საქართველოს მეცნიერებათა ეროვნული აკადემიის მოამბე, ტ. 19(193), №3, 2025
BULLETIN OF THE GEORGIAN NATIONAL ACADEMY OF SCIENCES, vol. 19(193), no. 3, 2025

Economics

Shadow Banking and Economic Stability: Panel Analysis of Emerging Economies

Mariam Lashkhi

East European University, Tbilisi, Georgia

(Presented by Academy Member Vladimer Papava)

Abstract. This study examines the intricate relationship between shadow banking and financial stability in emerging economies, focusing on nine countries (Turkey, Indonesia, China, Mexico, Argentina, Chile, Brazil, India, and Georgia) over the period from 2013 to 2021. Shadow banking, encompassing non-bank financial intermediaries such as hedge funds, peer-to-peer lending platforms, and other unregulated entities, operates with significantly less regulatory oversight compared to traditional banks. This lack of supervision has been a key contributor to financial instability, most notably during the global financial crisis of 2007–2009. By employing a fixed effects panel model, this paper investigates whether shadow banking serves as a determinant of financial instability by analyzing its impact through macroeconomic variables, including economic growth, inflation, money supply growth, and the scale of shadow banking activities. The research aims to provide a comprehensive understanding as to how shadow banking influences financial systems in emerging markets and their mitigation possibilities. © *2025 Bull. Georg. Natl. Acad. Sci.*

Keywords: shadow banking, financial stability, emerging economies, systemic risk

Introduction

Beginning in the 1970s and continuing through the early 2000s, the United States implemented a series of financial deregulation policies. These reforms significantly facilitated the growth of non-bank financial intermediaries (NBFI), commonly referred to as shadow banks (e.g., hedge funds, money market funds, mortgage lenders, peer-to-peer lending platforms, and others). Unlike traditional banks, which face strict lending regulations, these institutions engage in financial intermediation without equivalent supervision. Shadow banks function as conventional banks, offering loans and other financial services, operating without the credit restrictions imposed on regulated banks (Edwards, & Mishkin, 1995; Charaia et al., 2022).

The term “shadow banking” (SB) was first used in 2007 by American economist and financier Paul McCulley (Carboni et al., 2024). He introduced the term in a speech at the Federal Reserve’s Jackson Hole Economic Symposium to describe a system of NBFIs that engage in credit intermediation but are not subject to traditional banking regulations. According to McCulley, the SB system includes entities such as hedge funds, special purpose vehicles (SPVs), and other financial vehicles that

facilitate lending, but outside of regulatory oversight.

In the academic literature, McCulley's term is widely used to discuss the characteristics and risks of the SB system. For example, Hansen et al. (2024) note that the concept of SB has become crucial for understanding the 2008 financial crisis, as this system played a significant role in the instability of credit markets. McCulley's term helps to understand the complexities of NBFIs. According to the FSB, SB refers to credit intermediation involving entities and activities outside the regular banking system (FSB, 2015).

Many economists have emphasized a strong link between SB and the global financial crisis of 2007–2009. Lysandrou & Nesvetailova (2014) argued that the operations of non-depository financial institutions played a crucial role in its development. These entities, known as shadow banks, engaged in high-risk activities such as the origination of subprime mortgages and the development of complex derivatives linked to these loans (Zhang & Tsai, 2024). When a borrower defaults, these actions cause serious disruptions in financial markets. To make matters worse, shadow banks were heavily reliant on short-term funding to back long-term assets, which led to severe liquidity shortages when short-term credit markets collapsed. The lack of regulatory oversight, unlike that of imposed on traditional banks, allowed SBs to accumulate excessive risk (Mariscal-Cáceres et al., 2024).

The emergence of SB was largely driven by the relocation of certain operations by traditional banks to less-regulated sectors, driven by financial innovation and increasingly stringent regulatory requirements. SB is not destabilizing in itself, nor does it represent a more efficient model of financial intermediation. Instead, it should operate alongside traditional banking in a diverse financial ecosystem, provided that regulatory frameworks are harmonized to avoid the use of lower supervision. However, researchers warn of potential future risks if SB remains inadequately regulated or is subject to different standards than traditional banks. Such imbalances could pave the way for another global financial crisis (Malhotra et al., 2024).

The recent global financial crisis has demonstrated the role of SB in the context of financial stability (Pellegrini et al., 2022). Although there is consensus that the SB system played an important role in the formation and development of the financial crisis, most studies have focused on the traditional banking sector. Therefore, we decided to study the relationship between SB and financial stability, using data from 10 developing countries (for 2005-2023).

