robust standard errors in parentheses		
*** p<0.01, ** p<0.05, * p<0.1		

Table 1.36: Regressions without Bank Concentration for Number of Household Loan Accounts

VARIABLES	Number of Household Loan Accounts	
	(1)	(2)
LN(Private Credit/GDP)	71.82	70.81
	(56.13)	(50.18)
LN(GDP/Capita)	177.49*	207.54*
	(98.08)	(115.82)
KAOPEN	-127.71	
	(248.21)	
LMF		2.73***
		(0.45)
Institutional Quality Index	7.81	39.42
	(124.93)	(110.49)
Observations	682	601
R-squared	0.14	0.16
Number of Countries	63	65
Robust standard errors in parentheses		
*** p<0.01, ** p<0.05, * p<0.1		

Note: For Tables 1.29-1.36, standard errors are clustered at the country level.

As an additional robustness test, I check whether results are affected by changes in the lag structure of the regressors. To compare with the main results in Tables 1.3-1.10, I develop two additional specifications. One specification includes a mixture of lags as in Owen and Pereira (2018) to facilitate result comparison, using one year lagged values for financial openness and bank asset concentration ratio with contemporaneous values for all the other regressors. The other specification uses one year lagged values for all regressors, which could facilitate a casual interpretation of the effects of these variables on financial inclusion, diminishing potential endogeneity issues from financial inclusion to the right-hand side variables. Results are robust to these different lag structures, across both the larger sample sizes and considering a common sample to ensure that results are consistent. Results using a common sample for the no lags, mixed lags and all lags regressors are presented in Tables 1.45-1.68 in the Appendix. Throughout these specifications, LMF is positive and significant for number of loan accounts and number of household loan accounts, while KAOPEN has little impact on the eight measures of financial

inclusion. The main finding that financial openness does not appear to reduce financial inclusion holds after considering these additional lag structures[5].

For the final robustness analysis, I verify whether results are sensitive to the inclusion of a lagged dependent variable, using Arellano and Bond's (1991) GMM estimation as in Owen and Pereira (2018). Results are reported in Tables 1.37-1.44. As Table 1.40 indicates, LMF continues to have a positive and significant impact on the number of loan accounts measure of financial inclusion in regressions with the three bank asset concentration ratio, which have a larger sample compared to the sample with the five bank asset concentration ratio. KAOPEN has a negative and significant effect on number of loan accounts and number of household loan accounts, as shown in Tables 1.40 and 1.44. Overall, this analysis suggests that results are sensitive to the number of countries in the sample and perhaps the methodology. There is evidence that LMF has a positive and significant effect on some measure of financial inclusion. This result is sensitive to the sample, but for the largest sample, with three bank asset concentration ratio, there is a positive impact of LMF on financial inclusion. KAOPEN tends to have neither a positive or negative effect on measures of financial inclusion. This result is sensitive to methodology and number of countries, but overall higher levels of financial openness do not appear to negatively affect inclusion in most instances.

[5] In the specification with all lagged regressors, the coefficient for KAOPEN has negative significance in one instance only for number of depositors at the 10% level. However, this is sensitive to the specification and does not appear in any of the other analyses.

Table 1.37: GMM Results for Number of Depositors

VARIABLES	Number of Depositors							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Lagged Depositors	0.69***	0.70***	0.75***	0.76***	0.71***	0.71***	0.70***	0.71***
	(0.09)	(0.09)	(0.06)	(0.06)	(0.10)	(0.10)	(0.05)	(0.05)
LN(M3/GDP)	-17.77	-16.56	-15.24	-11.99	-13.48	-12.85	-9.43	-5.77
	(25.39)	(23.90)	(25.34)	(22.36)	(18.91)	(17.82)	(19.18)	(16.79)
LN(GDP/Capita)	6.66	7.72	34.51	35.42	40.64	41.03	138.49	135.58
	(103.00)	(104.42)	(117.82)	(117.13)	(153.43)	(153.10)	(190.51)	(178.02)
KAOPEN	-29.34	-26.90	-18.28	-17.11				
	(43.33)	(41.07)	(25.36)	(24.41)				
LMF					0.97	0.79	17.49	16.73
					(12.84)	(12.66)	(20.35)	(18.90)
3 Bank Asset Concentration	-0.64	1.42			-0.15	0.78		
	(0.56)	(2.97)			(0.50)	(3.02)		
3 Bank Asset Concentration Squared		-0.01				-0.01		
		(0.02)				(0.02)		
5 Bank Asset Concentration			-0.04	9.55			-0.00	11.01
			(0.58)	(7.11)			(0.58)	(7.31)
5 Bank Asset Concentration Squared				-0.06				-0.07
				(0.05)				(0.05)
Observations	689	689	567	567	572	572	463	463
Number of Countries	76	76	68	68	75	75	64	64
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Table 1.38: GMM Results for Number of Deposit Accounts

VARIABLES	Number of Deposit Accounts							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Lagged Deposit Accounts	0.74***	0.73***	0.76***	0.75***	0.95***	0.97***	1.13***	1.13***
	(0.13)	(0.13)	(0.14)	(0.14)	(0.19)	(0.17)	(0.24)	(0.24)
LN(M3/GDP)	-4.60	-5.49	-3.15	-3.78	-14.55	-16.92	-16.90	-18.87
	(25.85)	(26.33)	(26.04)	(26.74)	(31.92)	(33.33)	(32.65)	(33.76)
LN(GDP/Capita)	274.92*	269.47*	297.56	300.04	73.50	42.65	-26.43	-28.27
	(151.43)	(152.62)	(182.20)	(181.68)	(183.86)	(182.56)	(277.04)	(273.96)
KAOPEN	10.35	7.98	2.69	3.23				
	(39.59)	(39.78)	(40.96)	(40.87)				
LMF					-1.01	-1.08	-1.60*	-1.58*
					(0.66)	(0.68)	(0.88)	(0.86)
3 Bank Asset Concentration	-0.36	-3.86			0.92	-8.64*		
	(0.95)	(4.14)			(0.94)	(4.78)		
3 Bank Asset Concentration Squared		0.02				0.07*		
		(0.03)				(0.03)		
5 Bank Asset Concentration			-0.82	-3.17			0.16	-7.10**
			(1.08)	(4.94)			(1.12)	(3.33)
5 Bank Asset Concentration Squared				0.02				0.05**
				(0.03)				(0.02)
Observations	973	973	852	852	808	808	702	702
Number of Countries	100	100	90	90	100	100	90	90
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Table 1.39: GMM Results for Number of Borrowers

VARIABLES	Number of Borrowers							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Lagged Borrowers	0.45	0.45	0.44	0.43	0.40	0.39	0.46	0.43
	(0.35)	(0.34)	(0.48)	(0.47)	(0.38)	(0.37)	(0.40)	(0.40)
LN(Private Credit/GDP)	27.26	27.28	18.78	19.09	24.20	24.13	13.42	13.72
	(18.93)	(18.81)	(15.64)	(15.59)	(18.66)	(18.50)	(12.44)	(12.72)
LN(GDP/Capita)	48.44**	48.49**	54.63*	55.71**	55.10**	55.18**	75.05**	78.34**
	(22.52)	(22.84)	(27.80)	(27.23)	(23.67)	(24.26)	(35.42)	(35.90)
KAOPEN	-14.92	-14.10	-11.90	-11.90				
	(12.11)	(11.72)	(8.37)	(8.34)				
LMF					-1.97	-1.68	5.13	5.57
					(3.58)	(3.56)	(4.83)	(4.97)
3 Bank Asset Concentration	-0.02	2.02			0.06	1.93		
	(0.19)	(1.72)			(0.22)	(1.65)		
3 Bank Asset Concentration Squared		-0.01				-0.01		
		(0.01)				(0.01)		
5 Bank Asset Concentration			0.33*	1.42			0.30	2.52
			(0.18)	(2.44)			(0.18)	(2.38)
5 Bank Asset Concentration Squared				-0.01				-0.01
				(0.01)				(0.01)
Observations	699	699	594	594	595	595	498	498
Number of Countries	78	78	70	70	78	78	69	69
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Table 1.40: GMM Results for Number of Loan Accounts

VARIABLES	Number of Loan Accounts							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Lagged Loan Accounts	0.54***	0.54***	0.49***	0.50***	0.32*	0.32	0.29	0.29
	(0.16)	(0.16)	(0.17)	(0.17)	(0.19)	(0.19)	(0.21)	(0.21)
LN(Private Credit/GDP)	61.44***	61.48***	68.87***	66.31***	75.85**	78.94**	84.64**	87.60***
	(22.95)	(23.14)	(25.14)	(24.96)	(30.33)	(31.19)	(32.45)	(33.07)
LN(GDP/Capita)	70.67	70.84	93.01*	91.38*	126.76**	128.59**	153.52**	155.50**
	(42.90)	(42.86)	(47.16)	(47.67)	(59.90)	(60.93)	(69.25)	(69.24)
KAOPEN	-33.21*	-33.11*	-43.28**	-44.56**				
	(18.68)	(19.20)	(18.62)	(18.26)				
LMF					0.73*	0.73*	0.72	0.71
					(0.39)	(0.39)	(0.44)	(0.44)
3 Bank Asset Concentration	0.86**	1.01			0.43	3.20*		
	(0.38)	(2.36)			(0.40)	(1.75)		
3 Bank Asset Concentration Squared		-0.00				-0.02*		
		(0.02)				(0.01)		
5 Bank Asset Concentration			1.11**	-1.67			0.70	3.32
			(0.55)	(3.33)			(0.67)	(2.69)
5 Bank Asset Concentration Squared				0.02				-0.02
				(0.02)				(0.02)
Observations	711	711	605	605	588	588	497	497
Number of Countries	81	81	72	72	79	79	70	70
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Table 1.41: GMM Results for Number of Household Depositors

VARIABLES	Number of Household Depositors							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Lagged Household Depositors	0.62***	0.56***	0.63***	0.58***	0.62***	0.56***	0.63***	0.58***
	(0.09)	(0.09)	(0.08)	(0.09)	(0.07)	(0.07)	(0.07)	(0.09)
LN(M3/GDP)	-11.67	-16.52	-8.99	-12.19	-16.84	-23.03	-16.22	-19.31
	(22.91)	(25.48)	(23.23)	(24.58)	(25.42)	(29.46)	(27.69)	(29.57)
LN(GDP/Capita)	-54.72	-50.08	-52.66	-54.96	21.10	32.02	193.22	182.01
	(54.54)	(47.25)	(56.02)	(46.88)	(139.54)	(140.65)	(294.44)	(285.81)
KAOPEN	-7.75	9.52	-78.33	-76.54				
	(77.28)	(79.74)	(62.93)	(63.35)				
LMF					26.15	28.50	67.19	65.26
					(30.28)	(32.57)	(66.64)	(67.25)
3 Bank Asset Concentration	-0.65	-13.29			-0.81	-15.36		
	(0.99)	(8.28)			(1.23)	(9.54)		
3 Bank Asset Concentration Squared		0.09				0.10		
		(0.05)				(0.06)		
5 Bank Asset Concentration			-1.64	-17.39			-2.35	-17.87
			(1.47)	(13.63)			(1.92)	(16.14)
5 Bank Asset Concentration Squared				0.10				0.10
				(0.08)				(0.10)
Observations	293	293	227	227	241	241	180	180
Number of Countries	37	37	32	32	34	34	29	29
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Table 1.42: GMM Results for Number of Household Deposit Accounts

VARIABLES	Number of Household Deposit Accounts							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Lagged Household Deposit Accounts	0.46*	0.43*	0.48**	0.50**	0.39	0.37	0.42*	0.43*
	(0.25)	(0.25)	(0.22)	(0.21)	(0.27)	(0.26)	(0.24)	(0.23)
LN(M3/GDP)	-0.54	-3.02	-1.99	-1.19	-0.75	-3.13	-1.54	-0.89
	(30.25)	(31.66)	(30.73)	(30.75)	(30.17)	(32.36)	(30.15)	(30.87)
LN(GDP/Capita)	451.90**	420.92*	514.58*	526.92	581.65**	548.24*	665.65**	679.28*
	(222.86)	(240.54)	(286.85)	(312.97)	(261.78)	(277.56)	(328.43)	(354.03)
KAOPEN	139.67	152.70*	126.87	119.71				
	(83.20)	(86.20)	(83.14)	(78.78)				
LMF					0.60	0.77	0.22	0.10
					(2.52)	(2.60)	(2.00)	(1.90)
3 Bank Asset Concentration	-0.56	-7.60			-0.69	-6.82		
	(1.38)	(7.59)			(1.32)	(7.02)		
3 Bank Asset Concentration Squared		0.05				0.05		
		(0.05)				(0.05)		
5 Bank Asset Concentration			-0.61	3.36			0.05	4.26
			(1.97)	(10.92)			(1.52)	(8.40)
5 Bank Asset Concentration Squared				-0.03				-0.03
				(0.07)				(0.06)
Observations	406	406	353	353	341	341	293	293
Number of Countries	45	45	40	40	43	43	38	38
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Table 1.43: GMM Results for Number of Household Borrowers

VARIABLES	Number of Household Borrowers							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Lagged Household Borrowers	0.05	0.05	0.15	0.14	0.12	0.12	0.34	0.39
	(0.32)	(0.32)	(0.29)	(0.30)	(0.59)	(0.59)	(0.63)	(0.63)
LN(Private Credit/GDP)	33.06	32.58	40.19**	38.87**	32.50	32.48	31.93	28.28
	(24.45)	(24.24)	(18.07)	(18.49)	(34.18)	(34.55)	(35.06)	(34.61)
LN(GDP/Capita)	46.13*	46.43*	50.17*	49.08*	29.79	29.65	13.94	7.30
	(25.90)	(25.87)	(26.03)	(26.66)	(56.29)	(56.40)	(53.87)	(52.51)
KAOPEN	3.40	3.34	-5.00	-3.83				
	(10.90)	(10.93)	(15.08)	(15.51)				
LMF					-6.65	-6.65	-8.94	-9.88
					(9.34)	(9.49)	(9.27)	(9.01)
3 Bank Asset Concentration	0.24	-0.01			0.42	0.45		
	(0.17)	(0.75)			(0.28)	(1.12)		
3 Bank Asset Concentration Squared		0.00				-0.00		
		(0.01)				(0.01)		
5 Bank Asset Concentration			0.44	-2.15			0.42	-1.17
			(0.32)	(2.18)			(0.40)	(1.87)
5 Bank Asset Concentration Squared				0.02				0.01
				(0.01)				(0.01)
Observations	356	356	312	312	288	288	247	247
Number of Countries	46	46	42	42	42	42	38	38
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Table 1.44: GMM Results for Number of Household Loan Accounts

VARIABLES	Number of Household Loan Accounts							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Lagged Household Loan Accounts	0.65***	0.65***	0.64***	0.64***	0.42**	0.42**	0.42**	0.42**
	(0.15)	(0.15)	(0.15)	(0.15)	(0.19)	(0.19)	(0.20)	(0.20)
LN(Private Credit/GDP)	68.75**	69.15**	74.94**	73.45**	98.00**	98.31**	107.02**	106.06**
	(31.95)	(32.21)	(32.58)	(33.44)	(43.52)	(43.98)	(45.47)	(46.65)
LN(GDP/Capita)	98.83***	97.53**	113.15***	112.57***	140.92**	141.09**	159.75***	159.41***
	(36.00)	(36.57)	(37.57)	(38.27)	(53.97)	(54.19)	(57.05)	(57.45)
KAOPEN	-44.09**	-43.36**	-50.97**	-50.22**				
	(19.02)	(19.92)	(19.57)	(18.80)				
LMF					-0.93	-0.92	-1.00	-0.99
					(1.20)	(1.19)	(1.27)	(1.27)
3 Bank Asset Concentration	0.39	2.07			0.11	0.96		
	(0.39)	(2.94)			(0.49)	(2.51)		
3 Bank Asset Concentration Squared		-0.01				-0.01		
		(0.02)				(0.02)		
5 Bank Asset Concentration			0.51	-2.52			0.29	-0.81
			(0.62)	(3.31)			(0.80)	(4.07)
5 Bank Asset Concentration Squared				0.02				0.01
				(0.02)				(0.02)
Observations	466	466	411	411	384	384	336	336
Number of Countries	53	53	48	48	50	50	45	45
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Note: For Tables 1.37-1.44, standard errors are clustered at the country level.

VI. **Conclusion**

This paper contributes to the literature examining the determinants of financial inclusion by estimating the effects of financial openness measured by LMF, a de facto financial openness measure, and KAOPEN, a de jure index indicating the degree of a country's capital account openness, on eight different measures of financial inclusion, both on the deposit and on the lending sides. Financial openness as measured by LMF has a positive impact on number of loan accounts, number of household loan accounts and number of household deposit accounts. On the deposits side of financial inclusion, these results suggest that depositors may diversify their funds more, across different banks and/or across different types of deposit accounts, such as checking and savings accounts, as a result of higher financial openness. On the loans side, the findings suggest that, holding the level of financial development fixed, a higher degree of financial openness leads banks to offer a wider variety of services, enabling customers to use several loan accounts to better suit their financial needs. These results are sensitive to the sample and using different sets of controls changes that sample, as well as potentially to the methodology used, but there is still evidence of a positive impact of LMF on financial inclusion. In the GMM sensitivity analysis, LMF still shows a positive effect on financial inclusion for the larger sample with the three bank asset concentration ratio. KAOPEN appears to have neither a positive or negative effect on inclusion. This effect is sensitive to the methodology and number of countries, with the fixed effects estimation providing evidence for a positive significant impact on number of household deposit accounts only and no effect otherwise, while the GMM analysis shows negative effects for the number of loan accounts and number of household loan accounts measures of financial inclusion.

The number of borrowers or depositors measures of inclusion are not responsive to either measure of financial openness. These results hold after also including variables measuring the quality of domestic institutions. Further, institutional quality may also impact financial inclusion, particularly for number of borrowers or depositors. Out of the six different measures of institutional quality, RL exhibits the most consistent effects, with better rule of law being associated with higher levels of financial inclusion.

From a policy perspective, opening up to increased financial integration is not a channel by which a country may promote financial inclusion. However, financial integration does not appear to impact financial inclusion negatively in most cases. Greater focus on deepening and broadening domestic financial development and on strengthening the rule of law may have greater impact on particularly the number of borrowers or depositors using the financial system.

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Chapter 2: Macroeconomic Uncertainty and the SME Share in Total Borrowing

I. **Introduction**

Small and medium enterprises (SMEs) are important drivers of economic growth and employment, providing a large variety of goods and services, and encouraging a competitive environment. The United States Small Business Administration reports that over the last 25 years, small businesses have been responsible for adding two-thirds of all new jobs in the United States, generating more net new jobs than large firms during recessionary periods (Wilmoth, 2022). Globally, SMEs represent about 90% of businesses and over 50% of employment (World Bank, 2023), creating the largest number of new jobs (Ayyagari et al., 2011). For these reasons, encouraging SME growth and ensuring that SMEs have adequate access to external finance represents a priority for policymakers in many countries.

Using country-year panel data for 2005-2011, Morgan and Pontines (2018) show that a higher proportion of SME loans in banks' lending portfolios improves financial stability by reducing the amount of non-performing loans and by lowering the probability of bank insolvency. The authors note that, even though SMEs are riskier than large firms on average, SMEs tend to have quasi-normal loss distributions rather than the fat tailed loss distributions specific to large corporations. This means that, in extreme events, SMEs prove less risky than large firms. Additionally, lending more to SMEs rather than to a few very large firms allows banks to better diversify their lending portfolios, reducing risk (Khan, 2011). Morgan and Pontines (2018) find that a higher percentage of SME borrowing in total borrowing leads to higher Z-scores for banks, meaning a lower probability of bank insolvency, as well as to a lower percentage of non-performing loans out of total loans.

Despite these benefits associated with SME borrowing, SMEs are generally less likely than large corporations to obtain loans (World Bank, 2023). During unfavorable economic conditions, such as the 2008 financial crisis, SMEs have become more financially constrained than large corporations (Artola and Genre, 2011; Holton et al., 2014). More recently, spikes in uncertainty during Brexit and the US-China trade conflict led IMF researchers to identify uncertainty as the theme of the recent period (Ahir et al., 2022), which culminated with record high uncertainty induced by the Coronavirus pandemic. This paper aims to shed light on the effect of macroeconomic uncertainty, measured by the World Uncertainty Index (WUI), on the proportion of small and medium enterprise (SME) loans in total loans from commercial banks. During periods of higher macroeconomic uncertainty, a higher proportion of SME loans could help offset the negative effects of uncertainty on financial sector stability due to the positive impact on banking sector stability of a higher proportion of SME loans in total loans as shown by Morgan and Pontines (2018). On the other hand, a falling percentage of SME loans in total loans would deepen the negative impacts that periods of high uncertainty have on financial sector stability, or act as a channel through which general macroeconomic uncertainty affects financial sector stability.

Rather than investigating the effects of macroeconomic uncertainty on the percentage of SME borrowing in total borrowing, prior studies have focused on the influence of banking sector characteristics, such as banks' ownership structure and size, as well as on the effect of the institutional environment on the composition of banks' lending portfolios. For a sample of bank level data in 20 European transition countries, De Haas et. al. (2010) find that foreign banks have a higher focus on mortgage lending and a lower focus on large firm lending than domestic banks, but bank ownership structure has no impact on the proportion of SME loans in total loans. In

Eastern Europe, foreign banks brought their mortgage lending technologies to transition countries, and domestic banks had difficulty competing with these technologies. A higher quality of collateral related laws also mainly favored mortgage lending, since this type of lending is heavily based on collateral. De Haas et al. (2010) also find that small banks lend a higher percentage of their loans to SMEs, while large banks lend a higher percentage of their total loans to large firms. This is likely because large banks usually employ hard information lending technologies that are more readily available from large firms than from small firms, while small banks focus on relationship lending more suitable with small firms. Haselman and Watchel (2007) find that a better legal environment makes it more likely for banks to accept collateral and is associated with a higher proportion of SME and mortgage loans in banks' lending portfolios. A better legal environment ensures banks' effective access to collateral in case of default and makes it more likely for banks to offer loans to more informationally opaque agents like SMEs and households.

Additionally, previous literature focused on the determinants of SME versus large firm borrowing. There are studies focused on the demand and supply side factors that influence the amount of small versus large firms' ability to borrow. In my study on the impact of uncertainty, I consider both demand and supply side factors.

As far as the demand, or firm characteristics side is concerned, previous literature documents disadvantages of small firms relative to large corporations in terms of firms' ability to access external finance. On average, SMEs are found to be riskier than large firms (Dietsch and Petey, 2009). Banks view large corporations as safer borrowers because large firms have more assets that can serve as collateral and be sold if necessary. Large firms face lower transaction

costs and lower risk premia than small firms due to large firms' higher revenue and more consistent revenue streams relative to small firms (Hennessy and Whited, 2007; Beck and Demirguc-Kunt, 2006). Small firms also tend to be more informationally opaque than large firms (Beck and Demirguc-Kunt, 2006; Berger and Udell, 1995; Ekpu, 2016). Large firms often have a longer-established reputation, as well as better record keeping of quantitative information, such as financial statements and credit scores, relative to small firms, which gives large firms a borrowing advantage over small firms, especially when applying to centralized, large banks (Berger and Black, 2011; Stein, 2002; Canales and Nanda, 2012; Cole, 2004). Large firms have better options than small firms to respond to volatile market conditions due to large firms' economies of scope. Despite these disadvantages faced by SMEs in obtaining loans from commercial banks compared to large firms, studies show that banks have a preference for lending to small firms if the small firms belong to the high-tech sector, or are considered super-growth firms (Ekpu, 2016).[6]

In terms of the role of the supply side, or banking sector characteristics, for SME borrowing, using bank loan data, Canales and Nanda (2012) find that decentralized banks, or banks with a flatter organizational structure, give larger loans to small firms based on soft information technologies as compared to centralized banks. Sapienza (2002) also finds that small firms are less likely to obtain loans from banks after mergers, leading to a more hierarchical organizational structure for banks than before the occurrence of these mergers. This is because decentralized bank employees have the ability to make loan related decisions locally, based on

[6] According to the 2007 Survey of SME finance by Cosh et al. (2008), a super growth firm is a firm that experiences consistent annual growth of at least 30%.

relationship lending, whereas in centralized banks, decision makers do not develop such close connections with their borrowers, and tend to rely heavily on hard information technologies such as financial statements and credit scores. The level of banking sector competition also has an important role for SME borrowing. Canales and Nanda (2012) find that, in concentrated markets where decentralized banks have market power, decentralized banks offer smaller loans to SMEs than centralized banks, acting as local monopolies, restricting credit supply and charging higher interest rates. This effect is stronger for decentralized banks than for centralized banks in a concentrated environment because of the limited financing options associated with small firms decentralized banks serve. They also find that decentralized banks have a preference for lending to larger firms in concentrated markets. Owen and Pereira (2018), on the other hand, find that a higher three bank asset concentration ratio, which represents the assets of the three largest commercial banks as a share of total commercial bank assets, leads to a higher total number of loan accounts. They argue that this effect is due to the economies of scope resulting from a larger market share for banks, enabling them to offer a wider variety of services, which leads to an increased number of bank accounts. Owen and Pereira (2018) note that the banking sector can remain competitive even if it only has a small number of large banks. If the level of competition is reduced, as reflected in high pricing compared to marginal cost, a higher three bank concentration ratio has detrimental effects on the total number of loan accounts. If prices are much higher compared to marginal costs, banks have less of an incentive to expand their services to new markets, resulting in a lower number of loan accounts. Similarly, using a cross country sample of firm level survey data, Love and Martínez Peria (2015) find that lower banking sector competition is associated with lower firm access to finance, regardless of firm size. They also

confirm the well-established finding that large firms have more access to external finance than small firms. Lastly, Berger and Black (2011) use loan level data to show that large banks have a comparative advantage in lending to both small and large firms, but they tend to use hard information technologies, such as fixed asset lending, when providing funds to small firms.

The focus of this paper is to investigate whether country level uncertainty has an impact on the amount that SMEs borrow as a percentage of total borrowing. I hold constant several supply side variables or banking sector characteristics that could affect the amount that SMEs borrow as a percentage of total borrowing. Thus, the impacts I find are likely due to responses on the demand side channel. Increased levels of uncertainty are concerning, since uncertainty can have detrimental effects on the economy, particularly through the financial sector channel. Uncertainty leads to higher interest rates, lower supply of credit, bank liquidity shortages, more loan defaulters and decreased financial stability (Bordo et al., 2016; Yung et al., 2019; Garcia-Kuhnert et el., 2015; Phan et al., 2021). Uncertainty takes many forms in the literature, as it could refer to macro level uncertainty such as GDP growth, as well as to micro-level uncertainty such as firm growth. To measure uncertainty, researchers have used volatility of important economic variables (Leahy and Whited 1996; Bloom 2009; Fernandez-Villaverde, 2011; Jurado, Ludvigson and Ng, 2013; and Ludvigson, Ma, and Ng, 2021), as well as variables based on newspaper word searches, such as the widely used Economic Policy Uncertainty Index (EPU) developed by Baker, Bloom and Davis (2016) to measure uncertainty related to economic policy development and implementation. However, these variables are only available for a limited set of developed countries. In this paper, I use the World Uncertainty Index (WUI), which is a word search based index created by Ahir et. al. (2022). The WUI has greater country and time coverage than EPU.

The WUI is also more suitable for cross-country comparison than the EPU because the WUI is based on only one source, the Economist Intelligence Unit (EIU), which covers the main economic, financial, and political events of each country. The EIU has a structure and writing process that are standardized across countries, while the EPU data is based on multiple newspapers, which may differ across countries.

Using a sample of 50 countries from 2005 to 2019 and country-year fixed effects regression analysis, I find that higher macroeconomic uncertainty as measured by the country level WUI lowers the share of SME loans in commercial banks' lending portfolios, with the strongest effect in the most economically developed countries. I hold constant several important supply side, or banking sector characteristics variables. Thus, I focus on the effect of macroeconomic uncertainty on SME borrowing as a share of total borrowing through the demand side, or firm characteristics channel. I further show that this finding likely arises due to SME borrowing falling relatively more than large firm and household borrowing fall during times of higher uncertainty, rather than due to a smaller relative increase in SME borrowing during periods with higher uncertainty. A lower share of SME borrowing in total borrowing associated with higher levels of uncertainty potentially deepens the negative impacts that periods of high uncertainty have on financial sector stability and may act as a channel through which general macroeconomic uncertainty affects financial sector stability. I provide evidence that the negative effect of the country level WUI on the SME share is driven by countries with higher level of macroeconomic instability. Lastly, because the country level WUI could capture credit risk, I consider an interest rate spread control as a proxy for overall default or credit risk of a country. After including the interest rate spread, the negative effect of WUI on the SME share still holds.

The rest of this paper is organized as follows. Section II explains how my analysis fits within related literature and develops the main hypothesis. Section III provides the methodology. Section IV describes the data. Section V presents the results. Section VI provides the robustness analysis, which considers the credit risk control, and Section VII concludes.

II. **Literature Review and Hypothesis Development**

The focus of this paper is to investigate whether country level uncertainty has an impact on the amount that SMEs borrow as a percentage of total borrowing. I hold constant several supply side or banking sector characteristics that could affect this ratio. Changes in the proportion of SME borrowing in total borrowing can reflect variations in SME, large firm, household borrowing, or total borrowing. In order to derive my hypothesis on the effect of country level uncertainty on the percentage of SME outstanding loans out of total outstanding loans, I examine the potential impact of uncertainty on each of these outstanding loan components, starting with the effect of uncertainty on overall firm borrowing.

Since firms primarily borrow to invest, a closely related strand of literature concerns the impact of uncertainty on firms' investment decisions. If firms primarily borrow to invest in physical capital, changes in their demand for loans would be mainly due to changes in investment decisions in response to uncertainty. In turn, those demand side changes in investment decisions can be due to changes in firms' willingness to borrow or to changes in firms' ability to secure loans due to firm characteristics. These effects can be difficult to distinguish from each other. Financial constraints can also arise due to supply side factors. Consequently, I control for banking sector characteristics to take account of the supply side impacts. The effect of country level

uncertainty on firm borrowing in general could be either positive or negative. Indeed, theoretical and empirical literature studying the impact of uncertainty on investment presents conflicting results in terms of the sign of this effect.

In the theoretical literature, conclusions about the impact of uncertainty on overall firm investment are highly dependent on assumptions regarding the shape of the cost and revenue functions, as well as the type of product market in which the firms operate. For instance, in terms of arguments regarding firm's preferences or willingness to invest, Hartman (1972), Pindyck (1982) and Abel (1983) derive a positive relationship between uncertainty and incentives to invest in physical capital, mainly attributable to the convexity of the revenue product of capital in output prices. On the other hand, arguments for an inverse relationship between investment and uncertainty involve the irreversibility of capital or the asymmetric adjustment cost of capital function. If it is very costly for firms to adjust investment downward if necessary, possibly because of highly specialized physical capital that is difficult to sell or repurpose, uncertainty about the economic environment would incentivize firms to wait for more information before increasing their demand for investment. Pindyck (1988) provides a theoretical model for this argument and suggests a negative relationship between investment and uncertainty. Caballero (1991) explains these differences in findings through the market structure and production function assumptions. He shows that, when there are asymmetric adjustment costs of capital, a positive uncertainty-investment relationship is more likely under perfect competition and increasing returns to scale, whereas a negative uncertainty-investment relationship is more likely when competition is imperfect and when there are decreasing returns to scale. Another argument for a negative relationship between uncertainty and investment is represented by risk

aversion. Risk averse firms decrease their investment in response to uncertainty (Zeira, 1990; Nakamura, 1999; Applebaum and Katz, 1986; Hartman, 1976; Gul, 1991; Aizenman and Marion, 1999). Moreover, firms invest less than the optimal level during periods of uncertainty due to financial constraints (Baum et al, 2010; Rashid and Jabeen, 2018).

As far as the empirical literature is concerned, the impact of uncertainty on investment for firms is not very clear, but, even though there are some studies that suggest a positive relationship, there is more consensus on a negative impact. This literature does not clearly disentangle the effects of changes in firms' willingness to borrow, or preferences related to investment, from financial constraints impacting the uncertainty-investment relationship. Regarding the evidence for a positive effect of uncertainty on investment, Abel (1983) found that risk neutral firms with convex adjustment cost curves invest more when output price uncertainty is higher. Nickelle (1977) found that the effect of uncertainty measured by changes in the structure of the tax system depend on risk preferences: risk loving firms invest more, while risk averse firms invest less in response to increases in uncertainty. There are numerous studies that reveal a negative relationship between uncertainty and investment. Goldberg (1993) and Campa and Goldberg (1995) find a negative effect of exchange rate volatility on investment for US industries. Episcopos (1995) finds a negative impact of several uncertainty variables (related to the GDP deflator, the growth rate of real interest rate, personal consumption, and a stock price index) on fixed (irreversible) investment. Von Kalckreuth (2001) reveals a negative impact of sales and firm costs uncertainty measures on investment for German firms from 1987-1997. Beaudry et al (2001) show that macroeconomic uncertainty measured by inflation volatility reduces firms' investment in the United Kingdom. Rashid et al. (2021) also find a negative uncertainty-

investment relationship for Pakistani firms. They find that the impact of firm specific uncertainty is less detrimental than macro level and political uncertainty for all types of firms. Focusing on firm characteristics, Minton and Schrand (1999) provide evidence for cash flow volatility reducing investment in capital, advertising and R&D.

Differentiating the effect of uncertainty on SME investment from the effect of uncertainty on large firm investment is an important component for determining the impact of uncertainty on the ratio of SME borrowing in total borrowing, which is the focus of this paper. In terms of the firm characteristics channel, large firms are better able to respond to risk and uncertainty than SMEs due to large firms' having the option to use their large cash flows or retained earnings, which makes SMEs riskier on average. Theoretical literature suggests that the negative impact of uncertainty on investment is stronger for small firms than for large firms. The impact of asymmetric adjustment costs of capital, with downward adjustments being relatively more costly than upward adjustments, could be more severe for SMEs than for large firms. This is because, compared to large corporations, small firms are less able to use specialized physical capital as a substitute in production, due to less product variety offered, making it more difficult to repurpose physical capital, and thus more costly to adjust physical capital downwards than for large firms (Rashid et al, 2021). Consequently, SME's demand for investment could be more severely impacted in a negative direction by uncertainty than large firms. In terms of financial constraints due to firm risk factors, theoretical literature suggests that firm high cash flow volatility and shortfalls make accessing external finance more difficult or costly for small firms, which results in lower investment levels (Minton and Schrand, 1999; Myers and Majluf, 1984.) In times of uncertainty, the information asymmetries between borrowers and lenders are exacerbated

(Greenwald and Stiglitz, 1990), making it more difficult especially for small firms to obtain loans from commercial banks (Kumar et al, 1999; Love, 2003).

Empirical literature on the effects of uncertainty on SME investment relative to large firm investment also suggests a larger negative impact of uncertainty on small firm investment relative to large firm investment. For instance, in a sample of Japanese firms, Shima (2016) finds that high industry concentration (a high market share of firms) ameliorates the negative impact of uncertainty on investment, meaning that large firms' investment levels suffer less from the negative effects of uncertainty. Rashid et al. (2021) argue that large firms' cash flows and profits are less impacted by uncertainty due to large firm's higher hedging opportunities; large corporations are better able than small firms to diversify their sales across different types of buyers, including more access to international markets. Indeed, they find that, while investment in Pakistan decreases for all firms when uncertainty is higher, small firms are more severely affected. Kang et al. (2014) find that the effect of economic policy uncertainty interacted with firm level uncertainty measured by stock price volatility is negative and significant in their whole sample of 2,700 U.S. firms of various sizes in the manufacturing sector from 1985 to 2010. However, Kang et al (2014) find that this effect disappears for the largest firms (top 20% in terms of real total assets) in their sample, meaning that policy uncertainty does not have an impact on very large firms. Gousal and Loungani (2000) show that the negative investment-profit uncertainty relationship is more pronounced in industries dominated by small firms than by big firms, and argue their result most likely arises due to the financial constraints rather than to firms' investment preferences motive. Gousal and Loungani (2000) suggest that these increased financial constraints for SMEs relative to large firms are likely due to the larger increase in

informational asymmetries associated with small firms relative to large corporations during periods of higher profit uncertainty. Indeed, there is extensive empirical literature providing evidence that small firms are more severely financially constrained than large corporations during unfavorable economic times. For instance, Artola and Genre (2011) and Holton et al. (2014) show that European SMEs suffered more severe financial constraints than other firms during the 2008 financial crisis.

Uncertainty may also impact household borrowing, which is a component of total borrowing. Individuals tend to engage in precautionary saving, thus reducing borrowing, in response to income fluctuations (Zeldes, 1989; Carroll and Samwick, 1998). Using Norwegian bank-level data, Juelsrud and Larsen (2022) find that macroeconomic uncertainty in general and monetary policy uncertainty in particular have no effect on household loans, but reduce corporate loans. Rubaszek and Serwa (2014) show that the impact of income uncertainty on household borrowing is negative but small.

In general, the bulk of previous literature shows that SME, large firm, and household borrowing are all negatively affected by increases in uncertainty. There appears to be a stronger negative effect for SMEs through the investment channel than for large corporations and households. This leads me to my main hypothesis:

Higher country level uncertainty leads to a decrease in SME outstanding loans as a percentage of total outstanding loans, such that loans to SMEs decline more than loans to large corporations and households decline.

III. **Methodology**

In order to investigate the demand side effect of country level uncertainty on the proportion of SME outstanding loans in banks' lending portfolios, I estimate several fixed effects regressions with varying controls. The following model is the base specification:

$$SME\ share_{i,t} = \beta_1 WUI\ country\ level\ uncertainty_{i,t} + \beta_2 bank\ overhead\ costs_{i,t} + \beta_3 bank\ concentration\ ratio_{i,t} + \beta_4 financial\ openness_{i,t} + \beta_5 financial\ development_{i,t} + \beta_6 economic\ development_{i,t} + \delta_i + \gamma_t + \varepsilon_{i,t}$$

Equation 2.1

where the dependent variable is SME share, defined as SME outstanding loans as a percentage of total outstanding loans with commercial banks. The main variable of interest is country level macroeconomic uncertainty measured using the country level World Uncertainty Index (WUI). The base control variables consist of bank overhead costs as a percentage of total assets, the three bank asset concentration ratio, financial openness, the level of financial development, and the level of economic development. I also include country and time fixed effects denoted as δ_i and γ_t.

