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Does Trustworthiness Matter for the Actual Lending-Deposit Spread and Perceived Financial Service Affordability?

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Abstract

Trustworthiness in financial systems is widely recognized as a crucial factor in fostering financial market efficiency. This research delves into the influence of trustworthiness in financial markets on both the perceived and actual costs of the financial system, drawing upon an eleven-year panel (2007-2017) encompassing 136 countries. The data was obtained from the Global Financial Development (GFD) and World Economic Forum Global Competitiveness Index (GCI). The study assesses the cost of financial systems through two key indicators: the bank lending-deposit spread and the perception of affordability in financial services. Additionally, this paper introduces a novel trustworthiness index from the GCI for estimation purposes. Three methodologies - fixed effect model, random effect model, and two-stage procedure - are applied. The findings reveal that trustworthiness shows an insignificant negative relationship with the bank lending-deposit spread. However, trustworthiness in financial systems positively impacts the perception of the cost of financial services across the overall sample, as it aids in cost reduction for financial transactions and enhances the affordability of financial services. As evident, enhancing trustworthiness within financial systems can effectively reduce the perceived cost of financial services. Policymakers should direct their efforts towards fostering trustworthiness in financial systems by implementing measures that prioritize transparency and accountability practices.

Keywords: trustworthiness; financial service; bank-lending deposit spread; affordability
JEL Classification: O16; E43

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1. Introduction

The data from the Global Financial Development (GFD) and the World Economic Forum Global Competitiveness Index (GCI) allows for a comparison of lending-deposit spreads across country classifications based on income levels. The average value from 2007 to 2017 indicates a significant difference in lending-deposit spreads between high-income countries and the remaining groups. Specifically, high-income countries have an average spread of 3.8, whereas the low-income group exhibits a higher average spread of 10. Moreover, the perceived affordability score of financial services for the low-income group is 3.4, reflecting a lower perception of affordability, while high-income countries have a higher score of 4.8, indicating that financial services are considered more affordable in comparison.

It can be said that the lending-deposit spreads indicator and the level of affordability of financial services are used as proxies to represent the cost of a country's financial system. The bank lending-deposit spread refers to the difference between the lending rate and the deposit rate. The lending rate is the rate charged by banks on loans to the private sector, while the deposit interest rate is the rate offered by commercial banks on three-month deposits. Lending-deposit spreads serve as indicators of the expenses associated with financial services. Lower spreads between loan rates and deposit rates signify a more efficient financial system or greater financial development efficiency (Agapova & McNulty, 2016; Calice & Zhou, 2018).

Previous studies (Shin, 1985; Glaeser & Gyourko, 2005) have observed that the lending-deposit spread offers valuable insights into the performance of financial systems. However, these studies also emphasize the significance of perceived affordability in assessing market efficiency. Perceived affordability refers to the subjective assessment made by individuals regarding whether the cost or pricing of financial products is reasonable and aligns with their budget. The measurement of financial service affordability involves assessing the perceived cost of various financial services, such as insurance, loans, and trade finance, which can potentially restrict business activities.

The research question addressed in this study is: "What are the major factors that contribute to the variation in the lending-deposit spread and financial service affordability across countries?" Previous literature reviews (Demirguc-Kunt & Levine, 2000; Mujeri & Younus, 2009; Hossain, 2010; Gelos, 2009; Gropp et al., 2014; Mi & Han, 2020) have primarily focused on examining objective measures such as bank overhead costs, banking industry concentration, size of the financial sector, and the presence of banking crises in relation to lending-deposit spreads. However, there has been relatively limited analysis of the role of trustworthiness in financial systems, despite the fact that banks operate in trust-dependent industries. This paper aims to investigate whether trustworthiness should be included in this list of factors.

The importance of trustworthiness in the financial system, as indicated in previous literature, can be summarized as follows. Firstly, a lack of trustworthiness in institutions creates a sense of uncertainty, leading to decreased interaction rates and heightened transaction costs among economic agents. Consequently, the market tends to exhibit lower levels of efficiency (Dyer & Chu, 2003; Butter & Mosch, 2003; Guiso et al., 2008;

OECD, 2019). Secondly, the efficient functioning of financial markets relies on the trust of customers, as trust plays a vital role in facilitating social and economic exchanges (Blommestein, 2006).

Although previous studies have examined the correlation between trustworthiness and the cost of financial systems (Agapova & McNulty, 2016; Calice & Zhou, 2018; Chan et al., 2020), the findings remain inconclusive across different types of data, countries, and research methodologies. For instance, Howorth & Moro (2012) and Chan et al. (2020) discovered evidence of a negative relationship between trustworthiness and interest rate spreads. However, Álvarez-Botas & González (2021), in their analysis of firm level from 47 countries, concluded that trust does not generally impact loan spreads. Interestingly, they found that trust only reduces loan spreads in countries where the quality of the institutional environment is weak. The research gap in this topic highlights the limited utilization of panel cross-country data in studying this issue. Existing studies have primarily focused on firm-level analysis within a single country or largely emphasis on developed countries.

