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Bank-specific determinants of explicit deposit insurance adoption: A global analysis

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Abstract

Purpose — The adoption of explicit deposit insurance has increased significantly over the past two decades, yet there is limited evidence on how bank-specific factors influence this decision. This study addresses this gap by investigating the determinants of explicit deposit insurance adoption.

Method — This study uses 25 years of unbalanced data from 107 countries and a probit model to identify the key factors influencing the adoption of the financial safety net.

Findings — The analysis reveals that bank-specific factors significantly influence the decision to implement explicit deposit insurance. However, bank capitalization does not significantly impact the decision. Additionally, regulatory quality, economic growth, and financial crises are critical determinants of the adoption decision. The likelihood of adopting explicit deposit insurance also varies considerably across different income groups in countries.

Implications — The study provides valuable insights for policymakers on the factors to consider when implementing this financial safety net.

Originality — This study contributes to the existing literature by highlighting the previously overlooked role of bank-specific factors in adopting explicit deposit insurance.

Keywords — Explicit Deposit Insurance; bank-specific factors; regulatory quality; global banking; probit

Introduction

Deposit insurance is a safeguard mechanism established by governments or specialized institutions to protect depositors' funds in case of a bank failure (Dubey, 2018). It ensures that depositors do not lose their money up to a predefined limit, thereby sustaining public confidence in the banking system. Explicit deposit insurance schemes (EDI) are those where the terms, limits, and conditions are clearly defined and publicly communicated, as opposed to implicit schemes where the government's backing is assumed but not explicitly guaranteed. Explicit deposit insurance schemes are implemented to promote financial stability (Anginer & Demirguc-Kunt, 2018). Over the past 25 years, a notable global trend has been toward adopting explicit deposit insurance schemes (Van Roosebeke & Defina, 2022). This period has been marked by several significant financial crises, including the global financial crisis of 2008, the European sovereign debt crisis, and the Asian financial crisis of the late 1990s. Over two-thirds of countries have experienced one or more

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banking crises in recent years (Barth, Nguyen, & Xu, 2021). These events profoundly influenced the adoption and design of deposit insurance systems worldwide. However, despite these advancements, many countries still do not have explicit deposit insurance. According to the latest data, approximately 50 countries have yet to implement such schemes, leaving their banking sectors and depositors more vulnerable to financial instability. Deposit insurance is crucial for maintaining financial stability, preventing bank runs, and protecting depositors' savings. During periods of financial distress, such as the global financial crisis of 2008, deposit insurance schemes were pivotal in restoring confidence in the banking system. Understanding the determinants of explicit deposit insurance adoption is essential to developing effective financial policies and regulatory frameworks.

In an era of globalization and global banking, the bank sector's contagions and cross-country instability spillovers are evident; understanding what factors countries investigate before taking the explicit deposit insurance scheme leap is essential. Although significant literature is available on deposit insurance, its focus has been on understanding how such schemes help improve stability in the banking sector amidst the debate on moral hazard and market discipline. There is a dearth of literature on what factors matter for its adoption. The limited empirical evidence focuses on macroeconomic factors, and little work has been done on micro foundations (Cull, Senbet, & Sorge, 2002; Demirgüç-Kunt, Kane, & Laeven, 2008; Qian, Zhang, & Zheng, 2017). Previous studies indicate that various factors influence the adoption and design of explicit deposit insurance schemes. Economic development, crisis pressures, and political institutions play significant roles (Demirgüç-Kunt et al., 2008). Deposit insurance is more common in democratic systems, although it may be poorly designed, particularly in times of crisis or when copying other nations (Demirgüç-Kunt et al., 2008). While deposit insurance may increase confidence in the financial sector, it can also facilitate risk-taking, potentially negatively impacting financial system health (Cull et al., 2002). The adoption of deposit insurance is more likely when it is publicly administered, privately funded, has non-risk-rated premiums, and compulsory membership. Other factors include a larger deposit market, diverse banking groups, lower government ownership of banks, and higher economic freedom (Chu, 2021). Empirical literature has overlooked the role of the banking sector as an economic agent in the decision to adopt explicit deposit insurance schemes. This study addresses this gap by analyzing global banking data from the past 25 years. We answer the question of what bank-specific, economic, regulatory, political, and institutional factors influence the adoption of explicit deposit insurance schemes.

Research suggests that explicit deposit insurance (EDI) schemes can positively and negatively affect banking stability during financial crises. While EDI adoption may increase moral hazard and risk-taking (Prabha & Wihlborg, 2008). It can also stabilize bank lending and mitigate the impact of a crisis (Hasan, Liu, Saunders, & Zhang, 2022). The effectiveness of EDI depends on factors such as the level of financial liberalization and the design of the insurance scheme (Demirgüç-Kunt et al., 2008; Maysami & Sakellariou, 2008). Countries with democratic systems are more likely to adopt EDI but may design it poorly, primarily when implemented during crises or due to external pressures. The relationship between EDI coverage and risk-taking is U-shaped, suggesting that an optimal level of coverage exists (Prabha & Wihlborg, 2008). While EDI can be beneficial, its implementation requires careful consideration of institutional factors and design elements to maximize its effectiveness in crisis mitigation. We test for institutional factors that matter when it comes to EDI adoption. There is a difference in the regional adoption of EDI. Finally, we test whether income classifications matter when adopting explicit deposit insurance.