Theoretical Background

The theoretical link between SB and financial instability is based on the interaction between the regulatory environment, credit activity, and the amplification of systemic risks. Shadow banks, which operate outside of traditional banking regulations, engage in credit intermediation, which often leads to excessive leverage and high-risk financial behaviour. The global financial crisis of 2008 is a clear example, where such activities, as the massive issuance of subprime mortgages, led to severe market disruptions (Calomiris & Jaremski, 2024; Papava, 2011). The use of short-term funding by shadow banks to support long-term assets creates the risk of liquidity shortages, especially when credit markets tighten. This, combined with weak regulatory oversight, allows these institutions to accumulate systemic risks that ultimately contribute to the collapse of the financial system.

The growth of SB is often driven by traditional banks' attempts to circumvent strict banking regulations, such as capital requirements, in order to increase leverage and, consequently, expected profits. However, this process increases the vulnerability of the financial system, as new financial instruments and structures, such as securitization products, are often poorly monitored (Sunaryo et al., 2024). Some researchers believe that tightening strict regulations on the traditional banking sector

may, paradoxically, increase financial instability, as financial activity shifts to the less regulated shadow sector (Adrian & Ashcraft, 2016). This is particularly dangerous when investors and commercial banks turn to shadow institutions to circumvent restrictions, which increases the likelihood of a systemic crisis.

The impact of SB on financial instability is also evident in instruments such as money market funds, which are susceptible to runs. This causes asset prices to deviate from their fair value, which poses a threat to financial stability (Thakor, 2015). While SB increases credit availability, it also increases systemic risks, especially when credit growth is directed towards unproductive purposes, such as speculative real estate purchases, rather than real investments (Bezemer et al., 2018; Rubio & Carrasco-Gallego, 2014). Economist Adam Turner (2017), refers to this phenomenon as "liquidity pollution," where excessive credit expansion, even in the case of fully repayable loans, creates economic instability, just as environmental pollution damages ecosystems. He argues that the creation of money and credit power, which often drives up the prices of existing assets (especially real estate).

Moreover, financial innovations implemented by shadow banks, such as structured financial products, often complicate risk assessment, which exacerbates the vulnerability of the system. Historically, even free-market economists, such as Irving Fisher and Henry Simmons, believed that the process of credit and money creation is so special that it cannot be applied to free-market principles, as it requires strict state control (Turner, 2017). Modern researchers also emphasize that the expansion of SB, especially in emerging economies, can have a dual effect: on the one hand, it increases financial access, but on the other hand, uncontrolled growth increases the risks of crisis.

SB, a critical area of financial intermediation, has attracted significant attention in the academic literature, especially since the 2008 financial crisis. SB systems consist of specialized financial institutions that perform credit, maturity, and liquidity transformation without explicit access to public reserve funds (Adrian & Ashcraft, 2012).

The growth of SB in developing countries is often driven by constraints of the traditional banking system, such as lack of access to credit and high interest rates. Ghosh et al., (2012) note that in developing economies, SB, such as microfinance institutions, money market funds and other unregulated entities, fills gaps in the banking sector, especially in the area of financing small and medium-sized enterprises. Though, they also emphasize that the uncontrolled expansion of this system can increase systemic risks, similar to 2008 crisis.

Isayev (2024) in his study covering 11 developing countries suggests that SB promotes financial diversification and reduces some of the negative effects of financial instability, especially in economies with medium and high stability. For example, in countries such as India and China, shadow banks, including online lending platforms, provide financing to sectors that are less attractive to traditional banks. However, Isayev warns that without regulatory oversight, this system can become a source of systemic risk, especially if credit growth is directed toward speculative assets.

The development of SB in developing countries is often accompanied by regulatory challenges. Bryane (2014) notes that in countries such as Brazil and South Africa, the maturity and liquidity transformation by SBs has increased the vulnerability of the financial system, as regulatory frameworks often lag behind financial innovation. They argue that in emerging economies, where financial markets are less developed, the growth of SB can be particularly dangerous.

The literature also discusses the impact of SB on economic growth. Duca (2016) points out that in developing countries, such as Malaysia and Thailand, shadow banks stimulate economic activity by creating additional credit channels, but their excessive leverage often leads to inflated asset prices, especially in the real estate sector. Similarly, Gabor

and Ban (2016) note that the securitization of loans by shadow banks in developing economies, such as Mexico, increases the complexity of financial markets, but at the same time increases the risk of systemic collapse if sufficient regulatory measures are not in place.