After identifying the research gaps, the objectives of this study are set to seek a better understanding of the relationship of trustworthiness in financial markets on both the actual and the perceived indicators: bank lending-deposit spread and the perception of affordability in financial services. The empirical results of this study are derived from cross-country panel data encompassing 136 countries over the period of 2007-2017, obtained from the Global Financial Development (GFD) and World Economic Forum Global Competitiveness Index (GCI). A novel trustworthiness index from the GCI is introduced in this paper for estimation purposes. The trustworthiness index is constructed through a series of questions that ask respondents to rate the soundness of their country's banks, the regulation of securities exchanges, and the legal protection provided to borrowers and lenders. The index offers an advantage in that it embraces the multidimensional nature of trust. Instead of relying on a single question to gauge trust in financial institutions, such as assessing confidence in banks, the trustworthiness index provides a more comprehensive framework encompassing reliability, integrity, openness, and fairness (OECD, 2017).

This paper aims to contribute to the existing literature in the following ways. Firstly, it sheds light on the influence of trustworthiness in financial systems on both the actual bank-lending spread and the perceived affordability of financial services. Secondly, this study considers trustworthiness in financial systems, measured by the GCI trust index, which emphasizes the value of the trust index in providing a comprehensive framework encompassing reliability, integrity, openness, and fairness. Thirdly, this study employs three methodologies: fixed effect model, random effect model, and two-stage procedure, to examine the relationship between trustworthiness in financial systems and affordability. The remainder of the paper is organized as follows: Section 2 outlines the data and methodology, Section 3 presents the empirical analysis results, and the concluding section summarizes our main findings.

2. Data and Methodology

2.1 Data

The empirical analysis is based on two primary databases: Global Financial Development (GFD) by the World Bank and World Economic Forum Global Competitiveness Index (GCI). The study utilizes a cross-country panel data set consisting of 136 countries during the period 2007-2017, which spans 11 years. While GFD and GCI provide data from a longer time frame, the data set for this study is restricted to the period from 2007 to 2017 due to data unavailability in some countries. The variable definitions and descriptive statistics, which are detailed in Table 1, are used in the analysis and presented as follows:

Table 1: Descriptive statistics

Variable	Symbol	Obs	Mean	S.D.	Min	Max	Source
Bank lending-deposit spread	Spread	1,001	7.1	6.3	0.1	49	GFD
Affordability of financial services, 1-7 (best)	Afford	1,060	4.2	0.8	2.0	6.1	GCI
Trustworthiness and confidence in financial Systems	Trust	1,449	4.6	0.8	2.1	6.7	GCI
Bank overhead costs to total assets (%)	Overhead	1,319	3.4	3.5	0.1	81.9	GFD
5-bank asset concentration	5-bank	1,320	78.1	16.3	26.1	100	GFD
Financial system deposits to GDP (%)	Deposit	1,408	56.0	50.7	2.3	472	GFD
Banking crisis dummy (1=banking crisis, 0=none)	Crisis	1,350	0.1	0.3	0.0	1.0	GFD
Transparency of government policymaking, 1-7 (best)	Trans	1,427	4.2	0.8	1.8	6.3	GCI
Individuals using Internet (%)	Internet	1,426	41.0	29.0	0.1	98.2	GCI

2.1.1 Dependence variables: lending-deposit spread, affordability of financial services

The lending-deposit spread and affordability of financial services are indicators that involve considering costs in different ways. The lending-deposit spread reflects the larger margin between the interest rates charged on loans and the interest rates paid on deposits by financial institutions, which may impact the costs by individuals. On the other hand, the affordability of financial services emphasizes the accessibility and reasonable pricing of financial products. Both concepts contribute to the overall effectiveness of financial systems.

Bank lending-deposit spread is defined by IMF as the difference between lending rate and deposit rate. The lending rate is the rate charged by banks on loans to the private sector, and deposit interest rate is the rate offered by commercial banks on three-month deposits. The spread represents the factual cost of funds and can be used to infer how efficiently financial markets perform. *The financial service affordability* is measured with a perception question asking, "In your country, to what extent does the cost of financial services (e.g., insurance, loans, trade finance) impede business activity?". The responses are measured on scales ranging from 1 (to a great extent) to 7 (not at all).