The main goal of this study is to determine and examine the factors that influence the adoption of explicit deposit insurance across different countries over the past 25 years. What bank-specific, economic, political, and institutional factors influence the adoption of explicit deposit insurance schemes? How do financial crises affect the likelihood of adopting explicit deposit insurance? Since data suggest that DI adoption varies across countries of different income classifications, with the high-income group countries having the highest percentage of EDI adoption while the lower-income group having the lowest adoption percentage, we finally test if income matters in the adoption decision of explicit deposit insurance.

The current research utilizes a comprehensive global banking dataset that includes information on deposit insurance schemes, banking sector performance, and macroeconomic indicators for over 107 countries from 1999 to 2023, enabling an examination of the long-term trends and impact of major financial events. This study employs a probit regression model to investigate the key determinants of explicit deposit insurance adoption. The probit model is particularly suited for this analysis, as it allows for modeling binary dependent variables, in this case, the presence or absence of explicit deposit insurance. This study also uses an event study methodology to assess the impact of financial crises on the likelihood of adoption.

This study contributes to the theoretical understanding of financial stability and regulation by providing empirical evidence of the factors driving the adoption of explicit deposit insurance schemes. We extend the existing literature by incorporating various banking, economic, political, and institutional variables. This study's findings have significant implications for policymakers and regulators. Identifying the key determinants of deposit insurance adoption provides insights into how countries make this decision.

Deposit insurance has been a subject of considerable debate in the literature. Its effectiveness in ensuring bank stability regarding moral hazard and market discipline has been extensively studied. Some studies suggest that the introduction of deposit insurance reduces risk-taking. Gropp and Vesala (2004) argue that deposit insurance mitigates moral hazard by setting safety net limits, thereby reducing risk-taking. Similarly, Lopez-Quiles and Petricek (2018) demonstrate that increased insurance does not lead to higher risk-taking or reduced market discipline, as evidenced by the lack of impact on banks' deposit rates. Mumtaz and Jadoon (2018) provide evidence from an analysis of 2,196 banks across 125 countries, indicating that deposit insurance is associated with reduced risk-taking. Chiaramonte, Girardone, Migliavacca, and Poli (2020) also find that deposit insurance schemes do not increase risk-taking in banks, and moral hazards can be countered using temporary blanket guarantees.

Contrarily, other studies highlight the potential for deposit insurance to incentivize risk-taking. Keeley (1990) suggests that explicit deposit insurance encourages moral hazard without stringent regulations and increases risk-taking. Lé (2013) finds that deposit insurance increases insolvency risk by promoting higher leverage and reducing capital, with larger banks being less responsive to the safety net. Demirgüç-Kunt and Huizinga (2004) also suggest that explicit deposit insurance reduces market discipline. Karas, Pyle, and Schoors (2021) observed that introducing deposit insurance led to increased risk-taking due to a decline in market discipline. Kim and Rezende (2023) also argue that insurance premiums impact bank margins and balance sheets, inducing a "search for yield." Additionally, Qian, Zhang, Zheng, and Ashraf (2019) suggest that competition induces risk-taking in banks, and explicit deposit insurance becomes ineffective under excessive scenarios.

Prabha and Wihlborg (2008) propose that the relationship between risk and insurance is U-shaped when analyzed in the context of insurance coverage, with institutional characteristics acting as essential moderators. Other factors also influence the relationship between deposit insurance and risk. Qian et al. (2019) noted that risk premiums are higher in uninsured countries. During the COVID-19 pandemic, systemic risk was aggravated in many countries (Yan, Jeon, & Wu, 2023), with central bank interventions potentially exacerbating moral hazard behavior. The pandemic negatively impacted global bank profitability and stability, with significant variations in response based on the type of banking system (Elnahass, Trinh, & Li, 2021; Xiazi & Shabir, 2022). High leverage, loan ratios, and undercapitalization made banks more vulnerable during the crisis, and insurance was found to moderate these relationships (Ben-Ammar, 2024a; Duan, El Ghoul, Guedhami, Li, & Li, 2021). Banks with explicit deposit insurance experienced faster recovery and smaller increases in bank spreads (Hasan et al., 2022).

Research indicates that stringent capital regulation generally reduces bank default risk, an effect strengthened by explicit deposit insurance during crises (Ashraf, Zheng, Jiang, & Qian, 2020). Bank risk-taking is positively associated with shareholder power within corporate governance structures, and the impact of regulations on risk varies with ownership concentration. Increased competition in banking can lead to higher default risk through increased asset risk and reduced

capital (Keeley, 1990). While generous deposit insurance schemes increase bank risk during stable periods, they contribute to lower bank risk and better systemic stability during crises. Adequate bank supervision can mitigate the unintended consequences of deposit insurance on systemic risk during stable periods (Anginer, Demirguc-Kunt, & Zhu, 2014).