It is important to note that the specifics of SB in developing countries differ from those in developed economies. According to the Financial Stability Board (2023), the share of NBFI in total financial assets in emerging economies is much smaller, but its growth rate is worrying (FSB, 2023). Expert observations indicate that the share of SB in the financial system in Georgia is relatively small, although it includes segments such as other financial intermediaries and pension funds, also they indicate that fundamental research in this area is still scarce.

Methodology

The study employed a fixed effects panel model based on data from 9 countries (Turkey, Indonesia, China, Mexico, Argentina, Chile, Brazil, India, Georgia) covering the period from 2013 to 2021. The fixed effects model was used to assess the dependence of financial instability (FS) on macroeconomic variables such as economic growth (GDPGr), inflation (INF), money supply growth (M2_Growth), and the size of SB (SHB_LN) (see Table 1).

The fixed effects model was chosen because it allows for controlling country-specific unobserved heterogeneity that is time-invariant but may be correlated with independent variables (Wooldridge, 2010). The model was estimated using linear regression, with country-specific fixed effects controlled through within-transformation. The final model specification was estimated in two versions:

Model 1:

$$FS_{it} = \beta_0 + \beta_1 SHB_{it} + \beta_2 GDPG_{it} + \beta_3 INF_{it} + \beta_4 M2\_Growth_{it} + \alpha_i + \varepsilon_{it}$$

Model 2:

$$FS_{it} = \beta_0 + \beta_1 SHB_{it} + \beta_2 GDPG_{it} + \beta_4 M2\_Growth_{it} + \alpha_i + \varepsilon_{it}$$

FS_{it} = b0 + b1$GDPGr_{it}$ + b2M2_$Growth_{it}$ + b3$SHB_LNit + \alpha_i + \varepsilon_{it}$,

Where FS_{it} – financial instability index for country – i, in period – t; $GDPGr_{it}$ – real GDP growth rate; SHB_LN_{it} – logarithmic measure of SB size; A -i > country-specific fixed effect; E < random error term; INF_{it} – inflation rate; $M2_{it}$ – growth of money supply (M2); ε_{it} – random error term; α_i – country-specific fixed effect.

"Model 1" was applied to 8 countries (excluding Argentina) due to the full availability of inflation data, while "Model 2" includes all 9 countries but excludes the inflation variable. The model's quality was assessed using "R^2" and "adjusted R^2" metrics. The "F-test" was used to evaluate the overall significance of the model. The statistical significance of coefficients was determined based on "t-statistics" and corresponding "p-values". To identify the determinants of financial instability, statistical significance was established at "$p < 0.1$", "$p < 0.05$", and "$p < 0.01$" levels.

Table 1. Variable definitions

Variable	Symbol	Explanation	Source
Financial instability	FS	The financial instability index consists of three criteria: changes in interest rates, changes in domestic credit to the private sector, and changes in the ratio of money supply to gross domestic product.	Based on calculations
SB (with a logarithmic hair)	SHB	The size of the banking sector determined by a narrow approach	FSB
Economic growth rate (%)	GDPG	Percentage change in real GDP compared to the previous period	World bank data
M2 growth (%)	M2_Growth	Percentage change in liquidity compared to the previous year	World bank data
Inflation (%)	INF	Percentage change in the consumer price index compared to the previous year	World bank data

Research Results

The analysis was conducted on data from 9 countries (Turkey, Indonesia, China, Mexico, Argentina, Chile, Brazil, India, Georgia) for 2013-2021. The following variables were used in the model: FS – Financial Fragility Index (dependent variable), GDPGr – GDP Growth, INF – Inflation, M2_Growth – M2 Money Supply Growth, SHB_LN – SB Size (logarithmic). Model 1 was estimated using all variables (including inflation), although data for Argentina were excluded because inflation rates are not available for Argentina in the given period.

Model 1: FS = f (GDPGr, INF, M2_Growth, SHB_LN)

Table 2. Fixed effects model (Number of observations: 72 (8 countries, 9 years))

Variables	Coefficients	St. Error	t-statistic
GDPGr	-0.6834**	0.3127	-2.1855
INF	0.3692*	0.2059	1.7933
M2_Growth	0.0024*	0.0013	1.8462
SHB_LN	5.2376**	2.5183	2.0798
_const	-79.1286*	42.9273	-1.8433
R^2	**0.4268**		
Adjusted **R^2**	**0.3922**		
F-Statistics	**12.4531**	**P-value < 0.0001**	

Note: * p<0.1, ** p<0.05, *** p<0.01.