2.1.2 Variable: trustworthiness in financial systems

The trustworthiness in financial systems indicator is formed with the aggregate values of three components: soundness of banks, regulation of securities exchanges, and legal right index. The first component is soundness of banks, which is measured with the question: *"In your country, how do you assess the soundness of banks?"*. The responses are measured on a 7-point scale: higher values representing healthier banking with more sound balance sheets. The regulation of securities exchanges score is measured using the question *"In your country, to what extent do regulators ensure the stability of the financial market?".* This question is answered using a 7-point Likert scale, with one meaning not at all and seven meaning to a great extent. The third component is the legal rights index, which presents the degree to which collateral and bankruptcy laws protect borrowers and lenders on a 0–12 (best) scale.

2.1.3 Control variables

Control variables are utilized to account for other factors that are likely to influence the cost of financial intermediation. Apart from emphasizing the role of trust on the cost of financial intermediate, the previous literature suggests that higher financial intermediation costs are associated with higher overhead, lower competition, a smaller size of financial market, and economic volatility (Demirguc-Kunt & Levine, 2000).

The evidence linking overhead cost and interest rate spread is mentioned in previous studies (Mujeri & Younus, 2009; Hossain, 2010). The results showed that higher intermediation spreads are associated with higher overhead costs. This can be explained by the law of supply and demand, inefficient bank operations are likely to have higher overhead costs, and a bank can pass that higher cost along to consumers in the form of higher interest rate spread.

Market size and competition are considered to be vital factors generating an impact on the deposit and lending rate. Former research (Gelos, 2009; Gropp et al., 2014; Mi & Han, 2020) has suggested that banks in highly concentrated markets provide higher rates on loans to customers and lower rates on deposits. However, Demirguc-Kunt & Levine (2000) found using cross-country data that there is not enough substantial evidence proving the relationship between bank concentration and interest rate spread. As opposed to other industries, the banking industry is fairly concentrated, especially in high-income countries. As such, concentration in the banking industry can be good in the sense that high concentration leads to high stability. Gropp et al. (2014) found that a larger financial market size leads to stronger competition and, as a result, the tightening of bank lending rate.

According to the literature review, the model estimation of trust on the perceived and actual cost of financial intermediation for households and firms will be estimated using bank overhead expenses, bank market power, size of the market, and banking crisis as control variables. In order to capture the degree of banking industry concentration and size of financial sectors, two variables (the 5-bank asset concentration and financial system deposits to GDP) are utilized. The banking industry concentration presents an indicator of banking market structure, and the assets of the five largest banks as a share of total commercial banking assets. The

financial system deposits to GDP ratio represents the size of the financial system. According to the World Bank definition, it includes saving deposits in deposit money banks and other financial institutions as a share of GDP.

2.2 Methodology

Panel data analysis is used to estimate the relationship between trustworthiness in financial systems and the lending-deposit spread, as well as perceived financial service affordability. Panel data contains both cross-sectional and time-series dimensions so that it provides more flexibility in modeling differences in behavior across individuals over time (Greene, 2002). The estimation techniques for panel data with continuous dependent variables commonly use fixed and/or random-effects models. The former allows for a correlation between the individual effect and the regressors of the model, while the latter assumes the unobserved factors are uncorrelated with the regressors and the overall disturbance term (Chamberlain, 1980). To assess the impact of trustworthiness, this study follows the study of Álvarez-Botas & González, 2021. The bank lending-deposit spread, and perception of financial service affordability models are constructed as follows:

(1) The bank lending-deposit spread model

$$spread_{it} = \beta_0 + \beta_1 trust_{it} + \beta_2 overhead_{it} + \beta_3 conc_{it} + \beta_4 deposit_{it} + \beta_5 crisis_{it} + \mu_{1i} + \varepsilon_{1it}$$

(2) The perception of financial service affordability model

$$afford_{it} = \beta_0 + \beta_1 trust_{it} + \beta_2 overhead_{it} + \beta_3 conc_{it} + \beta_4 deposit_{it} + \beta_5 crisis_{it} + \mu_{2i} + \varepsilon_{2it}$$

where $spread_{it}$ represents bank lending-deposit spread for country *i* in period *t*. The variables $afford_{it}$ and $trust_{it}$ symbolize the affordability level of financial services and trustworthiness in financial systems for country *i* at time *t,* respectively. The control variables include bank overhead costs to total assets ($overhead_{it}$), 5-bank asset concentration ($conc_{it}$), financial system deposits to GDP ($deposit_{it}$), and a banking crisis dummy ($crisis_{it}$). μ_i is the country-specific error component, and ε_{it} is the disturbance term.

3. Results

3.1 Descriptive statistics

Figure 1 shows a comparison of lending-deposit spread across country classifications by income level. There is a substantial difference between the lending-deposit spread for high-income versus the remaining groups. The group of high-income countries has the smallest average spread of 3.8 and the lowest standard deviation of 2.02. In contrast, the low-income group has the highest average spread of 10 with a standard deviation of 9.38 indicating that the spread points are spread out over an extensive range of values. Madagascar and Brazil have the highest spread (40.09 and 31.62, respectively). The lowest spread corresponds to the Netherlands (0.47), followed by Japan (0.95), and South Korea (1.69).