Islamic banking presents unique challenges and considerations regarding deposit insurance. Hamisu and Hassan (2017) suggest that Islamic banking is generally compatible with traditional deposit insurance, and some propose integrating takaful principles with traditional systems (Fendi, 2020). However, Islamic banks are advised to have a higher potential for moral hazard (Oktarina, Fahmi, & Beik, 2019). Mili and Abid (2017) find that Islamic banks with low franchise values are more prone to risk-taking. Kabir et al. (2022) analyze Islamic and conventional banks in Bangladesh, finding similar credit risk behaviors. Grassa et al. (2022) compare Islamic and conventional banks. It is noted that government support in improving capitalization and market discipline is less effective for Islamic banks due to their risk-sharing characteristics. Political stability, proxied by government stability, the absence of internal conflicts, and democratic rights, can moderate the risk-deposit insurance relationship (Anginer et al., 2014). Politics also influences banks' lobbying for increased insurance coverage (Laeven, 2004).

Previous studies suggest that capital regulation and deposit insurance are essential in moderating bank risk and capital ratios. Bank default risk is decreased by strict capital regulations, especially in nations where deposit insurance is explicitly provided during times of crisis (Ashraf et al., 2020). However, the relationship between capital requirements and risk behavior differs between conventional and Islamic banks. Conventional banks show a negative link between increased capitalization and credit risk only for banks with high market power, while Islamic banks are less sensitive to market competition. The introduction of deposit insurance influences the relationship between bank capital and liquidity creation, especially for banks with high household deposit ratios, reducing the impact of capital on liquidity creation.

Research has also focused on factors needed for making deposit insurance schemes effective and identified factors like legislation, depositor confidence, and risk-adjusted premiums as essential factors (Chen & Shen, 2023; Tofan, 2022). The EDI can become manipulated by larger influential banks (Suljić Nikolaj, Olgić Draženović, & Buterin, 2022).

Empirical evidence on the determinants of the adoption of deposit insurance is limited. Chu (2021) developed a model of deposit insurance that suggests that administration, funding sources, risk premiums, banking sector ownership, and economic and political freedom would influence deposit insurance adoption. Their model does not focus specifically on the role of bank-specific factors either. Democracy, risk, financial crisis, and external pressures are suggested to improve the probability of deposit insurance adoption (Demirgüç-Kunt et al., 2008). Stable economies, financial crises, strong legal systems, real per capita GDP, and the regional adoption of EDI also impact the decision to adopt the system (Cull et al., 2002). Greater government effectiveness, less privatization, and lower financial liberalization also increase the likelihood of EDI adoption (Ji, Bian, & Huang, 2018).

There is limited evidence on how bank-specific factors impact the adoption decision. The size of the bank plays a critical role; larger banks with more extensive deposit bases are more likely to support the adoption of deposit insurance to protect their extensive customer bases (Demirgüç-Kunt et al., 2008). Second, higher bank capitalization is predicted to increase the likelihood of DI adoption (Demirgüç-Kunt et al., 2008). How profitability, risk-taking, liquidity management, and operations impact the adoption decision is unclear. This paper tries to answer this question.

Methods

We extend (Demirgüç-Kunt et al., 2008) and use a probit model for the analysis. The choice of probit as the estimation technique is grounded on its ability to analyze discrete choice data and estimate probabilities of binary or categorical outcomes. Probit models effectively address correlated binary responses within longitudinal or clustered datasets. They can accommodate person-specific or cluster-specific effects, rendering them highly suitable for analyzing repeated

measurements or grouped data (Gibbons & Hedeker, 1994). Their model fails to model important bank-specific factors, which this study includes in the analysis. The mathematical form is as follows.

$$\mathrm{P(EDI = 1|X) = f(B, E, R, P)} \quad (1)$$

where B is bank-specific factors, E is economic factors, R is regulatory factors, and P is political factors. The econometric model follows the following function form.

$$\begin{aligned}\mathrm{P(EDI = 1|X)} = \Phi\big(&\beta_0 + \beta_1 BankSize_{i,c,t} + \beta_2 NPL_{i,c,t} + \beta_3 DepositRatio_{i,c,t} + \\ &\beta_4 LoanRatio_{i,c,t} + \beta_5 Liquidity_{i,c,t} + \beta_6 KA_{i,c,t} + \beta_7 NonOperEx_{i,c,t} + \\ &\beta_8 ROA_{i,c,t} + \beta_9 PoliticalStability_{c,t} + \beta_{10} RegulQuality_{c,t} + \\ &\beta_{11} OilRenttoGDP_{c,t} + \beta_{12} GDPgrowth_{c,t} + \beta_{13} Crisis + \\ &\beta_{14} IncomeClassification_c\big)\end{aligned} \quad (2)$$

whereas,

β is the coefficient of the independent variables representing the changes in Z score for a unit change in the independent variable, and the standard normal distribution's cumulative distribution function (or CDF) is denoted as Φ. The subscripts *i*, *c*, and *t* represent individual banks, countries, and time. EDI represents a binary (0, 1) variable indicating the presence of explicit deposit insurance. The explicit deposit insurance (EDI) data is taken from the WDI database.