According to the main hypothesis, I expect the coefficient $\beta_1$on country level uncertainty to be negative. During times of higher uncertainty, I expect SME borrowing to be more severely affected relative to large firms and households. SMEs would reduce their investment and thus borrow relatively less than large firms in response to uncertainty for two demand side reasons: more stringent financial constraints arising from firm characteristics and reduced willingness to invest. First, because of the high cash flow volatility SMEs encounter during uncertain times,

resulting from less effective hedging opportunities (Rashid et al, 2021), SMEs face more severe financial constraints than large firms (Gousal and Loungani, 2000; Artola and Genre, 2011 and Holton et al, 2014). Second, due to a larger degree of investment irreversibility attributable to a more limited ability to redirect physical capital to more efficient uses during periods of uncertainty, SMEs would likely prefer to wait for better information before committing to borrow to invest in physical capital. Therefore, SME borrowing is expected to decrease relatively more than large firm borrowing in response to uncertainty. Thus, the share of SME outstanding loans in total outstanding loans would decrease, given that the household borrowing response is expected to be limited. I explore further the individual categories in Section V C, but focus here on the relative shares.

I include several supply side country level variables commonly used in the literature on factors that impact bank loans, utilizing especially those from studies focusing on the effect of macroeconomic uncertainty on bank lending. Bank overhead costs as a ratio of total assets was a significant control in Ozili (2021) who studied the impact of EPU on bank account ownership. The three bank asset concentration ratio is commonly used as a measure of bank sector competition in the literature on bank loans (Canales and Nanda, 2012). Private credit to GDP as a measure of financial development and GDP per capita as a measure of economic development are also common variables used to control for country level heterogeneity in the literature on bank lending (Ozili, 2021; Owen and Pereira, 2018; Haselman and Watchel, 2007). Another supply side variable that was found to impact small versus large firm loans, and thus could have an effect on SME borrowing as a percentage of total borrowing, is the level of bank centralization. Centralized, or more hierarchical banks, are found to lend relatively less to SMEs than

decentralized banks, as decentralized banks managers have the ability to develop relationships with SMEs and make loan decisions locally, without having to communicate difficult to transmit soft information to superiors (Canales and Nanda, 2012; Berger and Black, 2011; Stein, 2002). To measure the degree of bank centralization, researchers have used bank size as a proxy, as well as bank level interviews with banks in a single country. The effect of bank centralization is partially captured by the bank asset concentration ratio to the extent that a higher bank asset concentration ratio is associated with more mergers, leading to a more hierarchical bank structure.[7] In my model, I use country fixed effects to control for country level heterogeneity of such variables that are only available at firm level for a limited number of countries. I explain each control variable and the expected coefficient sign in detail further below, starting with bank overhead costs.

Bank overhead costs, which refer to a banks' operating expenses, can affect banks' lending decisions. Ceteris paribus, the higher a commercial bank's overhead costs are, the higher the reduction in profit (Perera et al, 2007; Camanho and Dyson, 2005), and this incentivizes banks to take measures aimed at reducing costs. The effect on the share of SME borrowing depends on whether lending to SMEs is relatively less costly or relatively more costly. On the one hand, SMEs tend to be more informationally opaque than large firms (Berger and Udell, 1995; Ekpu, 2016), and the acquisition of soft information for SME risk evaluation can be very costly for banks. Thus,

[7] For literature on the effect of mergers on small firm lending, see Sapienza (2002), Peek and Rosengren (1996), Berger, Saunders, Scalise, and Udell (1998), Berger, Goldberg, and White (2001), Whalen (1995), Strahan and Weston (1996), (1998). For instance, Sapienza (2002) shows that small firms have a lower probability of borrowing from banks after those banks merged than small firms borrowing from banks that have not merged, due to an increased hierarchical structure associated with banks following merging.

banks with higher overhead costs could increase their requirements for SME loans in order to transfer part or all of the costs related to asymmetric information to these firms, demanding collateral, for example, that leads to less SME borrowing relative to total borrowing. On the other hand, lending to SMEs can be relatively less expensive for banks. Adasme et al (2016) show that large borrowers tend to have fat tailed loss distributions, meaning there is a small probability of very large losses requiring costly "information intensive technologies," while small borrowers tend to have quasi-normal loss distributions, which means that very large losses are less of a concern, so banks can use more cost effective, automated screening technologies. High bank overhead costs are likely to negatively affect household borrowing, as well. Ozili (2021) shows evidence that high bank overhead costs are associated with fewer ATMs, a decrease in credit card usage and to a reduction in formal account ownership.

Another control I use is the three bank asset concentration ratio, which represents the share of assets of the three largest commercial banks in total commercial bank assets. There are arguments for either a negative or a positive coefficient on this term. The three bank asset concentration ratio can be thought of as a measure of competition in the banking sector, with higher concentration corresponding to less competition, or more market power. In terms of the rationale for positive effects, according to the information hypothesis, all else equal, banks operating in less competitive markets have more of an incentive to focus on relationship lending and invest in soft information collection. This investment would diminish the informational opacity, which is particularly problematic for SMEs. In accordance with this hypothesis, Fungáčová et al (2017) find that less banking sector competition is associated with a lower cost of credit, with a stronger effect for small firms than for large firms. Less banking sector

competition is relatively more beneficial for SMEs not only due to a decrease in the cost of credit, which is relatively more pronounced for small firms than for large firms (Fungáčová et al, 2017), but also due to increased access to credit due to banks' incentives to invest in overcoming the opacity problem associated with SMEs. Therefore, according to the information hypothesis, I expect a positive relationship between the three bank asset concentration ratio and SME outstanding loans as a percentage of total outstanding loans. There is further support for this relationship in the literature. Researchers argue that banks with a larger share of assets benefit from economies of scale and scope, which allows them to expand their services to a wider variety of clients and markets, making them more financially inclusive (Owen and Pereira, 2018). This allows for better hedging opportunities and greater lending diversification for commercial banks, which could translate into a higher share of SME loans in banks' portfolios if the impact on the household sector is insignificant. In terms of the negative effects of the bank concentration ratio on the SME share, if the beneficial effects of economies of scale and scope extend to households, a considerable increase in household outstanding loans in the denominator could offset the increase in the amount of SME outstanding loans in the numerator, and lead to a negative impact of three bank asset concentration on the SME share. Canales and Nanda (2012) use the local bank concentration ratio as a measure of market power and show that, for firms in Mexico, the size of credit to SMEs decreases in response to higher market power. This effect could also lead to a decrease in SME borrowing as a percentage of total borrowing.

Financial openness, which I measure using both the Chinn-Ito de jure index and the Lane and Milesi-Ferretti de facto indicator, could also have a positive impact on the SME share. This effect would operate through the economies of scale and scope channels, which would widen

the variety of financial services offered and reduce their price, respectively, thus increasing SMEs outstanding loans relatively more than large firm loans. Banks that operate under high levels of financial openness could be more worried about contagion and would diversify their lending portfolio more, increasing SME lending. I anticipate the financial openness effect to be positive for both the de jure and de facto indicators, but I expect that the impact will be more pronounced for the de facto index compared to the de jure measure. This is because the LMF reflects the actual cross-border capital movements influenced by a diverse range of factors, including tax policies, geographical position, and political affiliations, rather than reflecting solely the impact of changes in de jure regulations associated with the transfer of capital across borders. A country may have less stringent capital control regulations, resulting in more de jure financial openness as measured by KAOPEN, but no tangible effects as measured the LMF index. Agents could anticipate negligible alterations in capital flows due to the implementation of more lenient regulations pertaining to cross-border movement of capital, so their behavior will not change. To the extent that this positive effect of financial openness is not offset by an increase in household outstanding loans in the denominator, I expect a positive coefficient for financial openness on the percentage of SME outstanding loans out of total outstanding loans.

I also control for domestic financial development, which I measure by private credit as a percentage of GDP. I anticipate more credit to the private sector to be associated with better firm performance, which would lead to higher bank profits, which would further enable banks to offer a wider variety of services. To the extent that these additional services would better accommodate SME's financial needs, an increase in financial development would lead to a higher SME share. Fungáčová et al (2017) find that financial development strengthens the effects of low

banking sector competition on lowering the cost of credit. They argue that financial development further incentivizes banks to focus on relationship lending, benefiting from economies of scale.

Lastly, I control for the level of domestic economic development or country size using real GDP per capita. All else equal, a more economically developed country would have less risky SMEs on average and better SMEs opportunities to grow and access financial services. For instance, Beck et al. (2004) finds that economic development reduces the financial constraints exacerbated by high bank sector concentration. Fungáčová et al (2017) mention that financial and economic development correspond to lower informational asymmetry issues, which could be due to higher quality of bank employees and risk assessment tools implemented in these countries. They find that economic development diminishes the beneficial effect of low competition for SME borrowing. The sign on the coefficient for economic development depends on whether these positive effects apply more to SME loans than to household loans. If impacts are greater on small firms than on households, I expect a positive relationship between GDP per capita and SME borrowing as a percentage of total borrowing.

IV. **Data**

The main specification involves a panel of 50 countries from 2005-2019.[8] Data on the amount of SME outstanding loans, the amount of household loans and the amount of total loans, as well as data on SME, household and total loans as a percentage of GDP come from the International Monetary Fund's Financial Access Survey, which is a database that uses commercial

[8] For a list of countries for the main sample including 50 countries, along with summary statistics by country, see Table 2.27 in the Appendix.

bank and other financial institutions' administrative data to assess financial access and use. It covers 189 countries over 15 years. The SME share is calculated as the amount of resident SME outstanding loans divided by the total amount of outstanding loans, both measured in domestic currency. Total outstanding loans include loans with commercial banks pertaining to resident public and private nonfinancial firms (SMEs and large firms), as well as households. Table 2.1 presents summary statistics for the sample of 50 countries from 2005-2019. On average, around 24% of total outstanding loans are borrowed by SMEs, but cross country variation is high, with values ranging from approximately 0.09% to around 89%. Total outstanding loans and SME outstanding loans are measured in local currency, so the standard deviation for each of these two variables is large.

To measure country-level uncertainty, I use the country level World Uncertainty Index (WUI). The country level WUI is constructed by Ahir et al. (2022) by text mining the ratio in total words of the word "uncertain" and its variations, "uncertainty" and "uncertainties," in country reports of the Economist Intelligence Unit (EIU). The EIU country reports analyze the key economic, financial, and political trends of a country, covering topics such as politics, economic policies, the local economy and its political and economic foreign relationships, with a focus on how these factors influence country risk. Ahir et al.'s (2022) WUI constitutes an improvement over the previously widely used EPU index constructed by Baker, Bloom and Davis (2016) for several reasons. First, the WUI is better for cross-country comparison, because it is based on a common source, the EIU, with a standardized protocol and format, while the EPU is based on a wider variety of sources, which differ across countries. Second, the WUI has wider country coverage than EPU. WUI includes data from 1950 to current year for 143 countries in Africa, Asia

and the Pacific, Europe, Middle East and Central Asia, as well as Western Hemisphere, with different levels of economic development, while the EPU only covers data from 1997 to current year for a set of 28 advanced economies.[9] Third, while Ahir et al. (2022) show a positive correlation of approximately 0.7 between WUI and EPU, they argue that the country level WUI is more country specific compared to the EPU index, which is more global, since the newspaper sources EPU is based on also cover worldwide events.

A higher WUI is associated with higher uncertainty. For example, a WUI of 0.2 translates to 0.2 "uncertainty" words per thousand words, or 0.02 percent of the words in the report are "uncertainty" words. Given that, on average, an EIU report has 10,000 words, a WUI index of 0.2 translates to 2 "uncertainty" words per report. The WUI is reported as quarterly data by utilizing one country report per observation, given that there is one EIU country report released per quarter. I take the yearly average to match the yearly data for the other variables in my analysis. As shown in Table 2.1, the country level WUI in my sample has a mean of around 0.2, or an occurrence of about 2 "uncertainty" words per report, ranging from 0 to 1.2, or approximately 12 "uncertainty" words per report.

Table 2.1 also shows summary statistics for the global level WUI, which is constructed by taking GDP-weighted averages across all 141 countries in the WUI dataset for each quarter, which I then average across quarters to obtain yearly values. The global level WUI mean of about 2 "uncertainty" words per EIU report is very close to the mean for the country level WUI in my

[9] Robustness checks using EPU showed that EPU was unusable for my analysis in conjunction with data availability for the SME loan data due the small resulting sample size.

sample of 50 countries ranging from 2005 to 2019. However, the standard deviation of the global WUI is lower than the standard deviation for country level WUI. Figure 1 shows the global WUI over time. Recent years have been characterized by higher levels of uncertainty, above the 1996-2010 average represented by the red horizontal line. Worldwide, peak levels of uncertainty occurred during the European sovereign debt crisis in 2012, Brexit and US elections in 2016, during the US-China trade tensions in 2019 and the Coronavirus pandemic in 2020.

Data for a number of the control variables, including bank overhead costs as a percentage of total assets, private credit as a percentage of GDP and the three bank asset concentration ratio, are extracted from the World Bank's Global Financial Development database. To measure financial openness, I use both the KAOPEN index developed by Chinn and Ito (2006), and the Lane and Milesi-Ferretti (2018) de facto variable. KAOPEN, which is the de jure measure, is based on restrictions on cross-border capital movement found in the IMF's Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER), with higher values indicating more openness. LMF is the sum of external assets and liabilities over GDP, with higher values indicating a greater stock of international assets and liabilities and thus more openness. Per capita real GDP comes from the World Bank. Table 2.26 in the Appendix provides a list of variables, their definition, and their sources. Summary statistics in Table 2.1 show significant cross-country variation for the control variables. For instance, GDP per capita varies from about 293 to approximately 85,819 in constant 2015 dollars. On average, the three bank asset concentration ratio shows that the largest three commercial banks own 67% of total commercial bank assets, but, for some countries, the financial market is entirely dominated by the largest three banks, which own all of the commercial bank assets.

Table 2.2 presents the correlation matrix for the main specification of 50 countries from 2005 to 2019. There is a high correlation between total outstanding loans and SME outstanding loans. The correlation between country level WUI and each of the loan related variables: total outstanding loans, SME outstanding loans, and SME share is negative, suggesting an inverse relationship between uncertainty and lending. In terms of the controls, there is a positive association between the level of domestic economic development as measured by GDP per capita and the level of capital account openness using KAOPEN and LMF, with correlations of 0.64 and 0.5. The de jure and the de facto measures of capital account openness are positively correlated (with a correlation of 0.36). KAOPEN is positively correlated with the share of SME borrowing, while LMF is negatively correlated with the share of SME borrowing.

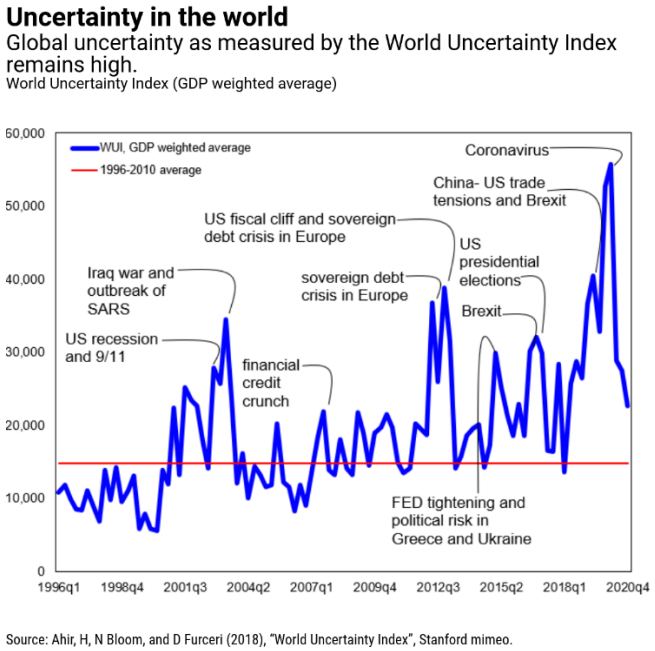

Figure 2.1: Global WUI

Note: For this figure, the global WUI index was rescaled by multiplying the per thousand WUI index by 100,000.

Table 2.1: Summary Statistics

	Total Outstanding Loans	SME Outstanding Loans	SME Share (%)	WUI Global	WUI Country	LN(Private Credit/GDP)	LN(GDP/ capita)	Bank Overhead Costs to Total Assets(%)	Three Bank Asset Concentration	KAOPEN	LMF
Obs	560.00	560.00	560.00	560.00	560.00	560.00	560.00	560.00	560.00	560.00	560.00
Mean	112,000,000.00	29,600,000.00	23.96	0.22	0.21	3.75	8.66	3.58	66.96	0.57	283.41
Std. Dev.	559,000,000.00	137,000,000.00	14.84	0.07	0.17	0.78	1.31	4.45	19.83	1.57	527.19
Min	942.22	89.00	0.09	0.10	0.00	1.43	5.68	0.05	22.31	-1.92	36.12
Max	5,620,000,000.00	1,110,000,000.00	89.33	0.41	1.18	5.14	11.36	84.34	100.00	2.32	4,017.81

Note: Outstanding loans are expressed in millions of domestic currency. Real GDP per capita uses constant 2015 US dollars. Private credit to GDP is a percentage. WUI is measured as number of times the words "uncertain, "uncertainty," and "uncertainties" appear per thousand words. For example, a WUI of 0.2 translates to 0.2 "uncertainty" words per thousand words, or 0.02 percent of the words in the report are "uncertainty" words. Given that, on average, an EIU report has 10,000 words, a WUI index of 0.2 translates to 2 "uncertainty" words per report.

Table 2.2: Correlation Matrix

	Total Outstanding Loans	SME Outstanding Loans	SME Share (%)	WUI Global	WUI Country	LN(Private Credit/GDP)	LN(GDP /capita)	Bank Overhead Costs to Total Assets(%)	Three Bank Asset Concentration	KAOPEN	LMF
Total Outstanding Loans	1										
SME Outstanding Loans	0.9157	1									
SME Share (%)	0.0326	0.1409	1								
WUI Global	0.0653	0.0426	-0.0678	1							
WUI Country	-0.0718	-0.0788	-0.0166	0.205	1						
LN(Private Credit/GDP)	0.028	0.0551	-0.1049	0.1067	-0.0782	1					
LN(GDP/capita)	-0.0123	0.0185	-0.077	0.0763	0.1251	0.6463	1				
Bank Overhead Costs to Total Assets(%)	-0.0233	-0.0402	-0.0168	-0.0599	0.0658	-0.2729	-0.1745	1			
Three Bank Asset Concentration	-0.2502	-0.2251	-0.0054	0.0402	-0.0286	-0.0936	-0.0395	-0.1011	1		
KAOPEN	-0.0259	0.0182	0.0331	0.013	0.1456	0.3518	0.6405	-0.092	0.0647	1	
LMF	-0.066	-0.071	-0.0227	0.0511	0.1567	0.2878	0.4987	-0.1364	0.1776	0.3641	1

V. **Results**

A. Overall Effect of WUI on The SME Share

Table 2.3 presents 6 different specifications based on equation 2.1 and considers different sets of controls with a common sample for comparison. In each of the 6 specifications, country level WUI is negative and significant. Due to the relevance for the analysis of all controls shown in columns 5 and 6, which I discuss in the previous section, I consider regressions 5 and 6 the main specifications. Overall, a higher level of country level uncertainty, as measured by the frequency of the word "uncertain" and its variations in the EIU, leads to a decrease in the SME share, holding constant several important banking sector characteristics, or supply side variables. Using the values in Table 2.3 column 5, the coefficient of -4.65 for country level WUI indicates

that a 1 standard deviation increase in WUI (0.17) for a country at the mean WUI of 0.21 is associated with a 0.79 percentage point decrease in the SME share. A one unit increase in WUI, or an increase of one "uncertainty" word per thousand, is equivalent to approximately 10 additional "uncertainty" words per EUI report, given that the report has 10,000 words, on average. With a WUI coefficient of -4.65, this means that 10 additional "uncertainty" words per report are associated with a 4.65 percentage point decline in the SME share. In an extreme uncertainty event, the number of "uncertainty" words could increase by 10 words per report above the mean, as shown by the maximum value in the sample of approximately 12 "uncertainty" words per report, which is 10 words higher than the average of 2.[10] Thus, in extreme events, there is an important negative impact of uncertainty on the SME share, as the mean value for the main specification sample for the SME share is approximately 24% as show in Table 2.1. If 10 additional "uncertainty" words are associated with a 4.65 percentage point decline in the SME share, one additional "uncertainty" word per report above the mean of approximately 2 words per report corresponds to a 0.465 percentage point decline is the SME share. Higher macroeconomic uncertainty as measured by the country level WUI reduces the percentage of SME outstanding loans in total outstanding loans, which could have negative implications for SME profits, as well as for financial sector stability, as shown by Morgan and Pontines (2017).

[10] Note that the sample does not cover the 2020 Coronavirus pandemic, which is associated with record high levels of uncertainty.

The decline in the SME share of loans could be due to changes in the amount of SME loans, the amount of large corporation loans and/or the amount of household loans. Previous literature suggests the most likely case for the decline in this percentage is a bigger drop in SME outstanding loans relative to the sum of households' and large firms' outstanding loans in the face of uncertainty, rather than to a relatively smaller increase in SME outstanding loans. Literature covering the effect of uncertainty on household borrowing indicates a negative relationship: in response to income uncertainty, in particular, research suggests that households, especially the risk averse ones, engage in precautionary saving behaviors (Zeldes, 1989; Carroll and Samwick, 1998). Rubaszek and Serwa (2014) find evidence for a decrease in household borrowing associated with higher income uncertainty, although this effect is mild. Furthermore, considering the prevalent results in the related empirical literature, it is likely that SMEs and large firms both adjust their investment downward, with SMEs reducing their borrowing relatively more than large corporations during uncertain times. For instance, Gousal and Loungani (1999) found that the negative impact of uncertainty on investment was more pronounced in industries dominated by small firms than in those dominated by large firms. Shima (2016) showed that small firms' investment was more severely impacted by uncertainty in a negative direction than large firms' in a sample of Japanese firms. Rashid et al. (2021) found a similar effect for firms in Pakistan and argue that small firms' profits and cash flows are more severely affected by higher uncertainty than those of large firms due to large firms' better hedging opportunities arising from access to bigger and more diverse markets for their products and services. They argue this is why small firms are relatively more financially constrained when uncertainty is higher, which is a strongly supported finding in the literature.

In terms of demand side preferences, my results are consistent with the irreversibility of investment theory, which states that, when physical capital is more costly to adjust downward than upward due to it being highly specialized and difficult to resell or repurpose, firms have an incentive to reduce investment demand or at least wait for better information before investing in physical capital when uncertainty increases. This incentive to reduce investment demand or wait for more information is stronger for SMEs because of their increased difficulty to repurpose physical capital due to the smaller variety of products SMEs offer compared to large firms. Since I hold constant several main supply side, or banking sector characteristics variables, this change in the composition of loan portfolios for commercial banks in response to uncertainty likely arises through the firm characteristics, or demand channel, either due to financial constraints that occur because of firm characteristics or due to firms' preferences in changing their investment. While it is challenging to determine which of these two effects dominates, in Section V C I examine the amount of each type of loan outstanding, which suggests that the decline in the percentage of SME borrowing in total borrowing in response to higher country level uncertainty is likely due to a bigger decrease in SME loans relative to total loans, rather than to a smaller increase in SME loans relative to large firm and household loans.

In terms of the effects of the control variables, bank overhead costs as a percentage of total assets enters with a positive and significant coefficient. A possible interpretation is that, as their expenses increase, commercial banks strive to diminish these costs by increasing lending to SMEs. According to Adasme et al (2016), it is less costly for banks to lend to SMEs because very high losses are less likely for small firms than for big firms, since SMEs tend to have a quasi-normal loss distribution as compared to fat tailed ones that are prevalent for large corporations. For this

reason, banks could use automated screening technologies for SMEs, which are relatively less costly than the more complex technologies banks would employ to evaluate large firms due to the relatively higher probability of very large losses for the latter. Additionally, since household loans are part of the denominator, a decrease in this variable could also contribute to a positive effect of bank overhead costs on the SME share. This could happen because, in response to higher operating costs, banks tend to decrease the availability of ATMs and possibly increase fees of credit card use, which could negatively affect household borrowing (Ozili, 2021). I find evidence that, faced with higher overhead costs, banks change their loan composition to the detriment of households and in favor of SMEs. These results are presented in Table 2.31 in the Appendix, which shows regression results for the effect of country level WUI on household outstanding loans as a percentage of total loans for the largest available common sample of 44 countries. The bank overhead costs variable enters with a negative and significant coefficient in regressions with household outstanding loans as a percentage of total outstanding loans. For the same sample of 44 countries, bank overhead cost has a positive and significant coefficient in regressions with the SME share as shown in Table 2.29 in the Appendix.

B. Effect of WUI on SME Share by Country Income Group

Since the samples contain a wide variety of countries in terms of their level of economic development, I further investigate whether country level uncertainty impacts the SME share in developed countries differently than less developed countries. I expect the negative impact of uncertainty on SME outstanding loans as a percentage of total outstanding loans to be higher in developing countries because of less developed domestic financial institutions and more fragile

financial systems, which could lead to relatively more financial constraints for SMEs. On average, SMEs are riskier in that they have a higher probability of default than large corporations (Morgan and Pontines, 2017) and, in times of uncertainty, commercial banks could be relatively more reluctant to lend to SMEs because they might be less equipped to adapt to changing economic conditions than large firms that sell a wider variety of products and services and can make quicker and more cost effective adjustments to diminish profit fluctuations. This reluctance of commercial banks to lend to SMEs in times of high uncertainty could be more pronounced in developing countries because those governments tend to provide less assistance to small firms than developed countries.

I use the World Bank's classification according to income levels, which divides countries into four income groups: high, upper-middle, lower-middle and low income countries. Regression results for different samples with countries grouped by income level from 2005-2019 are presented in Table 2.4: the main sample of 50 countries is split into four sub-samples: high (H), upper-middle (UM), lower-middle (LM) and low income (L). Table 2.4 presents evidence that the full sample results are driven by high-income countries, as the coefficient for country level WUI retains significance in the sample with high income countries only. For regressions in Table 2.5, countries were grouped by income levels into different samples: high (H); high and upper-middle (H & UM); lower-middle and low (LM & L); high, upper-middle and lower-middle (H, UM & LM); and low (L) income countries. Table 2.5 presents further evidence that the impact of country level WUI on the SME share is stronger for higher income countries. The strongest negative coefficient for WUI, both in terms of magnitude and significance, appears in the high income group sample: regressions 1 and 2 in Table 2.5. Eliminating the low income countries, thus keeping only the high,

upper and lower middle income groups (regressions 7 and 8), results in a negative and significant effect of country level uncertainty on the SME share, while in the sample consisting of low income countries only (regressions 9 and 10), this effect is no longer significant. Lastly, comparing the sample of high and upper-middle income countries (regressions 3 and 4) to the sample of lower-middle and low income countries (regressions 5 and 6), the former retains significance for the country level WUI variable, while the latter does not. It is possible that these results occur because of large differences in the percentage of SME outstanding loans across different income groups: there could be a threshold percentage of SME lending above which uncertainty starts to matter, and, in the case of developing economies, the percentage of SME outstanding loans out of total outstanding loans could be too small for banks to become concerned during uncertain times. Summary statistics for each sub-sample presented in Table 2.25 in the Appendix indicate this is less of a concern: the mean value for SME outstanding loans as a percentage of total outstanding loans is similar in high and low income countries: around 23% and 27%, respectively, with a standard deviation of approximately 12 in both high income and low income groups in the sample. Similarly, Table 2.25 in the Appendix shows that the mean of country level WUI is not very different across income groups, ranging from 0.18 for low-income countries to 0.22 for high-income countries. In terms of the control variables, the coefficient for bank overhead costs as a percentage of total assets is positive and significant in the upper-middle income countries, as shown in Table 2.4. While these income group results suggest that uncertainty is more important for the share of SME lending in the higher income countries, it is also important to note that the sample sizes for each of the sub-groups is much smaller, with higher standard errors on the coefficients.

Table 2.3: Full Sample Regressions

VARIABLES	*Dependent Variable: SME Share (%)*					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-4.426*	-4.447*	-4.467**	-4.609**	-4.651**	-4.524**
	(2.331)	(2.223)	(2.184)	(2.150)	(2.117)	(2.143)
LN(Private Credit/GDP)			-2.093	-1.710	-1.840	-1.676
			(2.794)	(2.777)	(2.930)	(2.737)
LN(GDP per Capita)		-0.968	0.036	0.359	0.244	0.265
		(10.387)	(9.920)	(9.852)	(9.945)	(9.853)
Bank Overhead Costs per Total Assets (%)			0.061	0.064*	0.068*	0.065*
			(0.038)	(0.037)	(0.036)	(0.037)
Three Bank Asset Concentration				0.053	0.052	0.053
				(0.036)	(0.035)	(0.036)
KAOPEN					0.497	
					(1.647)	
LMF						-0.003
						(0.005)
Observations	560	560	560	560	560	560
R-squared	0.055	0.055	0.062	0.070	0.071	0.071
AIC	3571.225	3573.137	3573.34	3570.218	3571.602	3571.876
BIC	3640.472	3646.712	3655.571	3656.777	3662.489	3662.763
Number of Countries	50	50	50	50	50	50

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Table 2.4: Regressions by Income Group: Specification 1

VARIABLES	*Dependent Variable: SME Share (%)*							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	High Income		Upper Middle Income		Lower Middle Income		Low Income	
WUI Country Level	-8.233**	-8.201**	-2.442	-2.733	-4.598	-3.919	3.271	3.062
	(3.412)	(3.491)	(2.659)	(2.637)	(5.617)	(6.333)	(5.269)	(5.658)
LN(Private Credit/GDP)	-2.070	-1.922	-1.366	0.320	-4.728	-5.773	-15.473	-17.225
	(2.605)	(2.649)	(3.697)	(3.196)	(4.622)	(5.968)	(13.534)	(11.430)
LN(GDP per Capita)	-17.115*	-16.054*	0.657	-2.022	17.623	16.565	41.989*	35.970
	(9.225)	(8.756)	(7.695)	(7.383)	(20.717)	(20.836)	(18.135)	(20.312)
Bank Overhead Costs per Total Assets (%)	0.512	0.502	0.078**	0.090**	-0.870	-0.876	-0.304	0.242
	(0.399)	(0.386)	(0.035)	(0.035)	(0.882)	(0.962)	(1.429)	(0.697)
Three Bank Asset Concentration	0.014	0.011	0.048	0.036	0.220*	0.222*	-0.206*	-0.211
	(0.030)	(0.029)	(0.031)	(0.025)	(0.107)	(0.106)	(0.095)	(0.137)
KAOPEN	-0.811		0.036		0.495		-5.808	
	(1.212)		(0.743)		(5.133)		(5.004)	
LMF		0.002		-0.034**		0.025		0.049
		(0.003)		(0.015)		(0.063)		(0.078)
Observations	162	162	187	187	140	140	71	71
R-squared	0.285	0.285	0.209	0.229	0.309	0.312	0.386	0.365
Number of Countries	16	16	16	16	12	12	6	6

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Note: Results are qualitatively similar in specifications without LN(GDP/capita), KAOPEN or LMF, or both. Results available upon request

Table 2.5: Regressions by Income Group: Specification 2

	Dependent Variable: SME Share (%)									
VARIABLES	High Income		High and Upper Middle Income		Lower Middle and Low Income		High, Upper Middle and Lower Middle Income		Low Income	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
WUI Country Level	-8.233**	-8.201**	-4.014*	-3.828*	-6.274	-6.008	-4.414**	-4.328**	3.271	3.062
	(3.412)	(3.491)	(2.075)	(2.015)	(4.909)	(5.164)	(2.008)	(2.138)	(5.269)	(5.658)
LN(Private Credit/GDP)	-2.070	-1.922	0.058	-0.013	-4.547	-4.522	-0.434	-0.312	-15.473	-17.225
	(2.605)	(2.649)	(2.021)	(2.020)	(5.010)	(5.291)	(2.490)	(2.287)	(13.534)	(11.430)
LN(GDP per Capita)	-17.115*	-16.054*	-3.371	-3.810	8.696	9.694	-2.974	-3.030	41.989*	35.970
	(9.225)	(8.756)	(4.764)	(4.546)	(19.584)	(18.438)	(10.061)	(10.116)	(18.135)	(20.312)
Bank Overhead Costs per Total Assets (%)	0.512	0.502	0.103***	0.103***	-0.206	-0.284	0.071*	0.068*	-0.304	0.242
	(0.399)	(0.386)	(0.027)	(0.028)	(0.859)	(0.803)	(0.036)	(0.038)	(1.429)	(0.697)
Three Bank Asset Concentration	0.014	0.011	0.028	0.028	0.098	0.098	0.075**	0.077**	-0.206*	-0.211
	(0.030)	(0.029)	(0.021)	(0.020)	(0.106)	(0.103)	(0.031)	(0.032)	(0.095)	(0.137)
KAOPEN	-0.811		0.067		0.850		0.450		-5.808	
	(1.212)		(0.438)		(4.622)		(1.716)		(5.004)	
LMF		0.002		-0.004		-0.000		-0.001		0.049
		(0.003)		(0.005)		(0.049)		(0.005)		(0.078)
Observations	162	162	349	349	211	211	489	489	71	71
R-squared	0.285	0.285	0.116	0.119	0.123	0.122	0.103	0.102	0.386	0.365
Number of Countries	16	16	32	32	18	18	44	44	6	6

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Note: Results are qualitatively similar in specifications without LN(GDP/capita), KAOPEN or LMF, or both. Results available upon request.

C. Effect of Country Level Uncertainty on Amounts of SME, Large Firm, and Household Outstanding Loans as a Percentage of GDP

The decline in the SME share in response to higher country level WUI could be due to changes in the amount of SME loans, the amount of large corporation loans, or the amount of household outstanding loans. According to previous literature, the most likely reason for the decrease in the SME share is a larger decrease in SME loans rather than a smaller increase in SME loans relative to large firms and household loans. In order to provide additional evidence, I analyze the effect of country level WUI on the amounts of SME, large firm, and household outstanding loans, each as a percentage of GDP. The large firm outstanding loan variables were calculated as a residual obtained by subtracting the sum of SME outstanding loans and household outstanding loans from the total. The resulting sample has 44 countries, which is lower than the 50 country sample in the main specifications. This is due to lower data availability for household outstanding loans, which reduced the sample size by 6 countries. For the small number of cases where the value for large firm outstanding loan variables was negative, I have interpolated the data by using the surrounding years to get an average large firm loan value.

Table 2.6 shows summary statistics for the amounts of SME, large firm and household loans as a percentage of GDP in the 44 country sample. On average, the largest amount of loans as a percentage of GDP is given to households, with a mean of approximately 23%, followed by large firms, with a mean of about 17%. SMEs receive the smallest amount of loans with a mean of approximately 11% of GDP. There is large cross-country variation for each type of loan. The standard deviation for SME loans as a percentage of GDP, for instance, is approximately 11, with values ranging from 0.17% to 66.8%.

Table 2.7 presents results for SME outstanding loans as a percentage of GDP, including all 6 specifications as in Table 2.3. This table shows that higher country level WUI leads to less SME outstanding loans as a percentage of GDP.[11] Higher uncertainty does not reduce or increase the amount of large firm loans or household loans. As shown in Tables 2.8 and 2.9, the coefficient on WUI is not significant for large firm loans and household loans as a percentage of GDP. These findings support the hypothesis that the fall in the SME share found in Section V A is likely due to a larger decrease in the amount of SME loans relative to large firms and households, rather than to a relatively smaller increase in the amount of SME loans. According to the results in Tables 2.7-2.9, country level macroeconomic uncertainty as measured by the WUI has a significant negative impact on the amount of SME loans, but uncertainty does not have a significant impact on the amount of large firm and household outstanding loans.

I provide further evidence that the results on the impact of country level WUI on SME borrowing are not due to sample differences between the 50 and the 44 country samples. The main result in Section V C of a negative impact of country level WUI on the amount of SME loans as a percentage of GDP in the 44 country sample also holds in the main 50 country sample, as shown in Table 2.28 in the Appendix. The main result in Section V A of a negative impact of country level WUI on the SME share also holds for the smaller sample of 44 countries used in

[11] The negative significance of the country level WUI on SME outstanding loans as a percentage of GDP also holds in the 50 country sample used in the main specifications. Results are provided in Table 2.28 in the Appendix.

Section V C, as shown in Table 2.29 in the Appendix. Data availability for households did not allow for large firm and household outstanding loan regressions for the 50-country sample.

In terms of the control variables, the level of domestic financial development measured by private credit to GDP is positive and significant for SME, large firm, household and total outstanding loans as a percentage of GDP. Increased lending to the private sector is associated with improved firm performance, resulting in higher profits for banks. This, in turn, would allow banks to expand their range of services, becoming more inclusive for SMEs and households and offering a wider variety of lending services to large firms. Private credit is positively associated with the amounts of SME, large firm and household loans, but not the SME share in Section V A. Bank overhead costs as a percentage of total assets retains positive significance for SME loans, which supports the hypothesis that, when confronted with increased overhead costs, banks offer more loans to SMEs in an effort to reduce costs, as SME screening technologies can be less costly due to a lower probability of very large losses compared to large corporations (Adasme et al, 2016). It may also be less costly to overcome the SME information asymmetry issues compared with households.