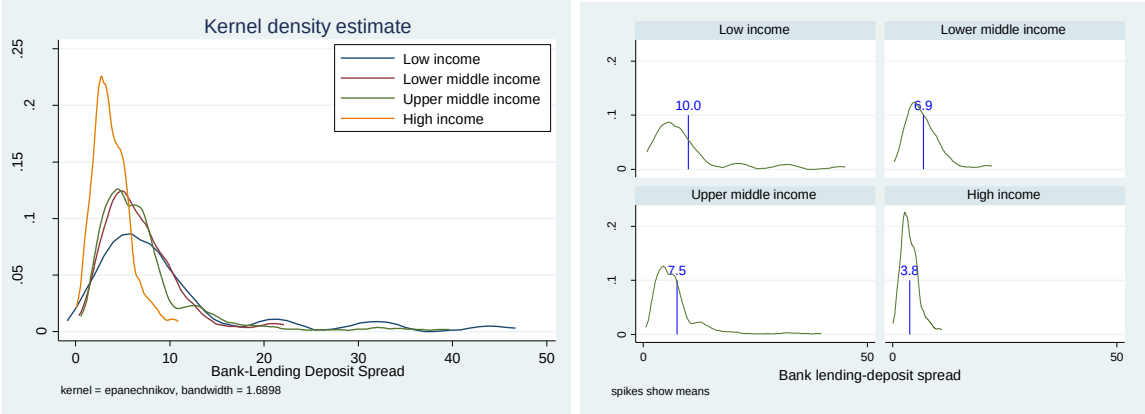

Figure 1: Average bank lending-deposit spread by country income groups, 2007-2017

Source: Authors own calculations based on primary data (Global Financial Development (GFD)

Figures 2-3 illustrate the degree of trustworthiness in financial systems and affordability of financial services (using average values of year 20011-2017). The world map of trustworthiness in financial systems shows that New Zealand (6.33), Australia (6.30), Singapore (6.28), Hong Kong (2.26), South Africa (5.90), Finland (5.86), and Canada (5.81) stand out as countries with a very high level of trustworthiness and confidence in financial systems. The affordability of financial services indicator is shown in Figure 3. As with the level of affordability, values in the map range from 1(least affordable) to 7 (most affordable). The map displays that the five countries with the highest level of financial service affordability are Switzerland (5.89), Hong Kong (5.85), Singapore (5.78), Luxembourg (5.41), and Finland (5.86). At the other extreme, countries with the lowest score are Libya (3.02) and Chad (3.23). Notably, countries with darker blue shade (representing high trust in financial systems) also tend to rate financial service affordability more highly. The maps provide the supportive idea that countries with more trust in financial systems tend to perceive financial products at affordable prices.

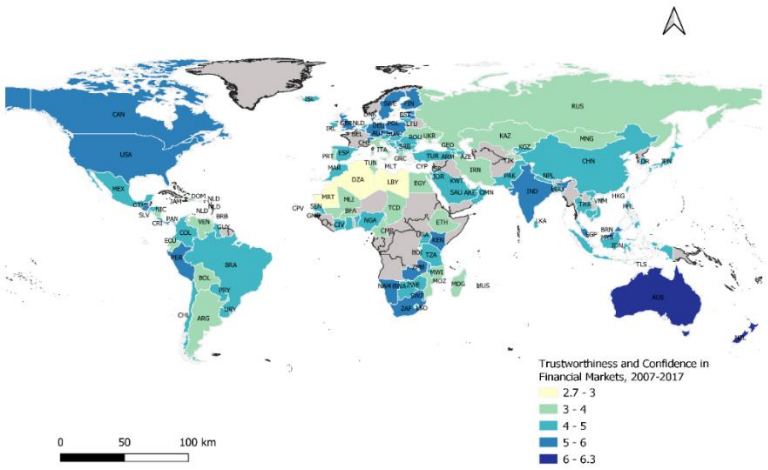

Figure 2: Trustworthiness in financial systems, 2011-2017

Source: Authors own calculations based on primary data (World Economic Forum Global Competitiveness Index (GCI))