Table 1: List of Countries

Lower Income	Sudan	Russia	Kuwait
Benin	Ukraine	South Africa	Liechtenstein
Burkina Faso	Vietnam	Thailand	Malta
Malawi	Zambia	Tunisia	Namibia
Mali		Turkey	Netherlands
Niger	**Upper Middle**	Venezuela	New Zealand
Rwanda	Argentina		Norway
Tanzania	Bahrain	**Higher Income**	Oman
Togo	Brazil	Australia	Portugal
Uganda	Bulgaria	Austria	Puerto Rico
Zimbabwe	China (Mainland)	Belgium	Qatar
	Colombia	Bermuda	Saudi Arabia
Lower Middle Income	Croatia	Canada	Singapore
Bangladesh	Cyprus	Cayman Islands	Slovakia
Botswana	Ecuador	Chile	Slovenia
Egypt	Estonia	Czech Republic	South Korea
Ghana	Kazakhstan	Denmark	Spain
India	Lebanon	Faroe Islands	Sweden
Indonesia	Lithuania	Finland	Switzerland
Ivory Coast	Malaysia	France	Taiwan
Jamaica	Mauritius	Germany	Trinidad and Tobago
Jordan	Mexico	Greece	United Arab Emirates
Kenya	Panama	Greenland	United Kingdom
Morocco	Peru	Guam	United States
Nigeria	Poland	Hong Kong	
Pakistan	Romania	Hungary	
Palestinian Territories	Mexico	Iceland	
Papua New Guinea	Panama	Ireland	
Philippines	Peru	Israel	
Senegal	Poland	Italy	
Sri Lanka	Romania	Japan	

The bank-specific variables include bank size, non-performing loans ratio, deposit ratio, loan ratio, liquidity, capitalization, non-operational expenditures, and profitability. The source of

bank-specific data is the LSE workspace. Larger banks are expected to improve the probability of EDI adoption. Demirgüç-Kunt et al. (2008) use size and capitalization in their study; they found that higher capitalization and larger size increase the likelihood of EDI adoption. Higher non-performing loans proxy higher banking sector instability through risk-taking. The possibility of adopting EDI is ambiguous because of the underlying moral hazard and market discipline hypothesis. Higher deposits are expected to increase the probability of EDI adoption. Higher lending ratios are also expected to increase the likelihood of EDI adoption. Improved liquidity positions of banks indicate higher stability and increase the probability of EDI adoption.

Various political and economic factors influence the adoption of deposit insurance (Chu, 2021). The macroeconomic variables included in the model are regulatory quality, political stability, GDP growth rates, and oil rent to GDP. We include a dummy variable for the crisis period, which takes a value of 1 during the global financial crisis (2007 to 2009) and the Covid-19 crisis (2020 to 2021) to proxy crisis periods. The data source for macroeconomic variables is the World Development Indicators Database.

Annual data from 1999 to 2023 from all the world's banks (107 countries) were used. Table 1 shows the list of countries included in the analysis, which are classified by World Bank income classification. Due to missing values, the panel was unbalanced. Table 2 summarizes the descriptive statistics of all variables in the model. For example, the EDI value is 0.82, meaning that 82% of the countries in the sample have adopted EDI.

Table 2. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
EDI	38674	0.82	0.384	0	1
Bank Size	27147	22.401	2.194	5.631	30.487
Log (NPL)	22481	-0.8	1.468	-6.908	10.653
Deposit Ratio	27117	0.898	0.34	0	50.854
Loan Ratio	26093	0.672	4.038	-13.144	650.776
Liquidity Ratio	27089	-1.706	0.547	-6.446	0.203
KA	26626	0.022	0.052	-0.08	6.358
Non-Operating Expense Ratio	26877	19.248	2.578	4.317	29.128
ROA	30340	1.009	1.674	-29.19	46.13
Political Stability	33295	0.101	0.815	-2.81	1.964
Regulatory Quality	33283	0.81	0.864	-2.387	2.252
Oil Rent to GDP	34700	2.147	6.344	0	58.369
GDP growth	37766	3.084	3.218	-28.759	26.17
Crisis Period	38674	0.16	0.367	0	1

Results and Discussion

Table 3 reports the estimation results of equation (2), while the average marginal effects are reported in column 3. The literature has primarily ignored bank-specific factors that may influence a country's decision to adopt explicit deposit insurance (EDI). We find that bank-specific factors are essential in this decision. Bank size, loan ratio, and liquidity ratio have a significant positive impact on EDI adoption, whereas NPL, non-operating expense ratio, and ROA negatively impact the probability of EDI adoption.

Financial instability decreases the probability of EDI adoption (Cull et al., 2002). The bank-specific marginal effects can be interpreted in line with how they affect the overall stability of the financial sector. The results suggest countries' likelihood of adopting EDI increases with bank size. The marginal effects show a 3.5% increase in probability due to increased bank size. Demirgüç-Kunt et al. (2008) model small banks and find that the probability of adoption of EDI is lower when banks are small, which is consistent with our findings. With increasing size, the banking sector's vulnerability arises in the case of bank runs. It burdens the economy, as suggested by the too-big-to-fail hypothesis. Among bank-specific factors, bank size has the most significant magnitude. Chu (2021). It also indicates that larger deposit markets will increase adoption probabilities.