Table 2.6: Summary Statistics for Amounts of Loans per GDP (%)

Variable	SME Outstanding Loans per GDP (%)	Large Firm Outstanding Loans per GDP (%)	Household Outstanding Loans per GDP (%)	Total Outstanding Loans per GDP (%)
Obs	484.000	484.000	484.000	484.000
Mean	11.213	16.600	22.573	50.379
Std. Dev.	10.578	14.973	19.420	34.115
Min	0.166	0.000	0.739	3.006
Max	66.769	105.267	108.436	168.761

Table 2.7: SME Outstanding Loans as a percentage of GDP

VARIABLES	*Dependent Variable: SME Outstanding Loans per GDP (%)*					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-2.997*	-3.009*	-2.807***	-2.768***	-2.756***	-2.753***
	(1.712)	(1.763)	(1.026)	(0.993)	(0.990)	(0.971)
LN(Private Credit/GDP)			8.379***	8.264***	8.317***	8.271***
			(2.393)	(2.390)	(2.401)	(2.400)
LN(GDP/capita)		-0.802	-4.386	-4.302	-4.240	-4.313
		(6.168)	(5.451)	(5.451)	(5.408)	(5.470)
Bank Overhead Costs per Total Assets (%)			0.058***	0.057***	0.056***	0.058***
			(0.015)	(0.016)	(0.016)	(0.016)
Three Bank Asset Concentration				-0.016	-0.016	-0.016
				(0.013)	(0.013)	(0.013)
KAOPEN					-0.178	
					(0.398)	
LMF						-0.000
						(0.002)
Observations	484	484	484	484	484	484
R-squared	0.096	0.096	0.431	0.435	0.436	0.435
Number of Countries	44	44	44	44	44	44

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Note: Results for regressions excluding the GDP per capita control from these specifications are qualitatively similar. Results available upon request.

Table 2.8: Large Firm Outstanding Loans as a Percentage of GDP

VARIABLES	*Dependent Variable: Large Firm Outstanding Loans per GDP (%)*					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-0.053	0.054	0.279	0.274	0.322	0.253
	(1.865)	(1.929)	(1.225)	(1.219)	(1.225)	(1.291)
LN(Private Credit/GDP)			10.556***	10.572***	10.783***	10.562***
			(1.915)	(2.024)	(2.083)	(2.035)
LN(GDP/capita)		7.556	3.126	3.115	3.359	3.130
		(10.925)	(9.463)	(9.567)	(9.579)	(9.591)
Bank Overhead Costs per Total Assets (%)			0.031	0.031	0.027	0.031
			(0.039)	(0.040)	(0.038)	(0.040)
Three Bank Asset Concentration				0.002	0.005	0.002
				(0.028)	(0.028)	(0.028)
KAOPEN					-0.712	
					(0.760)	
LMF						0.001
						(0.006)
Observations	484	484	484	484	484	484
R-squared	0.022	0.033	0.175	0.175	0.178	0.175
Number of Countries	44	44	44	44	44	44

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Note: Results for regressions excluding the GDP per capita control from these specifications are qualitatively similar. Results available upon request.

Table 2.9: Household Outstanding Loans as a Percentage of GDP

VARIABLES	*Dependent Variable: Household Outstansing Loans per GDP (%)*					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-1.579	-1.570	-1.273	-1.201	-1.230	-1.439
	(3.396)	(3.503)	(1.935)	(1.896)	(1.912)	(1.718)
LN(Private Credit/GDP)			15.423***	15.213***	15.089***	15.099***
			(3.444)	(3.429)	(3.465)	(3.653)
LN(GDP/capita)		0.636	-5.735	-5.579	-5.723	-5.400
		(10.753)	(8.106)	(8.215)	(8.159)	(8.372)
Bank Overhead Costs per Total Assets (%)			-0.004	-0.005	-0.003	-0.007
			(0.033)	(0.033)	(0.031)	(0.032)
Three Bank Asset Concentration				-0.030	-0.031	-0.031
				(0.024)	(0.025)	(0.024)
KAOPEN					0.419	
					(0.872)	
LMF						0.008
						(0.010)
Observations	484	484	484	484	484	484
R-squared	0.197	0.198	0.554	0.558	0.559	0.564
Number of Countries	44	44	44	44	44	44

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Note: Results for regressions excluding the GDP per capita control from these specifications are qualitatively similar. Results available upon request.

Table 2.10: Total Outstanding Loans as a Percentage of GDP

VARIABLES	*Dependent Variable: Total Outstanding Loans per GDP (%)*					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-4.494	-4.388	-3.664	-3.557	-3.526	-3.801
	(6.218)	(6.537)	(2.804)	(2.754)	(2.759)	(2.472)
LN(Private Credit/GDP)			34.361***	34.049***	34.189***	33.933***
			(6.351)	(6.348)	(6.455)	(6.659)
LN(GDP/capita)		7.524	-6.863	-6.632	-6.469	-6.448
		(22.341)	(15.265)	(15.381)	(15.397)	(15.678)
Bank Overhead Costs per Total Assets (%)			0.086**	0.084*	0.081*	0.082*
			(0.043)	(0.043)	(0.043)	(0.043)
Three Bank Asset Concentration				-0.044	-0.042	-0.045
				(0.034)	(0.034)	(0.033)
KAOPEN					-0.473	
					(1.473)	
LMF						0.008
						(0.016)
Observations	484	484	484	484	484	484
R-squared	0.120	0.123	0.567	0.569	0.569	0.570
Number of Countries	44	44	44	44	44	44

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Note: Results for regressions excluding the GDP per capita control from these specifications are qualitatively similar. Results available upon request.

D. Effect of Country Level Uncertainty in Unstable versus Stable Countries

It is possible that in countries that experience high instability, loans are more responsive to changes in macroeconomic uncertainty than in countries that experience low instability. In countries that see large jumps in uncertainty from one year to the next, firms and households might be more reluctant to borrow, and financial institutions might be more reluctant to lend especially to small firms and households when macroeconomic uncertainty increases. This could be the case because agents have witnessed the destabilizing consequences of higher fluctuations in uncertainty more than those in countries with milder year-to-year changes in uncertainty, all else being equal. To test this rationale, I split the full sample into two groups: countries that experienced high year-to-year fluctuations in uncertainty, on average, and countries that experienced low year-to-year fluctuations in uncertainty, on average. The two sub-samples were obtained in the following manner. First, I calculate the squared year-to-year change in WUI, which measures the magnitude of the year-to-year fluctuations in uncertainty (either decreasing or increasing). Then, I calculate the mean value of the squared year-to-year change in WUI for each country, which is an overall measure of macroeconomic instability at the country level. I consider countries with a higher than the median value of the mean square change in WUI as countries experiencing high levels of instability, and I consider countries with a lower than the median value of the mean squared change in WUI as countries experiencing macroeconomic stability. Tables 2.11-2.15 present the results. As shown in Table 2.11, there is some evidence that the effect of the WUI on the SME share is stronger in countries experiencing high levels of

instability compared to the more stable countries.[12] Household outstanding loans as a percentage of GDP are also negatively affected by increases in the WUI in countries with high levels of instability, while there is no such effect in countries with low levels of instability, as presented in Table 2.14. Households in unstable countries could be relatively more cautious and save more rather than borrow when uncertainty is higher. The negative effect on total loans as a percentage of GDP in unstable countries seen in Table 2.15 is likely driven by the household decline in borrowing in response to higher levels of the WUI.

Table 2.11: SME Share by Country Instability Level

	Dependent Variable: SME Share (%)											
VARIABLES	Above Median Instability Level						Below Median Instability Level					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-3.973**	-2.997	-3.125*	-2.978*	-2.850*	-2.655*	-6.349	-4.705	-5.067	-5.469	-5.034	-5.758
	(1.748)	(1.779)	(1.667)	(1.598)	(1.599)	(1.452)	(7.345)	(5.328)	(5.210)	(5.041)	(4.906)	(4.694)
LN(Private Credit/GDP)			-0.859	-0.496	0.058	-0.506			-4.830	-4.685	-3.063	-4.976
			(1.857)	(1.671)	(1.645)	(1.579)			(5.596)	(5.579)	(5.547)	(5.450)
LN(GDP/capita)		-24.157**	-23.952**	-23.378**	-22.683**	-23.541**		8.304	11.006	11.044	9.692	11.619
		(9.273)	(9.018)	(8.929)	(8.267)	(8.577)		(13.586)	(12.191)	(12.145)	(11.899)	(12.236)
Bank Overhead Costs per Total Assets (%)			0.249	0.257	0.182	0.218			-0.010	-0.008	0.045	-0.012
			(0.313)	(0.321)	(0.302)	(0.311)			(0.060)	(0.058)	(0.061)	(0.059)
Three Bank Asset Concentration				0.044	0.050	0.046				0.025	0.027	0.022
				(0.037)	(0.037)	(0.037)				(0.049)	(0.042)	(0.048)
KAOPEN					-0.930						6.192	
					(0.573)						(6.591)	
LMF						-0.009						0.013
						(0.008)						(0.012)
Observations	274	274	274	274	274	274	286	286	286	286	286	286
R-squared	0.050	0.147	0.153	0.162	0.171	0.176	0.103	0.113	0.126	0.127	0.168	0.132
Number of Countries	25	25	25	25	25	25	25	25	25	25	25	25

Robust standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

[12] This finding also holds in the 44 country sample split by the level of country instability. Results available in Table 2.33 in the Appendix.

Table 2.12: SME Outstanding Loans as a Percentage of GDP by Country Instability Level

	Dependent Variable: SME Outstanding Loans per GDP (%)											
VARIABLES	Above Median Instability Level						Below Median Instability Level					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-2.348	-1.824	-1.733*	-1.766*	-1.603	-1.657	-4.261*	-3.096*	-2.702	-2.354	-2.332	-2.521*
	(2.050)	(1.473)	(1.003)	(1.004)	(1.032)	(0.984)	(2.078)	(1.712)	(1.612)	(1.580)	(1.576)	(1.312)
LN(Private Credit/GDP)			10.311***	10.244***	10.632***	10.222***			3.930*	3.890*	3.900*	3.615*
			(2.134)	(2.176)	(2.207)	(2.128)			(2.054)	(2.065)	(2.057)	(1.879)
LN(GDP/capita)		-15.985	-17.879**	-17.887**	-17.712**	-17.995**		7.227**	5.385*	5.514*	5.456*	5.738*
		(13.799)	(7.070)	(7.130)	(6.777)	(7.141)		(2.605)	(2.900)	(2.943)	(3.020)	(2.984)
Bank Overhead Costs per Total Assets (%)			-0.121	-0.126	-0.170	-0.141			0.045***	0.044***	0.045***	0.041***
			(0.135)	(0.142)	(0.137)	(0.138)			(0.012)	(0.012)	(0.012)	(0.011)
Three Bank Asset Concentration				-0.006	-0.000	-0.006				-0.019	-0.019	-0.020
				(0.023)	(0.023)	(0.024)				(0.016)	(0.016)	(0.016)
KAOPEN					-0.719						0.104	
					(0.481)						(0.352)	
LMF						-0.003**						0.008**
						(0.001)						(0.004)
Observations	241	241	241	241	241	241	243	243	243	243	243	243
R-squared	0.085	0.169	0.629	0.629	0.639	0.632	0.183	0.274	0.365	0.374	0.374	0.399
Number of Countries	22	22	22	22	22	22	22	22	22	22	22	22

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Table 2.13: Large Firm Outstanding Loans as a Percentage of GDP by Country Instability Level

	Dependent Variable: Large Firm Outstanding Loans per GDP (%)											
VARIABLES	Above Median Instability Level						Below Median Instability Level					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-0.613	-0.468	-0.609	-0.491	-0.451	-0.575	0.028	2.105	2.342	2.897	1.661	2.832
	(2.762)	(2.456)	(1.835)	(1.713)	(1.722)	(1.863)	(3.622)	(3.474)	(3.289)	(2.865)	(2.145)	(2.870)
LN(Private Credit/GDP)			13.135***	13.368***	13.464***	13.385***			5.944**	5.882**	5.354**	5.774**
			(2.233)	(2.507)	(2.583)	(2.511)			(2.576)	(2.545)	(2.137)	(2.472)
LN(GDP/capita)		-4.442	-6.928	-6.900	-6.857	-6.818		12.875	10.144	10.350	13.581	10.437
		(20.681)	(16.081)	(15.960)	(15.962)	(15.953)		(11.685)	(11.362)	(11.396)	(11.354)	(11.415)
Bank Overhead Costs per Total Assets (%)			0.588*	0.605*	0.594*	0.616*			-0.014	-0.015	-0.056	-0.016
			(0.313)	(0.339)	(0.333)	(0.338)			(0.026)	(0.027)	(0.034)	(0.026)
Three Bank Asset Concentration				0.023	0.024	0.022				-0.030	-0.038	-0.031
				(0.039)	(0.041)	(0.039)				(0.043)	(0.035)	(0.042)
KAOPEN					-0.177						-5.777*	
					(0.745)						(3.219)	
LMF						0.002						0.003
						(0.009)						(0.008)
Observations	241	241	241	241	241	241	243	243	243	243	243	243
R-squared	0.077	0.079	0.265	0.267	0.267	0.267	0.021	0.099	0.159	0.164	0.263	0.165
Number of Countries	22	22	22	22	22	22	22	22	22	22	22	22

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Table 2.14: Household Outstanding Loans as a Percentage of GDP by Country Instability Level

	Dependent Variable: Household Outstanding Loans per GDP (%)											
VARIABLES	Above Median Instability Level						Below Median Instability Level					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-3.320	-3.207	-2.989**	-3.284**	-3.360**	-3.369***	4.063	4.923	5.511	5.267	5.223	4.715
	(3.972)	(3.331)	(1.364)	(1.210)	(1.207)	(1.120)	(4.687)	(4.642)	(4.333)	(4.514)	(4.296)	(3.331)
LN(Private Credit/GDP)			18.243***	17.655***	17.475***	17.672***			9.866***	9.894***	9.875***	8.983***
			(3.687)	(3.780)	(3.925)	(3.777)			(2.835)	(2.807)	(2.744)	(2.270)
LN(GDP/capita)		-3.443	-6.778	-6.847	-6.928	-6.763		5.335	0.772	0.681	0.795	1.422
		(25.769)	(11.843)	(12.408)	(12.437)	(12.518)		(6.810)	(7.996)	(8.004)	(7.993)	(7.915)
Bank Overhead Costs per Total Assets (%)			-0.380	-0.424	-0.404	-0.412			0.022	0.022	0.021	0.012
			(0.383)	(0.368)	(0.342)	(0.358)			(0.030)	(0.030)	(0.024)	(0.029)
Three Bank Asset Concentration				-0.057	-0.060	-0.057				0.013	0.013	0.008
				(0.043)	(0.046)	(0.043)				(0.029)	(0.032)	(0.029)
KAOPEN					0.333						-0.204	
					(1.047)						(2.383)	
LMF						0.002						0.028**
						(0.009)						(0.011)
Observations	241	241	241	241	241	241	243	243	243	243	243	243
R-squared	0.149	0.151	0.662	0.672	0.673	0.673	0.378	0.389	0.520	0.521	0.521	0.584
Number of Countries	22	22	22	22	22	22	22	22	22	22	22	22

Robust standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table 2.15: Total Outstanding Loans as a Percentage of GDP by Country Instability Level

	Dependent Variable: Total Outstanding Loans per GDP (%)											
VARIABLES	Above Median Instability Level						Below Median Instability Level					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-6.101	-5.328	-5.166*	-5.378**	-5.251**	-5.437**	-0.122	3.985	5.205	5.865	4.609	5.080
	(8.097)	(6.515)	(2.562)	(2.402)	(2.398)	(2.421)	(7.448)	(7.476)	(6.639)	(6.738)	(5.888)	(5.260)
LN(Private Credit/GDP)			41.692***	41.269***	41.570***	41.281***			19.756***	19.682***	19.146***	18.386***
			(5.753)	(5.822)	(6.002)	(5.769)			(4.579)	(4.618)	(4.525)	(3.704)
LN(GDP/capita)		-23.549	-31.265	-31.315	-31.179	-31.256		25.468*	16.323	16.568	19.852	17.622
		(53.317)	(22.860)	(23.380)	(23.334)	(23.635)		(13.386)	(12.869)	(13.115)	(13.381)	(13.414)
Bank Overhead Costs per Total Assets (%)			0.101	0.070	0.036	0.078			0.053	0.052	0.010	0.037
			(0.540)	(0.533)	(0.537)	(0.526)			(0.046)	(0.046)	(0.049)	(0.042)
Three Bank Asset Concentration				-0.041	-0.036	-0.041				-0.036	-0.044	-0.043
				(0.071)	(0.074)	(0.071)				(0.042)	(0.045)	(0.038)
KAOPEN					-0.558						-5.872	
					(1.807)						(5.113)	
LMF						0.002						0.040**
						(0.015)						(0.019)
Observations	241	241	241	241	241	241	243	243	243	243	243	243
R-squared	0.112	0.126	0.680	0.682	0.682	0.682	0.210	0.307	0.500	0.503	0.535	0.550
Number of Countries	22	22	22	22	22	22	22	22	22	22	22	22

Robust standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

VI. **Robustness**

As the WUI could capture a country's default or credit risk, in this section I verify whether results are sensitive to the inclusion of a default or credit risk control. As a broad measure of overall financial stress, I consider an interest rate spread variable calculated as the difference between the country-specific real interest rate and the USA real interest rate as a proxy for a risk-free rate, using real interest rate data from the World Bank. Higher values of the interest rate spread thus indicate higher overall credit risk. Summary statistics in Table 2.16 show a mean

value of 3.22 for the interest rate spread, indicating the real interest rate is, on average, approximately 3.22 percentage points higher than the risk-free rate. The standard deviation for the interest spread of 8.47 is large. According to the correlation matrix presented in Table 2.17, the interest spread and the country level WUI have a small positive correlation at approximately 0.035, suggesting that the country level WUI is not likely to pick up the overall credit risk of a country. Results including the interest rate spread control are presented in Tables 2.18-2.24. Sample sizes are smaller than the ones in Section V due to real interest rate data availability. After considering the control for credit risk, results are qualitatively similar to the main results reported in Section V: WUI maintains its negative and significant impact on the SME share, as shown in Table 2.18.[13] Though with a less strong significance than in the previous section, results in Table 2.20 for regressions using different samples with countries grouped by income level still suggest that the negative effect of WUI on the SME share is stronger in higher income level countries compared to the lower income level countries. Table 2.20 shows that the WUI is negative and significant in the high and upper middle income countries, while WUI is not significant in the low and lower middle income countries. As before, eliminating only the countries belonging to the low income group leads to a negative and significant coefficient for WUI, while WUI is not significant in the low income sample. Results in Table 2.21 shows little effect of WUI on the SME outstanding loans as a percentage of GDP. The interest rate spread is not significant throughout. Overall, these results indicate that the main analysis presented in Section V on the effect of WUI

[13] The negative and significant effect on the WUI on the SME share also holds in the smaller, 34 country sample after including the interest rate spread. Results available in Table 2.37 in the Appendix.

on the SME share remains largely unaffected by the inclusion of the interest rate spread as a control for the overall level of financial stress.

Table 2.16: Summary Statistics Including the Interest Rate Spread

	Total Outstanding Loans	SME Outstanding Loans	SME Share (%)	WUI Global	WUI Country	Interest Rate Spread	LN(Private Credit/GDP)	LN(GDP/ capita)	Bank Overhead Costs to Total Assets (%)	Three Bank Asset Concentration	KAOPEN	LMF
Obs	427.00	427.00	427.00	427.00	427.00	427.00	427.00	427.00	427.00	427.00	427.00	427.00
Mean	146,000,000.00	38,700,000.00	24.82	0.22	0.20	3.22	3.69	8.43	3.86	65.68	0.43	182.94
Std. Dev.	636,000,000.00	155,000,000.00	15.98	0.07	0.16	8.47	0.76	1.22	4.97	20.61	1.54	197.57
Min	942.22	89.00	0.09	0.10	0.00	-16.13	1.43	5.68	0.05	22.31	-1.92	37.22
Max	5,620,000,000.00	1,110,000,000.00	89.33	0.41	0.95	50.28	5.14	11.36	84.34	100.00	2.32	1,333.29

Table 2.17: Correlation Matrix Including the Interest Rate Spread

	Total Outstanding Loans	SME Outstanding Loans	SME Share (%)	WUI Global	WUI Country	Interest Rate Spread	LN(Private Credit/GDP)	LN(GDP/ capita)	Bank Overhead Costs to Total Assets (%)	Three Bank Asset Concentration	KAOPEN	LMF
Total Outstanding Loans	1											
SME Outstanding Loans	0.9147	1										
SME Share (%)	0.0231	0.1378	1									
WUI Global	0.0845	0.0598	-0.0863	1								
WUI Country	-0.0763	-0.0834	0.0184	0.1462	1							
Interest Rate Spread	-0.0008	-0.0393	-0.0357	0.0699	0.0345	1						
LN(Private Credit/GDP)	0.0519	0.0865	-0.1131	0.107	-0.1093	-0.3212	1					
LN(GDP/capita)	0.0268	0.0693	-0.0618	0.0772	0.1024	-0.392	0.6263	1				
Bank Overhead Costs to Total Assets (%)	-0.0368	-0.0556	-0.0271	-0.065	0.0813	0.0319	-0.2168	-0.0876	1			
Three Bank Asset Concentration	-0.2626	-0.2343	-0.0287	0.0059	0.0047	0.2319	-0.1728	-0.1226	-0.0925	1		
KAOPEN	-0.009	0.0449	0.0571	0.0212	0.1954	-0.0594	0.2163	0.5714	-0.0101	0.0304	1	
LMF	-0.086	-0.0915	-0.0485	0.0469	0.1272	-0.1053	0.463	0.5726	-0.0952	0.1735	0.4425	1

Table 2.18: Full Sample Regressions with Interest Rate Spread

VARIABLES	*Dependent Variable: SME Share (%)*					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country	-6.469**	-6.368**	-5.555**	-5.530**	-5.622**	-5.698**
	(3.102)	(2.768)	(2.650)	(2.578)	(2.530)	(2.575)
Interest Rate Spread	-0.029	-0.026	-0.011	-0.010	-0.005	-0.011
	(0.147)	(0.155)	(0.146)	(0.145)	(0.138)	(0.145)
LN(Private Credit/GDP)			-4.739	-4.521	-4.805	-4.672
			(3.429)	(3.415)	(3.643)	(3.302)
LN(GDP/capita)		1.969	5.541	6.152	5.948	6.392
		(11.990)	(10.809)	(10.595)	(10.648)	(10.644)
Bank Overhead Costs per Total Assets (%)			0.015	0.022	0.026	0.020
			(0.040)	(0.038)	(0.036)	(0.039)
Three Bank Asset Concentration				0.054	0.050	0.054
				(0.038)	(0.036)	(0.038)
KAOPEN					0.937	
					(1.788)	
LMF						0.004
						(0.012)
Observations	427	427	427	427	427	427
R-squared	0.082	0.083	0.100	0.108	0.111	0.108
Number of Countries	36	36	36	36	36	36

Robust standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table 2.19: Regressions by Income Group with Interest Rate Spread: Specification 1

	Dependent Variable: SME Share (%)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	High Income		Upper Middle Income		Lower Middle Income		Low Income	
WUI Country	-6.828	-7.045	-3.204	-3.062	-9.987	-7.904	-3.175	-9.365
	(3.671)	(4.796)	(3.217)	(3.160)	(6.979)	(6.069)	(4.747)	(5.926)
Interest Rate Spread	0.037	0.046	0.145	0.155	-0.100	-0.143	0.043	-0.256
	(0.163)	(0.177)	(0.128)	(0.121)	(0.177)	(0.272)	(0.122)	(0.165)
LN(Private Credit/GDP)	-6.379*	-6.475**	-3.270	-2.340	-5.602	-6.823	-22.699**	-21.703**
	(2.716)	(2.510)	(3.982)	(3.123)	(6.822)	(8.036)	(7.703)	(4.735)
LN(GDP/capita)	0.100	0.244	0.552	-0.367	27.265	28.811	46.144*	33.688*
	(4.458)	(4.613)	(6.843)	(6.681)	(19.782)	(21.258)	(17.656)	(14.270)
Bank Overhead Costs per Total Assets (%)	0.548*	0.549*	0.066*	0.072*	-1.569	-1.645	1.455	1.304
	(0.281)	(0.272)	(0.037)	(0.034)	(0.898)	(0.991)	(1.433)	(0.987)
Three Bank Asset Concentration	0.018	0.018	0.021	0.021	0.160	0.169	-0.082	0.031
	(0.037)	(0.038)	(0.025)	(0.022)	(0.128)	(0.125)	(0.108)	(0.140)
KAOPEN	-0.068		0.410		2.496		-3.186	
	(0.892)		(0.673)		(5.767)		(6.153)	
LMF		0.001		-0.014		0.022		0.161*
		(0.006)		(0.025)		(0.070)		(0.066)
Observations	90	90	168	168	106	106	63	63
R-squared	0.462	0.462	0.223	0.222	0.423	0.414	0.436	0.479
Number of Countries	8	8	15	15	8	8	5	5

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Table 2.20: Regressions by Income Group with Interest Rate Spread: Specification 2

	Dependent Variable: SME Share (%)									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	High Income		High and Upper Middle Income		Lower Middle and Low Income		High, Upper Middle and Lower Middle Income		Low Income	
WUI Country	-6.828	-7.045	-4.317*	-3.981*	-11.431	-10.448	-5.546**	-5.708**	-3.175	-9.365
	(3.671)	(4.796)	(2.165)	(2.020)	(6.534)	(6.417)	(2.367)	(2.588)	(4.747)	(5.926)
Interest Rate Spread	0.037	0.046	0.053	0.048	0.050	0.014	-0.029	-0.034	0.043	-0.256
	(0.163)	(0.177)	(0.091)	(0.092)	(0.199)	(0.226)	(0.162)	(0.168)	(0.122)	(0.165)
LN(Private Credit/GDP)	-6.379*	-6.475**	-3.500	-3.156	-5.398	-6.272	-2.245	-2.215	-22.699**	-21.703**
	(2.716)	(2.510)	(2.257)	(2.353)	(5.134)	(5.330)	(3.272)	(2.856)	(7.703)	(4.735)
LN(GDP/capita)	0.100	0.244	2.026	0.744	10.617	11.487	3.115	3.603	46.144*	33.688*
	(4.458)	(4.613)	(4.225)	(4.181)	(20.263)	(20.141)	(10.504)	(10.839)	(17.656)	(14.270)
Bank Overhead Costs per Total Assets (%)	0.548*	0.549*	0.069***	0.070***	-0.437	-0.525	0.023	0.017	1.455	1.304
	(0.281)	(0.272)	(0.022)	(0.022)	(0.985)	(0.905)	(0.039)	(0.045)	(1.433)	(0.987)
Three Bank Asset Concentration	0.018	0.018	0.021	0.023	0.107	0.110	0.068**	0.073**	-0.082	0.031
	(0.037)	(0.038)	(0.017)	(0.016)	(0.115)	(0.119)	(0.031)	(0.034)	(0.108)	(0.140)
KAOPEN	-0.068		0.601		2.094		0.886		-3.186	
	(0.892)		(0.369)		(5.072)		(1.917)		(6.153)	
LMF		0.001		-0.006		0.025		0.007		0.161*
		(0.006)		(0.006)		(0.051)		(0.012)		(0.066)
Observations	90	90	258	258	169	169	364	364	63	63
R-squared	0.462	0.462	0.170	0.169	0.176	0.172	0.147	0.145	0.436	0.479
Number of Countries	8	8	23	23	13	13	31	31	5	5

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0

Table 2.21: SME Outstanding Loans as a Percentage of GDP Regressions with Interest Rate Spread

VARIABLES	*Dependent Variable: SME Outstanding Loans per GDP (%)*					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country	-1.138	-0.831	-1.404	-1.408	-1.407	-1.583*
	(1.120)	(0.986)	(0.844)	(0.837)	(0.836)	(0.801)
Interest Rate Spread	0.009	0.036	0.017	0.018	0.018	0.018
	(0.031)	(0.025)	(0.016)	(0.016)	(0.015)	(0.017)
LN(Private Credit/GDP)			3.627***	3.585***	3.598***	3.407***
			(1.217)	(1.224)	(1.208)	(1.190)
LN(GDP/capita)		7.067***	4.161	4.166	4.177	4.404
		(2.316)	(2.830)	(2.804)	(2.765)	(2.816)
Bank Overhead Costs per Total Assets (%)			0.044***	0.043***	0.043***	0.041***
			(0.008)	(0.008)	(0.009)	(0.008)
Three Bank Asset Concentration				-0.011	-0.011	-0.011
				(0.011)	(0.011)	(0.012)
KAOPEN					-0.033	
					(0.328)	
LMF						0.005*
						(0.003)
Observations	375	375	375	375	375	375
R-squared	0.152	0.228	0.334	0.337	0.337	0.344
Number of Countries	32	32	32	32	32	32

Robust standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table 2.22: Large Firm Outstanding Loans as a Percentage of GDP Regressions with Interest Rate Spread

VARIABLES	*Dependent Variable: Large Firm Outstanding Loans per GDP (%)*					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country	2.263	2.763	1.253	1.250	1.272	1.068
	(1.888)	(1.663)	(1.346)	(1.335)	(1.336)	(1.430)
Interest Rate Spread	0.124	0.168*	0.125	0.125	0.123	0.126
	(0.105)	(0.099)	(0.085)	(0.085)	(0.084)	(0.085)
LN(Private Credit/GDP)			8.760***	8.726***	8.958***	8.541***
			(2.583)	(2.645)	(2.699)	(2.728)
LN(GDP/capita)		11.497	4.649	4.653	4.851	4.901
		(12.593)	(12.606)	(12.621)	(12.629)	(12.784)
Bank Overhead Costs per Total Assets (%)			0.029	0.028	0.025	0.025
			(0.043)	(0.045)	(0.045)	(0.047)
Three Bank Asset Concentration				-0.009	-0.007	-0.009
				(0.031)	(0.032)	(0.031)
KAOPEN					-0.600	
					(0.802)	
LMF						0.005
						(0.008)
Observations	375	375	375	375	375	375
R-squared	0.044	0.067	0.136	0.136	0.138	0.137
Number of Countries	32	32	32	32	32	32

Robust standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table 2.23: Household Outstanding Loans as a Percentage of GDP Regressions with Interest Rate Spread

VARIABLES	*Dependent Variable: Household Outstanding Loans per GDP (%)*					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country	3.001	3.610	1.808	1.804	1.792	0.441
	(2.798)	(2.857)	(2.259)	(2.252)	(2.270)	(1.675)
Interest Rate Spread	-0.016	0.038	-0.012	-0.011	-0.010	-0.006
	(0.100)	(0.076)	(0.055)	(0.056)	(0.055)	(0.053)
LN(Private Credit/GDP)			10.141***	10.100***	9.967***	8.720***
			(2.041)	(2.030)	(2.007)	(2.132)
LN(GDP/capita)		13.983**	6.130	6.135	6.022	7.984
		(6.812)	(6.545)	(6.634)	(6.595)	(6.067)
Bank Overhead Costs per Total Assets (%)			-0.001	-0.002	-0.001	-0.018
			(0.022)	(0.022)	(0.021)	(0.019)
Three Bank Asset Concentration				-0.011	-0.013	-0.007
				(0.026)	(0.026)	(0.024)
KAOPEN					0.344	
					(0.706)	
LMF						0.035***
						(0.008)
Observations	375	375	375	375	375	375
R-squared	0.362	0.420	0.577	0.578	0.579	0.662
Number of Countries	32	32	32	32	32	32

Robust standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table 2.24: Total Outstanding Loans as a Percentage of GDP Regressions with Interest Rate Spread

VARIABLES	*Dependent Variable: Total Outstanding Loans per GDP (%)*					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country	4.295	5.721	1.840	1.830	1.840	0.107
	(4.350)	(4.300)	(2.910)	(2.856)	(2.865)	(2.325)
Interest Rate Spread	0.118	0.243	0.133	0.133	0.132	0.140
	(0.207)	(0.162)	(0.111)	(0.111)	(0.110)	(0.107)
LN(Private Credit/GDP)			22.506***	22.386***	22.498***	20.643***
			(3.491)	(3.511)	(3.594)	(3.652)
LN(GDP/capita)		32.752**	15.163	15.177	15.273	17.512
		(14.547)	(12.935)	(13.011)	(13.050)	(12.783)
Bank Overhead Costs per Total Assets (%)			0.072	0.069	0.067	0.049
			(0.043)	(0.045)	(0.044)	(0.045)
Three Bank Asset Concentration				-0.032	-0.031	-0.027
				(0.034)	(0.036)	(0.033)
KAOPEN					-0.289	
					(1.255)	
LMF						0.045***
						(0.012)
Observations	375	375	375	375	375	375
R-squared	0.221	0.305	0.505	0.507	0.507	0.542
Number of Countries	32	32	32	32	32	32

Robust standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

VII. **Conclusion**

This paper provides evidence that higher macroeconomic level uncertainty measured by the country level WUI reduces the SME share of loans. There is a significant negative coefficient on country level WUI for SME share in a sample of 50 countries and a smaller sample of 44 countries. This finding is robust to the inclusion of an interest rate spread control as a proxy for country risk. There is some evidence that this effect is driven by higher-income countries, but small sample sizes may also reduce significance due to the larger standard errors. There is also evidence that the negative effect of the country level WUI on the SME share is significant in countries which experience higher levels of macroeconomic instability, and the effect is not significant in stable countries. Examining not only the SME share but also overall borrowing amounts relative to GDP, I show that the decline in the SME share associated with higher levels of WUI is likely due to SME borrowing declining relatively more than large firm and household borrowing in response to higher uncertainty, thus decreasing the SME share. There is a significant negative coefficient on WUI for the amount of SME outstanding loans as a percentage of GDP in the 50 and in the 44 country samples, but an insignificant coefficient on WUI for the amounts of large firm and household loans in response to higher uncertainty. Given the broad literature that shows that greater SME borrowing could improve bank stability, there is scope for policies aimed at encouraging SME desire to invest, as well as aid for SMEs during uncertain times that could reduce this negative impact.

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Chapter 3: Drivers of the MSME Finance Gap: Financial Development, Economic Development and Macroeconomic Uncertainty

I. **Introduction**

Micro, small and medium enterprises (MSMEs) play a significant role in the world economy, being important drivers of economic growth and employment. On a worldwide scale, these firms account for approximately 90% of all businesses and contribute to more than 50% of total employment (World Bank, 2023), making them the primary source of new job creation (Ayyagari et al., 2011). Given these factors, promoting the growth of MSMEs and guaranteeing that they have sufficient access to external funding is considered a top priority for policymakers in many nations.

Despite the economic benefits associated with MSMEs, these firms face severe financial constraints (Beck et. al, 2014). Ayadi and Gadi (2013) found that SMEs encounter difficulties in obtaining funds due to their small size, less diversification and less developed financial structures. According to the authors, SMEs register delayed payments on receivables and there is a rising number of SME bankruptcies and insolvencies. MSMEs also face higher asymmetric information issues compared to large corporations and have difficulties providing high quality collateral (International Finance Corporation, 2017). Several research findings indicate that MSMEs are prone to experiencing greater credit limitations compared to larger corporations. Additionally, they depend to a greater extent on trade credit and informal credit sources (IFC, 2017). In times of adverse economic circumstances, like the 2008 financial crisis, SMEs have faced more significant financial constraints than large corporations (Artola and Genre, 2011; Holton et al., 2014). This leads to a finance gap, which is defined as the gap between the financing needed and

the financing obtained. In this paper, I seek to examine the determinants of the size of the MSME finance gap, focusing on financial development, economic development, and uncertainty. I also examine the impact of these drivers on MSME's potential demand for credit and the MSME finance supply.

In order to assess the extent of the underfunding challenges encountered by MSMEs, the International Finance Corporation (IFC) constructs the MSME finance gap as the difference between MSME's potential demand for funds and the MSME finance supply for 125 developing countries. Using ten developed countries as benchmark, the IFC creates estimates for MSME's potential demand for finance, interpreted as the amount of funding that MSMEs would be willing and able to obtain under improved macroeconomic conditions, with better institutional quality. This is then compared with the amount of financing MSMEs actually get. This new dataset constitutes a significant improvement over previous attempts at estimating the degree of financial constraints experienced by small firms. This is because it is the first cross-country dataset that provides estimates on both the demand and supply sides of MSME finance, while previous cross-country studies only cover data on the supply side. Due to data scarcity, many previous studies only include estimates for a particular country or region (IFC, 2017).

The IFC dataset on the MSME finance gap provides opportunities to explore the determinants of the size of MSME's credit shortages across a sample of developing countries. It also allows for an investigation of the effects of these determinants on the two components of the MSME finance gap, the potential demand for and the supply of credit to MSMEs. The IFC dataset also provides an opportunity for decomposing the effects on the MSME variables separately into effects on SMEs and micro firms, which are the two components of the MSME

estimates. The variables of interest considered in this paper as the determinants of the finance gap of small firms and its components are indicators commonly encountered in the literature on small firm finance. These potential determinants are financial development, economic development, and uncertainty. Financial development is measured by private credit as a percentage of GDP. Economic development is measured by real GDP per capita. Uncertainty is measured by the World Uncertainty Index developed by Ahir et al. (2022). I use cross-sectional data for 2017 from the IFC for a large number of developing countries. As country size may be important for the analysis, I also divide the samples of developing countries into two groups, separating countries with higher than median income levels measured by GDP per capita from countries with lower than median income levels.

The level of domestic financial development is expected to be an important driver for the MSME finance gap. A more developed financial system likely leads to more competent bank employees and more advanced screening technologies that enable banks to overcome the information asymmetry problems associated with small firm lending (Fungáčová et al., 2017). Thus, I expect higher levels of domestic financial development to be associated with a reduction in the MSME finance gap, through increased supply of credit to MSMEs. The level of domestic economic development is also likely to be an important factor in MSME finance. I expect a positive effect of economic development on both the finance supply and demand of MSMEs. A more developed economy provides better opportunities for growth and access to larger markets for small firms, thus increasing their desire to invest in physical capital, and their demand for finance. On the supply side, small firms in more economically developed countries are likely less risky, on average, which encourages more lending to SMEs. These offsetting effects might mean

that the MSME finance gap remains unaffected by an increase in the domestic level of economic development. In terms of the effect of macroeconomic uncertainty, I expect a negative relationship between macroeconomic uncertainty and the MSME finance gap. I hypothesize that higher levels of uncertainty lead to a reduction in both the demand for credit and the finance supply for MSME, but I expect a higher negative effect on the demand side, resulting in a reduction in the MSME finance gap. In the previous chapter, I show evidence that macroeconomic uncertainty, as measured by the WUI, is linked to a reduced proportion of SME outstanding loans in total outstanding loans. Since I include several important supply side controls, this effect likely operates through the demand side channel, with higher WUI associated with a decreased SMEs willingness or ability to borrow due to firm characteristics. In this chapter, I aim to distinguish the demand side effect of WUI on MSME borrowing from the supply side effects directly, using IFC's new dataset. On the demand side, higher levels of macroeconomic uncertainty inhibit SME's desire to invest in physical capital, due to difficulties in selling or repurposing physical capital as required by volatile economic conditions, thus decreasing their demand for credit. Lastly, bank overhead costs are also expected to increase the MSME finance gap through the supply side, as higher costs are associated with a decrease in supply, which likely affects MSMEs along with other borrowers.