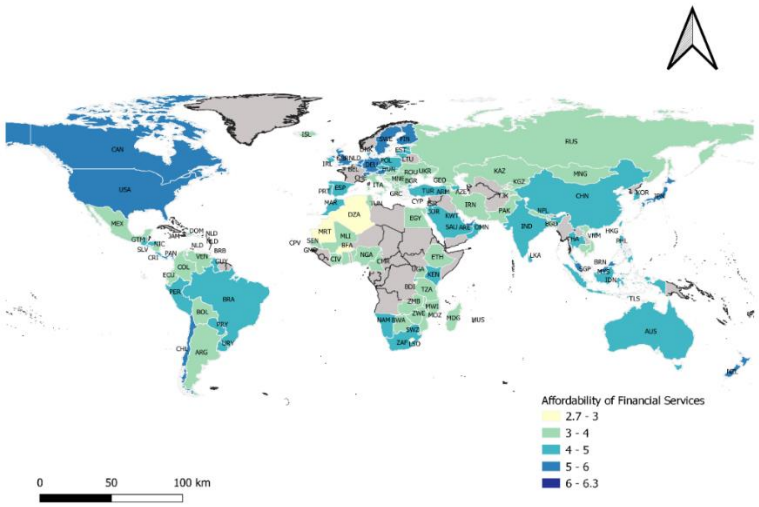

Figure 3: Affordability of financial services, 2011-2017

Source: Authors own calculations based on primary data (World Economic Forum Global Competitiveness Index (GCI))

Cross-tabulations of the raw data are presented in Table 2. It shows that countries with a higher level of trust in financial systems tend to have a lower spread. The spread of the countries with the most trusting environment is around 3.35, whereas the value reaches up to almost four times this figure for the countries with the least trusting environment. Figure 4 supports the result from Table 2 that there is a negative correlation between trust and lending-deposit spread. It can be seen that a strong negative trend between lending-deposit spread and trust is clearly illustrated in the low and middle-income countries, but a low correlation is shown for the high-income countries.

Table 2: Bank lending-deposit spread and Trustworthiness in financial systems

Trust in financial systems	Spread
3 (low)	11.84
4	8.62
5	7.05
6	5.75
7 (high)	3.35
Total	7.06

Table 3 reports the correlation matrix among the main variables. The correlation between spread and trust is found to be significantly negative. Bank spread correlates positively with bank overhead costs and bank asset concentration. These findings are in line with the hypothesis and previous literature on the role of trust in reducing cost funding for individuals and firms. Also, the study finds that trust in financial systems correlates positively with the affordability level of financial services.

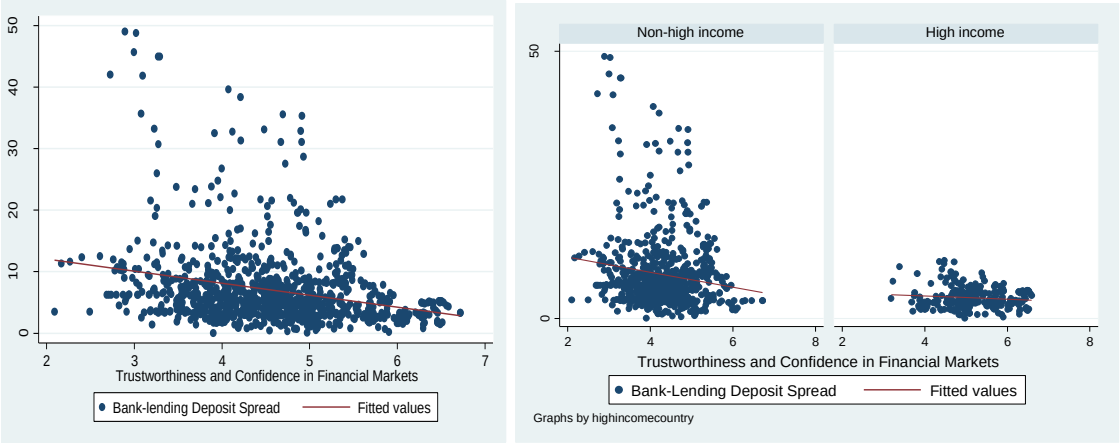

Figure 4: Cross-country correlation between bank lending-deposit spread and Trustworthiness in financial systems, 2007-2017

Table 3: Correlation matrix

	Spread	Afford	Trust	Overhead	5-bank	Deposit	Crisis
Spread	1						
Afford	-0.295**	1					
	(0.000)						
Trustworthiness	-0.258**	0.691**	1				
	(0.000)	(0.000)					
Overhead	0.233**	-0.314**	-0.217**	1			
	(0.000)	(0.000)	(0.000)				
5-bank	0.140**	0.046	0.101**	-0.116**	1		
	(0.000)	(0.154)	(0.000)	(0.000)			
Deposit	-0.282**	0.528**	0.400**	-0.301**	-0.053	1	
	(0.000)	(0.000)	(0.000)	(0.000)	(0.0602)		
Crisis	-0.048	0.073**	0.009	-0.006	-0.058**	0.177**	1
	(0.1501)	(0.018)	(0.7399)	(0.8248)	(0.044)	(0.000)	

3.2 Empirical Results

The bank lending-deposit spread model's results

Table 4 illustrates the impact of trustworthiness in financial systems on lending-deposit spread from three different estimation methods: fixed effect (FE), random effect (RE) regressions, and instrumental variable two-stage least squares (2SLS). Two preliminary tests (Breusch and Pagan, and Hausman tests) are employed to determine whether the estimation should be specified as pooled OLS, RE, or FE model. The test result shows that the RE model is preferred over pooled estimation, and the Hausman test result shows the p-value is 0.000, which means FE is preferable to the pooled and RE estimations.