Table 3. Probit Estimation Results and Marginal Effects

Deposit Insurance Dummy	Model 1 Coef./(Std.Err)	Average Marginal Effects (dy/dx)/(Std.Err)
Bank Specific		
Bank Size	0.213***	0.035***
	(0.018)	(0.003)
Log (Non-Performing Loans)	-0.045***	-0.007***
	(0.012)	(0.002)
Deposit Ratio	0.363	0.059
	(0.270)	(0.044)
Loan Ratio	0.150**	0.025 **
	(0.075)	(0.012)
Liquidity Ratio	0.095**	0.016 ***
	(0.029)	(0.005)
Capital To Equity	0.019	0.003
	(0.180)	(0.029)
Non-Operating Expense Ratio	-0.209***	-0.034 ***
	(0.016)	(0.003)
ROA	-0.048***	-0.008 ***
	(0.009)	(0.001)
Macroeconomic		
Political Stability	0.023	0.004
	(0.023)	(0.004)
Regulatory Quality	0.614***	0.100 ***
	(0.039)	(0.006)
Oil Rent to GDP (Oil import reliance)	-0.065***	-0.011 ***
	(0.003)	(0.000)
GDP growth	-0.024***	-0.004 ***
	(0.004)	(0.001)
Crisis Period	0.078**	0.013 **
	(0.036)	(0.006)
Income Classifications		
Low income	0.376**	0.061 **
	(0.126)	(0.02)
Lower middle income	0.651***	0.106 ***
	(0.073)	(0.012)
Upper middle income	0.364***	0.059 ***
	(0.058)	(0.009)
Constant	-0.211	
	(0.271)	
Pseudo r-squared	0.292	
Chi-square	4169.741	
Akaike crit. (AIC)	10163.543	
Number of observations	16851	

Note: ***, **, * indicate significant at 0.1, 0.5, and 0.10 level.

The safety nets are suggested to be effective when the country has firm regulatory control. The increase in non-performing loans indicates excessive risk-taking by banks (Prabha & Wihlborg, 2011). We find that the probability of countries adopting explicit insurance falls when excessive risk-taking occurs. A lower chance of deposit insurance adoption is linked to higher percentages of non-performing loans. Similarly, the value of the marginal effect for NPL, which is -0.007, indicates that NPL decreases the probability of adopting deposit insurance. The likelihood of having deposit insurance decreases by 0.7% for every unit increase in NPL. A negative correlation exists between higher non-performing loan levels and deposit insurance probability. Deposit insurance can induce banks to take on more risky loans, knowing their deposits are protected. This behavior aligns with the moral hazard theory, which predicts that the presence of insurance can

lead to increased risk-taking. Introducing deposit insurance safety nets may increase the moral hazard behavior in high-risk-taking.

Higher loan ratios also increase the probability of EDI adoption in countries. Like the loan ratio, improved liquidity management positively impacts the likelihood of adopting explicit deposit insurance. The average marginal effects suggest that their liquidity ratios have a 1.6% marginal impact on the adoption decision. It is important to note that although the results indicate that an improved liquidity position or healthier banks would improve the probability of EDI adoption, EDI adoption will also reduce liquidity risks (Moyo & Mukorera, 2022). So, healthy lending ratios in the banking sector increase the likelihood of adopting explicit deposit insurance. Bank profitability is negatively associated with EDI adoption. However, the size is less than 1%. According to Demirgüç-Kunt et al. (2008), bank capitalization plays a significant role in influencing the decision to implement deposit insurance. Literature suggests a negative moderating role of capital on deposit insurance and the relationship between stability and stability (Ben-Ammar, 2024b). However, interestingly, we do not find that capital ratios significantly impact the decision to adopt the safety net.

Regulatory quality ensures that the explicit deposit insurance schemes do not induce excessive risk-taking due to a lack of market discipline and moral hazard. We find that a unit increase in regulatory quality improves the probability of EDI adoption by 10%, which is a significant positive impact. Qian et al. (2019) find similar results and show that high regulatory ability and competition enhance the probability of EDI adoption.

Oil rent to GDP is a proxy to measure the country's dependence on oil imports and vulnerability to supply-side oil shocks. Excessive reliance on oil imports suggests excessive susceptibility to oil-based shocks. Higher import dependence reduces the probability of adopting the safety net. According to the value of marginal effects for GDP growth, which is -0.004, GDP growth decreases the probability of adoption of deposit insurance by 0.04%. It means that a nation's or financial system's chance of having deposit insurance falls with increasing GDP growth rates. The probability of having deposit insurance tends to be slightly less likely during periods of significant economic growth, according to the inverse link between GDP growth and that likelihood. Cull et al. (2002) find that positive real GDP per capita growth increases the probability of EDI adoption.

Cull et al. (2002) model the recent financial crisis as a factor of EDI adoption and find that the recent crisis also increases the impact of EDI adoption with a 27% marginal effect. In this study, we model the crisis period as a dummy variable that takes a value of 1 during the financial and COVID crises (Hasan et al., 2022). We find a similar impact of the financial crisis on the probability of explicit deposit insurance adoption. However, the average marginal effect is much smaller than in their study. It is important to note that evidence suggests that countries with explicit deposit insurance schemes could resist the negative consequences of financial crises (Hasan et al., 2022).

We find that lower-income countries are more likely to adopt explicit deposit insurance schemes than higher-income countries. In marginal terms, lower-middle-income countries are the most likely to adopt the scheme (Cull et al., 2002). We model the percentage of neighbors who have adopted explicit deposit insurance and find that the probability of adoption increases if neighboring countries have adopted the scheme, which is consistent with our findings.