In line with my hypothesis, I find that the level of domestic financial development is a major determinant of the MSME finance gap, with higher levels of financial development being associated with a diminished finance gap. This effect occurs through the supply side channel, as higher levels of financial development lead to an increase in the supply of credit to MSMEs. All of these impacts are driven by SMEs, as the effects of financial development on micro firms are

not significant. In samples which include only the developing countries with above median income level, as measured by real GDP per capita, financial development positively affects the potential demand in addition to the supply of credit to SMEs, thus leaving the SME finance gap unchanged. I also find that the level of domestic economic development is associated with an increase in both the potential demand for and the supply of credit for MSMEs, and in particular for SMEs, which confirms my hypothesis. In terms of the effect of macroeconomic uncertainty, I find that the developing countries in the above median income level samples experience a reduction in the SME finance gap through the demand side channel when uncertainty is higher. This result is consistent with my findings in Chapter 2, where I show that higher levels of macroeconomic uncertainty are associated with a lower proportion of SME outstanding loans in total outstanding loans, likely due to a decrease in demand for credit for small firms. Lastly, I find that higher bank overhead costs are associated with a reduction in potential demand and a reduction in supply of credit to MSMEs.

The rest of this paper is organized as follows. The following section provides a literature review and develops the formal hypotheses. Section III reports on the methodology. Section IV describes the data. Section V presents the results, and Section VI concludes.

II. **Literature Review and Hypotheses Development**

Prior research provides evidence that the financial constraints faced by MSMEs have a negative impact on their growth (IFC, 2017), and literature has highlighted the importance of diminishing the financial constraints to encourage their growth (World Bank, 2013). A reduction in the financial constraints encountered by MSMEs would also help with employment. With a

focus on the COVID-19 pandemic, Chundakkadan et al. (2022) find that firms that face financial constraints are more likely to lay off employees during recessionary times.

Rather than measuring the size of the MSME finance gap by considering both the demand and the supply sides across countries, prior studies have focused either on the gap for particular countries and regions, or only on the supply side in cross-country studies, due to data scarcity. These prior studies on factors influencing the financial constraints faced by small firms inform the choice of potential determinants of the MSME finance gap and its components considered in this paper. I focus here on the gap defined as the difference between MSME's potential demand and the amount of financing MSMEs actually receive and consider the determinants of both the supply side and the demand side to develop hypotheses on these determinants.

The level of domestic financial development, often measured as private credit as a percentage of GDP, is an important variable in the literature on small firms' access to finance. For instance, Fungáčová et al (2017) find that a higher level of financial development contributes to lowering the cost of credit. They argue this is due to higher levels of financial development leading to economies of scale and encouraging relationship lending, which might increase the supply of credit to MSMEs. A more developed domestic financial system likely improves overall firm performance, which is likely associated with higher bank profits. In turn, these higher profits could enable banks to offer a wider range of services, reaching a wider range of borrowers, potentially translating into more lending to MSMEs. Considering this rationale and to the extent that the demand side remains largely unaffected by financial development, the first hypothesis is as follows.

H_1: Higher levels of domestic financial development lower the MSME finance gap by increasing the supply of credit to MSMEs.

Macroeconomic uncertainty could affect the MSME gap through the demand and the supply side channels. If firms mainly borrow to invest in physical capital, changes in their demand for loans would be primarily driven by changes in investment decisions in response to uncertainty. These demand-side changes in investment decisions can result from changes in firms' willingness or ability to borrow due to firm characteristics. Supply-side factors related to the structure and development of the domestic financial system can also give rise to financial constraints. Previous research has its limitations when it comes to effectively distinguishing between demand-side and supply-side changes in firm investment and borrowing levels linked to heightened uncertainty. In the empirical research, despite some studies indicating a positive connection between uncertainty and investment, there is a greater consensus regarding a negative impact (Goldberg, 1993; Campa and Goldberg, 1995; Episcopos, 1995; Von Kalckreuth, 2001; Beaudry et al, 2001; Rashid et al.,2021; Minton and Schrand, 1999). Additionally, there is a strand of related literature focused specifically on the impact of uncertainty on small firm investment. There is extensive support for a higher negative impact of uncertainty on small firm investment relative to large firm investment levels. In terms of firm characteristics, theoretical studies suggest that substantial cash flow volatility and shortfalls make it more challenging and expensive for small firms to secure external financing, consequently leading to reduced levels of investment (Minton and Schrand, 1999; Myers and Majluf, 1984). Small firms could also have relatively more pronounced asymmetric adjustment costs of capital, with higher costs of adjusting capital downward than upward. This is because small businesses have a limited ability to substitute

specialized physical assets in their production processes (Rashid et al, 2021). There is evidence that, during uncertain times, SME borrowing is relatively more negatively impacted by information asymmetries, which are exacerbated to a higher extent for small firms than for large corporations (Kumar et al, 1999; Love, 2003). Substantial empirical research offers evidence indicating that small businesses face more significant financial constraints than large corporations during uncertain economic conditions, which could be due to both demand side and supply side considerations (Artola and Genre, 2011; Holton et al., 2014).

Most of the prior literature suggests a negative relationship between uncertainty and small firm investment, with higher uncertainty being linked to a lower SME desire to invest and more SME financial constraints due to both demand and supply side factors. Therefore, I expect higher levels of WUI to reduce both the potential demand and the supply of finance to SMEs. Given the findings in my previous chapter, where I show evidence that macroeconomic uncertainty is linked to a reduced proportion of SME outstanding loans in total outstanding loans, likely due to the demand side channel, I expect a higher negative impact on the demand side than on the supply side, which leads to the following hypothesis.

H_2: Higher macroeconomic uncertainty, as measured by the WUI, leads to a smaller MSME finance gap, such that MSME potential demand declines more than the MSME finance supply.

However, it is important to note that available data measures MSME potential demand rather than actual demand. Therefore, it is also possible that WUI has a limited effect on this potential, or "ideal" demand, considering it assumes that firms operate in an optimal macroeconomic environment, which would be well-equipped to withstand uncertainty shocks. In contrast, the

MSME finance supply measures actual MSME financing in developing countries, with more fragile financial systems, which could be more severely affected by higher uncertainty than the potential demand. If this is the case, it is also possible for the MSME gap to have a positive relationship with the WUI, or, if both the potential demand and finance supply fall to a similar extent, there could be no overall effect of the WUI on the MSME finance gap.

Another potential determinant of the finance gap is the amount of competition in the banking sector. The three bank asset concentration ratio, which is the ratio of the assets owned by the three largest banks to total assets in the banking sector, is often considered in the literature on small firm lending as a measure of banking sector competition, with higher concentration meaning less competition or more market power, and has been found to affect MSME's access to external finance. Previous literature provides conflicting results in terms of the effect of the three bank asset concentration ratio on small firm access to external finance. The information hypothesis provides arguments for a positive effect: a more concentrated banking sector could encourage relationship lending and incentivize banks to use soft information technologies. This would help overcome the information asymmetry problem associated with MSME borrowing, and encourage supply of finance to small firms. Fungáčová et al (2017) provide support for this hypothesis for firms in a panel dataset covering 20 European countries. They find that less competition in the banking sector is associated with a reduction in the cost of credit, particularly for small firms. Another argument for a positive relationship between banking sector concentration and the MSME supply of credit is that banks with a larger asset share experience economies of scale and scope, which allows them to expand the variety of services they offer, possibly reaching a wider range of customers, including small firms. Economies of scale and scope

allow banks to better diversify their risk and benefit from more hedging opportunities. Owen and Pereira (2018) find that more concentration in the banking sector is associated with greater financial inclusion. On the other hand, researchers also provide arguments for a negative effect of a high concentration in the banking sector on the amount of MSME credit supply. If the banking sector is dominated by large firms, this could mean less lending to small firms, as literature provides evidence that large banks tend to lend relatively more to large firms based on hard information technologies such as credit scores, while small banks tend to lend relatively more to small firms based on soft information technologies (Berger and Udell, 1998). Canales and Nanda (2012) find that a high banking sector concentration ratio, and thus more market power, is associated with a lower supply of credit to small firms in Mexico. Given this prior literature, the hypothesis regarding the three-bank asset concentration ratio focuses on effects on the gap through its supply side component.

H_3: A higher three-bank asset concentration ratio could lead either to a larger or smaller MSME finance gap, depending on whether it increases or decreases the supply of credit to MSMEs.

Along with banking sector competition, bank overhead costs as a ratio of total bank assets (Ozili, 2021) may also impact the supply of credit. Bank overhead costs as a ratio of total bank assets refer to the operating expenses of banks. An increase in banks' costs likely leads to a decrease in the supply of credit. As higher overhead costs are associated with a reduction in profits (Perera et al, 2007; Camanho and Dyson, 2005), banks would likely seek to diminish costs when overhead costs are higher. An increase in bank overhead costs could hinder MSME borrowing, as overcoming the information asymmetry problem could be more costly for banks when lending to MSMEs, as these firms are more informationally opaque than large firms (Berger

and Udell, 1995; Ekpu, 2016). If it is costly for banks to use soft information technologies to overcome the opacity problem associated with MSMEs, higher bank overhead costs could negatively impact the MSME finance supply.

H_4: Higher bank overhead costs are expected to increase the MSME finance gap by reducing the finance supply to MSMEs.

The level of domestic economic development, measured by real GDP per capita, is also a potentially important determinant for the MSME finance gap and its two components. Fungáčová et al (2017) argue that, in economically and financially developed countries, there are milder informational asymmetry problems, possibly due to better performance of bank employees in assessing risk and more developed screening technologies. Larger, more developed economies provide more opportunities for economies of scale and scope for banks, which would enable them to offer a wider variety of services at lower costs, potentially benefiting MSMEs. These arguments suggests a greater supply of credit to MSMEs in response to higher levels of economic development. A more economically developed environment likely provides more opportunities for growth and larger markets for MSMEs, thus the demand for credit could also be higher. There is some evidence in the literature suggesting that the finance gap for MSMEs is smaller in more economically developed countries. For example, Beck et al (2004) find that higher levels of economic development help offset the negative effects of high banking concentration on financial constraints experienced by firms.

H_5: I expect the supply side effects to be relatively stronger, so that higher levels of economic development lead to a reduction in the MSME finance gap. However, this may be mitigated by demand effects that increase the gap or leave it relatively unchanged.

Financial openness, which refers to the level of capital account openness of a country, could also have an impact on MSME finance. Park et al. (2020) found that higher degrees of financial openness benefit large firms more than small firms in terms of large firms' ability to attract foreign funds due to their international visibility and transparency, compared to the information opacity specific to small firms. Consequently, Park et al. (2020) found that large firms grow faster than small firms when a country becomes more financially open. The authors also found that higher levels of financial openness widen the wage difference between small and large firms. Due to foreign funds, larger firms are better able to attract more talented workers. Consequently, small firms' growth could be hindered because of their diminished ability to secure high-skilled workers when financial openness is higher. This could lead to a decrease in demand for investment and credit for MSMEs. If higher levels of financial openness increase competition for domestic MSMEs, possibly due to foreign firms expanding their activities in the domestic country, MSME's demand for credit could decrease due to a lower willingness to invest in physical capital. The degree of financial openness of a country could also have an impact on the supply of credit to MSMEs. If higher financial openness encourages economies of scale and scope for banks, and if financial institutions diversify their lending portfolios more in response to higher levels of financial openness, possibly due to concerns about contagion, banks might lend more to MSMEs. Combined, these supply and demand effects lead to the final hypothesis.

H_6: Higher levels of financial openness are expected to lead to a decrease in the MSME finance gap, assuming that the potential demand for credit is expected to decrease more than the supply of credit is expected to increase.

III. **Methodology and Data**

As data related to the MSME, SME and micro firms finance gap is available for 2017, the analysis is cross-sectional. The other variables have availability across several years, so I take the mean values for 2012-2017, thus excluding the global financial crisis, as in Lin et. al (2022). Excluding the global financial crisis is done in order for these variables to be compatible with the potential demand measurement, which assumes optimal economic conditions. In order to investigate the importance of the potential drivers of the MSME gap, MSME potential demand and MSME external finance supply, I estimate the following cross-country OLS regressions:

$$\frac{Finance\ Gap_i}{GDP_i} = \beta_1 country\ level\ uncertainty_i + \beta_2 financial\ development_i + \beta_3 bank\ concentration\ ratio_i + \beta_4 bank\ overhead\ costs_i + \beta_5 economic\ development_i + \beta_6 financial\ openness_i + \varepsilon_i \quad \textit{Equation 3.1}$$

$$\frac{Potential\ Demand_i}{GDP_i} = \beta_1 country\ level\ uncertainty_i + \beta_2 financial\ development_i + \beta_3 bank\ concentration\ ratio_i + \beta_4 bank\ overhead\ costs_i + \beta_5 economic\ development_i + \beta_6 financial\ openness_i + \varepsilon_i \quad \textit{Equation 3.2}$$

$$\frac{Finance\ Supply_i}{GDP_i} = \beta_1 country\ level\ uncertainty_i + \beta_2 financial\ development_i + \beta_3 bank\ concentration\ ratio_i + \beta_4 bank\ overhead\ costs_i + \beta_5 economic\ development_i + \beta_6 financial\ openness_i + \varepsilon_i \quad \textit{Equation 3.3}$$

where the dependent variable is the finance gap, or its two components: potential demand, or finance supply, each as a percentage of GDP. I consider these measures for MSMEs as a group and for SMEs or micro firms separately. On the right hand side, I include variables that previous literature has found to be important factors determining the financial constraints faced by small firms. Macroeconomic uncertainty measures general macroeconomic uncertainty at the country

level. Domestic financial development refers to the size of the financial sector. The three bank asset concentration ratio is a measure of the domestic level of banking sector competition. Bank overhead costs as a percentage of total assets measure costs associated with operating banks. The level of domestic economic development measures the overall economic wellbeing of a country, and financial openness refers to a country's level of capital account openness. These factors could influence the finance gap through the supply channel, demand channel, or both. Endogeneity issues could arise due to a potential two-way causality between the MSME finance supply as a percentage of GDP and private credit as a percentage of GDP. However, usage of lagged dependent variables is not possible due to MSME related data being available only cross-sectionally for 2017.

Due to data availability, sample sizes range between 78 and 87 countries, depending on whether the dependent variable refers to MSMEs, SMEs, or micro firms. Data pertaining to the MSME gap and its components, the potential demand for and the supply of credit to MSMEs as a whole, as well as decomposed into SMEs and micro firms, comes from the International Financial Corporation (IFC). This dataset covers 125 developing countries for year 2017. IFC calculates the MSME gap as the difference between the potential demand for and the supply of credit to MSMEs to measure the extent of financial constraints faced by MSMEs. According to IFC (2017, p. 7), potential demand measures "how much financing MSMEs in a country would have sought (willingness) and been able to obtain (ability) if they operated in a better institutional, regulatory and macroeconomic environment." IFC constructs the MSME potential demand for finance based on Rajan and Zingales' (1998) assumptions that the reliance on external finance by industry remains relatively consistent across nations, and that developed

countries can serve as a benchmark for evaluating other countries' industry-specific dependence on external financing. Instead of considering the United States only as in Rajan and Zingales (1998), IFC uses 10 developed countries as benchmarks: Australia, Canada, Denmark, Germany, Ireland, Israel, New Zealand, Switzerland, the United Kingdom, and the United States. IFC adds two other criteria to industry type (manufacturing, retail and services): MSME firm size (which consists of 5 categories according to number of employees: 0-9, 10-19, 20-49, 50-99, and 100-249) and age (which includes two categories: young and mature[14]). Then IFC calculates the mean debt-to-sales ratio across the 10 benchmark countries in each of these 30 sub-groups (3x5x2) using data from the Bureau van Dijk's ORBIS, which is a commercial database containing firm level data. Using data from the World Bank Enterprise Surveys on average firm sales and number of firms in developing countries, the IFC then applies the benchmarked debt-to-sales ratios from developed nations to the corresponding MSMEs in each developing country, finally aggregating at the country level. This procedure thus estimates how much MSMEs in developing countries would borrow if they followed the same debt-to-sales ratios as their counterparts in developed countries, based on the MSME type and sales. This is an approximation of how much the MSMEs in developing countries would be willing and able to borrow under improved economic circumstances, which is the potential demand as in equation 3.2. On the supply side, data for MSME finance supply primarily comes from the International Monetary Fund's (IMF) Financial Access Survey (FAS) and measures the amount of finance firms actually receive, noted as finance

[14] Mature firms are defined as firms that are older than 5 years.

supply in equation 3.1. The gap then measures the difference between these two for each country by micro firms, small firms, and MSMEs.

Table 3.1 shows summary statistics for the MSME, SME and micro firm finance gap as a percentage of GDP, as well as for the potential demand and finance supply for these firms as a percentage of GDP. The mean MSME finance gap as a percentage of GDP is approximately 18%, most of it being attributable to the SME gap, representing around 15%. There is high variability in the sample, with a standard deviation of 9.74 for the MSME gap, for instance. The MSME mean potential demand as a percentage of GDP is about 26% and the MSME supply is around 8%.

The country level World Uncertainty Index (WUI), which measures general macroeconomic uncertainty at the country level, is developed by Ahir et al. (2022). The authors use the Economist Intelligence Unit (EIU) country reports to calculate the proportion of the word "uncertain" and its variations relative to the total number of words in the report. The EIU reports cover topics pertaining to important political, economic and financial events of a country, focusing on their impact on country risk. Compared to the economic policy uncertainty index (EPU) developed by Baker, Bloom and Davis (2016), the WUI has wider country coverage (143 countries at different stages of economic development versus only 28 developed countries). While the EPU is based on various newspapers which vary by country, the WUI was created using the same report, the EIU, which follows the same process and format across countries, making the WUI more appropriate for cross country comparison. The original WUI dataset has quarterly data. Using yearly averages, I take the mean for years 2012-2017 to match the dependent variable, which is available cross sectionally only. Higher values of the WUI correspond to greater uncertainty. The mean value of WUI in Table 3.1 is approximately 0.25, reflecting a frequency of

0.25 “uncertainty” words per thousand words, or 0.025 percent. This would translate to about 2.5 words per EIU report, given that the average report has approximately 10,000 words. WUI varies significantly in the sample, ranging from about 0.6 to 8.5 “uncertainty” words per report.

In Chapter 2, I present evidence indicating a connection between macroeconomic uncertainty, measured by the WUI, and a decreased percentage of SME outstanding loans relative to total outstanding loans. As I incorporate various supply-side controls, it is likely that this impact operates through the demand-side mechanism. A higher WUI is correlated with a diminished willingness or ability of SMEs to borrow, likely influenced by firm-specific characteristics. Further investigating this argument, in terms of the small firm finance gap, a negative coefficient for the WUI in equation 3.1, along with a stronger negative coefficient on WUI in equation 3.2 than in equation 3.3 would support the hypothesis stating that higher country level macroeconomic uncertainty, as measured by the WUI, leads to a diminished WUI finance gap, such that MSME’s potential demand falls more in response to higher uncertainty than finance supply to MSMEs.

Data for private credit as a percentage of GDP, bank overhead costs as a percentage of total bank assets and three bank asset concentration ratio are obtained from the World Bank’s Global Financial Development database. Data for real GDP per capita also come from the World Bank. For financial openness, I use both a de jure and a de facto measure. The de facto index, KAOPEN, was constructed by Chinn and Ito (2006) based on regulations concerning the movement of capital across borders as described in the IMF's Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER). Higher values of KAOPEN indicate higher levels of financial openness. The de facto measure, LMF, is derived from Lane and Milesi-Ferretti

(2018) as the sum of external assets and liabilities over GDP. Higher values of LMF indicate more openness, as they reflect a greater stock of external assets and liabilities. For these variables, I use average values from 2012-2017 for each country. The sample contains developing countries, with the level of real GDP per capita ranging from about $308 to approximately $21,000 2015 US dollars corresponding to log values in Table 3.1. In these countries, the three bank concentration ratio varies from 28% to 100% of the banking sector assets being owned by the three largest banks. Private credit as a percentage of GDP, also shown in log form in Table 3.1, also ranges from approximately 5% to 144%. In terms of financial openness, LMF exhibits high variability, which is greater than for KAOPEN, with a standard deviation of 91.43 for LMF versus 1.48 for KAOPEN, as shown in Table 3.1. This suggests that, even if countries have similar levels of capital account openness in terms of regulations, as measured by the de jure capital openness variable, they vary greatly from the point of view of actual cross border financial transactions, as measured by the de facto level of financial openness.

The level of domestic financial development, commonly measured by private credit to GDP, is likely to be one of the most impactful determinants of the MSME finance gap. According to H_1, I anticipate β_2 to be positive in equation 3.3 and negative in equation 3.1. Thus, I expect that a more developed financial sector is associated with a higher supply of credit to MSMEs, thus lowering their finance gap, all else equal. As Fungáčová et al (2017) argue, a more financially developed banking system could be associated with economies of scope, and could encourage relationship based lending, which favors small firms' access to financial services. Indeed, the authors find that higher financial development contributes to a decrease in the cost of credit.

The three bank asset concentration ratio is expected to have an impact on the MSME finance gap primarily through the supply channel. According to H_3, β_3 in equation 3.3 could be either positive or negative. A higher three-bank asset concentration ratio is expected to lead to a larger supply of credit to MSMEs (and a smaller MSME finance gap) if the information hypothesis and the economies of scale and scope argument dominate. A higher three-bank asset concentration ratio, with a banking sector dominated by large firms, would lead to a smaller supply of credit to MSMEs (and a larger MSME finance gap) if large banks have a tendency to lend relatively more to large firms based on hard information technologies to the detriment of small firms, which tend to base their borrowing on relationship lending.

In terms of the effect of bank overhead costs, I anticipate a negative β_4 in equation 3.3, as larger costs are expected to reduce the supply of credit. In line with H_4, this effect would increase the finance gap, which translates into a positive $\beta_4$in equation 3.1.

In terms of the level of domestic economic development, as measured by real GDP per capita, I expect a positive impact on both the demand and the supply sides, thus a positive β_5 in equations 3.2 and 3.3. On the demand side, higher economic development could provide access to larger markets for small firms, incentivizing them to increase their demand for investment and for credit. On the supply side, a more developed economy could provide more opportunities for economies of scale and scope for banks, allowing them to expand services to reach the needs of more MSMEs. Better levels of economic development could also translate to superior screening technologies to better overcome information asymmetry issues (Fungáčová et al., 2017). As described in H_5, the effect of economic development on the MSME gap in equation 3.1 depends on the magnitude of the effects on the demand versus the supply side.

As far as financial openness is concerned, as described in H_6, I expect a negative effect of financial openness on the potential demand for credit of small firms, meaning that β_6 in equation 3.2 would be negative. This is mainly due to the increased wage differential between small and large firms in response to higher financial openness, which would impede small firms' ability to higher high skill workers, thus slowing their growth and negatively impact their desire to invest (Park et al., 2020). I also anticipate a positive β_6 in equation 3.3, thus a positive effect of financial openness on the supply of credit to small firms if banks experience economies of scale and scope and expand their services to better suit the needs of small firms in response to a higher degree of financial openness. Together, these supply and demand effects would diminish the finance gap of small firms, which would translate to a negative β_6 in equation 3.1. I anticipate the effect of the de facto indicator to be stronger than the effect of the de jure index. This is because the de facto indicator represents actual cross border financial transactions rather than being based on looser regulations alone, as is the case for the de jure measure. Actual cross border capital movement could be relatively more important for the MSME finance gap because it is influenced by a variety of economic factors, such as the tax policies and geography, and more capital movement does not necessarily occur as a result of looser regulations.

Table 3.1: Summary Statistics

	MSME Finance Gap/GDP (%)	SME Finance Gap/GDP (%)	Micro Firms Finance Gap/GDP	MSME Potential Demand/ GDP (%)	SME Potential Demand/ GDP (%)	Micro Firms Potential Demand/	MSME Finance Supply/ GDP (%)	SME Finance Supply/ GDP (%)	Micro Firms Finance Supply/GDP (%)	WUI Country	LN(Private Credit/GDP)	LN(GDP per capita)	Bank Overhead Costs to Total Assets	Three Bank Asset Concentration	KAOPEN	LMF
Obs	87	81	78	87	81	78	87	81	78	87	87	87	87	87	87	87
Mean	17.75	15.48	3.15	25.69	22.35	3.82	7.94	6.87	0.66	0.25	3.47	8.01	4.08	65.12	0.01	150.34
Std. Dev.	9.74	8.87	3.20	10.52	9.88	3.48	6.61	5.74	1.15	0.13	0.73	1.08	1.93	17.33	1.48	91.43
Min	0.24	2.55	0.02	7.41	6.11	0.30	0.02	0.02	0.00	0.06	1.63	5.73	0.98	28.44	-1.92	43.34
Max	52.76	51.19	13.73	55.79	52.86	14.58	33.34	31.79	7.68	0.85	4.97	9.95	9.26	100.00	2.32	552.80

Note: Real GDP per capita is expressed in constant 2015 US dollars. Private credit to GDP is a percentage.

Table 3.2: Correlation Matrix

	MSME Finance Gap/GDP (%)	SME Finance Gap/GDP (%)	Mirco Firms Finance Gap/GDP (%)	MSME Potential Demand/ GDP (%)	SME Potential Demand/ GDP (%)	Micro Potential Demand/ GDP (%)	MSME Finance Supply/ GDP (%)	SME Finance Supply/ GDP (%)	Micro Firms Finance Supply/GDP (%)	WUI Country	LN (Private Credit/GDP)	LN (GDP per capita)	Bank Overhead Costs to Total Assets (%)	Three Bank Asset Concentration	KAOPEN	LMF
MSME Finance Gap/GDP (%)	1															
SME Finance Gap/GDP (%)	0.94	1.00														
Mirco Firms Finance Gap/GDP (%)	0.40	0.07	1.00													
MSME Potential Demand/GDP (%)	0.82	0.77	0.32	1.00												
SME Potential Demand/GDP (%)	0.76	0.82	0.02	0.95	1.00											
Micro Potential Demand/GDP (%)	0.35	0.03	0.94	0.37	0.05	1.00										
MSME Finance Supply/GDP (%)	-0.12	-0.11	-0.05	0.47	0.47	0.11	1.00									
SME Finance Supply/GDP (%)	-0.12	-0.10	-0.07	0.47	0.49	0.04	0.98	1.00								
Micro Firms Finance Supply/GDP (%)	-0.06	-0.09	0.07	0.22	0.09	0.40	0.46	0.30	1.00							
WUI Country	-0.11	-0.13	0.04	-0.11	-0.14	0.06	-0.03	-0.04	0.06	1.00						
LN (Private Credit/GDP)	-0.16	-0.15	-0.07	0.22	0.23	0.02	0.62	0.62	0.26	-0.05	1.00					
LN (GDP per capita)	0.08	0.07	0.03	0.39	0.37	0.14	0.55	0.53	0.33	-0.10	0.57	1.00				
Bank Overhead Costs to Total Assets (%)	-0.07	-0.07	-0.03	-0.32	-0.30	-0.12	-0.44	-0.42	-0.28	0.27	-0.53	-0.38	1.00			
Three Bank Asset Concentration	0.04	0.06	-0.05	-0.10	-0.07	-0.10	-0.22	-0.21	-0.15	0.02	-0.30	-0.20	0.12	1.00		
KAOPEN	0.19	0.19	0.05	0.26	0.25	0.08	0.15	0.15	0.10	-0.15	0.21	0.44	-0.13	-0.03	1.00	
LMF	0.01	-0.01	0.05	0.24	0.23	0.08	0.39	0.40	0.09	0.05	0.45	0.40	-0.22	0.07	0.38	1.00

Table 3.2 shows the correlation matrix. Variables pertaining to MSMEs (the finance gap, potential demand and finance supply, each as a percentage of GDP) are very highly and positively correlated with the corresponding SME variables, while correlations between micro firm related variables and their MSME and SMEs counterparts are significantly weaker. Private credit per GDP is positively correlated with the MSME/SME potential demand, as well as with the MSME/SME supply of finance, with the latter correlations being higher; and private credit to GDP is negatively associated with the MSME/SME finance gap. Correlations between private credit to GDP and micro firm related variables are weaker. WUI is negatively correlated with the finance gap, potential demand and supply of credit. Real GDP per capita is positively correlated with the dependent variables, especially with those referring to MSMEs and SMEs. KAOPEN and LMF are positively correlated, but not highly so, indicating they show different aspects of financial openness.

IV. **Results**

A. Overall Effects on the Finance Gap, Potential Demand and Finance Supply for MSMEs

Tables 3.3-3.5 below show regression results based on equations 3.1, 3.2 and 3.3 for MSME's, finance gap, the potential demand and finance supply. I investigate a common sample across 87 countries with MSME data. Table 3.3 reveals that private credit as a percentage of GDP is an important driver of the MSME finance gap. These results indicate that a higher level of financial development, as measured by private credit as a percentage of GDP, is associated with a lower finance gap for MSMEs. This effect operates through the supply side channel: higher levels of financial development are associated with a larger supply of credit for MSMEs, as results in Table 3.5 indicate, which diminishes the finance gap, given that the potential demand for credit remains unchanged. This finding supports the first hypothesis, H_1, suggesting that a more developed financial system could lead to better firm performance, which would, in turn, contribute to higher bank profits. This could enable banks to provide a wider range of services, which could be more suitable for meeting the needs of small firms. Consistent with these findings, Fungáčová et al (2017) argue that a more developed financial system could mean more experience for bank employees and more developed lending technologies, which reduce the asymmetric information problem associated with small firm lending. They also point out that a more developed financial system could provide economies of scale benefits and encourage banks to invest more in relationship based lending, which benefits small firms. Fungáčová et al (2017) provide evidence that higher levels of domestic financial development contribute to lowering the cost of credit.

The level of domestic economic development, measured by real GDP per capita, is also important for explaining the MSME potential demand and finance supply. This variable enters with a positive and significant effect in Tables 3.4, which refers to the potential demand as a percentage of GDP for MSMEs, as well as in Tables 3.5, which refers to the finance supply of MSMEs as a percentage of GDP. This finding is consistent with H_5: a more developed economy provides more growth opportunities for small firms, perhaps through access to greater markets, which could promote demand for credit by these firms in order to invest in physical capital and expand. Small firms in countries with higher levels of economic development are also less risky on average, which encourages a higher supply of credit to small firms. Beck et al. (2004) provide evidence that higher levels of economic development diminish the financial constraints arising due to a higher banking sector concentration ratio. Fungáčová et al (2017) add the level of domestic economic development to financial development as an important contributor to lowering information asymmetry problems often faced by small firms. The overall effect of real GDP per capita on the finance gap of MSMEs in Table 3.3 is insignificant, likely due to both the demand and supply side effects being positive and of similar enough magnitude to not induce a change in the finance gap.

Bank overhead costs as a percentage of total bank assets have a negative and significant effect on the MSME potential demand and finance supply as a percentage of GDP. As these effects are of similar enough magnitude, bank overhead costs do not enter with a significant coefficient for the MSME finance gap. On the demand side, higher bank overhead costs impact MSMEs' ability to borrow due to firm characteristics, particularly their information opacity issues. Faced with higher overhead costs, banks become more reluctant to lend to MSMEs, as it can be

more costly for banks to overcome the information asymmetry issues associated with MSMEs. As described in $H_{6,}$ in terms of the effect of bank overhead cost on the supply of credit to MSMEs, higher operating costs for banks are associated with a reduction in supply of credit, which affects MSMEs, as well as other borrowers.

There is no evidence of an impact from the WUI, three bank asset concentration, or financial openness on the MSME finance gap, potential demand, or finance supply. The WUI has no impact on the demand side likely because the left-hand side variable measures potential, rather than actual demand. This is the MSME demand under "ideal" economic circumstances, thus being well-equipped to withstand shocks such as an increase in macroeconomic uncertainty. There is no evidence that the finance supply of credit diminishes as a result of greater macroeconomic uncertainty, thus indicating that firms do not necessarily decrease their lending to MSMEs in times of greater macroeconomic uncertainty. The absence of an impact from the three bank asset concentration ratio likely reflects the opposing effects on the supply side presented under $H_{3,}$ which offset the overall impact of three bank asset concentration on the MSME finance supply. Lastly, results also suggest that increasing the level of financial openness does not influence the potential demand for credit by MSMEs, so it is also likely that this "ideal" demand does not negatively respond to higher levels of capital account openness. On the supply side, there could be conflicting responses that cancel an overall impact: while economies of scale and scope encourage banks to lend more to MSMEs, it is also possible banks lend less to MSMEs and more to large firms, as large firms are expected to grow relatively faster in response to higher levels of financial openness (Park et al., 2020).

Table 3.3: MSMEs: Finance Gap as a Percentage of GDP

	Dependent Variable: MSME Finance Gap/GDP (%)					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-7.9287	-7.9474	-4.9729	-4.8685	-4.2530	-5.0589
	(6.8214)	(6.8269)	(5.8588)	(5.9464)	(6.1880)	(6.0597)
LN(Private Credit/GDP)			-5.5102**	-5.6796**	-5.6638**	-6.0279**
			(2.4594)	(2.4136)	(2.3430)	(2.5326)
LN(GDP per Capita)		-0.0317	1.6612	1.6585	1.1498	1.5230
		(1.0346)	(1.1538)	(1.1602)	(1.1135)	(1.1529)
Bank Overhead Costs per Total Assets (%)			-0.7509	-0.7693	-0.8015	-0.7860
			(0.6237)	(0.6147)	(0.6220)	(0.6224)
Three Bank Asset Concentration				-0.0213	-0.0256	-0.0292
				(0.0563)	(0.0560)	(0.0622)
KAOPEN					0.7182	
					(0.8444)	
LMF						0.0068
						(0.0128)
Observations	87	87	87	87	87	87
R-squared	0.0119	0.0119	0.1045	0.1058	0.1149	0.1088
Robust standard errors in parentheses						
*** p<0.01, ** p<0.05, * p<0.1						

Table 3.4: MSMEs: Potential Demand as a Percentage of GDP

	Dependent Variable: MSME Potential Demand/GDP (%)					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-7.6925	-5.6587	-1.1453	-0.9875	-0.4347	-1.4464
	(6.7283)	(6.3866)	(6.2203)	(6.2205)	(6.3461)	(6.3379)
LN(Private Credit/GDP)			-2.4563	-2.7123	-2.6981	-3.5517
			(2.6218)	(2.6304)	(2.5712)	(2.7819)
LN(GDP per Capita)		3.4526***	3.4823***	3.4782***	3.0212**	3.1515**
		(1.1136)	(1.2925)	(1.3148)	(1.2809)	(1.3088)
Bank Overhead Costs per Total Assets (%)			-1.3567*	-1.3846**	-1.4135**	-1.4248**
			(0.6985)	(0.6888)	(0.6925)	(0.6919)
Three Bank Asset Concentration				-0.0322	-0.0361	-0.0513
				(0.0595)	(0.0596)	(0.0635)
KAOPEN					0.6451	
					(0.8389)	
LMF						0.0165
						(0.0130)
Observations	87	87	87	87	87	87
R-squared	0.0096	0.1336	0.1757	0.1783	0.1845	0.1929
Robust standard errors in parentheses						
*** p<0.01, ** p<0.05, * p<0.1						

Table 3.5: MSMEs: Finance Supply as a Percentage of GDP

	Dependent Variable: MSME Finance Supply/GDP (%)					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	0.2362	2.2887	3.8276	3.8810	3.8184	3.6125
	(4.5976)	(2.9738)	(3.2060)	(3.1812)	(3.2458)	(3.1668)
LN(Private Credit/GDP)			3.0539***	2.9673***	2.9657***	2.4761**
			(0.8912)	(0.9187)	(0.9240)	(1.0249)
LN(GDP per Capita)		3.4842***	1.8211***	1.8197***	1.8715***	1.6285***
		(0.5237)	(0.5732)	(0.5887)	(0.6279)	(0.5679)
Bank Overhead Costs per Total Assets (%)			-0.6058**	-0.6153**	-0.6120**	-0.6388**
			(0.2456)	(0.2515)	(0.2579)	(0.2479)
Three Bank Asset Concentration				-0.0109	-0.0104	-0.0221
				(0.0312)	(0.0312)	(0.0321)
KAOPEN					-0.0731	
					(0.3998)	
LMF						0.0096
						(0.0062)
Observations	87	87	87	87	87	87
R-squared	0.0000	0.3198	0.4547	0.4554	0.4556	0.4681
Robust standard errors in parentheses						
*** p<0.01, ** p<0.05, * p<0.1						

B. Overall Effects on the Finance Gap, Potential Demand and Finance Supply for SMEs and Micro Firms

Tables 3.6-3.11 present results for the finance gap, potential demand and finance supply for the SME and micro firm subgroups. These results indicate that the positive effect of financial development on the MSME gap is driven by its effect on the SME finance gap, as Table 3.6 shows. As for MSMEs as a whole, this effect of financial development operates through an increase in the supply of credit to SMEs, as presented in Table 3.8. The level of domestic economic development also has a positive effect on the SME potential demand and finance supply, as indicated in Tables 3.7 and 3.8. Micro firms, which have a much smaller weight than SMEs in the MSME group, respond differently. There is a positive effect of financial development and a negative effect of bank overhead costs for the supply of finance for micro firms. However, the considered explanatory variables do not appear to have an impact on the micro firm gap or micro firm potential demand.