In order to provide additional evidence on the robustness of the results across different estimation methods, robustness tests are conducted using instrumental variable estimation to analyze model uncertainty.

This study treats trustworthiness as an endogenous variable and instruments the trust variable using four variables: transparency of government policymaking, internet usage by individuals, African countries, and year. The Sargan test is employed to test the identifying restrictions for the instrument variables, ensuring they are uncorrelated with the error term. However, the results indicate an insignificant chi-square statistic value (Sargan-Hansen statistic: 32.545, chi-square statistic: 0.00), suggesting that the selected instruments may not be sufficiently valid.

Table 4: The bank lending-deposit spread model, 2007-2017

	RE	FE	IV-2SLS
Trustworthiness in financial systems	-0.460**	-0.335	-0.322
	[0.201]	[0.212]	[0.687]
Bank overhead costs	0.017	0.011	0.011
	[0.022]	[0.022]	[0.022]
5-bank asset concentration	0.033***	0.028**	0.028**
	[0.011]	[0.011]	[0.012]
Financial system deposits/GDP	-0.022***	-0.015	-0.014
	[0.007]	[0.009]	[0.011]
A year lag of banking crisis	-0.076	0.071	0.075
	[0.501]	[0.503]	[0.540]
Cons	7.303***	6.690***	6.626*
	[1.411]	[1.437]	[3.392]
R-squared	0.107	0.109	0.109
N	733	733	772
Prob (F-statistic)	0.000	0.000	0.000
Hausman test	13.090		
(P-value)	0.023		
Breusch and Pagan test	1964.610		
(P-value)	0.000		

Note: Standard errors are given in parentheses, *, **, and ** denote significance at 10%, 5%, and 1%, respectively.

Therefore, the FE model is the most appropriate to interpret the results. Based on the FE model, the only factor affecting bank spread is bank asset concentration, suggesting that a higher degree of concentration increases spread. The overall results show that trustworthiness has a negative but statistically insignificant effect on lending-deposit spread. The insignificant result can be explained by Álvarez-Botas & González's (2021) study, which found that trust only reduces loan spreads in countries with weak institutional environments. The International Monetary Fund (2003) states that the quality of the institutional environment is generally better in high-income countries than in low-income countries. Therefore, this paper conducts a bank lending-deposit spread model divided into high-income and low- and middle-income groups to investigate how trustworthiness is correlated with lending-deposit spread in different income level groups. This paper separates countries into

only high-income and low-middle-income groups instead of three groups (high-income, middle-income, and low-income) due to a limited number of variables in the low-income country group.

The sub-group estimations on high-income and low- and middle-income groups are presented in Table 5 to assess whether the impacts demonstrated in Table 4 differ across income groups. The test results suggest that RE is the preferred model for the case of sub-group estimation. The results of RE show the relationship between trust in financial systems and lending-deposit spread only for the low and middle-income group. Regarding high-income countries, the primary factor that affects the spread is bank overhead costs. This implies that, on aggregate, higher overhead costs tend to lead to higher lending rates. In low and middle-income countries, the three factors that affect the spread are trust, bank concentration, and country's size of financial market. A possible explanation for this is that an increase in market size results in more competition which then lowers the spread.

Table 5: The bank lending-deposit spread model by income groups, 2007-2017

	High income		Low and middle income	
	FE	RE	FE	RE
Trustworthiness in financial systems	0.356	0.168	-0.482*	-0.518**
	[0.311]	[0.243]	[0.261]	[0.254]
Bank overhead costs	0.097**	0.118***	0.000	0.005
	[0.041]	[0.039]	[0.027]	[0.027]
5-bank asset concentration	-0.009	-0.009	0.030**	0.036***
	[0.022]	[0.016]	[0.013]	[0.013]
Financial system deposits/GDP	-0.001	-0.004	-0.028*	-0.037**
	[0.007]	[0.004]	[0.017]	[0.015]
A year lag of banking crisis	0.075	0.014	0.036	-0.087
	[0.446]	[0.437]	[0.759]	[0.755]
Cons	2.676	3.781**	8.555***	8.774***
	[2.773]	[1.864]	[1.688]	[1.768]
R-squared	0.065	0.132	0.112	0.115
N	215	215	558	558
Prob (F-statistic)	0.000	0.000	0.000	0.000
Hausman test		9.800		7.930
(P-value)		0.081		0.160
Breusch and Pagan test		303.270		1410.880
(P-value)		0.000		0.000

Note: Standard errors are given in parentheses, *, **, and ** denote significance at 10%, 5%, and 1%, respectively.