Robustness

Finally, we estimate a linear probability and logit model as a robustness test. Table 4 provides robustness estimates using a Logit model (Model 2), a Panel Linear Model (PLM), and their respective marginal effects. Across all models, bank size demonstrates a consistently positive and significant impact, with a higher magnitude in the Logit model than in the Probit model. Non-performing loans exhibit a significant adverse effect in all models, corroborating that higher non-performing loans reduce the likelihood of deposit insurance adoption. Liquidity and non-operating expense ratios remain statistically significant, with the latter displaying a substantial negative impact across all models. Regarding macroeconomic variables, regulatory quality presents a substantial and

statistically significant positive effect in all models, with the highest coefficient in the Logit model. Oil rent to GDP remains negative and highly significant across all models, indicating that countries dependent on oil rents are less likely to implement explicit deposit insurance. GDP growth consistently demonstrates a negative and significant effect, suggesting that robust economic growth diminishes the probability of deposit insurance adoption. Concerning income classifications, lower-income, lower-middle-income, and upper-middle-income categories all exhibit positive and significant effects in predicting deposit insurance, with the most pronounced impact observed in the Logit model.

Table 4: Robustness estimates using Logit and PLM

Deposit Insurance Dummy	Logit Model 2 Coef./(Std.Err)	Average Marginal Effects (dy/dx)/(Std.Err)	PLM Coef./(Std.Err)
Bank Specific			
Bank Size	0.433***	0.039***	0.036***
	(0.036)	(0.003)	(0.003)
Log (Non-Performing Loans)	-0.078***	-0.007***	-0.007***
	(0.022)	(0.002)	(0.002)
Deposit Ratio	0.706	0.063	0.087*
	(0.52)	(0.046)	(0.045)
Loan Ratio	0.231*	0.021*	0.000
	(0.144)	(0.013)	(0.000)
Liquidity Ratio	0.21***	0.019***	0.016***
	(0.056)	0.005	(0.005)
Capital To Equity	0.162	0.014	0.001
	(0.032)	0.028	(0.046)
Non-Operating Expense Ratio	-0.424***	-0.038***	-0.035***
	(0.032)	(0.003)	(0.002)
ROA	-0.096***	-0.008***	-0.015***
	(0.019)	(0.002)	(0.002)
Macroeconomic			
Political Stability	0.09*	0.008**	0.011**
	(0.045)	(0.004)	(0.005)
Regulatory Quality	1.11***	0.099***	0.143***
	(0.072)	(0.006)	(0.008)
Oil Rent to GDP (Oil import reliance)	-0.115***	-0.01***	-0.017***
	(0.005)	(0.000)	(0.000)
GDP growth	-0.047***	-0.004 ***	-0.005***
	(0.008)	0.001	(0.001)
Crisis Period	0.149**	0.012**	0.012**
	(0.066)	(0.006)	(0.006)
Income Classification			
Low income	0.835***	0.074***	0.053*
	(0.223)	0.02	(0.028)
Lower middle income	1.31***	0.117***	0.182***
	(0.142)	(0.013)	(0.014)
Upper middle income	0.819***	0.073***	0.121***
	(0.113)	0.01	(0.011)
Constant	-0.637		0.552***
	0.515		(0.047)
Pseudo R-squared/R Squared	0.288		0.287
Chi-square / F-test	4118.657 (Prob>chi2=0)		424.404 (Prob>F=0)
Akaike crit. (AIC)	10214.627		
Number of obs	16851		16851

Note: ***, **, * indicate significant at 0.1, 0.5, and 0.10 level.

Conclusion

The study examined the influences of bank-specific, economic, regulatory, and institutional factors on the adoption of explicit deposit insurance schemes. We also examined whether economic instability played a role in the country's decision to adopt the scheme and whether the decision to adopt explicit deposit insurance depends on national income.

The results highlight bank size as the most critical bank-specific factor considered in EDI adoption, consistent with the "too big to fail" hypothesis. However, higher levels of non-performing loans (NPLs) decrease the likelihood of deposit insurance adoption, underscoring the risks of moral hazard in the presence of safety nets. Additionally, robust regulatory quality significantly enhances the probability of adopting explicit deposit insurance, emphasizing the importance of strong regulatory frameworks. The findings also reveal that financial crises and neighboring countries' adoption of similar schemes increase the likelihood of EDI adoption. The robustness of these results was confirmed through linear probability and logit models, reinforcing the consistency of our conclusions.

The current research provides important insights regarding bank-specific income classification and macroeconomic factors influencing the adoption of EDI. A dataset from 107 countries was used to test the model. The bank-specific, economic, and regulatory factors may differ in non-represented countries, thus impacting the robustness and generalization of the results. The analysis of more comprehensive data covering all the countries can increase the generalization of the findings. While this study considers various institutional factors, some unobservable or difficult-to-quantify variables, such as regulatory enforcement motivation, informal financial sector dynamics, and political will, may influence the adoption of explicit deposit insurance.