Table 3.6: SMEs: Finance Gap as a Percentage of GDP

	Dependent Variable: SME Finance Gap/GDP (%)					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-10.9167*	-10.6848*	-7.7817	-7.7946	-6.9832	-8.0181
	(6.0950)	(6.1727)	(4.9797)	(5.0207)	(5.2733)	(5.1148)
LN(Private Credit/GDP)			-4.6230*	-4.5825*	-4.5912**	-4.9179**
			(2.4313)	(2.3021)	(2.2085)	(2.3167)
LN(GDP per Capita)		0.3757	1.7588	1.7621	1.2710	1.6344
		(0.9651)	(1.0605)	(1.0740)	(1.0685)	(1.0977)
Bank Overhead Costs per Total Assets (%)			-0.6825	-0.6787	-0.7205	-0.6985
			(0.6227)	(0.6168)	(0.6222)	(0.6223)
Three Bank Asset Concentration				0.0051	0.0016	-0.0027
				(0.0483)	(0.0482)	(0.0532)
KAOPEN					0.7756	
					(0.8799)	
LMF						0.0065
						(0.0094)
Observations	81	81	81	81	81	81
R-squared	0.0287	0.0307	0.1130	0.1131	0.1261	0.1164
Robust standard errors in parentheses						
*** p<0.01, ** p<0.05, * p<0.1						

Table 3.7: SMEs: Potential Demand as a Percentage of GDP

	Dependent Variable: SME Potential Demand/GDP (%)					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-11.2465*	-9.2441	-5.9044	-5.9014	-5.3366	-6.3767
	(6.6538)	(6.0285)	(5.4948)	(5.5385)	(5.6775)	(5.5733)
LN(Private Credit/GDP)			-1.2431	-1.2525	-1.2586	-1.9659
			(2.6642)	(2.5735)	(2.5239)	(2.6354)
LN(GDP per Capita)		3.2437***	3.0644**	3.0636**	2.7218**	2.7920**
		(1.0744)	(1.2376)	(1.2500)	(1.2623)	(1.2800)
Bank Overhead Costs per Total Assets (%)			-0.9900	-0.9909	-1.0200	-1.0331
			(0.7053)	(0.7007)	(0.7123)	(0.7023)
Three Bank Asset Concentration				-0.0012	-0.0036	-0.0177
				(0.0526)	(0.0527)	(0.0560)
KAOPEN					0.5399	
					(0.9170)	
LMF						0.0139
						(0.0105)
Observations	81	81	81	81	81	81
R-squared	0.0246	0.1471	0.1726	0.1726	0.1777	0.1848
Robust standard errors in parentheses						
*** p<0.01, ** p<0.05, * p<0.1						

Table 3.8: SMEs: Finance Supply as a Percentage of GDP

	Dependent Variable: SME Finance Supply/GDP (%)					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-0.3298	1.4407	1.8773	1.8932	1.6466	1.6414
	(4.4135)	(2.9525)	(2.6450)	(2.6556)	(2.8585)	(2.6126)
LN(Private Credit/GDP)			3.3799***	3.3300***	3.3326***	2.9520***
			(0.8478)	(0.8609)	(0.8698)	(0.9388)
LN(GDP per Capita)		2.8681***	1.3056***	1.3015***	1.4508***	1.1576**
		(0.4545)	(0.4664)	(0.4795)	(0.5461)	(0.4882)
Bank Overhead Costs per Total Assets (%)			-0.3076	-0.3122	-0.2995	-0.3346*
			(0.2008)	(0.2062)	(0.2147)	(0.2007)
Three Bank Asset Concentration				-0.0062	-0.0052	-0.0150
				(0.0291)	(0.0289)	(0.0299)
KAOPEN					-0.2357	
					(0.3676)	
LMF						0.0074
						(0.0049)
Observations	81	81	81	81	81	81
R-squared	0.0001	0.2836	0.4486	0.4490	0.4518	0.4591
Robust standard errors in parentheses						
*** p<0.01, ** p<0.05, * p<0.1						

Table 3.9: Micro Firms: Finance Gap as a Percentage of GDP

	Dependent Variable: Micro Firm Finance Gap/GDP (%)					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	0.9001	0.9817	1.5317	1.5566	1.7028	1.3601
	(2.6381)	(2.7039)	(2.7145)	(2.7052)	(2.7983)	(2.7373)
LN(Private Credit/GDP)			-0.7559	-0.8678	-0.8617	-1.0744
			(0.7722)	(0.8588)	(0.8686)	(0.9670)
LN(GDP per Capita)		0.1095	0.3015	0.2905	0.2144	0.2098
		(0.3191)	(0.4171)	(0.4172)	(0.4153)	(0.3807)
Bank Overhead Costs per Total Assets (%)			-0.1581	-0.1664	-0.1718	-0.1752
			(0.1726)	(0.1740)	(0.1759)	(0.1756)
Three Bank Asset Concentration				-0.0151	-0.0156	-0.0198
				(0.0237)	(0.0242)	(0.0254)
KAOPEN					0.1159	
					(0.2925)	
LMF						0.0040
						(0.0066)
Observations	78	78	78	78	78	78
R-squared	0.0015	0.0029	0.0203	0.0267	0.0289	0.0362
Robust standard errors in parentheses						
*** p<0.01, ** p<0.05, * p<0.1						

Table 3.10: Micro Firms: Potential Demand as a Percentage of GDP

	Dependent Variable: Micro Firm Potential Demand/GDP (%)					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	1.4183	1.7709	2.7700	2.8037	2.9276	2.6495
	(2.8316)	(2.9992)	(3.0635)	(2.9745)	(3.0552)	(3.0176)
LN(Private Credit/GDP)			-0.7585	-0.9102	-0.9050	-1.0723
			(0.8012)	(0.8922)	(0.8996)	(1.0026)
LN(GDP per Capita)		0.4732	0.5794	0.5645	0.5000	0.5011
		(0.3521)	(0.4418)	(0.4424)	(0.4455)	(0.4158)
Bank Overhead Costs per Total Assets (%)			-0.2900	-0.3013	-0.3059	-0.3082
			(0.1893)	(0.1906)	(0.1924)	(0.1913)
Three Bank Asset Concentration				-0.0205	-0.0209	-0.0242
				(0.0252)	(0.0257)	(0.0267)
KAOPEN					0.0982	
					(0.3028)	
LMF						0.0031
						(0.0065)
Observations	78	78	78	78	78	78
R-squared	0.0032	0.0246	0.0471	0.0571	0.0585	0.0620
Robust standard errors in parentheses						
*** p<0.01, ** p<0.05, * p<0.1						

Table 3.11: Micro Firms: Finance Supply as a Percentage of GDP

	Dependent Variable: Micro Firm Finance Supply/GDP (%)					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	0.5182	0.7893	1.2383	1.2471	1.2248	1.2894
	(1.1035)	(1.1740)	(1.3566)	(1.3261)	(1.3095)	(1.3952)
LN(Private Credit/GDP)			-0.0026	-0.0424	-0.0433	0.0021
			(0.1376)	(0.1568)	(0.1592)	(0.1782)
LN(GDP per Capita)		0.3637**	0.2779**	0.2740**	0.2856**	0.2914*
		(0.1385)	(0.1249)	(0.1251)	(0.1409)	(0.1466)
Bank Overhead Costs per Total Assets (%)			-0.1319**	-0.1349**	-0.1341**	-0.1330**
			(0.0580)	(0.0600)	(0.0595)	(0.0588)
Three Bank Asset Concentration				-0.0054	-0.0053	-0.0043
				(0.0052)	(0.0052)	(0.0050)
KAOPEN					-0.0177	
					(0.0584)	
LMF						-0.0009
						(0.0016)
Observations	78	78	78	78	78	78
R-squared	0.0038	0.1187	0.1596	0.1658	0.1662	0.1692
Robust standard errors in parentheses						
*** p<0.01, ** p<0.05, * p<0.1						

C. Effects on the Finance Gap, Potential Demand and Finance Supply for MSMEs in Samples Divided by Median Income Level

As the level of real GDP per capita and bank overhead costs variables are important in the benchmark analysis, country size may be relevant. In this section I divide the samples of developing countries into two groups, according to the median level of real GDP per capita. Table

3.12 presents summary statistics for the above and below median GDP per capita groups. The differences between the finance gaps in the above versus below median income level samples are not large. For instance, for MSMEs, in the below median income level sample, the finance gap is 1 percentage point larger than in the above median income level sample. However, the differences between the two samples are more considerable in terms of potential demand and supply of finance to small firms. For example, for MSMEs, the potential demand is about 29% of GDP in the above median income level sample, and approximately 23% of GDP in the below median income level sample, while the supply of finance is about 12% in the above median income level sample versus around 4% in the below median income level sample. Regression results for MSMEs are presented in Tables 3.13-3.15 below.

These results indicate there are not significant differences between the two groups. Private credit as a percentage of GDP remains important for the supply of credit to MSMEs, both in the above and in the below median income level samples, as results in Tables 3.15 show. A higher degree of financial development, as measured by private credit to GDP, is associated with a larger supply of credit to MSMEs, regardless of the income level of the developing countries in the sample.

Bank overhead costs to total assets have a negative effect on both the demand and supply sides in the above median income level samples for MSMEs. As in the full samples, higher bank overhead costs are associated with a decreased potential demand and supply of credit to MSMEs. As both the demand and supply side effects occur in a negative direction, there is no significant effect of bank overhead costs for the finance gap.

Table 3.12: Summary Statistics for Above/Below Median GDP per Capita Samples

		MSME Finance Gap/GDP (%)	SME Finance Gap/GDP (%)	Mirco Firm Finance Gap/GDP (%)	MSME Potential Demand/GDP (%)	SME Potential Demand/GDP (%)	Micro Firm Potential Demand/GDP (%)	MSME Finance Supply/GDP (%)	SME Finance Supply/GDP (%)	Micro Firm Finance Supply/GDP (%)	WUI Country	LN (Private Credit/GDP)	LN (GDP per capita)	Bank Overhead Costs to Total Assets (%)	Three Bank Asset Concentration	KAOPEN	LMF
Above Median Income Level	Obs	43	40	39	43	40	39	43	40	39	43	43	43	43	43	43	43
	Mean	17.10	15.46	2.69	28.62	25.24	3.66	11.51	9.77	0.97	0.24	3.86	8.93	3.54	65.40	0.64	188.23
	Std. Dev.	9.15	8.02	2.35	9.70	8.91	3.02	7.35	6.57	1.47	0.13	0.50	0.49	1.79	13.79	1.39	100.24
	Min	0.24	3.81	0.03	12.61	12.60	0.50	1.21	0.81	0.01	0.06	2.69	8.23	0.98	28.44	-1.92	79.42
	Max	40.80	37.00	11.30	55.79	51.33	12.13	33.34	31.79	7.68	0.85	4.97	9.95	9.26	95.29	2.32	552.80
Below Median Income Level	Obs	44	41	39	44	41	39	44	41	39	44	44	44	44	44	44	44
	Mean	18.39	15.50	3.62	22.83	19.53	3.97	4.45	4.03	0.35	0.25	3.09	7.11	4.61	64.84	-0.61	113.32
	Std. Dev.	10.35	9.73	3.84	10.62	10.06	3.91	3.07	2.67	0.59	0.14	0.73	0.64	1.93	20.36	1.30	63.77
	Min	2.84	2.55	0.02	7.41	6.11	0.30	0.02	0.02	0.00	0.07	1.63	5.73	1.46	30.21	-1.92	43.34
	Max	52.76	51.19	13.73	54.70	52.86	14.58	12.46	11.60	3.21	0.66	4.69	8.18	9.07	100.00	2.32	358.50

Table 3.13: MSMEs: Finance Gap as a Percentage of GDP - Split by Median GDP per Capita

	Dependent Variable: MSME Finance Gap/GDP (%)											
	Above Median Income Level						Below Median Income Level					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-13.2500*	-13.1513*	-7.9518	-7.6929	-8.2889	-7.4529	-3.2601	-2.1481	-0.4501	-0.2955	0.7960	-0.6703
	(6.9073)	(7.1195)	(7.1772)	(7.5224)	(8.0365)	(7.6512)	(10.8234)	(10.9127)	(10.8784)	(11.1603)	(10.9139)	(11.6062)
LN(Private Credit/GDP)			-4.1734	-4.1936	-4.2554	-4.4179			-5.5453	-5.4564	-5.4827	-6.7637
			(3.0844)	(3.1071)	(3.2214)	(3.2277)			(3.5142)	(3.7339)	(3.4122)	(4.3284)
LN(GDP per Capita)		3.1679	3.6071	3.4580	3.7705	3.1565		1.1783	2.0394	2.0934	1.0089	2.0990
		(3.0930)	(3.0596)	(3.2688)	(3.1325)	(3.2525)		(2.6432)	(2.8779)	(3.0667)	(3.0877)	(3.1096)
Bank Overhead Costs per Total Assets (%)			-0.1579	-0.1691	-0.1889	-0.1172			-1.2396	-1.2322	-1.4647	-1.5347
			(0.6574)	(0.6792)	(0.6645)	(0.6919)			(1.0205)	(1.0244)	(1.0555)	(1.0807)
Three Bank Asset Concentration				-0.0185	-0.0110	-0.0272				0.0063	0.0115	-0.0119
				(0.0873)	(0.0965)	(0.0938)				(0.0890)	(0.0895)	(0.0998)
KAOPEN					-0.3181						1.9753	
					(1.2170)						(1.3395)	
LMF						0.0050						0.0223
						(0.0151)						(0.0269)
Observations	43	43	43	43	43	43	44	44	44	44	44	44
R-squared	0.0365	0.0657	0.1054	0.1061	0.1081	0.1083	0.0019	0.0069	0.1237	0.1238	0.1816	0.1374
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Table 3.14:MSMEs: Potential Demand as a Percentage of GDP - Split by Median GDP per Capita

	Dependent Variable: MSME Potential Demand/GDP (%)											
	Above Median Income Level						Below Median Income Level					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-7.6497	-7.4421	-9.0495	-6.8069	-7.3557	-6.1432	-7.2687	-4.6493	-1.1644	-0.9186	0.0787	-1.2191
	(7.4098)	(6.6570)	(8.1652)	(8.6817)	(9.2619)	(9.2063)	(10.8788)	(10.5368)	(11.2816)	(11.5449)	(10.6598)	(11.8136)
LN(Private Credit/GDP)			1.4886	1.3141	1.2572	0.6938			-3.4939	-3.3526	-3.3767	-4.4006
			(3.7430)	(3.6501)	(3.7331)	(3.8898)			(3.6393)	(3.9783)	(3.7561)	(4.6791)
LN(GDP per Capita)		6.6662**	5.8038*	4.5132	4.8010	3.6791		2.7755	2.7496	2.8356	1.8446	2.8400
		(3.2750)	(3.1076)	(3.2447)	(3.2591)	(3.2777)		(2.7633)	(2.9703)	(3.2052)	(3.3019)	(3.2470)
Bank Overhead Costs per Total Assets (%)			-1.2186*	-1.3156*	-1.3338*	-1.1720			-1.2397	-1.2279	-1.4404	-1.4704
			(0.7002)	(0.7025)	(0.6767)	(0.7444)			(1.1073)	(1.1131)	(1.1529)	(1.1718)
Three Bank Asset Concentration				-0.1602	-0.1533	-0.1843*				0.0101	0.0148	-0.0045
				(0.1010)	(0.1083)	(0.1034)				(0.0970)	(0.1007)	(0.1100)
KAOPEN					-0.2929						1.8049	
					(1.1367)						(1.3215)	
LMF						0.0137						0.0179
						(0.0187)						(0.0295)
Observations	43	43	43	43	43	43	44	44	44	44	44	44
R-squared	0.0108	0.1257	0.1971	0.2439	0.2453	0.2588	0.0089	0.0354	0.0901	0.0903	0.1362	0.0987
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Table 3.15: MSMEs: Finance Supply as a Percentage of GDP - Split by Median GDP per Capita

	Dependent Variable: MSME Finance Supply/GDP (%)											
	Above Median Income Level						Below Median Income Level					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	5.6003	5.7092	-1.0977	0.8860	0.9332	1.3097	-4.0085	-2.5012	-0.7144	-0.6232	-0.7173	-0.5488
	(5.6349)	(4.9458)	(6.1654)	(5.2318)	(5.3156)	(5.5452)	(4.0875)	(3.8417)	(3.6503)	(3.7205)	(3.9778)	(3.8701)
LN(Private Credit/GDP)			5.6621***	5.5077***	5.5126***	5.1117**			2.0514***	2.1038***	2.1061***	2.3631***
			(2.0128)	(1.9336)	(1.9533)	(2.0113)			(0.5413)	(0.7309)	(0.7215)	(0.8348)
LN(GDP per Capita)		3.4983	2.1968	1.0552	1.0304	0.5227		1.5972*	0.7102	0.7421	0.8357	0.7410
		(2.2173)	(2.0678)	(2.2526)	(2.1691)	(2.2095)		(0.8747)	(0.8686)	(0.9289)	(0.9173)	(0.9436)
Bank Overhead Costs per Total Assets (%)			-1.0607**	-1.1464***	-1.1449***	-1.0548**			-0.0001	0.0043	0.0244	0.0643
			(0.4250)	(0.4104)	(0.4053)	(0.4095)			(0.2443)	(0.2536)	(0.2526)	(0.2504)
Three Bank Asset Concentration				-0.1417	-0.1423	-0.1571*				0.0037	0.0033	0.0074
				(0.0849)	(0.0863)	(0.0888)				(0.0267)	(0.0260)	(0.0273)
KAOPEN					0.0252						-0.1704	
					(0.6336)						(0.3725)	
LMF						0.0088						-0.0044
						(0.0080)						(0.0073)
Observations	43	43	43	43	43	43	44	44	44	44	44	44
R-squared	0.0101	0.0652	0.3567	0.4204	0.4204	0.4310	0.0323	0.1372	0.3273	0.3277	0.3326	0.3338
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

D. Effects on the Finance Gap, Potential Demand and Finance Supply for SMEs and Micro Firms in Samples Divided by Median Income Level

Interesting results occur when focusing just on SMEs by income level. Table 3.16 shows that, for SMEs in the above median income level sample, higher macroeconomic uncertainty as measured by the country level WUI is associated with a decrease in the finance gap as in H_2. This effect operates through the demand side channel. As presented in Table 3.17, higher country level WUI is associated with a decrease in potential demand for SMEs in the above median real GDP per capita sample. The irreversibility of investment theory suggests that, in times of heightened uncertainty, small firms decrease their desire to invest in physical capital if it is more costly to adjust this investment downward than upward. This would be the case if small firms find it difficult to sell or redirect physical capital to more productive uses during more volatile economic conditions, due to highly specialized equipment and a limited variety of goods and services. In addition to willingness to borrow considerations, demand for credit could also decrease in response to higher uncertainty due to issues related to SME's ability to borrow due to firm characteristics. Research shows that during times of higher uncertainty, information

asymmetry issues particularly problematic for SMEs increase (Greenwald and Stiglitz, 1990) and small firms face relatively more difficulties securing loans from commercial banks (Kumar et al, 1999; Love, 2003). These results are consistent with findings in Chapter 2, where I provide evidence that a higher level of WUI is associated with a decrease in the SME outstanding loans as a proportion of total outstanding loans with commercial banks, likely through the demand side channel. There is no effect of WUI for countries in the below median income level samples.

In the SME subgroup, private credit as a percentage of GDP increases the supply of credit in both above and below median income level samples, suggesting SMEs drive these effects in the MSME group, as presented in Table 3.18. There is no effect of higher levels of financial development on the supply of credit to micro firms. This is likely because in many cases, micro firms rely to a limited extent on credit from formal financial institutions, but rather use funding from friends and family. The effect of financial development on potential demand is confined to the above median income level sample of the SME subgroup. For the above median income level panel in Table 3.17, private credit to GDP enters with a positive and significant coefficient, meaning that higher levels of private credit as a percentage of GDP are associated with a higher potential demand for credit for SMEs. This finding is consistent with the hypothesis that a more developed financial system could improve firms' profits, which would enable them to expand services and provide an incentive to increase investment, thus increasing their demand for credit. For this sample, as both demand and supply side effects of financial development are positive, there is no significant change in the finance gap.

In the above median income level samples, bank overhead costs to total assets have a negative impact for the potential demand and finance supply for both SMEs and micro firm

subgroups, effect which also reflects for the overall MSME group. As Tables 3.19-3.21 indicate, bank overhead costs do not change the finance gap, but are important drivers for financing of micro firms in the above median income level group through decreasing their potential demand and finance supply.

Overall, considering the results for the full samples in Section IV A and IV B and the results with samples divided by the median level of real GDP per capita presented in Section IV C and IV D, private credit to GDP is an important driver of small firm finance, as it is strongly associated with the supply of finance to MSME and the SME subgroup. Whether this increase in supply of credit is associated with a reduction in the finance gap for MSMEs/SMEs depends on whether or not financial development affects the demand side. In the full samples, the finance gap for MSMEs/SMEs decreases in response to higher levels of domestic financial development, as the demand side is not affected. The only observed effect on the demand side is in the above median income level sample only for SMEs, in which case the finance gap remains unaffected by an increase in financial development.

Table 3.16: SMEs: Finance Gap as a Percentage of GDP - Split by Median GDP per Capita

	Dependent Variable: SME Finance Gap/GDP (%)											
	Above Median Income Level						Below Median Income Level					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-15.1052**	-15.9050**	-13.3989*	-14.0451*	-15.3036*	-14.2815**	-6.9613	-6.5594	-3.4552	-3.5740	-3.3098	-4.6239
	(6.7555)	(6.8139)	(6.9786)	(6.9153)	(8.1938)	(7.0150)	(10.0205)	(9.9360)	(9.9838)	(10.7764)	(10.3114)	(11.1763)
LN(Private Credit/GDP)			-1.9123	-1.8609	-1.8195	-1.6572			-5.2897	-5.3426	-5.3373*	-7.2892*
			(2.9061)	(2.9302)	(2.9878)	(2.9546)			(3.5043)	(3.4851)	(2.9897)	(3.9355)
LN(GDP per Capita)		3.6057	3.7484	3.9938	4.3187	4.2241		0.5189	1.3627	1.3278	0.4082	1.3900
		(2.7749)	(2.8221)	(2.9832)	(2.8971)	(3.0780)		(2.4917)	(2.6761)	(2.7701)	(2.6733)	(2.8037)
Bank Overhead Costs per Total Assets (%)			-0.0512	-0.0416	-0.0526	-0.0695			-1.3239	-1.3267	-1.5441	-1.7564
			(0.5509)	(0.5536)	(0.5511)	(0.5521)			(1.0199)	(1.0221)	(1.0203)	(1.0560)
Three Bank Asset Concentration				0.0364	0.0436	0.0431				-0.0039	0.0006	-0.0327
				(0.0690)	(0.0731)	(0.0776)				(0.0719)	(0.0729)	(0.0775)
KAOPEN					-0.4413						2.1384	
					(1.1891)						(1.4915)	
LMF						-0.0037						0.0335
						(0.0083)						(0.0258)
Observations	40	40	40	40	40	40	41	41	41	41	41	41
R-squared	0.0674	0.1198	0.1311	0.1349	0.1401	0.1366	0.0099	0.0109	0.1398	0.1399	0.2151	0.1763
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Table 3.17: SMEs: Potential Demand as a Percentage of GDP - Split by Median GDP per Capita

	Dependent Variable: SME Potential Demand/GDP (%)											
	Above Median Income Level						Below Median Income Level					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-11.3444	-12.7771*	-21.1329***	-19.9156**	-22.1319**	-19.6036**	-9.1528	-7.6956	-2.4562	-2.4427	-2.2196	-3.2665
	(7.2526)	(7.1994)	(7.1067)	(7.7735)	(8.5245)	(7.9299)	(10.3127)	(10.1455)	(10.8282)	(11.6649)	(10.6390)	(11.8788)
LN(Private Credit/GDP)			6.4457**	6.3488**	6.4216**	6.0800**			-3.5222	-3.5162	-3.5117	-5.0437
			(2.8566)	(2.9091)	(2.9046)	(2.9616)			(3.6000)	(3.6344)	(3.2832)	(4.1469)
LN(GDP per Capita)		6.4596**	5.8631**	5.4008*	5.9731**	5.0969		1.8815	1.8080	1.8120	1.0355	1.8608
		(3.1145)	(2.8140)	(2.8890)	(2.8217)	(3.0201)		(2.6421)	(2.8679)	(2.9698)	(2.9549)	(3.0120)
Bank Overhead Costs per Total Assets (%)			-0.2689	-0.2868	-0.3061	-0.2500			-1.4450	-1.4447	-1.6282	-1.7819
			(0.6649)	(0.7190)	(0.7051)	(0.7299)			(1.0857)	(1.0913)	(1.1051)	(1.1330)
Three Bank Asset Concentration				-0.0686	-0.0559	-0.0774				0.0004	0.0042	-0.0221
				(0.0802)	(0.0832)	(0.0859)				(0.0773)	(0.0818)	(0.0868)
KAOPEN					-0.7772						1.8058	
					(1.1284)						(1.5583)	
LMF						0.0049						0.0263
						(0.0107)						(0.0288)
Observations	40	40	40	40	40	40	41	41	41	41	41	41
R-squared	0.0308	0.1670	0.3027	0.3138	0.3267	0.3162	0.0160	0.0287	0.1001	0.1001	0.1504	0.1211
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Table 3.18: SMEs: Finance Supply as a Percentage of GDP - Split by Median GDP per Capita

	Dependent Variable: SME Finance Supply/GDP (%)											
	Above Median Income Level						Below Median Income Level					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	3.7608	3.1279	-7.7340	-5.8706	-6.8283	-5.3221	-2.1915	-1.1362	0.9990	1.1313	1.0902	1.3574
	(4.5554)	(4.4509)	(4.6316)	(4.3269)	(4.3962)	(4.5793)	(3.8245)	(3.6652)	(3.5274)	(3.5057)	(3.9570)	(3.7155)
LN(Private Credit/GDP)			8.3581***	8.2097***	8.2412***	7.7372***			1.7675***	1.8264**	1.8256**	2.2455***
			(1.7140)	(1.7603)	(1.7329)	(1.8376)			(0.5277)	(0.7074)	(0.6924)	(0.8128)
LN(GDP per Capita)		2.8538	2.1147	1.4071	1.6544	0.8728		1.3626*	0.4453	0.4842	0.6273	0.4708
		(1.7936)	(1.5051)	(1.6873)	(1.5970)	(1.7191)		(0.7770)	(0.7773)	(0.8444)	(0.8304)	(0.8549)
Bank Overhead Costs per Total Assets (%)			-0.2177	-0.2451	-0.2535	-0.1805			-0.1211	-0.1180	-0.0842	-0.0255
			(0.2943)	(0.3887)	(0.3854)	(0.4037)			(0.2289)	(0.2380)	(0.2465)	(0.2424)
Three Bank Asset Concentration				-0.1049	-0.0995	-0.1205				0.0044	0.0037	0.0106
				(0.0768)	(0.0757)	(0.0802)				(0.0258)	(0.0243)	(0.0258)
KAOPEN					-0.3359						-0.3326	
					(0.5548)						(0.3137)	
LMF						0.0086						-0.0072
						(0.0066)						(0.0062)
Observations	40	40	40	40	40	40	41	41	41	41	41	41
R-squared	0.0062	0.0551	0.4476	0.4953	0.4997	0.5087	0.0130	0.1080	0.3334	0.3342	0.3584	0.3567
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Table 3.19: Micro Firms: Finance gap as a Percentage of GDP - Split by Median GDP per Capita

	Dependent Variable: Micro Firm Finance Gap/GDP (%)											
	Above Median Income Group						Below Median Income Group					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	2.1787	1.9769	2.8967	2.8529	3.5697*	3.3499*	-0.7398	0.5598	-0.5511	-0.4484	-0.4388	-0.1068
	(1.7487)	(1.7580)	(1.7559)	(2.0495)	(2.0946)	(1.9282)	(4.9237)	(4.7927)	(4.8472)	(4.9444)	(5.0375)	(5.0827)
LN(Private Credit/GDP)			-0.7398	-0.7352	-0.7004	-1.1629*			-0.4827	-0.4433	-0.4438	-0.1707
			(0.5869)	(0.6044)	(0.5591)	(0.6549)			(1.0531)	(1.3666)	(1.4124)	(1.5752)
LN(GDP per Capita)		1.7911**	1.7768**	1.7943*	1.6522*	1.3105		1.6299	1.9525*	1.9804	1.8998	1.9585
		(0.7611)	(0.7845)	(0.9139)	(0.8600)	(0.7811)		(1.0342)	(1.1134)	(1.2663)	(1.3637)	(1.2555)
Bank Overhead Costs per Total Assets (%)			-0.1938	-0.1930	-0.1798	-0.1344			0.0995	0.1003	0.0819	0.1464
			(0.1206)	(0.1280)	(0.1293)	(0.1479)			(0.3586)	(0.3642)	(0.3803)	(0.4148)
Three Bank Asset Concentration				0.0025	-0.0010	-0.0115				0.0031	0.0035	0.0070
				(0.0296)	(0.0282)	(0.0278)				(0.0443)	(0.0443)	(0.0485)
KAOPEN					0.2382						0.1891	
					(0.2618)						(0.5174)	
LMF						0.0078						-0.0044
						(0.0075)						(0.0098)
Observations	39	39	39	39	39	39	39	39	39	39	39	39
R-squared	0.0163	0.1665	0.1892	0.1895	0.2057	0.2778	0.0007	0.0695	0.0804	0.0806	0.0845	0.0843
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Table 3.20: Micro Firms: Potential Demand as a Percentage of GDP - Split by Median GDP per Capita

	Dependent Variable: Micro Firm Potential Demand/GDP (%)											
	Above Median Income Level						Below Median Income Level					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	3.9196	3.6559	4.8370	5.2888	6.2851*	5.6718	-1.1401	0.3777	-0.5522	-0.2526	-0.2475	0.0630
	(3.7036)	(3.4029)	(3.4542)	(3.4626)	(3.4334)	(3.4631)	(4.9797)	(4.7766)	(4.8225)	(4.9498)	(5.0367)	(5.1035)
LN(Private Credit/GDP)			-0.9221	-0.9701	-0.9218	-1.2998			-0.3922	-0.2773	-0.2775	-0.0254
			(0.8597)	(0.9070)	(0.8258)	(0.9308)			(1.0755)	(1.3819)	(1.4166)	(1.6004)
LN(GDP per Capita)		2.3398**	2.2761**	2.0950**	1.8975*	1.7222*		1.9035*	2.1705*	2.2519*	2.2095	2.2317*
		(0.9035)	(0.9139)	(0.9735)	(0.9361)	(0.8914)		(1.0183)	(1.1060)	(1.2535)	(1.3518)	(1.2415)
Bank Overhead Costs per Total Assets (%)			-0.4148**	-0.4231**	-0.4047**	-0.3779*			0.0853	0.0876	0.0779	0.1301
			(0.1747)	(0.1753)	(0.1816)	(0.2008)			(0.3752)	(0.3822)	(0.3964)	(0.4270)
Three Bank Asset Concentration				-0.0259	-0.0308	-0.0368				0.0091	0.0093	0.0127
				(0.0355)	(0.0349)	(0.0333)				(0.0446)	(0.0449)	(0.0488)
KAOPEN					0.3310						0.0994	
					(0.2964)						(0.5258)	
LMF						0.0060						-0.0040
						(0.0080)						(0.0098)
Observations	39	39	39	39	39	39	39	39	39	39	39	39
R-squared	0.0318	0.1864	0.2361	0.2502	0.2691	0.2818	0.0017	0.0924	0.0995	0.1010	0.1021	0.1041
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Table 3.21: Micro Firms: Finance supply as a Percentage of GDP - Split by Median GDP per Capita

	Dependent Variable: Micro Firm Finance Supply/GDP (%)											
	Above Median Income Level						Below Median Income Level					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	1.7409	1.6790	1.9403	2.4359	2.7153	2.3219	-0.4003	-0.1821	-0.0011	0.1958	0.1913	0.1698
	(2.5564)	(2.4625)	(2.5932)	(2.5229)	(2.5186)	(2.4429)	(0.3275)	(0.4376)	(0.5243)	(0.5868)	(0.5608)	(0.5591)
LN(Private Credit/GDP)			-0.1823	-0.2349	-0.2214	-0.1369			0.0905	0.1661	0.1663	0.1453
			(0.4018)	(0.4444)	(0.4288)	(0.4798)			(0.1084)	(0.1173)	(0.1157)	(0.1641)
LN(GDP per Capita)		0.5486	0.4993	0.3007	0.2453	0.4116		0.2736	0.2180	0.2715	0.3097	0.2732
		(0.4191)	(0.4061)	(0.3256)	(0.3237)	(0.4108)		(0.1955)	(0.2002)	(0.2213)	(0.2328)	(0.2297)
Bank Overhead Costs per Total Assets (%)			-0.2211**	-0.2301*	-0.2249*	-0.2435*			-0.0142	-0.0127	-0.0040	-0.0162
			(0.1045)	(0.1166)	(0.1212)	(0.1252)			(0.0508)	(0.0515)	(0.0499)	(0.0600)
Three Bank Asset Concentration				-0.0285*	-0.0298*	-0.0252*				0.0060	0.0058	0.0057
				(0.0149)	(0.0155)	(0.0128)				(0.0038)	(0.0037)	(0.0034)
KAOPEN					0.0929						-0.0897*	
					(0.1087)						(0.0528)	
LMF						-0.0018						0.0003
						(0.0024)						(0.0015)
Observations	39	39	39	39	39	39	39	39	39	39	39	39
R-squared	0.0266	0.0627	0.1293	0.2012	0.2075	0.2131	0.0091	0.0927	0.1073	0.1374	0.1759	0.1383
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

V. **Robustness**

In this section, I perform two robustness analyses. First, I conduct the main analysis for MSMEs and SMEs using the 78 country sample used for micro firms to observe whether the countries included drive these results or micro firms do respond differently. Second, I include financial inclusion in the model, which refers to the access and use of financial services by a wide variety of agents, rather than measuring the overall size of the financial sector, which is done by financial development. I perform this analysis to observe whether financial inclusion is more

important than financial development for the small firm finance gap and its two components, as research on small firm finance is often a part of literature on financial inclusion. It is possible that financial inclusion is an important driver of the MSME gap, possibly making the level of financial development insignificant.

Results for the first robustness analysis concerning the smaller, 78 country sample applied to the MSME and SME regressions are reported in Tables 3.22-3.27 below. Results are qualitatively similar to the larger sample results presented in Section IV A for MSMEs and IV B for SMEs, so it is not the country composition that drives these findings. Micro firms likely behave differently from SMEs in response to these drivers, likely because micro firms rely less on formal financial services, and more on other forms of finance, such as friends and family.

For the second robustness check, I add a financial inclusion variable often used in the literature, the number of deposit accounts per 1,000 adults with commercial banks, to the model. This variable comes from the International Monetary Fund's Financial Access Survey. Table 3.28, which shows summary statistics, indicates that the mean value for number of deposit accounts in the 66 country sample is about 1,001 deposit accounts per 1,000 adults, and varies greatly by country, ranging from approximately 27 to 3,514. The correlation between financial inclusion and the MSME gap is very low at -0.003, but there is a higher correlation between inclusion and the supply side of MSME finance at 0.49. As the correlation between financial inclusion and financial development is moderate at 0.51, I include both of these variables in the analysis. The SME finance gap displays a similar response as the MSME finance gap, as shown in Table 3.33.

Table 3.22: Summary Statistics with Financial Inclusion

	MSME Finance Gap/GDP (%)	SME Finance Gap/GDP (%)	Micro Firms Finance Gap/GDP (%)	MSME Potential Demand/ GDP (%)	SME Potential Demand/ GDP (%)	Micro Firms Potential Demand/GDP (%)	MSME Finance Supply/ GDP (%)	SME Finance Supply/GDP (%)	Micro Firms Finance Supply/GDP (%)	WUI Country	LN(Private Credit/GDP)	Number of Deposit Accounts per 1,000 adults	LN(GDP per capita)	Bank Overhead Costs to Total Assets (%)	Three Bank Asset Concentration	KAOPEN	LMF
Obs	66	61	61	66	61	61	66	61	61	66	66	66	66	66	66	66	66
Mean	17.17	14.91	3.07	25.74	22.15	3.81	8.57	7.24	0.74	0.25	3.54	1001.44	8.04	4.00	64.71	0.17	153.74
Std. Dev.	9.50	8.72	3.14	10.45	10.08	3.45	7.08	6.16	1.27	0.14	0.77	780.93	1.04	2.01	18.10	1.51	100.04
Min	0.24	3.81	0.02	7.41	6.11	0.30	0.14	0.14	0.00	0.06	1.63	29.69	5.73	0.98	30.21	-1.92	43.34
Max	52.76	51.19	13.73	55.79	52.86	14.58	33.34	31.79	7.68	0.85	4.97	3514.10	9.77	9.07	100.00	2.32	552.80

Table 3.23: Correlation Matrix with Financial Inclusion

	MSME Finance Gap/GDP (%)	SME Finance Gap/GDP (%)	Mirco Firms Finance Gap/GDP (%)	MSME Potential Demand/ GDP (%)	SME Potential Demand/ GDP (%)	Micro Potential Demand/ GDP (%)	MSME Finance Supply/ GDP (%)	SME Finance Supply/GDP (%)	Micro Firms Finance Supply/GDP (%)	WUI Country	LN (Private Credit/GDP)	Number of Deposit Accounts per 1,000 adults	LN (GDP per capita)	Bank Overhead Costs to Total Assets (%)	Three Bank Asset Concentration	KAOPEN	LMF
MSME Finance Gap/GDP (%)	1.000																
SME Finance Gap/GDP (%)	0.941	1.000															
Mirco Firms Finance Gap/GDP (%)	0.333	-0.007	1.000														
MSME Potential Demand/GDP (%)	0.786	0.743	0.252	1.000													
SME Potential Demand/GDP (%)	0.731	0.795	-0.053	0.946	1.000												
Micro Potential Demand/GDP (%)	0.276	-0.042	0.930	0.307	-0.020	1.000											
MSME Finance Supply/GDP (%)	-0.140	-0.126	-0.063	0.502	0.491	0.105	1.000										
SME Finance Supply/GDP (%)	-0.135	-0.115	-0.078	0.495	0.511	0.028	0.983	1.000									
Micro Firms Finance Supply/GDP (%)	-0.075	-0.097	0.049	0.210	0.079	0.414	0.441	0.267	1.000								
WUI Country	-0.112	-0.110	-0.025	-0.107	-0.113	0.002	-0.015	-0.030	0.067	1.000							
LN (Private Credit/GDP)	-0.146	-0.134	-0.059	0.245	0.247	0.030	0.597	0.594	0.227	-0.049	1.000						
Number of Deposit Accounts per 1,000 adults	-0.003	0.015	-0.051	0.303	0.263	0.164	0.490	0.408	0.570	0.097	0.506	1.000					
LN (GDP per capita)	0.062	0.081	-0.042	0.404	0.394	0.089	0.560	0.530	0.345	-0.085	0.587	0.623	1.000				
Bank Overhead Costs to Total Assets (%)	-0.095	-0.093	-0.020	-0.385	-0.362	-0.122	-0.484	-0.462	-0.281	0.336	-0.603	-0.340	-0.477	1.000			
Three Bank Asset Concentration	0.035	0.048	-0.032	-0.103	-0.080	-0.083	-0.214	-0.199	-0.146	0.062	-0.292	-0.248	-0.152	0.212	1.000		
KAOPEN	0.257	0.269	0.012	0.284	0.290	0.027	0.095	0.094	0.042	-0.144	0.159	0.137	0.379	-0.150	0.017	1.000	
LMF	0.045	0.014	0.093	0.266	0.242	0.110	0.363	0.375	0.068	0.058	0.430	0.307	0.403	-0.201	0.080	0.367	1.000

Results for regressions including financial inclusion for the finance gap, potential demand and finance supply for MSMEs, SMEs and micro firms are presented in Tables 3.24-3.32 below. As Table 3.24 shows, financial development is no longer significant for the MSME finance gap, and financial inclusion also does not show an effect. The absence of a persistent effect from financial development on the MSME gap likely arises because of the decrease in sample size due to the limited availability of financial inclusion data. The negative effect of bank overhead costs to total assets on the MSME potential demand holds after adding the financial inclusion variable. In terms of the MSME finance supply, there is also no significance of private credit and less significance real GDP per capita compared with the main results, but the effect of bank overhead costs still holds in this case, as well. There is very little significance in the SME potential demand regressions presented in Table 3.28. However, as Table 3.29 indicates, private credit is still an important driver for the SME finance supply, maintaining its positive effect, as well as economic development. Financial inclusion could be important for the micro firm finance supply, as it

enters with a positive and significant coefficient, as shown in Table 3.32. Economic development is no longer significant in this table. Bank overhead costs maintain its negative significant effects on the micro firm finance supply, overall displaying the most persistent effect in this robustness analysis, but it is important to note that the reduction in sample size could have an impact on these results.