The perception of financial service affordability model's results

This study employs trustworthiness in financial systems as the explanatory factor explaining the perception of financial service affordability, which is treated as a proxy explaining the perceived cost of financial

intermediation. Before interpreting the causality of the explanatory variables to perception of financial service affordability, this study conducts Hausman and endogeneity tests to check the robustness across all the estimators. The results of the Hausman test indicate that FE is the preferred model. Table 6 shows that the impact of trust on financial service affordability among all estimation techniques and sub-groups are considerably consistent with each other. Based on the FE model, the result shows that a higher trust in financial systems relates to higher financial service affordability. This emphasizes that a higher level of trust in the financial market relates to a higher affordability in financial services or lower cost of financial services (e.g., insurance, loans, trade finance).

Table 6: The perception of financial service affordability model, 2007-2017

	Overall Sample			High income			Low and middle income		
	FE	RE	IV-SLS	FE	RE	IV-SLS	FE	RE	IV-SLS
Trustworthiness	0.349***	0.438***	0.786***	0.305***	0.380***	0.425***	0.391***	0.433***	0.991***
	[0.033]	[0.029]	[0.085]	[0.053]	[0.046]	[0.115]	[0.043]	[0.036]	[0.122]
Bank overhead costs	0.000	-0.003	0.001	-0.015	-0.020*	-0.016	-0.002	-0.002	-0.005
	[0.004]	[0.004]	[0.004]	[0.011]	[0.011]	[0.011]	[0.005]	[0.005]	[0.006]
5-bank asset concentration	0.002	0.002	0.003	0.005	0.004	0.006	0.000	-0.002	-0.001
	[0.002]	[0.002]	[0.002]	[0.005]	[0.004]	[0.005]	[0.003]	[0.002]	[0.003]
Financial system deposits/GDP	-0.002	0.004***	0.001	0.000	0.002**	0.001	-0.008***	0.004**	-0.004
	[0.002]	[0.001]	[0.002]	[0.002]	[0.001]	[0.002]	[0.003]	[0.002]	[0.004]
A year lag of banking crisis	0.125**	0.148***	0.113*	0.100*	0.087	0.085	0.343**	0.310**	0.674***
	[0.053]	[0.052]	[0.058]	[0.056]	[0.055]	[0.058]	[0.136]	[0.130]	[0.173]
Cons	2.593***	1.783***	0.305	2.948***	2.360***	2.196***	2.508***	1.943***	-0.194
	[0.263]	[0.196]	[0.498]	[0.530]	[0.404]	[0.831]	[0.315]	[0.228]	[0.624]
R-squared	0.232	0.5434	0.475	0.3631	0.464	0.430	0.066	0.400	0.275
N	904	904	904	358	358	358	546	546	546
Prob (F-statistic)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	00.000
Hausman test		13.090			15.040			117.700	
(P-value)		0.023			0.010			0.000	
Breusch and Pagan test		1964.610			547.270			361.970	
(P-value)		0.000			0.000			0.000	
Sargan-Hansen statistic			1.536						
Sargan-Hansen (chi-square)			0.4639						

Note: Standard errors are given in parentheses, *, **, and ** denote significance at 10%, 5%, and 1%, respectively.

In order to offer additional evidence whether the results are robust across other estimation methods, robustness tests are conducted to analyze model uncertainty by using instrumental variable estimation. This study treats trustworthiness as an endogenous variable and instrument the trust variable using four variables: transparency of government policymaking, individuals using internet, African countries, and year. The Sargan test is used to test the identifying restrictions for the instrument variables that are uncorrelated with the error

term. The results show an insignificant chi-square statistic value (0.4639), which implies our model is accurate. A robustness check using alternative estimation provides the same empirical findings of the positive and significant link between trustworthiness in financial systems and perception of financial service affordability.

This finding is consistent with La Porta et al. (2008), who found evidence from a cross-country study that trust can help reduce the costs of financial transactions and make financial services more affordable. Additionally, Demirgüç-Kunt and Klapper (2012) found that trust plays a crucial role in lowering the expenses associated with financial transactions and enhancing the availability of financial services for low-income households.

4. Conclusion and Discussion

The objective of this paper is to investigate the relationship between trust in financial systems and two key factors: the actual lending-deposit spread and the perceived affordability of financial services. Utilizing a cross-country panel dataset for 136 countries spanning the period from 2011 to 2017, the empirical findings reveal three key outcomes. Firstly, trustworthiness in financial systems has a positive effect on the perception of the cost of financial services, as it aids in cost reduction for financial transactions and enhances affordability of financial services (La Porta et al., 2008; Klapper, 2012).