Additionally, cultural differences among countries, such as risk tolerance levels, may contribute to adopting EDI. The probit regression model is appropriate for binary data. However, this may not cover the complexity of strategic decision-making, such as adopting EDI. Other modeling approaches, such as the hazards model, may provide additional insights. This study uses an event study approach to account for the impact of the financial crisis on EDI. However, defining and measuring financial crises across regions, countries, and periods is challenging. This may lead to classification bias. Similarly, some countries also use alternative financial stability mechanisms. For instance, New Zealand employs an Open Bank Resolution (OBR) system in case of bank failures. Such alternatives may interact with or substitute for the adoption of EDI. The current study does not provide such insights.

While the study examines the determinants of EDI, it does not extensively investigate the long-term implications of such schemes, such as moral hazard, risk-taking behavior, and innovation in the financial systems. Such investigations are vital for policy evaluation. Future research may focus on the implications of the adoption of EDI. Countries with different adoption levels are expected to depict different moral and risk-taking behaviors. Similarly, their attitude towards developing innovative alternative financial stability mechanisms may vary. Country-specific variables such as financial system structures, cultural attitudes toward government interventions, and political will may determine the adoption of explicit deposit insurance. Researchers should extend the findings of this study by incorporating these variables into the model. Future studies should also focus on the other financial stability mechanisms in various regulatory environments. Alternative mechanisms can interact with determinants of EDI adoption to attenuate (amplify) the effects or substitute for the adoption of EDI. Researchers may focus on both areas to bring out more insights.

References

Anginer, D., & Demirguc-Kunt, A. (2018). *Bank Runs and Moral Hazard: A Review of Deposit Insurance. Bank Runs and Moral Hazard: A Review of Deposit Insurance*. https://doi.org/10.1596/1813-9450-8589

Anginer, D., Demirguc-Kunt, A., & Zhu, M. (2014). How does deposit insurance affect bank

risk? Evidence from the recent crisis. *Journal of Banking and Finance*, *48*, 312–321. https://doi.org/10.1016/j.jbankfin.2013.09.013

Prabha , A. P., & Wihlborg, C. (2008). Deposit Insurance, Risk-Taking and Banking Crises: Is there a Risk-Minimizing Level of Deposit Insurance Coverage? *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.1295452

Ashraf, B. N., Zheng, C., Jiang, C., & Qian, N. (2020). Capital regulation, deposit insurance and bank risk: International evidence from normal and crisis periods. *Research in International Business and Finance*, *52*. https://doi.org/10.1016/j.ribaf.2020.101188

Barth, J. R., Nguyen, N., & Xu, J. (2021). Deposit Insurance Schemes. In *Encyclopedia of Finance* (pp. 1–17). https://doi.org/10.1007/978-3-030-73443-5_2-1

Ben-Ammar, H. (2024a). Exploring the relationship between explicit deposit insurance, Islamic banks, and financial stability: a comparative analysis. *Afro-Asian Journal of Finance and Accounting*, *14*(5), 605–625. https://doi.org/10.1504/AAJFA.2024.140959

Ben-Ammar, H. (2024b). The mediating role of capital on deposit insurance and financial stability: evidence from Islamic and conventional banks. *Managerial Finance*, *50*(6), 1120–1138. https://doi.org/10.1108/MF-02-2023-0075

Chen, Q., & Shen, C. (2023). Deposit insurance system, risk-adjusted premium, and bank systemic risk: Evidence from China. *Research in International Business and Finance*. https://doi.org/10.1016/j.ribaf.2023.101969

Chiaramonte, L., Girardone, C., Migliavacca, M., & Poli, F. (2020). Deposit insurance schemes and bank stability in Europe: how much does design matter? *European Journal of Finance*, *26*(7–8), 589–615. https://doi.org/10.1080/1351847X.2019.1607763

Chu, K. H. (2021). A pure bureaucratic-entrepreneurial theory of deposit insurance adoption. *Review of Economic Analysis*. https://doi.org/10.15353/rea.v13i3.3591

Cull, R., Senbet, L. W., & Sorge, M. (2002). The effect of deposit insurance on financial depth: A cross-country analysis. *Quarterly Review of Economics and Finance*. https://doi.org/10.1016/S1062-9769(02)00120-5

Demirgüç-Kunt, A., & Huizinga, H. (2004). Market discipline and deposit insurance. *Statistics and Probability Letters*. https://doi.org/10.1016/j.jmoneco.2003.04.001

Demirgüç-Kunt, A., Kane, E. J., & Laeven, L. (2008). Determinants of deposit-insurance adoption and design. *Journal of Financial Intermediation*. https://doi.org/10.1016/j.jfi.2007.03.009

Duan, Y., El Ghoul, S., Guedhami, O., Li, H., & Li, X. (2021). Bank systemic risk around COVID-19: A cross-country analysis. *Journal of Banking and Finance*. https://doi.org/10.1016/j.jbankfin.2021.106299

Dubey, D. V. D. (2018). Deposit insurance: A way to secure your money deposited into bank. *International Journal of Financial Management and Economics*. https://doi.org/10.33545/26179210.2018.v1.i1.109

Elnahass, M., Trinh, V. Q., & Li, T. (2021). Global banking stability in the shadow of Covid-19 outbreak. *Journal of International Financial Markets, Institutions and Money*. https://doi.org/10.1016/j.intfin.2021.101322

Fendi, U. A. (2020). Toward Islamic deposit insurance model. *Journal of Islamic Accounting and Business Research*. https://doi.org/10.1108/JIABR-06-2017-0077