Table 3.24: MSME Finance Gap as a Percentage of GDP - Regressions with Financial Inclusion

	Dependent Variable: MSME Finance Gap/GDP (%)					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-5.4608	-4.8342	-1.4538	-1.2077	0.1133	-1.4343
	(7.1411)	(7.2393)	(6.5868)	(6.6160)	(7.0708)	(6.7868)
LN(Private Credit/GDP)			-4.3556	-4.5200	-4.3839	-5.0605
			(3.0546)	(3.0183)	(2.7956)	(3.1966)
Number of Deposit Accounts/1000 adults	-0.0016	-0.0021	-0.0015	-0.0016	-0.0013	-0.0017
	(0.0020)	(0.0031)	(0.0033)	(0.0032)	(0.0033)	(0.0031)
LN(GDP per Capita)		0.6359	1.3659	1.4412	0.4173	1.2212
		(1.9326)	(2.0574)	(2.0269)	(1.7822)	(1.9867)
Bank Overhead Costs per Total Assets (%)			-0.9644	-0.9566	-0.9973	-1.0047
			(0.8259)	(0.8462)	(0.8192)	(0.8541)
Three Bank Asset Concentration				-0.0276	-0.0341	-0.0401
				(0.0648)	(0.0637)	(0.0718)
KAOPEN					1.2605	
					(0.8500)	
LMF						0.0107
						(0.0140)
Observations	66	66	66	66	66	66
R-squared	0.0248	0.0275	0.0882	0.0907	0.1223	0.0997
Robust standard errors in parentheses						
*** p<0.01, ** p<0.05, * p<0.1						

Table 3.25: MSME Potential Demand as a Percentage of GDP with Financial Inclusion

	Dependent Variable: MSME Potential Demand/GDP (%)					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-8.5376	-5.3130	1.8732	2.2038	3.3146	1.7787
	(7.4495)	(7.2591)	(7.3079)	(7.2971)	(7.3446)	(7.3459)
LN(Private Credit/GDP)			-2.5124	-2.7332	-2.6188	-3.7471
			(3.1937)	(3.2473)	(3.0788)	(3.4573)
Number of Deposit Accounts/1000 adults	0.0033*	0.0004	0.0003	0.0001	0.0004	-0.0001
	(0.0017)	(0.0026)	(0.0029)	(0.0028)	(0.0030)	(0.0027)
LN(GDP per Capita)		3.2729*	2.8810	2.9822	2.1211	2.5694
		(1.8741)	(2.0714)	(2.0995)	(1.9968)	(2.0147)
Bank Overhead Costs per Total Assets (%)			-1.7296*	-1.7192*	-1.7534**	-1.8094**
			(0.8773)	(0.8973)	(0.8559)	(0.8889)
Three Bank Asset Concentration				-0.0371	-0.0425	-0.0605
				(0.0698)	(0.0696)	(0.0741)
KAOPEN					1.0601	
					(0.8787)	
LMF						0.0201
						(0.0140)
Observations	66	66	66	66	66	66
R-squared	0.0686	0.1281	0.1862	0.1899	0.2084	0.2161
Robust standard errors in parentheses						
*** p<0.01, ** p<0.05, * p<0.1						

Table 3.26: MSME Finance Supply as a Percentage of GDP with Financial Inclusion

	Dependent Variable: MSME Finance Supply/GDP (%)					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-3.0769	-0.4788	3.3270	3.4114	3.2014	3.2130
	(3.6852)	(2.8889)	(3.5171)	(3.5379)	(3.7456)	(3.4122)
LN(Private Credit/GDP)			1.8432	1.7868	1.7651	1.3134
			(1.2133)	(1.2265)	(1.2215)	(1.3718)
Number of Deposit Accounts/1000 adults	0.0048***	0.0025*	0.0017	0.0017	0.0017	0.0016
	(0.0011)	(0.0014)	(0.0013)	(0.0014)	(0.0014)	(0.0015)
LN(GDP per Capita)		2.6370***	1.5151*	1.5410*	1.7038	1.3483
		(0.9859)	(0.8353)	(0.8811)	(1.0502)	(0.9102)
Bank Overhead Costs per Total Assets (%)			-0.7652**	-0.7626**	-0.7561**	-0.8047**
			(0.3384)	(0.3410)	(0.3561)	(0.3284)
Three Bank Asset Concentration				-0.0095	-0.0084	-0.0204
				(0.0389)	(0.0386)	(0.0397)
KAOPEN					-0.2005	
					(0.5145)	
LMF						0.0094
						(0.0064)
Observations	66	66	66	66	66	66
R-squared	0.2829	0.3669	0.4469	0.4474	0.4488	0.4598
Robust standard errors in parentheses						
*** p<0.01, ** p<0.05, * p<0.1						

Table 3.27: SME Finance Gap as a Percentage of GDP with Financial Inclusion

	Dependent Variable: SME Finance Gap/GDP (%)					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-6.7327	-5.9160	-2.6198	-2.7045	-0.9012	-2.8931
	(6.9821)	(7.0884)	(6.0750)	(6.1825)	(6.4877)	(6.3078)
LN(Private Credit/GDP)			-4.3321	-4.2756	-4.1873	-4.6105
			(3.2131)	(3.0846)	(2.7711)	(3.1452)
Number of Deposit Accounts/1000 adults	0.0003	-0.0004	0.0003	0.0004	0.0007	0.0003
	(0.0019)	(0.0027)	(0.0029)	(0.0029)	(0.0031)	(0.0028)
LN(GDP per Capita)		0.7934	1.5814	1.5557	0.4580	1.4150
		(1.6227)	(1.8031)	(1.7876)	(1.6470)	(1.8131)
Bank Overhead Costs per Total Assets (%)			-0.9103	-0.9139	-0.9759	-0.9471
			(0.8667)	(0.8825)	(0.8231)	(0.8886)
Three Bank Asset Concentration				0.0097	0.0035	0.0021
				(0.0534)	(0.0520)	(0.0579)
KAOPEN					1.5321*	
					(0.9048)	
LMF						0.0064
						(0.0099)
Observations	61	61	61	61	61	61
R-squared	0.0128	0.0179	0.0919	0.0923	0.1493	0.0963
Robust standard errors in parentheses						
*** p<0.01, ** p<0.05, * p<0.1						

Table 3.28: SME Potential Demand as a Percentage of GDP with Financial Inclusion

	Dependent Variable: SME Potential Demand/GDP (%)					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-9.6856	-6.0822	-0.3815	-0.3825	1.0053	-0.7963
	(7.2749)	(6.8516)	(6.6224)	(6.7008)	(6.6207)	(6.6676)
LN(Private Credit/GDP)			-1.5090	-1.5083	-1.4404	-2.2431
			(3.4806)	(3.4052)	(3.1957)	(3.5144)
Number of Deposit Accounts/1000 adults	0.0037**	0.0007	0.0005	0.0005	0.0008	0.0004
	(0.0017)	(0.0026)	(0.0029)	(0.0029)	(0.0031)	(0.0028)
LN(GDP per Capita)		3.5004*	3.0480	3.0477	2.2029	2.7390
		(1.8289)	(2.0000)	(2.0061)	(1.9785)	(2.0213)
Bank Overhead Costs per Total Assets (%)			-1.3279	-1.3279	-1.3756	-1.4007
			(0.9481)	(0.9658)	(0.9116)	(0.9594)
Three Bank Asset Concentration				0.0001	-0.0046	-0.0166
				(0.0612)	(0.0609)	(0.0640)
KAOPEN					1.1791	
					(0.9722)	
LMF						0.0141
						(0.0110)
Observations	61	61	61	61	61	61
R-squared	0.0883	0.1628	0.2014	0.2014	0.2266	0.2157
Robust standard errors in parentheses						
*** p<0.01, ** p<0.05, * p<0.1						

Table 3.29: SME Finance Supply as a Percentage of GDP with Inclusion

	Dependent Variable: SME Finance Supply/GDP (%)					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-2.9528	-0.1662	2.2382	2.3220	1.9065	2.0968
	(4.1549)	(3.1745)	(3.2302)	(3.2879)	(3.6416)	(3.1757)
LN(Private Credit/GDP)			2.8231**	2.7673**	2.7470**	2.3674**
			(1.0591)	(1.0723)	(1.0757)	(1.1732)
Number of Deposit Accounts/1000 adults	0.0034***	0.0011	0.0002	0.0001	0.0001	0.0001
	(0.0010)	(0.0012)	(0.0011)	(0.0011)	(0.0011)	(0.0012)
LN(GDP per Capita)		2.7069***	1.4666*	1.4920*	1.7449*	1.3240
		(0.9287)	(0.7356)	(0.7789)	(0.9357)	(0.8160)
Bank Overhead Costs per Total Assets (%)			-0.4176	-0.4140	-0.3997	-0.4536
			(0.2912)	(0.2926)	(0.3165)	(0.2771)
Three Bank Asset Concentration				-0.0095	-0.0081	-0.0186
				(0.0361)	(0.0357)	(0.0365)
KAOPEN					-0.3530	
					(0.4639)	
LMF						0.0077
						(0.0052)
Observations	61	61	61	61	61	61
R-squared	0.1716	0.2909	0.4138	0.4145	0.4206	0.4259
Robust standard errors in parentheses						
*** p<0.01, ** p<0.05, * p<0.1						

Table 3.30: Micro Firm Finance Gap as a Percentage of GDP with Inclusion

	Dependent Variable: Micro Firm Finance Gap/GDP (%)					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-0.4265	-0.4929	0.0764	0.1575	0.2323	-0.0185
	(2.4105)	(2.4651)	(2.3624)	(2.4869)	(2.6511)	(2.5195)
LN(Private Credit/GDP)			-0.3709	-0.4248	-0.4211	-0.7374
			(0.7893)	(0.8641)	(0.8724)	(1.0098)
Number of Deposit Accounts/1000 adults	-0.0002	-0.0002	-0.0001	-0.0002	-0.0002	-0.0002
	(0.0004)	(0.0005)	(0.0005)	(0.0005)	(0.0005)	(0.0004)
LN(GDP per Capita)		-0.0645	-0.0429	-0.0183	-0.0638	-0.1496
		(0.4882)	(0.5770)	(0.5936)	(0.5634)	(0.4870)
Bank Overhead Costs per Total Assets (%)			-0.1417	-0.1383	-0.1408	-0.1692
			(0.2202)	(0.2196)	(0.2220)	(0.2233)
Three Bank Asset Concentration				-0.0092	-0.0095	-0.0163
				(0.0272)	(0.0279)	(0.0298)
KAOPEN					0.0635	
					(0.3341)	
LMF						0.0060
						(0.0070)
Observations	61	61	61	61	61	61
R-squared	0.0030	0.0033	0.0092	0.0118	0.0126	0.0385
Robust standard errors in parentheses						
*** p<0.01, ** p<0.05, * p<0.1						

Table 3.31: Micro Firm Potential Demand as a Percentage of GDP with Inclusion

	Dependent Variable: Micro Firm Potential Demand/GDP (%)					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-0.3232	-0.4085	0.7456	0.8367	0.8797	0.6967
	(2.7123)	(2.7479)	(2.6845)	(2.7651)	(2.9039)	(2.7856)
LN(Private Credit/GDP)			-0.7007	-0.7613	-0.7592	-1.0099
			(0.8561)	(0.9343)	(0.9409)	(1.0651)
Number of Deposit Accounts/1000 adults	0.0008	0.0008	0.0009	0.0008	0.0008	0.0008
	(0.0006)	(0.0006)	(0.0006)	(0.0006)	(0.0006)	(0.0007)
LN(GDP per Capita)		-0.0828	-0.0545	-0.0269	-0.0530	-0.1313
		(0.4940)	(0.5889)	(0.6112)	(0.5919)	(0.5221)
Bank Overhead Costs per Total Assets (%)			-0.2851	-0.2812	-0.2827	-0.3059
			(0.2404)	(0.2401)	(0.2420)	(0.2409)
Three Bank Asset Concentration				-0.0104	-0.0105	-0.0160
				(0.0290)	(0.0297)	(0.0312)
KAOPEN					0.0365	
					(0.3480)	
LMF						0.0048
						(0.0069)
Observations	61	61	61	61	61	61
R-squared	0.0269	0.0273	0.0460	0.0488	0.0490	0.0629
Robust standard errors in parentheses						
*** p<0.01, ** p<0.05, * p<0.1						

Table 3.32: Micro Finance Supply as a Percentage of GDP with Inclusion

	Dependent Variable: Micro Firm Finance Supply/GDP (%)					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	0.1033	0.0844	0.6691	0.6792	0.6474	0.7152
	(0.9273)	(0.9372)	(1.0835)	(1.0695)	(1.0918)	(1.1138)
LN(Private Credit/GDP)			-0.3298	-0.3365	-0.3381	-0.2726
			(0.2198)	(0.2269)	(0.2304)	(0.2051)
Number of Deposit Accounts/1000 adults	0.0010**	0.0010*	0.0010*	0.0010*	0.0010*	0.0010*
	(0.0004)	(0.0006)	(0.0005)	(0.0005)	(0.0006)	(0.0005)
LN(GDP per Capita)		-0.0183	-0.0116	-0.0085	0.0108	0.0183
		(0.2122)	(0.1994)	(0.2018)	(0.1963)	(0.2018)
Bank Overhead Costs per Total Assets (%)			-0.1434**	-0.1430*	-0.1419*	-0.1367*
			(0.0704)	(0.0715)	(0.0725)	(0.0704)
Three Bank Asset Concentration				-0.0011	-0.0010	0.0003
				(0.0057)	(0.0057)	(0.0063)
KAOPEN					-0.0271	
					(0.0726)	
LMF						-0.0012
						(0.0017)
Observations	61	61	61	61	61	61
R-squared	0.3251	0.3253	0.3585	0.3588	0.3596	0.3656
Robust standard errors in parentheses						
*** p<0.01, ** p<0.05, * p<0.1						

Results with samples split by median income level for MSMEs', SMEs' and micro firms' finance gap, potential demand and finance supply including financial inclusion are presented in

Tables 3.33-3.41 below. As shown in Table 3.33, in the above median GDP per capita sample, financial inclusion is associated with a reduction in the MSME gap, while financial development shows no significance. It is thus possible that, once countries become economically developed, financial inclusion becomes more important than private credit for diminishing the MSME finance gap. In the SME subgroup, financial inclusion reduces the finance gap in the above median income level sample, while it increases the finance gap in the below median income level sample, as shown in Table 3.36. Private credit is still positive and significant for the potential demand and finance supply for SMEs in the above median GDP per capita samples, as Tables 3.37 and 3.38 indicate, which may explain the lack of significance for the finance gap. In the full samples, private credit only increases the supply of finance for SMEs, which leads to a reduction in the finance gap for SMEs. Tables 3.40 and 3.41 show that, in the above median GDP per capita samples, financial inclusion is also important for micro firms, as higher levels of inclusion are associated with higher demand for and finance supply of credit to micro firms.

Overall, the reduction in sample sizes could make it more difficult to observe a pattern in the robustness analysis considering financial inclusion. Financial development retains its significance for the SME finance supply. Bank overhead costs display the most persistence, showing negative significance for the MSME potential demand, finance supply and micro firm finance supply. Financial inclusion could be more important than financial development once countries reach a certain level of economic development, and financial inclusion is important for micro firm finance.

Table 3.33: MSME Finance Gap as a Percentage of GDP - Split by Median GDP per Capita with Financial Inclusion

	Dependent Variable: MSME Finance Gap/GDP (%)											
	Above Median Income Level						Below Median Income Level					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-2.9782	-0.4176	2.8332	1.9590	5.4956	2.3306	-4.4915	-4.3173	-0.2971	0.6019	2.2247	0.2775
	(9.4182)	(8.0657)	(7.4683)	(8.3010)	(8.2147)	(8.6641)	(12.8388)	(11.4604)	(12.3312)	(12.7730)	(12.2355)	(13.4108)
LN(Private Credit/GDP)			-3.0842	-3.7746	-1.6355	-3.8810			-6.1375	-5.7274	-6.2472	-6.3248
			(3.4418)	(3.6875)	(3.9443)	(3.6641)			(4.3182)	(4.4605)	(3.9433)	(5.3658)
Number of Deposit Accounts/1000 adults	-0.0031	-0.0052**	-0.0054***	-0.0056***	-0.0055***	-0.0055***	0.0020	0.0019	0.0050	0.0053	0.0078*	0.0050
	(0.0020)	(0.0019)	(0.0019)	(0.0019)	(0.0018)	(0.0019)	(0.0034)	(0.0046)	(0.0040)	(0.0040)	(0.0043)	(0.0040)
LN(GDP per Capita)		9.1798**	9.3434**	10.6296**	9.3197**	10.1289*		0.1470	-0.3866	-0.2757	-2.6431	-0.3055
		(4.3797)	(4.4264)	(4.7606)	(4.3531)	(4.9472)		(3.1814)	(2.9755)	(3.0798)	(2.8516)	(3.0740)
Bank Overhead Costs per Total Assets (%)			-0.5221	-0.8080	-0.1797	-0.6539			-1.4778	-1.4722	-1.8803*	-1.6335
			(0.9490)	(1.0330)	(1.1562)	(1.1248)			(0.9786)	(0.9885)	(0.9375)	(1.1615)
Three Bank Asset Concentration				0.1034	0.0378	0.0848				0.0378	0.0603	0.0263
				(0.1134)	(0.1344)	(0.1331)				(0.0994)	(0.0989)	(0.1098)
KAOPEN					1.8224						2.5025*	
					(1.4496)						(1.3965)	
LMF						0.0068						0.0108
						(0.0134)						(0.0277)
Observations	33	33	33	33	33	33	33	33	33	33	33	33
R-squared	0.0620	0.2436	0.2591	0.2761	0.3234	0.2809	0.0235	0.0235	0.1779	0.1825	0.3044	0.1861
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Table 3.34: MSME Potential Demand as a Percentage of GDP - Split by Median GDP per Capita with Financial Inclusion

	Dependent Variable: MSME Potential Demand/GDP (%)											
	Above Median Income Level						Below Median Income Level					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-6.0918	-2.8544	-0.6367	0.0663	2.5989	0.9247	-7.5019	-5.9003	-0.8145	0.4295	2.0005	0.3194
	(9.9344)	(7.3638)	(10.7377)	(11.2538)	(11.3057)	(11.8663)	(13.0337)	(11.8531)	(13.2306)	(13.5185)	(11.6912)	(13.9531)
LN(Private Credit/GDP)			0.4683	1.0236	2.5554	0.7777			-4.8252	-4.2578	-4.7609	-4.4606
			(5.0532)	(5.0120)	(5.3486)	(5.0536)			(4.4011)	(4.6493)	(4.2783)	(5.6499)
Number of Deposit Accounts/1000 adults	0.0005	-0.0021	-0.0033	-0.0031	-0.0031	-0.0030	0.0046	0.0039	0.0062*	0.0067*	0.0091**	0.0066*
	(0.0025)	(0.0023)	(0.0025)	(0.0023)	(0.0024)	(0.0024)	(0.0027)	(0.0039)	(0.0035)	(0.0034)	(0.0038)	(0.0035)
LN(GDP per Capita)		11.6065**	10.3797**	9.3453*	8.4073	8.1886		1.3520	0.5236	0.6770	-1.6147	0.6669
		(4.6773)	(4.3035)	(5.3077)	(5.1606)	(5.4512)		(3.3794)	(3.1772)	(3.2714)	(3.3181)	(3.3142)
Bank Overhead Costs per Total Assets (%)			-2.2286*	-1.9987	-1.5487	-1.6427			-1.4460	-1.4383	-1.8333*	-1.4931
			(1.2367)	(1.2472)	(1.3404)	(1.3730)			(1.0239)	(1.0340)	(0.9773)	(1.2233)
Three Bank Asset Concentration				-0.0831	-0.1300	-0.1260				0.0522	0.0741	0.0484
				(0.1601)	(0.1666)	(0.1737)				(0.1083)	(0.1126)	(0.1221)
KAOPEN					1.3050						2.4226*	
					(1.2329)						(1.3371)	
LMF						0.0156						0.0037
						(0.0186)						(0.0300)
Observations	33	33	33	33	33	33	33	33	33	33	33	33
R-squared	0.0067	0.2368	0.3630	0.3718	0.3910	0.3920	0.0986	0.1037	0.1968	0.2046	0.3068	0.2050
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Table 3.35: MSME Finance Supply as a Percentage of GDP - Split by Median GDP per Capita with Financial Inclusion

	Dependent Variable: MSME Finance Supply/GDP (%)											
	Above Median Income Level						Below Median Income Level					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-3.1137	-2.4368	-3.4698	-1.8928	-2.8967	-1.4059	-3.0104	-1.5829	-0.5174	-0.1724	-0.2242	0.0419
	(5.7776)	(5.6266)	(6.4816)	(6.1527)	(6.1714)	(6.4682)	(4.2116)	(4.2262)	(4.6523)	(4.6028)	(4.8210)	(4.9035)
LN(Private Credit/GDP)			3.5525	4.7982	4.1909	4.6587			1.3123*	1.4697	1.4863*	1.8642*
			(2.9023)	(3.0964)	(3.0002)	(3.2081)			(0.6984)	(0.8659)	(0.8609)	(0.9934)
Number of Deposit Accounts/1000 adults	0.0036*	0.0031	0.0021	0.0024	0.0024	0.0025	0.0026**	0.0019*	0.0013	0.0014	0.0013	0.0016
	(0.0021)	(0.0021)	(0.0016)	(0.0015)	(0.0015)	(0.0017)	(0.0010)	(0.0011)	(0.0010)	(0.0011)	(0.0011)	(0.0010)
LN(GDP per Capita)		2.4267	1.0364	-1.2843	-0.9124	-1.9403		1.2049	0.9102	0.9527	1.0283	0.9724
		(3.1092)	(2.8477)	(3.8390)	(3.7682)	(3.7846)		(1.2242)	(1.2250)	(1.2438)	(1.2477)	(1.2519)
Bank Overhead Costs per Total Assets (%)			-1.7065**	-1.1907	-1.3690*	-0.9888			0.0318	0.0339	0.0470	0.1405
			(0.6804)	(0.7468)	(0.7128)	(0.8154)			(0.2971)	(0.3050)	(0.2990)	(0.3182)
Three Bank Asset Concentration				-0.1865	-0.1679	-0.2108				0.0145	0.0138	0.0220
				(0.1431)	(0.1451)	(0.1490)				(0.0297)	(0.0299)	(0.0308)
KAOPEN					-0.5173						-0.0799	
					(0.8682)						(0.3922)	
LMF						0.0089						-0.0071
						(0.0106)						(0.0075)
Observations	33	33	33	33	33	33	33	33	33	33	33	33
R-squared	0.0976	0.1148	0.3754	0.4505	0.4556	0.4617	0.2857	0.3247	0.3874	0.3933	0.3944	0.4069
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Table 3.36: SME Finance Gap as a Percentage of GDP - Split by Median GDP per Capita with Financial Inclusion

	Dependent Variable: SME Finance Gap/GDP (%)											
	Above Median Income Level						Below Median Income Level					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-7.6824	-7.7342	-7.2388	-9.4295	-2.2360	-9.8169	-3.7093	-3.8551	1.9744	3.1598	1.6332	2.4340
	(9.1420)	(7.1542)	(7.8048)	(8.3579)	(8.5312)	(8.7860)	(12.6333)	(11.0387)	(11.5452)	(13.0242)	(12.9336)	(13.8932)
LN(Private Credit/GDP)			-0.3893	-1.2161	-0.1507	-1.0597			-6.7074	-6.2624	-6.9317*	-7.1190
			(3.0251)	(3.1477)	(2.4898)	(3.2089)			(4.3594)	(4.3029)	(3.3866)	(5.1130)
Number of Deposit Accounts/1000 adults	-0.0009	-0.0028*	-0.0029	-0.0029	-0.0036**	-0.0029	0.0028	0.0028	0.0059*	0.0062*	0.0097***	0.0058*
	(0.0020)	(0.0017)	(0.0017)	(0.0017)	(0.0015)	(0.0018)	(0.0030)	(0.0042)	(0.0031)	(0.0031)	(0.0033)	(0.0030)
LN(GDP per Capita)		8.8548**	8.8737**	10.3356**	9.8068**	10.6606**		-0.1320	-0.4405	-0.2957	-3.0587	-0.3064
		(3.8463)	(3.9616)	(4.1062)	(3.5684)	(4.2498)		(3.4273)	(3.0250)	(3.0911)	(2.7365)	(3.0762)
Bank Overhead Costs per Total Assets (%)			-0.1038	-0.4938	-0.1511	-0.5575			-1.7205	-1.7282	-2.0453**	-1.9454
			(0.6184)	(0.6689)	(0.6820)	(0.7107)			(1.0657)	(1.0871)	(0.9032)	(1.2342)
Three Bank Asset Concentration				0.1329	0.0841	0.1441				0.0417	0.0641	0.0250
				(0.0884)	(0.0935)	(0.1011)				(0.0836)	(0.0824)	(0.0859)
KAOPEN					2.1098						3.1509**	
					(1.2840)						(1.5211)	
LMF						-0.0042						0.0155
						(0.0098)						(0.0222)
Observations	30	30	30	30	30	30	31	31	31	31	31	31
R-squared	0.0343	0.2830	0.2834	0.3265	0.4249	0.3293	0.0388	0.0389	0.2388	0.2449	0.4312	0.2526
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Table 3.37: SME Potential Demand as a Percentage of GDP - Split by Median GDP per Capita with Financial Inclusion

	Dependent Variable: SME Potential Demand/GDP (%)											
	Above Median Income Level						Below Median Income Level					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-9.9095	-9.9777	-17.8191**	-17.3273*	-11.9831	-16.7882*	-4.9986	-3.5276	4.7481	6.3012	4.9296	6.0326
	(9.7289)	(7.1353)	(7.6201)	(8.5167)	(8.4472)	(9.0281)	(12.8260)	(11.5204)	(12.5536)	(13.8726)	(12.4039)	(14.4869)
LN(Private Credit/GDP)			8.0226**	8.2082**	8.9997***	7.9907**			-5.4975	-4.9145	-5.5158	-5.2315
			(3.0792)	(3.3748)	(3.0775)	(3.2899)			(4.3753)	(4.3542)	(3.6583)	(5.2606)
Number of Deposit Accounts/1000 adults	0.0009	-0.0016	-0.0016	-0.0016	-0.0021	-0.0016	0.0048*	0.0041	0.0064**	0.0069**	0.0100***	0.0067**
	(0.0026)	(0.0018)	(0.0016)	(0.0017)	(0.0016)	(0.0017)	(0.0026)	(0.0038)	(0.0030)	(0.0030)	(0.0034)	(0.0031)
LN(GDP per Capita)		11.6564**	10.5340**	10.2058**	9.8130**	9.7535*		1.3316	0.4898	0.6795	-1.8032	0.6755
		(4.5088)	(3.7697)	(4.3806)	(4.1335)	(4.8311)		(3.5867)	(3.3712)	(3.3868)	(3.3331)	(3.4328)
Bank Overhead Costs per Total Assets (%)			-0.3631	-0.2755	-0.0210	-0.1868			-1.8877*	-1.8977	-2.1827**	-1.9781
			(0.7771)	(0.9643)	(0.8884)	(1.0420)			(1.0974)	(1.1163)	(0.9215)	(1.2815)
Three Bank Asset Concentration				-0.0298	-0.0660	-0.0454				0.0547	0.0748	0.0485
				(0.1242)	(0.1254)	(0.1423)				(0.0911)	(0.0963)	(0.0969)
KAOPEN					1.5674						2.8312*	
					(1.0238)						(1.5600)	
LMF						0.0058						0.0057
						(0.0111)						(0.0237)
Observations	30	30	30	30	30	30	31	31	31	31	31	31
R-squared	0.0225	0.3198	0.5296	0.5311	0.5686	0.5348	0.0978	0.1022	0.2387	0.2479	0.3812	0.2488
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Table 3.38: SME Finance Supply as a Percentage of GDP - Split by Median GDP per Capita with Financial Inclusion

	Dependent Variable: SME Finance Supply/GDP (%)											
	Above Median Income Level						Below Median Income Level					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-2.2271	-2.2435	-10.5802**	-7.8978	-9.7471*	-6.9713	-1.2893	0.3276	2.7736	3.1415	3.2964	3.5986
	(6.3858)	(6.4988)	(4.8744)	(4.8475)	(5.2358)	(5.2648)	(4.0724)	(3.9063)	(4.3405)	(4.0517)	(4.5917)	(4.4702)
LN(Private Credit/GDP)			8.4119***	9.4243***	9.1504***	9.0504***			1.2099*	1.3479	1.4158*	1.8875*
			(2.2547)	(2.6187)	(2.4920)	(2.6922)			(0.6841)	(0.8424)	(0.8133)	(0.9733)
Number of Deposit Accounts/1000 adults	0.0018	0.0012	0.0013	0.0013	0.0015	0.0013	0.0020***	0.0012*	0.0006	0.0007	0.0003	0.0009
	(0.0021)	(0.0021)	(0.0010)	(0.0011)	(0.0012)	(0.0012)	(0.0007)	(0.0006)	(0.0006)	(0.0006)	(0.0005)	(0.0006)
LN(GDP per Capita)		2.8016	1.6603	-0.1298	0.0062	-0.9071		1.4636	0.9303	0.9752	1.2556	0.9820
		(2.6897)	(2.1797)	(3.1009)	(3.0169)	(3.0988)		(1.1284)	(1.1835)	(1.2022)	(1.1864)	(1.2065)
Bank Overhead Costs per Total Assets (%)			-0.2592	0.2183	0.1302	0.3707			-0.1672	-0.1696	-0.1374	-0.0328
			(0.5387)	(0.7156)	(0.7154)	(0.7462)			(0.2975)	(0.3002)	(0.3205)	(0.3280)
Three Bank Asset Concentration				-0.1627	-0.1502	-0.1895				0.0130	0.0107	0.0235
				(0.1262)	(0.1213)	(0.1322)				(0.0289)	(0.0276)	(0.0291)
KAOPEN					-0.5424						-0.3197	
					(0.8880)						(0.3138)	
LMF						0.0100						-0.0097
						(0.0095)						(0.0061)
Observations	30	30	30	30	30	30	31	31	31	31	31	31
R-squared	0.0261	0.0558	0.4304	0.5074	0.5152	0.5263	0.2186	0.2899	0.3955	0.4024	0.4251	0.4387
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Table 3.39: Micro Firm Finance Gap as a Percentage of GDP - Split by Median GDP per Capita with Financial Inclusion

	Dependent Variable: Micro Firm Finance Gap/GDP (%)											
	Above Median Income Level						Below Median Income Level					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	1.0675	1.0544	2.0964	1.4921	2.5820	2.3082	-3.4865	-1.7876	-2.3917	-2.4182	-2.4148	-2.4071
	(1.2020)	(1.2656)	(1.4221)	(1.9041)	(1.8785)	(2.0857)	(4.7127)	(4.2988)	(4.7267)	(4.6853)	(4.8324)	(4.6852)
LN(Private Credit/GDP)			-0.8401	-1.0682	-0.9068	-1.3976*			0.3256	0.3156	0.3171	0.3287
			(0.7155)	(0.7668)	(0.7242)	(0.7810)			(1.1921)	(1.4946)	(1.5528)	(1.7762)
Number of Deposit Accounts/1000 adults	0.0008	0.0003	0.0002	0.0002	0.0001	0.0002	-0.0002	-0.0011	-0.0012	-0.0012	-0.0012	-0.0012
	(0.0005)	(0.0006)	(0.0006)	(0.0005)	(0.0006)	(0.0004)	(0.0007)	(0.0009)	(0.0011)	(0.0012)	(0.0014)	(0.0012)
LN(GDP per Capita)		2.2516*	2.3006*	2.7039*	2.6237*	2.0192**		1.5379	1.6070	1.6037	1.6099	1.6039
		(1.1058)	(1.2037)	(1.5367)	(1.4579)	(0.9466)		(1.1663)	(1.2512)	(1.3153)	(1.5748)	(1.3470)
Bank Overhead Costs per Total Assets (%)			-0.1957	-0.3033	-0.2514	-0.1690			0.1274	0.1275	0.1282	0.1308
			(0.1751)	(0.2006)	(0.2201)	(0.2229)			(0.4230)	(0.4316)	(0.4499)	(0.5227)
Three Bank Asset Concentration				0.0367	0.0293	0.0130				-0.0009	-0.0010	-0.0007
				(0.0430)	(0.0385)	(0.0371)				(0.0478)	(0.0477)	(0.0544)
KAOPEN					0.3197						-0.0070	
					(0.2862)						(0.5848)	
LMF						0.0088						-0.0002
						(0.0068)						(0.0124)
Observations	30	30	30	30	30	30	31	31	31	31	31	31
R-squared	0.0642	0.2559	0.2781	0.3171	0.3441	0.4639	0.0197	0.0643	0.0683	0.0683	0.0683	0.0683
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Table 3.40: Micro Firm Potential Demand as a Percentage of GDP - Split by Median GDP per Capita with Financial Inclusion

	Dependent Variable: Micro Firm Potential Demand/GDP (%)											
	Above Median Income Level						Below Median Income Level					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	0.4620	0.4475	1.9506	1.8673	2.7039	2.5238	-3.7829	-1.8558	-2.2273	-2.0085	-1.9617	-1.9802
	(2.5111)	(2.4335)	(2.8049)	(3.1412)	(3.4093)	(3.2640)	(4.8194)	(4.3790)	(4.7420)	(4.7558)	(4.9105)	(4.7767)
LN(Private Credit/GDP)			-1.1013	-1.1327	-1.0088	-1.3977			0.3088	0.3909	0.4114	0.4243
			(1.0443)	(1.0875)	(1.0019)	(1.1582)			(1.2418)	(1.5310)	(1.5762)	(1.8028)
Number of Deposit Accounts/1000 adults	0.0024***	0.0019**	0.0017**	0.0017**	0.0017**	0.0018**	0.0001	-0.0008	-0.0010	-0.0009	-0.0010	-0.0009
	(0.0007)	(0.0007)	(0.0007)	(0.0007)	(0.0008)	(0.0008)	(0.0007)	(0.0009)	(0.0011)	(0.0011)	(0.0013)	(0.0012)
LN(GDP per Capita)		2.4942*	2.5159*	2.5715	2.5100	2.0207*		1.7444	1.7760	1.8027	1.8875	1.8031
		(1.2214)	(1.3330)	(1.6337)	(1.5861)	(1.1257)		(1.1968)	(1.3111)	(1.3742)	(1.6430)	(1.4076)
Bank Overhead Costs per Total Assets (%)			-0.4017*	-0.4165*	-0.3767	-0.3085			0.0933	0.0919	0.1016	0.1003
			(0.2097)	(0.2178)	(0.2337)	(0.2401)			(0.4432)	(0.4516)	(0.4675)	(0.5385)
Three Bank Asset Concentration				0.0051	-0.0006	-0.0139				0.0077	0.0070	0.0084
				(0.0457)	(0.0427)	(0.0363)				(0.0480)	(0.0481)	(0.0546)
KAOPEN					0.2454						-0.0967	
					(0.3761)						(0.5994)	
LMF						0.0071						-0.0006
						(0.0071)						(0.0127)
Observations	30	30	30	30	30	30	31	31	31	31	31	31
R-squared	0.2884	0.4170	0.4501	0.4505	0.4592	0.5024	0.0214	0.0765	0.0794	0.0807	0.0818	0.0808
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

Table 3.41: Micro Firm Finance Supply as a Percentage of GDP - Split by Median GDP per Capita with Financial Inclusion

	Dependent Variable: Micro Firm Finance Supply/GDP (%)											
	Above Median Income Level						Below Median Income Level					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-0.6055	-0.6069	-0.1458	0.3752	0.1219	0.2156	-0.2964	-0.0682	0.1644	0.4097	0.4531	0.4269
	(1.5519)	(1.5586)	(2.0095)	(1.9831)	(2.5320)	(2.0515)	(0.3897)	(0.5330)	(0.6871)	(0.7830)	(0.7319)	(0.7690)
LN(Private Credit/GDP)			-0.2612	-0.0645	-0.1021	-0.0001			-0.0168	0.0753	0.0943	0.0956
			(0.6129)	(0.6139)	(0.6112)	(0.6424)			(0.1801)	(0.1700)	(0.1666)	(0.2274)
Number of Deposit Accounts/1000 adults	0.0017**	0.0016**	0.0016**	0.0016**	0.0016**	0.0015**	0.0003	0.0002	0.0002	0.0003	0.0002	0.0003
	(0.0007)	(0.0007)	(0.0007)	(0.0006)	(0.0007)	(0.0006)	(0.0003)	(0.0002)	(0.0003)	(0.0003)	(0.0003)	(0.0003)
LN(GDP per Capita)		0.2426	0.2153	-0.1324	-0.1137	0.0015		0.2065	0.1690	0.1990	0.2776	0.1992
		(0.4361)	(0.4202)	(0.4547)	(0.4609)	(0.4822)		(0.2087)	(0.2328)	(0.2383)	(0.2601)	(0.2413)
Bank Overhead Costs per Total Assets (%)			-0.2060**	-0.1132	-0.1253	-0.1395*			-0.0341	-0.0357	-0.0266	-0.0305
			(0.0831)	(0.0742)	(0.0781)	(0.0757)			(0.0733)	(0.0738)	(0.0716)	(0.0852)
Three Bank Asset Concentration				-0.0316**	-0.0299*	-0.0270*				0.0086*	0.0080	0.0090**
				(0.0131)	(0.0146)	(0.0142)				(0.0048)	(0.0047)	(0.0044)
KAOPEN					-0.0743						-0.0897	
					(0.2286)						(0.0550)	
LMF						-0.0017						-0.0004
						(0.0020)						(0.0015)
Observations	30	30	30	30	30	30	31	31	31	31	31	31
R-squared	0.4499	0.4542	0.4861	0.5422	0.5450	0.5530	0.1044	0.1314	0.1371	0.1950	0.2289	0.1960
Robust standard errors in parentheses												
*** p<0.01, ** p<0.05, * p<0.1												

VI. **Conclusion**

This paper shows that, in terms of closing the finance gap for small firms, the level of domestic financial development, as measured by private credit as a percentage of GDP, is important. In the full samples in Section IV A and IV B, higher financial development is associated with a decrease in the MSME finance gap, in particular affecting SMEs, due to an increase in the supply of credit to these firms. When introducing financial inclusion as a robustness test, the only financial development effect that persists is the positive impact on the SME finance supply, but this lack of significance on the finance gap could arise due to the decrease in sample size resulting from reduced financial inclusion data availability. Higher levels of economic development are also important for increasing both the potential demand and finance supply for MSMEs, which is driven by effects on SMEs, but there is no impact on the finance gap, as these opposing effects offset each other. Bank overhead costs reduce both the potential demand and finance supply for MSMEs, and these effects also offset the impact on the MSME finance gap. In the samples divided by the median level of real GDP per capita in Section IV C and IV D, the positive impact on financial development on the supply of credit to MSMEs and SMEs persists regardless of the income level.