Secondly, however, when considering the overall sample, the impact of trustworthiness on the bank lending-deposit spread is found to be statistically insignificant. It should be noted, though, that the random effect model suggests that trustworthiness does have an influence on the spread for non-high-income countries. To ensure the robustness of the estimation, additional careful consideration is required in selecting appropriate instrumental variables (IVs) for the two-stage least squares (2SLS) estimation. Thirdly, bank overhead costs are the primary factor affecting the spread in high-income countries, while in non-high-income countries, the factor is bank concentration.

In summary, it is evident that enhancing trustworthiness within financial systems can effectively reduce the perceived cost of financial services and enhance affordability for individuals. These findings also have significant implications for Asian economies, as policymakers should prioritize directing their efforts towards fostering trustworthiness in financial systems. This can be achieved by implementing measures that prioritize transparency, accountability, and ethical practices, ultimately leading to increased affordability of financial services for individuals.

References

Agapova, A., & McNulty, J. (2016). Interest rate spreads and banking system efficiency: General considerations with an application to the transition economies of Central and Eastern Europe. *International Review of Financial Analysis*, *47*, 154-165.

Álvarez-Botas, C., & González, V. M. (2021). Does trust matter for the cost of bank loans? *Journal of Corporate Finance*, *66*, 101791.

Blommestein, H.J. (2006). How to restore trust in financial markets? In P.H. Dembinski, C. Lager, A. Cornford & J.M. Bonvin (Eds.), *Enron and World Finance* (pp.180-190). London: Palgrave Macmillan.

Butter, F. A. G. den, & Mosch, R. H. J. (2003). *Trade, trust, and transaction cost* (Tinbergen Institute Discussion Papers No. 03-082/3). Retrieved from https://research.vu.nl/en/publications/trade-trust-and-transaction-costs

Chamberlain, G. (1980). Analysis of covariance with qualitative data. *The Review of Economic Studies. 47*(1), 225-238.

Calice, P., & Zhou, N. (2018). *Benchmarking costs of financial intermediation around the world* (World Bank Policy Research Working Paper Series No. 8478). Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3238312

Chan, K., Kuo, W., Lin, C.-Y., & Lin, T.-C. (2020). *Firm trustworthiness and bank loan pricing* (SSRN Scholarly Paper ID 3535237). Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3535237

Demirguc-Kunt, A., & Levine, R. (2000). *Bank concentration: Cross-country evidence*. Retrieved from https://documents1.worldbank.org/curated/en/979371468780328170/pdf/wdr27828.pdf

Demirgüç-Kunt, A., & Klapper, L. (2012). The impact of trust on financial service affordability (World Bank Policy Research Working Paper No.6185). Retrieved from https://www.worldbank.org/en/topic/financialinclusion/brief/how-to-measure-financial-inclusion

Dyer, J. H., & Chu, W. (2003). The role of trustworthiness in reducing transaction costs and improving performance: Empirical evidence from the United States, Japan, and Korea. *Organization Science*, *14*(1), 57–68.

Gelos, R. G. (2009). Banking spreads in Latin America. *Economic Inquiry*, *47*(4), 796–814.

Glaeser, E. L., & Gyourko, J. (2005). *The impact of building restrictions on housing affordability* (SSRN Scholarly Paper ID 790487). Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=790487

Greene, W.H. (2002), *Econometric analysis.* New York: Prentice Hall.

Gropp, R., Kok, C., & Lichtenberger, J.-D. (2014). The dynamics of bank spreads and financial structure. *Quarterly Journal of Finance*, *4*(4), 1450014.

Guiso, L., Sapienza, P., & Zingales, L. (2008). Trusting the stock market. *The Journal of Finance*, *63*(6), 2557–2600.

Hossain, M. (2010). *Financial reforms and persistently high bank interest spreads in Bangladesh: Pitfalls in institutional development?* (MPRA Paper No. 24755). Retrieved from https://mpra.ub.uni-muenchen.de/24755/

Howorth, C., & Moro, A. (2012). Trustworthiness and interest rates: An empirical study of Italian SMEs. *Small Business Economics*, *39*(1), 161–177.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. (2008). Trust and financial inclusion: Evidence from a cross-country survey. *Journal of Finance*, *63*(2), 265–300.

Mujeri, M. K., & Younus, S. (2009). An analysis of interest rate spread in the banking sector in Bangladesh. *The Bangladesh Development Studies*, *32*(4), 1–33.

OECD. (2017). *OECD guidelines on measuring trust*. Paris: OECD Publishing.

OECD (2019). *OECD business and finance outlook 2019: Strengthening trust in business.* Paris: OECD Publishing.

Shin, J. (1985). Perception of price when price information is costly: Evidence from residential electricity demand. *The Review of Economics and Statistics, 67*(4), 591-598.

The International Monetary Fund. (2003). World economic outlook, April 2003: Growth and institutions. Retrieved from https://www.imf.org/en/Publications/WEO/Issues/2016/12/30/World-Economic-Outlook-April-2003-Growth-and-Institutions-16369