Gibbons, R. D., & Hedeker, D. (1994). Application of random-effects probit regression models. *Journal of Consulting and Clinical Psychology, 62*(2), 285–296. https://doi.org/10.1037/0022-006X.62.2.285

Grassa, R., Moumen, N., Kabir Hassan, M., & Hussainey, K. (2022). Market discipline and capital buffers in Islamic and conventional banks in the MENA region. *Eurasian Economic Review*. https://doi.org/10.1007/s40822-021-00195-0

Gropp, R., & Vesala, J. (2004). Deposit insurance, moral hazard and market monitoring. *Review of Finance*. https://doi.org/10.1007/s10679-004-6280-0

Hamisu, S., & Hassan, D. R. (2017). Depositors Protection Scheme: Appraisal of Islamic Banks Participation in Deposit insurance System. *Journal of Islamic Banking and Finance*. https://doi.org/10.15640/jibf.v5n1a3

Hasan, I., Liu, L., Saunders, A., & Zhang, G. (2022). Explicit deposit insurance design: International effects on bank lending during the global financial crisis☆. *Journal of Financial Intermediation*. https://doi.org/10.1016/j.jfi.2022.100958

Ji, Y., Bian, W., & Huang, Y. (2018). Deposit insurance, bank exit, and spillover effects. *Journal of Banking and Finance*. https://doi.org/10.1016/j.jbankfin.2018.09.013

Kabir, M. N., Dulal Miah, M., & Huda, R. N. (2022). Determinants of credit risk: A comparative analysis between islamic and conventional banks in bangladesh. *Singapore Economic Review*. https://doi.org/10.1142/S0217590820420011

Karas, A., Pyle, W., & Schoors, K. J. L. (2021). Deposit Insurance, Moral Hazard and Bank Risk. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3774675

Keeley, M. C. (1990). Deposit insurance, risk, and market power in banking. *The American Economic Review*, *80*(5), 1183–1200.

Kim, E. T., & Rezende, M. (2023). Deposit Insurance Premiums and Bank Risk. *Review of Corporate Finance Studies*. https://doi.org/10.1093/rcfs/cfad004

Laeven, L. (2004). The political economy of deposit insurance. *Journal of Financial Services Research*. https://doi.org/10.1023/B:FINA.0000040049.53563.e1

Lé, M. (2013). Deposit Insurance Adoption and Bank Risk-Taking: The Role of Leverage. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2363376

Lopez-Quiles, C., & Petricek, M. (2018). Deposit Insurance and Bank Risk Taking. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3158394

Maysami, R. C., & Sakellariou, C. (2008). Financial liberalization, deposit insurance and bank stability. *Applied Economics Letters*. https://doi.org/10.1080/13504850600749131

Mili, M., & Abid, S. (2017). Moral hazard and risk-taking incentives in Islamic banks, does franchise value matter! *International Journal of Islamic and Middle Eastern Finance and Management*. https://doi.org/10.1108/IMEFM-12-2015-0148

Moyo, Z., & Mukorera, S. (2022). Liquidity And Deposit Insurance: The Case Of Deposit-Taking Microfinance Institutions In Low-Income Sub-Saharan Africa. *Management and Economics Research Journal*. https://doi.org/10.18639/merj.2022.1782409

Mumtaz, R., & Jadoon, I. A. (2018). Effect of explicit deposit insurance premium on the moral hazard of banks' risk-taking: Around the globe. *International Journal of Financial Engineering*. https://doi.org/10.1142/s2424786318500123

Oktarina, A., Fahmi, I., & Beik, I. S. (2019). Is There Moral Hazard in Islamic Rural Bank Financing? *IQTISHADIA*. https://doi.org/10.21043/iqtishadia.v12i2.3875

Qian, N., Zhang, K., & Zheng, C. (2017). How Do Regulatory Ability and Banking Market Structure Affect Explicit Deposit Insurance Scheme Adoption and Bankss Risk Taking? *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3060943

Qian, N., Zhang, K., Zheng, C., & Ashraf, B. N. (2019). How do regulatory ability and bank

competition affect the adoption of explicit deposit insurance scheme and banks' risk-taking behavior? *International Review of Economics and Finance*. https://doi.org/10.1016/j.iref.2019.01.001

Suljić Nikolaj, S., Olgić Draženović, B., & Buterin, V. (2022). Deposit insurance, banking stability and banking indicators. *Economic Research-Ekonomska Istrazivanja* . https://doi.org/10.1080/1331677X.2022.2033130

Tofan, M. (2022). A Regulatory Perspective on the Actual Challenges for the European Deposit Insurance Scheme. *Laws*. https://doi.org/10.3390/laws11050075

Van Roosebeke, B., & Defina, R. (2022). Deposit Insurance in 2022: Global Trends and Emerging Issues. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3980578

Xiazi, X., & Shabir, M. (2022). Coronavirus pandemic impact on bank performance. *Frontiers in Psychology*. https://doi.org/10.3389/fpsyg.2022.1014009

Yan, Y., Jeon, B. N., & Wu, J. (2023). The impact of the COVID-19 pandemic on bank systemic risk: some cross-country evidence. *China Finance Review International*. https://doi.org/10.1108/CFRI-08-2022-0158