For SMEs in countries belonging to the above median income level group, higher macroeconomic uncertainty is associated with a diminishing of the finance gap, which is due to a decrease in potential demand. Lastly, micro firms display a different behavior, as their finance gap, potential demand and finance supply have a limited response to the variables considered, likely because micro firms have different financing sources than SMEs, relying more on funds from friends and family rather than from financial institutions.

This paper assumes a linear relationship between the explanatory variables and the MSME finance gap, the MSME potential demand and the MSME finance supply in order to provide a benchmark relationship between these variables. Using this approach, I find important relationships between the level of domestic financial development and the MSME finance gap. I also find significant associations between the level of domestic economic development as well as bank overhead costs and the MSME potential demand and finance supply. Future work could also explore whether there are any nonlinear relationships at play, particularly between financial development and the MSME gap. Initially, at lower levels of financial development, higher levels of financial development could diminish the MSME finance gap, as the finance supply to MSMEs increases due to a greater financial product variety offered. At higher levels of financial development, the relationship between financial development and the MSME gap could be positive, as demand increases relatively more than the finance supply, as MSMEs have a higher ability to borrow due to technologies that diminish the information opacity issue brought by higher levels of financial development.

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Appendix to Chapter 1

Table 3.42: No Lags Common Sample Regressions for Number of Depositors

VARIABLES	Number of Depositors							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LN(M3/GDP)	85.65*	88.85*	113.38	118.15	58.70**	63.33**	65.09	68.94
	(44.11)	(46.78)	(84.27)	(86.29)	(26.16)	(27.88)	(50.30)	(51.25)
LN(GDP/Capita)	496.67**	511.01**	489.29*	533.98**	403.10**	418.49**	419.66**	476.42**
	(221.79)	(235.85)	(246.09)	(263.06)	(162.84)	(168.29)	(199.01)	(204.62)
KAOPEN	-27.33	-29.57	-8.23	-35.46				
	(74.71)	(75.00)	(85.98)	(87.50)				
LMF					2.18	4.41	4.45	11.99
					(19.81)	(19.04)	(18.00)	(16.03)
3 Bank Asset Concentration	1.04	6.88			0.67	9.09		
	(1.30)	(10.26)			(1.31)	(9.39)		
3 Bank Asset Concentration Squared		-0.04				-0.07		
		(0.07)				(0.06)		
5 Bank Asset Concentration			2.18	22.55			1.85	26.16
			(2.29)	(21.16)			(2.18)	(19.40)
5 Bank Asset Concentration Squared				-0.14				-0.17
				(0.13)				(0.12)
Observations	771	771	643	643	649	649	530	530
R-squared	0.25	0.26	0.27	0.29	0.22	0.23	0.23	0.27
Number of Countries	76	76	68	68	75	75	64	64
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Table 3.43: No Lags Common Sample Regressions for Number of Deposit Accounts

VARIABLES	Number of Deposit Accounts							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LN(M3/GDP)	86.24***	84.77**	30.22	29.71	68.61***	67.71***	14.48	13.25
	(32.32)	(33.50)	(56.84)	(56.38)	(24.10)	(24.58)	(39.02)	(38.68)
LN(GDP/Capita)	1,016.49***	1,007.64***	1,227.82***	1,240.35***	926.45***	920.84***	1,145.27***	1,156.67***
	(219.80)	(223.16)	(268.17)	(271.78)	(196.97)	(198.24)	(247.15)	(249.03)
KAOPEN	198.73	203.14	187.39	184.83				
	(147.14)	(146.82)	(137.37)	(138.81)				
LMF					2.70	2.68	2.30	2.25
					(1.97)	(1.99)	(2.06)	(2.05)
3 Bank Asset Concentration	1.03	-2.23			0.00	-2.59		
	(1.36)	(7.91)			(1.29)	(7.27)		
3 Bank Asset Concentration Squared		0.02				0.02		
		(0.06)				(0.05)		
5 Bank Asset Concentration			2.84	8.16			1.90	7.45
			(1.91)	(12.42)			(1.63)	(11.27)
5 Bank Asset Concentration Squared				-0.04				-0.04
				(0.08)				(0.07)
Observations	1,076	1,076	947	947	909	909	796	796
R-squared	0.33	0.34	0.34	0.34	0.34	0.34	0.35	0.35
Number of Countries	100	100	90	90	100	100	90	90
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Table 3.44: No Lags Common Sample Regressions for Number of Borrowers

VARIABLES	Number of Borrowers							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LN(Private Credit/GDP)	54.88**	55.50**	66.68***	66.55***	56.66**	56.51**	62.79**	62.83**
	(27.04)	(26.87)	(22.10)	(22.11)	(25.01)	(25.09)	(23.79)	(23.80)
LN(GDP/Capita)	66.57	65.03	116.43*	113.71*	44.57	44.67	76.33	77.52
	(65.95)	(65.59)	(60.95)	(61.96)	(68.58)	(68.74)	(83.43)	(84.74)
KAOPEN	-6.47	-5.91	6.66	8.08				
	(37.99)	(37.88)	(39.00)	(38.61)				
LMF					-16.97	-16.96	-19.19	-19.14
					(11.11)	(11.13)	(13.33)	(13.44)
3 Bank Asset Concentration	0.81*	-0.39			0.96**	1.16		
	(0.48)	(1.96)			(0.47)	(2.28)		
3 Bank Asset Concentration Squared		0.01				-0.00		
		(0.01)				(0.02)		
5 Bank Asset Concentration			1.06*	-0.36			1.16**	1.77
			(0.55)	(3.64)			(0.55)	(3.68)
5 Bank Asset Concentration Squared				0.01				-0.00
				(0.02)				(0.02)
Observations	782	782	670	670	676	676	572	572
R-squared	0.28	0.28	0.37	0.37	0.28	0.28	0.38	0.38
Number of Countries	78	78	70	70	78	78	69	69
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Table 3.45: No Lags Common Sample Regressions for Number of Loan Accounts

VARIABLES	Number of Loan Accounts							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LN(Private Credit/GDP)	105.41	105.43	181.76**	189.28**	90.99	88.37	154.05**	164.11**
	(75.87)	(76.50)	(86.37)	(82.19)	(67.76)	(68.98)	(75.87)	(71.51)
LN(GDP/Capita)	190.69	197.39	307.28*	322.38*	234.24	250.86	356.02*	375.28**
	(162.69)	(164.55)	(182.84)	(178.16)	(154.75)	(158.93)	(180.95)	(167.45)
KAOPEN	-83.15	-85.45	-82.94	-97.26				
	(176.20)	(177.89)	(193.45)	(193.40)				
LMF					1.54***	1.58***	1.27**	1.06*
					(0.48)	(0.45)	(0.59)	(0.58)
3 Bank Asset Concentration	1.81	4.53			1.84	8.01		
	(1.59)	(4.00)			(1.70)	(4.87)		
3 Bank Asset Concentration Squared		-0.02				-0.05		
		(0.02)				(0.03)		
5 Bank Asset Concentration			2.66	17.26			2.42	21.48*
			(2.22)	(11.38)			(1.89)	(10.88)
5 Bank Asset Concentration Squared				-0.10				-0.13*
				(0.08)				(0.08)
Observations	794	794	681	681	667	667	570	570
R-squared	0.13	0.13	0.16	0.17	0.14	0.15	0.17	0.19
Number of Countries	81	81	72	72	79	79	70	70
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Table 3.46: No Lags Common Sample Regressions for Number of Household Depositors

VARIABLES	Number of Household Depositors							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LN(M3/GDP)	74.53*	66.20*	112.34	103.55	57.73**	53.18*	77.95	75.14
	(37.70)	(35.62)	(82.80)	(76.58)	(27.97)	(26.84)	(60.57)	(58.53)
LN(GDP/Capita)	320.20	288.11	328.01	250.72	330.76**	326.66**	277.68	237.79
	(232.33)	(221.89)	(245.58)	(209.79)	(157.83)	(156.84)	(193.86)	(201.56)
KAOPEN	-9.79	-9.12	-116.93	-95.31				
	(186.69)	(189.19)	(212.06)	(210.63)				
LMF					29.01	31.47	11.65	9.34
					(36.84)	(35.84)	(48.42)	(50.76)
3 Bank Asset Concentration	-1.15	-11.07			-0.60	-6.23		
	(1.67)	(8.49)			(1.12)	(6.13)		
3 Bank Asset Concentration Squared		0.07				0.04		
		(0.05)				(0.04)		
5 Bank Asset Concentration			-1.47	-20.51			-0.63	-12.78
			(1.96)	(19.85)			(1.38)	(15.17)
5 Bank Asset Concentration Squared				0.13				0.08
				(0.13)				(0.10)
Observations	331	331	261	261	275	275	210	210
R-squared	0.28	0.29	0.29	0.30	0.24	0.25	0.25	0.25
Number of Countries	37	37	32	32	34	34	29	29
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Table 3.47: No Lags Common Sample Regressions for Number of Household Deposit Accounts

VARIABLES	Number of Household Deposit Accounts							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LN(M3/GDP)	153.28***	152.14***	80.03	83.29	131.28***	135.45***	76.50*	78.95*
	(29.75)	(35.19)	(64.68)	(64.57)	(28.45)	(36.05)	(43.42)	(40.72)
LN(GDP/Capita)	1,429.80***	1,420.48***	1,842.82***	2,103.73***	1,336.81***	1,367.98***	1,811.61***	2,110.62***
	(366.34)	(364.28)	(388.93)	(357.52)	(377.65)	(395.55)	(397.85)	(421.18)
KAOPEN	428.23	429.96*	421.37	341.94				
	(262.70)	(254.61)	(258.39)	(213.99)				
LMF					3.93**	4.00***	2.77	2.57
					(1.55)	(1.41)	(1.70)	(1.65)
3 Bank Asset Concentration	1.97	0.72			1.62	5.86		
	(3.88)	(19.89)			(3.21)	(17.70)		
3 Bank Asset Concentration Squared		0.01				-0.03		
		(0.13)				(0.12)		
5 Bank Asset Concentration			3.63	40.73			4.40	47.53
			(4.99)	(29.41)			(3.71)	(29.95)
5 Bank Asset Concentration Squared				-0.27				-0.31
				(0.20)				(0.21)
Observations	453	453	395	395	385	385	332	332
R-squared	0.40	0.40	0.45	0.46	0.42	0.42	0.47	0.49
Number of Countries	45	45	40	40	43	43	38	38
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Table 3.48: No Lags Common Sample Regressions for Number of Household Borrowers

VARIABLES	Number of Household Borrowers							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LN(Private Credit/GDP)	51.39	51.01	116.45***	116.49***	49.05	48.37	118.65***	118.82***
	(43.73)	(43.13)	(40.05)	(40.20)	(45.09)	(44.93)	(34.51)	(34.73)
LN(GDP/Capita)	-31.60	-35.79	38.24	31.60	44.74	47.58	18.89	20.89
	(86.10)	(86.91)	(80.02)	(82.42)	(94.48)	(96.72)	(100.38)	(100.56)
KAOPEN	24.92	28.21	-2.61	0.15				
	(48.53)	(49.55)	(42.90)	(41.98)				
LMF					7.74	8.54	-18.89	-18.98
					(22.85)	(23.08)	(19.40)	(19.36)
3 Bank Asset Concentration	1.03	-0.92			1.72**	2.56		
	(0.80)	(2.61)			(0.78)	(2.89)		
3 Bank Asset Concentration Squared		0.02				-0.01		
		(0.02)				(0.02)		
5 Bank Asset Concentration			1.50**	-1.82			1.86**	3.26
			(0.72)	(4.75)			(0.74)	(4.90)
5 Bank Asset Concentration Squared				0.02				-0.01
				(0.03)				(0.03)
Observations	405	405	358	358	331	331	287	287
R-squared	0.42	0.42	0.53	0.53	0.43	0.43	0.53	0.53
Number of Countries	46	46	42	42	42	42	38	38
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Table 3.49: No Lags Common Sample Regressions for Number of Household Loan Accounts

VARIABLES	Number of Household Loan Accounts							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LN(Private Credit/GDP)	119.78	120.09	241.25**	248.54**	122.29	120.70	234.86**	250.67***
	(94.08)	(94.03)	(102.25)	(99.95)	(90.60)	(91.51)	(95.26)	(91.31)
LN(GDP/Capita)	133.58	132.28	254.06	262.46	217.30	220.82	328.82*	335.52**
	(177.23)	(178.12)	(176.95)	(169.23)	(158.80)	(161.37)	(165.49)	(143.65)
KAOPEN	-100.88	-100.03	-90.24	-114.56				
	(295.96)	(297.18)	(284.04)	(284.65)				
LMF					2.76***	2.78***	2.63***	2.37***
					(0.56)	(0.55)	(0.64)	(0.59)
3 Bank Asset Concentration	1.59	0.58			1.98	5.23		
	(2.28)	(5.40)			(2.36)	(5.40)		
3 Bank Asset Concentration Squared		0.01				-0.03		
		(0.03)				(0.03)		
5 Bank Asset Concentration			2.05	16.39			2.11	22.14
			(2.69)	(14.94)			(2.26)	(13.66)
5 Bank Asset Concentration Squared				-0.10				-0.14
				(0.11)				(0.10)
Observations	522	522	462	462	436	436	383	383
R-squared	0.15	0.15	0.20	0.21	0.17	0.18	0.23	0.25
Number of Countries	53	53	48	48	50	50	45	45
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Table 3.50: Mixed Lags Common Sample Regressions for Number of Depositors

VARIABLES	Number of Depositors							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LN(M3/GDP)	84.71*	92.07**	110.05	111.40	56.48**	68.04**	64.02	64.83
	(42.58)	(43.72)	(80.78)	(74.25)	(25.03)	(25.87)	(48.58)	(43.49)
LN(GDP/Capita)	513.22**	547.45**	513.30**	567.04**	432.35**	462.54**	434.76*	469.95**
	(223.43)	(233.34)	(251.37)	(252.43)	(190.15)	(185.71)	(225.14)	(212.24)
L.KAOPEN	-108.22	-110.92	-88.77	-133.06				
	(83.50)	(78.89)	(92.74)	(88.57)				
L.LMF					23.01	27.71*	8.07	17.26
					(16.13)	(16.39)	(12.85)	(14.05)
L.3 Bank Asset Concentration	1.65	16.37			1.77	20.32		
	(1.74)	(15.51)			(2.04)	(15.98)		
L.3 Bank Asset Concentration Squared		-0.11				-0.14		
		(0.11)				(0.11)		
L.5 Bank Asset Concentration			3.17	38.53			3.43	40.32
			(3.19)	(32.06)			(3.41)	(32.19)
L.5 Bank Asset Concentration Squared				-0.24				-0.26
				(0.20)				(0.21)
Observations	771	771	643	643	649	649	530	530
R-squared	0.26	0.29	0.28	0.34	0.23	0.28	0.26	0.34
Number of Countries	76	76	68	68	75	75	64	64
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Note: KAOPEN, LMF, 3 bank asset concentration, 5 bank asset concentration and their squares lagged by one year.

Table 3.51: Mixed Lags Common Sample Regressions for Number of Deposit Accounts

VARIABLES	Number of Deposit Accounts							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LN(M3/GDP)	87.16***	86.38**	31.28	26.24	68.63***	69.51**	14.04	4.69
	(32.22)	(34.82)	(56.38)	(53.81)	(24.60)	(27.27)	(39.96)	(40.80)
LN(GDP/Capita)	1,027.11***	1,023.29***	1,237.70***	1,271.88***	945.20***	947.71***	1,179.28***	1,204.99***
	(219.51)	(225.41)	(269.21)	(277.12)	(200.86)	(204.64)	(253.56)	(253.72)
L.KAOPEN	173.94	176.82	161.09	148.01				
	(164.06)	(166.58)	(159.90)	(163.33)				
L.LMF					1.32	1.33	0.96	0.70
					(1.52)	(1.51)	(1.60)	(1.55)
L.3 Bank Asset Concentration	1.43	-0.16			0.33	1.97		
	(1.54)	(12.42)			(1.61)	(12.87)		
L.3 Bank Asset Concentration Squared		0.01				-0.01		
		(0.09)				(0.09)		
L.5 Bank Asset Concentration			3.18	19.99			2.60	23.27
			(2.46)	(23.21)			(2.46)	(24.54)
L.5 Bank Asset Concentration Squared				-0.11				-0.14
				(0.15)				(0.16)
Observations	1,076	1,076	947	947	909	909	796	796
R-squared	0.33	0.33	0.34	0.35	0.34	0.34	0.35	0.36
Number of Countries	100	100	90	90	100	100	90	90
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Note: KAOPEN, LMF, 3 bank asset concentration, 5 bank asset concentration and their squares lagged by one year.

Table 3.52: Mixed Lags Common Sample Regressions for Number of Borrowers

VARIABLES	Number of Borrowers							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LN(Private Credit/GDP)	57.23**	57.14**	69.65***	70.11***	52.17**	51.39**	56.11**	56.58***
	(27.60)	(27.35)	(22.50)	(22.61)	(23.02)	(22.77)	(21.22)	(21.05)
LN(GDP/Capita)	63.01	63.22	116.05*	112.89*	60.99	62.21	107.67	104.47
	(66.35)	(65.28)	(60.77)	(61.86)	(66.98)	(66.05)	(67.41)	(67.56)
L.KAOPEN	-21.13	-21.16	-10.96	-9.67				
	(35.55)	(35.70)	(36.45)	(36.24)				
L.LMF					-6.37	-6.33	-13.19	-13.29
					(7.48)	(7.44)	(10.04)	(9.99)
L.3 Bank Asset Concentration	0.72	0.81			0.91*	1.61		
	(0.54)	(2.26)			(0.53)	(2.50)		
L.3 Bank Asset Concentration Squared		-0.00				-0.01		
		(0.02)				(0.02)		
L.5 Bank Asset Concentration			0.99*	-0.48			1.29**	-0.47
			(0.55)	(3.65)			(0.53)	(3.30)
L.5 Bank Asset Concentration Squared				0.01				0.01
				(0.02)				(0.02)
Observations	782	782	670	670	676	676	572	572
R-squared	0.28	0.28	0.37	0.38	0.27	0.27	0.37	0.37
Number of Countries	78	78	70	70	78	78	69	69
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Note: KAOPEN, LMF, 3 bank asset concentration, 5 bank asset concentration and their squares lagged by one year.

Table 3.53: Mixed Lags Common Sample Regressions for Number of Loan Accounts

VARIABLES	Number of Loan Accounts							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LN(Private Credit/GDP)	108.24	106.86	186.47**	189.01**	95.61	87.17	156.12**	157.69**
	(77.27)	(78.53)	(88.45)	(86.05)	(68.13)	(69.07)	(75.14)	(74.17)
LN(GDP/Capita)	190.37	209.33	307.71*	340.31*	231.23	253.76	362.71*	387.01**
	(165.12)	(165.41)	(184.44)	(179.31)	(157.52)	(161.21)	(186.21)	(174.48)
L.KAOPEN	-80.47	-91.90	-87.44	-106.97				
	(154.41)	(161.30)	(168.45)	(170.56)				
L.LMF					1.19**	1.24***	0.91*	0.62
					(0.47)	(0.43)	(0.54)	(0.55)
L.3 Bank Asset Concentration	2.20	8.82			1.81	9.88		
	(2.19)	(6.88)			(1.91)	(7.01)		
L.3 Bank Asset Concentration Squared		-0.05				-0.06		
		(0.04)				(0.04)		
L.5 Bank Asset Concentration			2.85	21.99*			2.78	22.86**
			(2.58)	(11.14)			(2.27)	(11.41)
L.5 Bank Asset Concentration Squared				-0.13*				-0.14*
				(0.08)				(0.08)
Observations	794	794	681	681	667	667	570	570
R-squared	0.13	0.14	0.16	0.18	0.14	0.15	0.17	0.19
Number of Countries	81	81	72	72	79	79	70	70
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Note: KAOPEN, LMF, 3 bank asset concentration, 5 bank asset concentration and their squares lagged by one year.

Table 3.54: Mixed Lags Common Sample Regressions for Number of Household Depositors

VARIABLES	Number of Household Depositors							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LN(M3/GDP)	75.77**	87.07*	115.81	120.94	56.55*	77.90**	82.91	84.47
	(37.16)	(43.39)	(85.01)	(86.07)	(29.42)	(35.12)	(63.41)	(59.21)
LN(GDP/Capita)	332.63	376.55	346.62	421.40	283.48	329.13*	274.29	334.65
	(230.46)	(249.86)	(258.86)	(292.63)	(200.20)	(186.62)	(226.46)	(226.42)
L.KAOPEN	-108.88	-104.27	-149.63	-179.03				
	(222.09)	(213.24)	(244.91)	(248.58)				
L.LMF					19.19	16.57	-1.00	2.94
					(22.88)	(24.33)	(27.28)	(20.57)
L.3 Bank Asset Concentration	0.13	12.61			0.87	22.58		
	(1.70)	(13.85)			(2.23)	(17.59)		
L.3 Bank Asset Concentration Squared		-0.10				-0.17		
		(0.09)				(0.12)		
L.5 Bank Asset Concentration			1.08	28.79			2.57	38.42
			(2.73)	(27.97)			(3.26)	(35.97)
L.5 Bank Asset Concentration Squared				-0.19				-0.25
				(0.18)				(0.23)
Observations	331	331	261	261	275	275	210	210
R-squared	0.27	0.29	0.29	0.32	0.24	0.31	0.26	0.33
Number of Countries	37	37	32	32	34	34	29	29
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Note: KAOPEN, LMF, 3 bank asset concentration, 5 bank asset concentration and their squares lagged by one year.

Table 3.55: Mixed Lags Common Sample Regressions for Number of Household Deposit Accounts

VARIABLES	Number of Household Deposit Accounts							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LN(M3/GDP)	154.00***	153.84***	80.57	78.70	130.69***	144.03***	74.95*	71.41**
	(30.47)	(38.31)	(64.89)	(58.31)	(28.00)	(38.26)	(43.25)	(33.77)
LN(GDP/Capita)	1,445.96***	1,444.86***	1,884.65***	2,137.94***	1,348.79***	1,401.15***	1,865.71***	2,078.79***
	(364.55)	(371.05)	(387.86)	(389.17)	(382.56)	(401.45)	(402.50)	(423.29)
L.KAOPEN	405.72	406.11	399.32	297.69				
	(272.51)	(268.38)	(269.52)	(235.66)				
L.LMF					2.43	2.40	1.16	0.46
					(1.50)	(1.54)	(1.69)	(1.74)
L.3 Bank Asset Concentration	1.95	1.76			2.26	14.37		
	(3.72)	(20.18)			(3.34)	(19.97)		
L.3 Bank Asset Concentration Squared		0.00				-0.10		
		(0.14)				(0.14)		
L.5 Bank Asset Concentration			3.99	54.77**			5.77	64.94**
			(4.79)	(24.76)			(3.83)	(29.49)
L.5 Bank Asset Concentration Squared				-0.36**				-0.42**
				(0.17)				(0.20)
Observations	453	453	395	395	385	385	332	332
R-squared	0.41	0.41	0.45	0.48	0.42	0.42	0.48	0.53
Number of Countries	45	45	40	40	43	43	38	38
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Note: KAOPEN, LMF, 3 bank asset concentration, 5 bank asset concentration and their squares lagged by one year.

Table 3.56: Mixed Lags Common Sample Regressions for Number of Household Borrowers

VARIABLES	Number of Household Borrowers							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LN(Private Credit/GDP)	57.35	57.92	127.14***	127.56***	51.36	51.86	103.72***	103.74***
	(46.06)	(45.13)	(41.95)	(42.27)	(39.37)	(37.78)	(33.08)	(33.25)
LN(GDP/Capita)	-27.13	-32.36	50.75	47.66	36.67	35.94	72.10	73.47
	(83.54)	(83.99)	(77.26)	(79.33)	(63.88)	(65.28)	(62.75)	(62.29)
L.KAOPEN	0.01	2.92	-35.81	-34.83				
	(42.64)	(43.86)	(36.99)	(36.07)				
L.LMF					20.48	20.14	-5.69	-5.97
					(22.86)	(22.18)	(15.52)	(15.52)
L.3 Bank Asset Concentration	1.27	-0.39			2.13**	1.75		
	(0.95)	(2.51)			(0.91)	(2.66)		
L.3 Bank Asset Concentration Squared		0.01				0.00		
		(0.02)				(0.02)		
L.5 Bank Asset Concentration			1.54**	0.24			2.05***	2.79
			(0.71)	(3.79)			(0.63)	(3.21)
L.5 Bank Asset Concentration Squared				0.01				-0.01
				(0.03)				(0.02)
Observations	405	405	358	358	331	331	287	287
R-squared	0.42	0.42	0.53	0.53	0.44	0.44	0.53	0.53
Number of Countries	46	46	42	42	42	42	38	38
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Note: KAOPEN, LMF, 3 bank asset concentration, 5 bank asset concentration and their squares lagged by one year.

Table 3.57: Mixed Lags Common Sample Regressions for Number of Household Loan Accounts

VARIABLES	Number of Household Loan Accounts							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LN(Private Credit/GDP)	121.34	119.70	243.79**	247.93**	130.54	122.87	238.57**	248.37**
	(95.36)	(96.02)	(104.55)	(103.09)	(91.86)	(92.54)	(94.03)	(93.28)
LN(GDP/Capita)	136.03	142.03	259.58	285.23*	205.42	216.39	328.12*	351.49**
	(178.03)	(179.57)	(177.21)	(169.91)	(161.71)	(167.66)	(171.40)	(156.41)
L.KAOPEN	-121.51	-127.04	-117.67	-153.95				
	(262.69)	(271.34)	(262.98)	(266.59)				
L.LMF					2.93***	2.88***	2.78***	2.41***
					(0.54)	(0.57)	(0.63)	(0.68)
L.3 Bank Asset Concentration	2.42	4.89			2.15	7.53		
	(3.30)	(7.92)			(2.73)	(7.76)		
L.3 Bank Asset Concentration Squared		-0.02				-0.04		
		(0.05)				(0.05)		
L.5 Bank Asset Concentration			2.49	22.70			2.65	25.56*
			(3.17)	(15.11)			(2.62)	(13.88)
L.5 Bank Asset Concentration Squared				-0.14				-0.16
				(0.11)				(0.10)
Observations	522	522	462	462	436	436	383	383
R-squared	0.16	0.16	0.21	0.22	0.18	0.18	0.24	0.26
Number of Countries	53	53	48	48	50	50	45	45
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Note: KAOPEN, LMF, 3 bank asset concentration, 5 bank asset concentration and their squares lagged by one year.

Table 3.58: All Lags Common Sample Regressions for Number of Depositors

VARIABLES	Number of Depositors							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
L.LN(M3/GDP)	73.01**	78.99**	78.70	85.08	41.64***	50.53***	39.97	42.00
	(30.16)	(31.81)	(52.68)	(52.32)	(14.99)	(13.93)	(28.55)	(25.16)
L.LN(GDP/Capita)	491.81**	521.37**	506.25**	573.91**	420.29***	440.97***	415.33**	470.78**
	(196.17)	(211.18)	(234.76)	(252.66)	(134.11)	(140.92)	(172.89)	(179.86)
L.KAOPEN	-115.96	-118.86	-100.38	-149.58*				
	(81.08)	(75.87)	(90.36)	(87.09)				
L.LMF					38.84*	43.78**	23.76	36.30*
					(20.10)	(21.01)	(18.32)	(20.77)
L.3 Bank Asset Concentration	1.72	16.06			1.93	19.66		
	(1.80)	(15.85)			(2.14)	(16.39)		
L.3 Bank Asset Concentration Squared		-0.11				-0.14		
		(0.11)				(0.11)		
L.5 Bank Asset Concentration			3.18	40.52			3.48	41.50
			(3.31)	(33.64)			(3.56)	(33.50)
L.5 Bank Asset Concentration Squared				-0.26				-0.27
				(0.21)				(0.21)
Observations	771	771	643	643	649	649	530	530
R-squared	0.26	0.28	0.28	0.35	0.23	0.27	0.25	0.33
Number of Countries	76	76	68	68	75	75	64	64
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Note: All regressors lagged by one year.

Table 3.59: All Lags Common Sample Regressions for Number of Deposit Accounts

VARIABLES	Number of Deposit Accounts							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
L.LN(M3/GDP)	92.92***	92.74***	44.48	42.28	77.09***	78.02***	35.89	30.84
	(25.35)	(26.71)	(39.68)	(38.79)	(24.84)	(25.22)	(37.69)	(38.48)
L.LN(GDP/Capita)	998.19***	996.79***	1,222.44***	1,256.11***	844.08***	848.97***	1,054.11***	1,080.90***
	(207.22)	(215.85)	(257.13)	(266.90)	(186.66)	(193.14)	(237.98)	(242.13)
L.KAOPEN	166.49	167.40	152.87	139.50				
	(165.79)	(168.81)	(163.48)	(167.76)				
L.LMF					1.67	1.69	1.44	1.20
					(1.53)	(1.51)	(1.62)	(1.58)
L.3 Bank Asset Concentration	1.45	0.97			0.24	2.57		
	(1.57)	(12.76)			(1.66)	(13.36)		
L.3 Bank Asset Concentration Squared		0.00				-0.02		
		(0.09)				(0.09)		
L.5 Bank Asset Concentration			3.46	20.76			2.62	23.39
			(2.51)	(24.33)			(2.57)	(26.45)
L.5 Bank Asset Concentration Squared				-0.12				-0.14
				(0.15)				(0.17)
Observations	1,076	1,076	947	947	909	909	796	796
R-squared	0.34	0.34	0.35	0.35	0.33	0.33	0.33	0.34
Number of Countries	100	100	90	90	100	100	90	90
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Note: All regressors lagged by one year.

Table 3.60: All Lags Common Sample Regressions for Number of Borrowers

VARIABLES	Number of Borrowers							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
L.LN(Private Credit/GDP)	43.30*	42.84*	44.64*	44.87*	44.71**	43.79**	41.98*	42.69*
	(23.33)	(23.10)	(22.93)	(23.18)	(22.29)	(21.99)	(22.88)	(22.75)
L.LN(GDP/Capita)	101.43	102.89	159.60**	157.70**	102.89	104.75	156.13*	152.53*
	(71.58)	(71.32)	(71.79)	(73.10)	(72.40)	(72.47)	(84.68)	(84.51)
L.KAOPEN	-23.84	-24.01	-11.63	-10.95				
	(35.99)	(36.25)	(37.15)	(37.03)				
L.LMF					-7.25	-7.16	-13.36	-13.48
					(7.37)	(7.31)	(10.12)	(10.05)
L.3 Bank Asset Concentration	0.72	1.20			0.98*	1.91		
	(0.53)	(2.35)			(0.52)	(2.55)		
L.3 Bank Asset Concentration Squared		-0.00				-0.01		
		(0.02)				(0.02)		
L.5 Bank Asset Concentration			1.02*	0.30			1.41**	-0.33
			(0.57)	(3.65)			(0.54)	(3.24)
L.5 Bank Asset Concentration Squared				0.00				0.01
				(0.02)				(0.02)
Observations	782	782	670	670	676	676	572	572
R-squared	0.28	0.28	0.37	0.37	0.28	0.28	0.38	0.38
Number of Countries	78	78	70	70	78	78	69	69
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Note: All regressors lagged by one year.

Table 3.61: All Lags Common Sample Regressions for Number of Loan Accounts

VARIABLES	Number of Loan Accounts							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
L.LN(Private Credit/GDP)	83.43	81.25	136.73	141.90	62.45	55.81	84.38	91.31
	(79.22)	(79.04)	(97.56)	(91.76)	(63.22)	(62.85)	(73.42)	(67.93)
L.LN(GDP/Capita)	293.70	319.08	449.34*	477.19**	353.96*	380.82*	576.14**	587.43***
	(193.42)	(196.43)	(229.97)	(208.23)	(194.89)	(201.13)	(247.39)	(218.74)
L.KAOPEN	-89.28	-102.85	-97.27	-117.84				
	(157.76)	(165.45)	(172.30)	(175.14)				
L.LMF					1.21**	1.28***	1.04*	0.76
					(0.47)	(0.43)	(0.56)	(0.54)
L.3 Bank Asset Concentration	2.26	9.79			2.02	11.18		
	(2.15)	(7.18)			(1.90)	(7.41)		
L.3 Bank Asset Concentration Squared		-0.06				-0.07		
		(0.04)				(0.05)		
L.5 Bank Asset Concentration			3.06	22.87**			3.46	23.27**
			(2.56)	(10.22)			(2.33)	(10.04)
L.5 Bank Asset Concentration Squared				-0.14*				-0.14**
				(0.07)				(0.06)
Observations	794	794	681	681	667	667	570	570
R-squared	0.14	0.15	0.17	0.19	0.15	0.16	0.19	0.21
Number of Countries	81	81	72	72	79	79	70	70
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Note: All regressors lagged by one year.

Table 3.62: All Lags Common Sample Regressions for Number of Household Depositors

VARIABLES	Number of Household Depositors							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
L.LN(M3/GDP)	70.81**	78.29**	82.69	92.34	40.45**	56.78**	38.53	44.95
	(31.02)	(35.90)	(61.70)	(64.70)	(17.28)	(20.85)	(32.41)	(28.49)
L.LN(GDP/Capita)	353.18*	367.36*	401.75	460.17	343.44***	331.43**	359.04**	416.66**
	(206.02)	(217.21)	(246.35)	(277.23)	(121.14)	(126.07)	(159.38)	(156.87)
L.KAOPEN	-156.13	-152.01	-212.78	-250.43				
	(220.34)	(213.16)	(256.04)	(260.90)				
L.LMF					57.07*	51.50	46.59	56.24*
					(29.00)	(30.59)	(42.52)	(31.90)
L.3 Bank Asset Concentration	0.30	10.62			0.90	19.50		
	(1.76)	(13.22)			(2.29)	(17.10)		
L.3 Bank Asset Concentration Squared		-0.08				-0.14		
		(0.09)				(0.11)		
L.5 Bank Asset Concentration			1.04	30.04			2.25	39.00
			(2.74)	(28.62)			(3.24)	(36.10)
L.5 Bank Asset Concentration Squared				-0.20				-0.25
				(0.18)				(0.23)
Observations	331	331	261	261	275	275	210	210
R-squared	0.28	0.29	0.29	0.33	0.24	0.29	0.26	0.33
Number of Countries	37	37	32	32	34	34	29	29
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Note: All regressors lagged by one year.

Table 3.63: All Lags Common Sample Regressions for Number of Household Deposit Accounts

VARIABLES	Number of Household Deposit Accounts							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
L.LN(M3/GDP)	148.98***	148.19***	58.48	59.15	121.59***	131.76***	59.49	62.51*
	(30.39)	(38.33)	(52.66)	(48.77)	(35.61)	(45.33)	(38.11)	(31.36)
L.LN(GDP/Capita)	1,396.54***	1,390.82***	1,945.15***	2,157.54***	1,158.39***	1,196.24***	1,746.08***	1,905.25***
	(344.21)	(368.57)	(326.56)	(348.39)	(373.63)	(410.24)	(359.90)	(394.75)
L.KAOPEN	390.52	392.80	388.69	292.33				
	(263.85)	(262.26)	(262.14)	(237.30)				
L.LMF					3.25**	3.26**	2.36	1.81
					(1.49)	(1.51)	(1.72)	(1.81)
L.3 Bank Asset Concentration	2.40	1.38			2.44	12.42		
	(3.51)	(20.17)			(3.24)	(20.55)		
L.3 Bank Asset Concentration Squared		0.01				-0.08		
		(0.14)				(0.15)		
L.5 Bank Asset Concentration			4.51	52.82**			5.94	60.76*
			(4.62)	(25.91)			(3.85)	(31.60)
L.5 Bank Asset Concentration Squared				-0.35*				-0.39*
				(0.18)				(0.21)
Observations	453	453	395	395	385	385	332	332
R-squared	0.41	0.41	0.46	0.49	0.40	0.40	0.46	0.50
Number of Countries	45	45	40	40	43	43	38	38
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Note: All regressors lagged by one year.

Table 3.64: All Lags Common Sample Regressions for Number of Household Borrowers

VARIABLES	Number of Household Borrowers							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
L.LN(Private Credit/GDP)	63.93*	64.04*	108.90***	109.08***	51.79	51.83*	88.99**	89.18**
	(37.15)	(36.95)	(37.51)	(37.68)	(31.24)	(30.50)	(32.91)	(33.43)
L.LN(GDP/Capita)	-45.10	-48.95	10.46	8.54	37.79	37.78	29.71	30.70
	(98.06)	(98.30)	(100.69)	(101.71)	(100.72)	(100.90)	(121.63)	(120.53)
L.KAOPEN	-4.49	-2.06	-31.73	-31.14				
	(43.35)	(45.01)	(40.97)	(40.38)				
L.LMF					15.70	15.64	-7.79	-8.19
					(21.48)	(20.74)	(15.88)	(16.08)
L.3 Bank Asset Concentration	1.15	-0.11			2.04**	1.96		
	(0.90)	(2.50)			(0.91)	(2.63)		
L.3 Bank Asset Concentration Squared		0.01				0.00		
		(0.02)				(0.02)		
L.5 Bank Asset Concentration			1.28*	0.58			1.88***	2.77
			(0.72)	(3.67)			(0.64)	(3.21)
L.5 Bank Asset Concentration Squared				0.01				-0.01
				(0.03)				(0.02)
Observations	405	405	358	358	331	331	287	287
R-squared	0.43	0.43	0.52	0.52	0.45	0.45	0.52	0.52
Number of Countries	46	46	42	42	42	42	38	38
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Note: All regressors lagged by one year.

Table 3.65: All Lags Common Sample Regressions for Number of Household Loan Accounts

VARIABLES	Number of Household Loan Accounts							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
L.LN(Private Credit/GDP)	109.85	108.47	202.19*	212.96**	108.56	104.26	156.33*	173.37**
	(95.38)	(95.73)	(105.91)	(99.15)	(83.47)	(84.17)	(90.75)	(82.41)
L.LN(GDP/Capita)	233.46	240.46	383.46	395.74*	331.48	338.12	536.37*	532.44**
	(217.44)	(220.65)	(236.89)	(206.70)	(232.65)	(236.79)	(281.19)	(242.56)
L.KAOPEN	-125.72	-133.19	-122.95	-160.57				
	(262.35)	(271.96)	(262.54)	(267.95)				
L.LMF					2.93***	2.90***	2.79***	2.45***
					(0.53)	(0.53)	(0.58)	(0.59)
L.3 Bank Asset Concentration	2.41	5.70			2.33	8.48		
	(3.21)	(8.35)			(2.70)	(8.15)		
L.3 Bank Asset Concentration Squared		-0.03				-0.05		
		(0.05)				(0.05)		
L.5 Bank Asset Concentration			2.54	23.68*			3.26	24.61**
			(3.08)	(13.86)			(2.63)	(11.89)
L.5 Bank Asset Concentration Squared				-0.15				-0.15*
				(0.09)				(0.08)
Observations	522	522	462	462	436	436	383	383
R-squared	0.17	0.17	0.22	0.23	0.19	0.20	0.25	0.27
Number of Countries	53	53	48	48	50	50	45	45
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Note: All regressors lagged by one year.

Note: For Tables 45-68, standard errors are clustered at the country level.

Appendix to Chapter 2

Table 3.66: Summary Statistics by Income Group

Income Group	Summary Statistic	Total Outstanding Loans	SME Outstanding Loans	SME Share(%)	SME Outstanding Loans per GDP(%)	WUI Global	WUI Country	LN(Private Credit/GDP)	LN(GDP/ capita)	Bank Overhead Costs to Total Assets(%)	Three Bank Asset Concentration	KAOPEN	LMF
H	Obs.	162.00	162.00	162.00	162.00	162.00	162.00	162.00	162.00	162.00	162.00	162.00	162.00
	Mean	85,800,000.00	33,500,000.00	22.54	17.19	0.22	0.22	4.32	10.19	2.16	71.50	2.16	679.66
	Std. Dev.	313,000,000.00	134,000,000.00	12.01	14.08	0.07	0.18	0.52	0.62	1.29	15.50	0.41	857.12
	Min.	10,389.00	3,878.00	3.18	1.72	0.10	0.00	3.14	9.20	0.31	32.34	0.86	127.11
	Max.	1,700,000,000.00	743,000,000.00	44.23	66.77	0.41	1.18	5.14	11.36	7.36	100.00	2.32	4,017.81
UM	Obs.	187.00	187.00	187.00	187.00	187.00	187.00	187.00	187.00	187.00	187.00	187.00	187.00
	Mean	21,500,000.00	2,460,594.00	25.95	12.64	0.22	0.22	3.90	8.83	4.28	60.22	0.19	141.94
	Std. Dev.	72,100,000.00	5,951,847.00	14.89	9.99	0.07	0.15	0.66	0.38	7.12	19.50	1.30	43.09
	Min.	7,392.00	89.00	0.36	0.17	0.10	0.00	2.27	8.16	0.81	22.31	-1.92	75.25
	Max.	479,000,000.00	36,600,000.00	55.71	37.10	0.41	0.85	5.10	9.56	84.34	100.00	2.32	264.25
LM	Obs.	140.00	140.00	140.00	140.00	140.00	140.00	140.00	140.00	140.00	140.00	140.00	140.00
	Mean	319,000,000.00	75,800,000.00	21.62	6.35	0.22	0.20	3.35	7.74	3.81	65.21	0.06	118.42
	Std. Dev.	1,040,000,000.00	225,000,000.00	18.14	4.49	0.07	0.19	0.66	0.46	1.87	21.72	1.48	68.38
	Min.	942.22	230.71	0.09	0.01	0.10	0.00	1.43	6.80	1.67	22.76	-1.92	44.63
	Max.	5,620,000,000.00	1,110,000,000.00	89.33	26.03	0.41	0.95	4.56	8.47	12.53	100.00	2.32	376.51
L	Obs.	71.00	71.00	71.00	71.00	71.00	71.00	71.00	71.00	71.00	71.00	71.00	71.00
	Mean	3,932,333.00	954,029.10	26.60	4.30	0.22	0.18	2.85	6.51	4.56	77.81	-1.06	77.27
	Std. Dev.	4,872,367.00	1,136,481.00	12.32	2.86	0.07	0.13	0.57	0.50	2.33	18.61	0.98	34.66
	Min.	163,851.20	31,541.90	4.18	0.59	0.10	0.00	1.79	5.68	0.05	29.13	-1.92	36.12
	Max.	26,500,000.00	5,427,379.00	57.15	10.49	0.41	0.68	3.86	7.38	9.66	100.00	1.25	187.61
Total	Obs.	560.00	560.00	560.00	560.00	560.00	560.00	560.00	560.00	560.00	560.00	560.00	560.00
	Mean	112,000,000.00	29,600,000.00	23.96	11.33	0.22	0.21	3.75	8.66	3.58	66.96	0.57	283.41
	Std. Dev.	559,000,000.00	137,000,000.00	14.84	10.92	0.07	0.17	0.78	1.31	4.45	19.83	1.57	527.19
	Min.	942.22	89.00	0.09	0.01	0.10	0.00	1.43	5.68	0.05	22.31	-1.92	36.12
	Max.	5,620,000,000.00	1,110,000,000.00	89.33	66.77	0.41	1.18	5.14	11.36	84.34	100.00	2.32	4,017.81

Note: H stands for high income; UM stands for upper-middle income; LM stands for lower-middle income; and L stands for low income.

Table 3.67: Data Sources

Variable	**Units**	**Source**	
Loan Data			
Total Outstanding Loans	Local Currency	IMF Financial Access Survey	"FAS_Latest_Data_2018" appended for recent years, retrieved from https://data.imf.org/?sk=E5DCAB7E-A5CA-4892-A6EA-598B5463A34C&sId=1496861011734.
SME Outstanding Loans	Local Currency	IMF Financial Access Survey	
Household Outstanding Loans	Local Currency	IMF Financial Access Survey	
SME Share	Percent	IMF Financial Access Survey	
Household Share	Percent	IMF Financial Access Survey	
SME Outstanding Loans per GDP	Percent	IMF Financial Access Survey	
Household Outstanding Loans per GD	Percent	IMF Financial Access Survey	
World Uncertainty Index (WUI)	Index	WUI Database	https://worlduncertaintyindex.com
Interest Rate Spread	Percentage Point	The World Bank World Development Indicators	
Private Credit per GDP	Percent	The World Bank Global Financial Development Database	
GDP per Capita	Constant 2015 USD	The World Bank	
Bank Overhead Costs to Total Assets	Percent	The World Bank Global Financial Development Database	
Three Bank Asset Concentration Ratio	Percent	The World Bank Global Financial Development Database	
KAOPEN	Index	Chinn and Ito (2006)	
LMF	Index	Lane and Milesi-Ferretti (2018)	

Table 3.68: Means by Country – SME Share, WUI, Bank Overhead Cost

Country	SME Share (%)	WUI Country	Bank Overhead Costs to Total Assets (%)	Country	SME Share (%)	WUI Country	Bank Overhead Costs to Total Assets (%)
Angola	47.15	0.09	4.11	Korea	42.72	0.18	1.68
Albania	27.91	0.19	2.07	Latvia	39.25	0.19	2.62
United Arab Emirates	4.99	0.17	1.30	Morocco	17.42	0.07	2.24
Argentina	14.01	0.33	5.85	Madagascar	25.23	0.22	4.33
Burundi	40.03	0.20	6.40	Mexico	42.27	0.29	3.55
Belgium	26.93	0.13	0.88	North Macedonia	35.34	0.21	2.74
Bangladesh	17.80	0.10	2.39	Myanmar	32.48	0.10	1.41
Bosnia and Herzegovina	48.29	0.20	3.43	Mongolia	11.95	0.16	2.20
Botswana	7.09	0.25	2.98	Malaysia	17.74	0.11	1.28
Switzerland	27.26	0.21	1.93	Namibia	3.18	0.19	4.38
Chile	11.56	0.16	2.49	Nigeria	0.14	0.43	6.18
China	36.43	0.12	1.01	New Zealand	43.35	0.32	1.05
Cameroon	28.23	0.27	4.22	Pakistan	11.06	0.07	2.87
Colombia	2.48	0.24	7.28	Peru	23.78	0.29	4.35
Czech Republic	30.62	0.16	1.68	Romania	35.98	0.18	3.48
United Kingdom	6.89	0.56	1.31	Russia	14.52	0.24	18.08
Georgia	20.72	0.23	5.02	Rwanda	19.61	0.19	7.12
Guinea	28.93	0.31	6.97	Sudan	13.43	0.24	5.29
Greece	19.39	0.16	1.49	El Salvador	13.86	0.21	3.49
Hungary	30.34	0.22	4.30	Slovak Republic	18.16	0.13	2.18
Indonesia	31.28	0.16	3.29	Sweden	12.76	0.25	2.85
India	10.81	0.10	1.94	Thailand	37.86	0.21	1.72
Ireland	24.93	0.36	1.27	Turkey	24.60	0.35	2.81
Italy	4.74	0.25	2.02	Uruguay	19.90	0.28	4.56
Jordan	8.45	0.04	2.18	Zambia	61.77	0.47	6.73

Note: This table shows countries for the 50 country sample. Angola, China, Nigeria, Rwanda, Sudan and El Salvador were dropped in the 44 country sample.

Table 3.69: SME Outstanding Loans as a Percentage of GDP: 50 Country Sample

VARIABLES	*Dependent variable: SME Outstanding Loans per GDP (%)*					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-2.442	-2.392	-2.184**	-2.161**	-2.176**	-2.171**
	(1.631)	(1.717)	(1.060)	(1.046)	(1.034)	(1.023)
LN(Private Credit/GDP)			7.861***	7.800***	7.753***	7.796***
			(2.185)	(2.174)	(2.199)	(2.197)
LN(GDP per Capita)		2.353	-1.855	-1.907	-1.949	-1.895
		(5.824)	(5.509)	(5.502)	(5.517)	(5.553)
Bank Overhead Costs per Total Assets (%)			0.044**	0.044**	0.045**	0.044**
			(0.020)	(0.020)	(0.020)	(0.020)
Three Bank Asset Concentration				-0.008	-0.009	-0.009
				(0.013)	(0.013)	(0.013)
KAOPEN					0.180	
					(0.589)	
LMF						0.000
						(0.003)
Observations	560	560	560	560	560	560
R-squared	0.076	0.079	0.353	0.353	0.354	0.354
Number of Countries	50	50	50	50	50	50

Robust standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table 3.70: SME Share (%): 44 Country Sample

VARIABLES	*Dependent Variable: SME Share (%)*					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-5.445**	-5.467**	-5.447**	-5.488***	-5.436**	-5.343***
	(2.089)	(2.076)	(2.025)	(2.004)	(2.019)	(1.965)
LN(Private Credit/GDP)			-2.085	-1.966	-1.737	-1.897
			(3.223)	(3.224)	(3.228)	(3.156)
LN(GDP/capita)		-1.581	-0.901	-0.989	-0.723	-1.098
		(9.526)	(9.006)	(9.153)	(9.000)	(9.093)
Bank Overhead Costs per Total Assets (%)			0.089***	0.090***	0.086***	0.091***
			(0.030)	(0.030)	(0.027)	(0.029)
Three Bank Asset Concentration				0.017	0.020	0.018
				(0.037)	(0.038)	(0.037)
KAOPEN					-0.773	
					(0.810)	
LMF						-0.005
						(0.006)
Observations	484	484	484	484	484	484
R-squared	0.052	0.052	0.063	0.064	0.067	0.066
Number of Countries	44	44	44	44	44	44

Robust standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table 3.71: Large Firm Share (%): 44 Country Sample

VARIABLES	*Dependent Variable: Large Firm Share (%)*					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	2.457	2.333	2.389	2.437	2.494	2.691
	(2.105)	(2.044)	(2.076)	(2.031)	(2.041)	(2.119)
LN(Private Credit/GDP)			1.645	1.504	1.753	1.625
			(4.178)	(4.223)	(4.405)	(4.168)
LN(GDP/capita)		-8.868	-9.622	-9.517	-9.227	-9.708
		(10.152)	(9.588)	(9.570)	(9.556)	(9.590)
Bank Overhead Costs per Total Assets (%)			0.036	0.035	0.030	0.037
			(0.037)	(0.037)	(0.034)	(0.037)
Three Bank Asset Concentration				-0.020	-0.017	-0.019
				(0.041)	(0.041)	(0.041)
KAOPEN					-0.843	
					(0.741)	
LMF						-0.008
						(0.006)
Observations	484	484	484	484	484	484
R-squared	0.117	0.128	0.131	0.132	0.134	0.137
Number of Countries	44	44	44	44	44	44

Robust standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table 3.72: Household Share (%): 44 Country Sample

VARIABLES	*Dependent Variable: Household Share (%)*					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	1.855	1.986	1.907	1.889	1.780	1.491
	(1.845)	(1.866)	(1.882)	(1.828)	(1.803)	(1.697)
LN(Private Credit/GDP)			0.479	0.532	0.050	0.341
			(2.945)	(3.039)	(3.056)	(2.807)
LN(GDP/capita)		9.317	9.382	9.343	8.784	9.644
		(10.737)	(10.713)	(10.770)	(10.474)	(10.584)
Bank Overhead Costs per Total Assets (%)			-0.129**	-0.129**	-0.119***	-0.131***
			(0.049)	(0.049)	(0.043)	(0.047)
Three Bank Asset Concentration				0.007	0.001	0.005
				(0.038)	(0.038)	(0.037)
KAOPEN					1.628**	
					(0.782)	
LMF						0.013**
						(0.006)
Observations	484	484	484	484	484	484
R-squared	0.160	0.179	0.189	0.189	0.204	0.207
Number of Countries	44	44	44	44	44	44

Robust standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table 3.73: SME Outstanding Loans as a Percentage of GDP by Country Instability Level: 50 Country Sample Split

	Dependent Variable: SME Outstanding Loans per GDP (%)											
VARIABLES	Above Median Instability Level						Below Median Instability Level					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-2.046	-1.476	-1.391	-1.419	-1.319	-1.314	-3.252	-1.344	-0.940	-0.776	-0.597	-0.986
	(1.927)	(1.336)	(0.878)	(0.869)	(0.874)	(0.848)	(2.578)	(2.260)	(2.163)	(2.159)	(2.086)	(1.794)
LN(Private Credit/GDP)			9.915***	9.846***	10.277***	9.843***			4.371**	4.312**	4.982***	4.101**
			(2.049)	(2.061)	(2.108)	(2.006)			(1.715)	(1.706)	(1.628)	(1.614)
LN(GDP/capita)		-14.085	-17.794**	-17.904**	-17.364**	-17.957**		9.640**	7.179*	7.163*	6.605	7.581*
		(12.718)	(6.765)	(6.832)	(6.500)	(6.802)		(4.515)	(4.146)	(4.126)	(4.110)	(4.194)
Bank Overhead Costs per Total Assets (%)			-0.126	-0.128	-0.186	-0.140			0.029	0.028	0.050**	0.025
			(0.108)	(0.108)	(0.111)	(0.104)			(0.018)	(0.017)	(0.021)	(0.018)
Three Bank Asset Concentration				-0.008	-0.004	-0.008				-0.010	-0.010	-0.012
				(0.021)	(0.020)	(0.021)				(0.015)	(0.012)	(0.015)
KAOPEN					-0.724*						2.556	
					(0.415)						(1.982)	
LMF						-0.003**						0.010**
						(0.001)						(0.005)
Observations	274	274	274	274	274	274	286	286	286	286	286	286
R-squared	0.068	0.141	0.607	0.608	0.620	0.611	0.118	0.218	0.293	0.295	0.346	0.314
Number of Countries	25	25	25	25	25	25	25	25	25	25	25	25

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Table 3.74: SME Share by Country Instability Level: 44 Country Sample Split

	Dependent Variable: SME Share (%)											
VARIABLES	Above Median Instability Level						Below Median Instability Level					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-5.074**	-4.237**	-4.289**	-4.093**	-3.850**	-3.726**	-7.319	-5.674	-5.681	-5.220	-5.641	-5.425
	(1.841)	(1.884)	(1.715)	(1.672)	(1.715)	(1.535)	(5.833)	(4.517)	(4.561)	(4.245)	(4.158)	(4.104)
LN(Private Credit/GDP)			-1.356	-0.966	-0.388	-1.040			-4.688	-4.740	-4.920	-5.079
			(1.957)	(1.774)	(1.688)	(1.655)			(7.763)	(7.789)	(7.786)	(7.648)
LN(GDP/capita)		-25.511**	-25.273**	-25.227**	-24.967**	-25.590**		10.199	12.326	12.497	13.600	12.774
		(10.767)	(10.469)	(10.143)	(9.399)	(9.758)		(11.488)	(9.948)	(10.173)	(10.050)	(10.195)
Bank Overhead Costs per Total Assets (%)			0.132	0.161	0.095	0.110			0.052	0.051	0.037	0.047
			(0.387)	(0.398)	(0.367)	(0.377)			(0.052)	(0.051)	(0.049)	(0.051)
Three Bank Asset Concentration				0.038	0.047	0.039				-0.025	-0.028	-0.027
				(0.038)	(0.039)	(0.039)				(0.057)	(0.059)	(0.056)
KAOPEN					-1.070						-1.972	
					(0.661)						(1.791)	
LMF						-0.010						0.010
						(0.009)						(0.011)
Observations	241	241	241	241	241	241	243	243	243	243	243	243
R-squared	0.071	0.171	0.176	0.183	0.193	0.198	0.070	0.091	0.110	0.112	0.117	0.116
Number of Countries	22	22	22	22	22	22	22	22	22	22	22	22

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Table 3.75: Large Firm Share by Country Instability Level: 44 Country Sample Split

	Dependent Variable: Large Firm Share (%)											
VARIABLES	Above Median Instability Level						Below Median Instability Level					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	2.203	2.278	2.124	2.155	2.301	2.211	2.968	0.929	0.998	1.702	1.029	2.172
	(1.507)	(1.577)	(1.476)	(1.449)	(1.502)	(1.481)	(6.611)	(6.740)	(7.130)	(6.957)	(6.867)	(6.650)
LN(Private Credit/GDP)			3.354*	3.416*	3.762*	3.404			-0.487	-0.566	-0.853	0.211
			(1.943)	(1.972)	(2.126)	(1.985)			(12.208)	(12.143)	(12.138)	(11.794)
LN(GDP/capita)		-2.294	-2.962	-2.955	-2.799	-3.011		-12.642	-12.432	-12.171	-10.412	-12.803
		(9.968)	(9.488)	(9.565)	(9.580)	(9.573)		(15.575)	(14.937)	(14.825)	(15.047)	(14.751)
Bank Overhead Costs per Total Assets (%)			0.492	0.497	0.458	0.489			0.021	0.020	-0.003	0.028
			(0.331)	(0.334)	(0.321)	(0.336)			(0.076)	(0.076)	(0.078)	(0.076)
Three Bank Asset Concentration				0.006	0.011	0.006				-0.038	-0.043	-0.034
				(0.051)	(0.053)	(0.051)				(0.067)	(0.060)	(0.069)
KAOPEN					-0.642						-3.145	
					(0.589)						(2.318)	
LMF						-0.002						-0.024
						(0.005)						(0.018)
Observations	241	241	241	241	241	241	243	243	243	243	243	243
R-squared	0.220	0.221	0.244	0.244	0.247	0.245	0.109	0.131	0.132	0.134	0.143	0.150
Number of Countries	22	22	22	22	22	22	22	22	22	22	22	22

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Table 3.76: Household Share by Country Instability Level: 44 Country Sample Split

	Dependent Variable: Household Share (%)											
VARIABLES	Above Median Instability Level						Below Median Instability Level					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	1.167	0.354	0.610	0.390	0.012	-0.029	4.351	4.745	4.684	3.518	4.612	3.253
	(1.595)	(1.575)	(1.780)	(1.719)	(1.716)	(1.621)	(5.098)	(5.027)	(5.091)	(4.613)	(4.575)	(4.549)
LN(Private Credit/GDP)			-2.027	-2.464	-3.363	-2.380			5.174	5.306	5.773	4.869
			(2.352)	(2.561)	(2.554)	(2.475)			(5.549)	(5.348)	(5.277)	(5.137)
LN(GDP/capita)		24.777*	25.227**	25.176**	24.770**	25.589**		2.443	0.106	-0.327	-3.188	0.029
		(12.653)	(11.743)	(11.818)	(10.958)	(11.450)		(14.369)	(15.525)	(15.285)	(14.602)	(15.118)
Bank Overhead Costs per Total Assets (%)			-0.768*	-0.800*	-0.698*	-0.742*			-0.073	-0.070	-0.034	-0.075
			(0.429)	(0.411)	(0.339)	(0.387)			(0.049)	(0.048)	(0.040)	(0.048)
Three Bank Asset Concentration				-0.042	-0.057	-0.044				0.063	0.071	0.061
				(0.048)	(0.049)	(0.048)				(0.057)	(0.049)	(0.057)
KAOPEN					1.664***						5.117**	
					(0.587)						(2.233)	
LMF						0.011						0.013
						(0.007)						(0.011)
Observations	241	241	241	241	241	241	243	243	243	243	243	243
R-squared	0.172	0.273	0.306	0.315	0.342	0.336	0.188	0.190	0.220	0.233	0.271	0.241
Number of Countries	22	22	22	22	22	22	22	22	22	22	22	22

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Table 3.77: SME Outstanding Loans as a Percentage of GDP Regressions with Interest Rate Spread: 36 Country Sample

VARIABLES	*Dependent Variable: SME Outstanding Loans per GDP (%)*					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country	-1.035	-0.559	-1.180	-1.181	-1.212	-1.421
	(1.125)	(0.991)	(0.932)	(0.934)	(0.918)	(0.908)
Interest Rate Spread	0.033	0.050	0.037	0.037	0.039	0.037
	(0.045)	(0.041)	(0.044)	(0.044)	(0.042)	(0.043)
LN(Private Credit/GDP)			3.938***	3.931***	3.836***	3.715***
			(1.191)	(1.203)	(1.243)	(1.174)
LN(GDP/capita)		9.260**	6.217*	6.198*	6.130	6.540*
		(3.658)	(3.646)	(3.619)	(3.646)	(3.624)
Bank Overhead Costs per Total Assets (%)			0.026	0.026	0.027	0.023
			(0.017)	(0.017)	(0.016)	(0.017)
Three Bank Asset Concentration				-0.002	-0.003	-0.001
				(0.011)	(0.010)	(0.011)
KAOPEN					0.312	
					(0.616)	
LMF						0.006**
						(0.003)
Observations	427	427	427	427	427	427
R-squared	0.088	0.190	0.280	0.280	0.283	0.289
Number of Countries	36	36	36	36	36	36

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Table 3.78: SME Share Regressions with Interest Rate Spread: 32 Country Sample

VARIABLES	*Dependent Variable: SME Share (%)*					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country	-6.643**	-6.613**	-5.511**	-5.504**	-5.487**	-5.362**
	(2.637)	(2.547)	(2.263)	(2.256)	(2.273)	(2.225)
Interest Rate Spread	-0.032	-0.030	-0.003	-0.003	-0.005	-0.004
	(0.125)	(0.117)	(0.108)	(0.108)	(0.107)	(0.107)
LN(Private Credit/GDP)			-5.702	-5.623	-5.441	-5.478
			(3.978)	(3.972)	(4.061)	(3.919)
LN(GDP/capita)		0.695	4.987	4.977	5.132	4.784
		(10.924)	(8.997)	(9.061)	(8.948)	(9.076)
Bank Overhead Costs per Total Assets (%)			0.056**	0.059**	0.057**	0.060**
			(0.023)	(0.024)	(0.022)	(0.025)
Three Bank Asset Concentration				0.021	0.023	0.021
				(0.042)	(0.043)	(0.042)
KAOPEN					-0.471	
					(0.886)	
LMF						-0.004
						(0.011)
Observations	375	375	375	375	375	375
R-squared	0.062	0.063	0.095	0.096	0.098	0.097
Number of Countries	32	32	32	32	32	32

Robust standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table 3.79: Large Firm Share Regressions with Interest Rate Spread: 32 Country Sample

VARIABLES	*Dependent Variable: Large Firm Share (%)*					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country	3.118	2.600	2.269	2.254	2.283	3.207
	(3.071)	(2.909)	(2.998)	(2.878)	(2.865)	(3.008)
Interest Rate Spread	0.114	0.069	0.057	0.058	0.055	0.054
	(0.089)	(0.120)	(0.125)	(0.125)	(0.125)	(0.131)
LN(Private Credit/GDP)			2.307	2.127	2.431	3.092
			(6.440)	(6.346)	(6.637)	(6.061)
LN(GDP/capita)		-11.903	-13.799	-13.777	-13.518	-15.068
		(13.129)	(12.758)	(12.561)	(12.523)	(12.620)
Bank Overhead Costs per Total Assets (%)			0.049	0.044	0.040	0.055
			(0.039)	(0.038)	(0.036)	(0.037)
Three Bank Asset Concentration				-0.048	-0.045	-0.051
				(0.044)	(0.044)	(0.045)
KAOPEN					-0.784	
					(0.871)	
LMF						-0.025**
						(0.011)
Observations	375	375	375	375	375	375
R-squared	0.130	0.148	0.152	0.157	0.160	0.175
Number of Countries	32	32	32	32	32	32

Robust standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table 3.80: Household Share Regressions with Interest Rate Spread: 32 Country Sample

VARIABLES	*Dependent Variable: Household Share (%)*					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country	2.129	2.545	1.724	1.733	1.689	0.629
	(2.695)	(2.544)	(2.380)	(2.336)	(2.292)	(2.194)
Interest Rate Spread	-0.089	-0.053	-0.069	-0.069	-0.065	-0.065
	(0.071)	(0.074)	(0.082)	(0.081)	(0.080)	(0.082)
LN(Private Credit/GDP)			3.651	3.769	3.289	2.651
			(3.667)	(3.624)	(3.719)	(3.340)
LN(GDP/capita)		9.535	6.946	6.932	6.523	8.428
		(12.851)	(13.656)	(13.498)	(13.287)	(13.300)
Bank Overhead Costs per Total Assets (%)			-0.108**	-0.105**	-0.099**	-0.117**
			(0.046)	(0.046)	(0.043)	(0.045)
Three Bank Asset Concentration				0.032	0.026	0.035
				(0.042)	(0.042)	(0.041)
KAOPEN					1.240	
					(0.783)	
LMF						0.029***
						(0.009)
Observations	375	375	375	375	375	375
R-squared	0.180	0.196	0.218	0.222	0.231	0.256
Number of Countries	32	32	32	32	32	32

Robust standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Appendix to Chapter 3

Table 3.81: MSME Finance Gap as a Percentage of GDP with Additional Specification in Column (2)

	Dependent Variable: MSME Finance Gap/GDP (%)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
WUI Country Level	-7.9287	-8.3010	-7.9474	-4.9729	-4.8685	-4.2530	-5.0589
	(6.8214)	(6.2927)	(6.8269)	(5.8588)	(5.9464)	(6.1880)	(6.0597)
LN(Private Credit/GDP)		-3.0237*		-5.5102**	-5.6796**	-5.6638**	-6.0279**
		(1.7436)		(2.4594)	(2.4136)	(2.3430)	(2.5326)
LN(GDP per Capita)			-0.0317	1.6612	1.6585	1.1498	1.5230
			(1.0346)	(1.1538)	(1.1602)	(1.1135)	(1.1529)
Bank Overhead Costs per Total Assets (%)				-0.7509	-0.7693	-0.8015	-0.7860
				(0.6237)	(0.6147)	(0.6220)	(0.6224)
Three Bank Asset Concentration					-0.0213	-0.0256	-0.0292
					(0.0563)	(0.0560)	(0.0622)
KAOPEN						0.7182	
						(0.8444)	
LMF							0.0068
							(0.0128)
Observations	87	87	87	87	87	87	87
R-squared	0.0119	0.0638	0.0119	0.1045	0.1058	0.1149	0.1088
Robust standard errors in parentheses							
*** p<0.01, ** p<0.05, * p<0.1							

Table 3.82: MSME Finance Gap as a Percentage of GDP for 78 Country Sample

	Dependent Variable: MSME Finance Gap/GDP (%)					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-7.3024	-6.8626	-3.8996	-3.8876	-2.4256	-4.3385
	(6.9624)	(7.1360)	(5.9652)	(6.0068)	(6.3085)	(6.1444)
LN(Private Credit/GDP)			-4.9468*	-5.0007*	-4.9394**	-5.4747**
			(2.6585)	(2.5775)	(2.4206)	(2.6724)
LN(GDP per Capita)		0.5902	1.9698*	1.9645	1.2034	1.7791
		(1.0596)	(1.1764)	(1.1882)	(1.0939)	(1.2007)
Bank Overhead Costs per Total Assets (%)			-0.8473	-0.8513	-0.9046	-0.8714
			(0.6455)	(0.6408)	(0.6380)	(0.6480)
Three Bank Asset Concentration				-0.0073	-0.0122	-0.0182
				(0.0568)	(0.0566)	(0.0628)
KAOPEN					1.1590	
					(0.8670)	
LMF						0.0091
						(0.0126)
Observations	78	78	78	78	78	78
R-squared	0.0112	0.0157	0.0977	0.0978	0.1231	0.1035
Robust standard errors in parentheses						
*** p<0.01, ** p<0.05, * p<0.1						

Table 3.83: MSME Potential Demand as a Percentage of GDP for 78 Country Sample

	Dependent Variable: MSME Potential Demand/GDP (%)					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-8.5068	-5.6954	-1.3218	-1.2880	-0.2278	-2.0900
	(6.9976)	(6.6566)	(6.5150)	(6.4715)	(6.6067)	(6.5611)
LN(Private Credit/GDP)			-1.6345	-1.7863	-1.7419	-2.6293
			(2.8633)	(2.8323)	(2.7252)	(2.9810)
LN(GDP per Capita)		3.7725***	3.5717**	3.5568**	3.0049**	3.2272**
		(1.1670)	(1.3638)	(1.3845)	(1.3156)	(1.3865)
Bank Overhead Costs per Total Assets (%)			-1.2776*	-1.2890*	-1.3276*	-1.3247*
			(0.7357)	(0.7307)	(0.7313)	(0.7335)
Three Bank Asset Concentration				-0.0205	-0.0240	-0.0399
				(0.0608)	(0.0610)	(0.0648)
KAOPEN					0.8405	
					(0.8997)	
LMF						0.0161
						(0.0136)
Observations	78	78	78	78	78	78
R-squared	0.0120	0.1558	0.1923	0.1934	0.2039	0.2075
Robust standard errors in parentheses						
*** p<0.01, ** p<0.05, * p<0.1						

Table 3.84: MSME Finance Supply as a Percentage of GDP for 78 Country Sample

	Dependent Variable: MSME Finance Supply/GDP (%)					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-1.2044	1.1672	2.5778	2.5996	2.1978	2.2486
	(4.8743)	(3.2249)	(3.2178)	(3.1817)	(3.3789)	(3.2196)
LN(Private Credit/GDP)			3.3123***	3.2144***	3.1975***	2.8455***
			(0.8911)	(0.9040)	(0.9140)	(0.9691)
LN(GDP per Capita)		3.1823***	1.6019***	1.5923***	1.8015***	1.4480**
		(0.4894)	(0.5102)	(0.5321)	(0.6148)	(0.5547)
Bank Overhead Costs per Total Assets (%)			-0.4303*	-0.4376*	-0.4230*	-0.4533**
			(0.2215)	(0.2255)	(0.2354)	(0.2194)
Three Bank Asset Concentration				-0.0132	-0.0119	-0.0217
				(0.0312)	(0.0311)	(0.0320)
KAOPEN					-0.3185	
					(0.3840)	
LMF						0.0071
						(0.0055)
Observations	78	78	78	78	78	78
R-squared	0.0007	0.3052	0.4597	0.4610	0.4655	0.4690
Robust standard errors in parentheses						
*** p<0.01, ** p<0.05, * p<0.1						

Table 3.85: SME Finance Gap as a Percentage of GDP for 78 Country Sample

	Dependent Variable: SME Finance Gap/GDP (%)					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-8.2025	-7.8443	-5.4313	-5.4442	-4.1285	-5.6986
	(6.1906)	(6.3260)	(5.0142)	(5.0751)	(5.2691)	(5.1861)
LN(Private Credit/GDP)			-4.1908	-4.1329	-4.0778*	-4.4003*
			(2.6530)	(2.5090)	(2.3394)	(2.5362)
LN(GDP per Capita)		0.4807	1.6683	1.6740	0.9890	1.5694
		(0.9862)	(1.0693)	(1.0849)	(1.0433)	(1.1110)
Bank Overhead Costs per Total Assets (%)			-0.6892	-0.6849	-0.7328	-0.6962
			(0.6558)	(0.6512)	(0.6495)	(0.6575)
Three Bank Asset Concentration				0.0078	0.0034	0.0017
				(0.0490)	(0.0490)	(0.0542)
KAOPEN					1.0431	
					(0.8717)	
LMF						0.0051
						(0.0095)
Observations	78	78	78	78	78	78
R-squared	0.0168	0.0203	0.0896	0.0899	0.1141	0.0920
Robust standard errors in parentheses						
*** p<0.01, ** p<0.05, * p<0.1						

Table 3.86: SME Potential Demand as a Percentage of GDP for 78 Country Sample

	Dependent Variable: SME Potential Demand/GDP (%)					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-9.9251	-7.4664	-4.0918	-4.0917	-3.1555	-4.7395
	(6.8022)	(6.2000)	(5.6529)	(5.7007)	(5.7951)	(5.7481)
LN(Private Credit/GDP)			-0.8759	-0.8762	-0.8369	-1.5570
			(2.8897)	(2.7831)	(2.6739)	(2.8586)
LN(GDP per Capita)		3.2993***	2.9923**	2.9923**	2.5049*	2.7260**
		(1.1012)	(1.2527)	(1.2665)	(1.2631)	(1.2993)
Bank Overhead Costs per Total Assets (%)			-0.9876	-0.9876	-1.0217	-1.0165
			(0.7368)	(0.7333)	(0.7369)	(0.7362)
Three Bank Asset Concentration				-0.0000	-0.0032	-0.0157
				(0.0537)	(0.0540)	(0.0574)
KAOPEN					0.7422	
					(0.9228)	
LMF						0.0130
						(0.0108)
Observations	78	78	78	78	78	78
R-squared	0.0189	0.1461	0.1718	0.1718	0.1812	0.1824
Robust standard errors in parentheses						
*** p<0.01, ** p<0.05, * p<0.1						

Table 3.87: SME Finance Supply as a Percentage of GDP for 78 Country Sample

	Dependent Variable: SME Finance Supply/GDP (%)					
	(1)	(2)	(3)	(4)	(5)	(6)
WUI Country Level	-1.7226	0.3779	1.3395	1.3525	0.9730	0.9592
	(4.6733)	(3.1509)	(2.6864)	(2.6957)	(2.9553)	(2.6577)
LN(Private Credit/GDP)			3.3149***	3.2567***	3.2408***	2.8434***
			(0.8661)	(0.8762)	(0.8811)	(0.9544)
LN(GDP per Capita)		2.8186***	1.3240***	1.3183***	1.5159***	1.1567**
		(0.4517)	(0.4703)	(0.4860)	(0.5638)	(0.4992)
Bank Overhead Costs per Total Assets (%)			-0.2984	-0.3027	-0.2889	-0.3202
			(0.2058)	(0.2095)	(0.2202)	(0.2033)
Three Bank Asset Concentration				-0.0078	-0.0066	-0.0174
				(0.0296)	(0.0294)	(0.0304)
KAOPEN					-0.3008	
					(0.3817)	
LMF						0.0079
						(0.0051)
Observations	78	78	78	78	78	78
R-squared	0.0017	0.2784	0.4363	0.4369	0.4415	0.4485
Robust standard errors in parentheses						
*** p<0.01, ** p<0.05, * p<0.1						