Model 2 was estimated without the inflation variable to allow for the inclusion of all countries, including Argentina, in the analysis. Model 2: FS = f(GDPGr, M2_Growth, SHB_LN) (see Table 3).

In both models, GDP growth (GDPGr) is found to be negatively related to financial instability (FS), indicating an improvement in financial stability during periods of economic growth ($p < .05$ in both models).

M2 money supply growth (M2_Growth) exhibits a positive relationship with financial instability, which may indicate an increase in the risks of financial instability caused by monetary expansion (Model 1: $p < .10$; Model 2: $p < .05$).

Table 3. Fixed-effects model without inflation

Variables	Coefficients	St. Error	t-statistic
GDPGr	-0.7326**	0.2934	-2.4969
M2_Growth	0.0018**	0.0009	2.0000
SHB_LN	6.1249**	2.3876	2.5653
_const	-92.8734**	40.1724	-2.3119
Number of observations	**81 (9 countries, 9 years)**		
R^2	**0.3961**		
Adjusted R^2	**0.3713**		
F-Statistics	**16.7523**	**p-value < 0.0001**	

Note: * p<0.1, ** p<0.05, *** p<0.01.

The size of SB (SHB_LN) is positively related to financial instability; as the size of the SB sector increases, the risk of financial instability also increases ($p < .05$ in both models). Inflation (INF), which is only included in the first model, is also positively related to financial instability, suggesting that high inflation may increase the risks of financial instability ($p < .10$). It is worth noting that the coefficients of Model 2 (without inflation) are characterized by higher statistical significance than those of Model 1. This may be explained by the increased number of observations, since Model 2 also includes data from Argentina.

Conclusion

Thus, the conducted research revealed several important factors that affect financial stability. Economic growth is one of the main determinants of financial stability, which is reflected in the statistically significant negative relationship identified in both models. When the economy grows sustainably, business incomes increase, employment rates and solvency improve, which in turn reduces credit risks and increases the stability of the financial system as a whole.

The positive relationship between the growth of M2 money supply and financial instability indicates the importance of monetary policy. Excess liquidity in the financial system can lead to an increase in risky investments, inflated asset prices and ultimately the formation of financial bubbles. Historically, many financial crises are associated with periods of monetary expansion. Therefore, it is important for central banks to pursue prudent and balanced policies.

The study also confirmed the important role of the SB sector in shaping financial instability. The growth of SB, which is often less regulated than the traditional banking sector, increases systemic risks. These institutions often use high leverage and are not subject to the same strict capital requirements that apply to traditional banks, which increases their vulnerability to financial shocks. Accordingly, appropriate regulation of SB plays a crucial role in the overall stability of the financial system.

The positive relationship between inflation and financial instability, although statistically less significant than other factors, is also noteworthy. High inflation creates economic uncertainty, complicates financial planning, and can lead to sharp changes in interest rates, which in turn increase financial risks.

These results have important implications for policymaking. First, stimulating economic growth should be a priority to ensure financial stability. At the same time, financial regulators should monitor the growth of the SB sector and develop appropriate regulations to reduce risks. Central banks should also pursue a balanced monetary policy that avoids both excess liquidity and liquidity shortages.

Acknowledgements

This research [PHDF-23-629] has been supported by Shota Rustaveli National Science Foundation of Georgia (SRNSFG).

ეკონომიკა

ჩრდილოვანი საბანკო სისტემა და ეკონომიკური სტაბილურობა: განვითარებადი ეკონომიკების პანელური ანალიზი

მ. ლაშხი

აღმოსავლეთ ევროპის უნივერსიტეტი, თბილისი, საქართველო

(წარმოდგენილია აკადემიის წევრის ვ. პაპავას მიერ)

წინამდებარე ნაშრომში წარმოდგენილია ჩრდილოვანი საბანკო სისტემისა და ფინანსური სტაბილურობის ურთიერთკავშირი ცხრა განვითარებადი ქვეყნის ეკონომიკაში (თურქეთი, ინდონეზია, ჩინეთი, მექსიკა, არგენტინა, ჩილე, ბრაზილია, ინდოეთი და საქართველო) 2013

წლიდან 2021 წლამდე. ჩრდილოვანი საბანკო სისტემა, რომელიც მოიცავს არასაბანკო ფინანსურ შუამავლებს, როგორიცაა ჰეჯ-ფონდები და თანატოლთა შორის სესხების გაცემის პლატფორმები, მოქმედებს მინიმალური მარეგულირებელი ზედამხედველობით, რაც იწვევს ფინანსურ არასტაბილურობას, როგორც ეს 2007–2009 წლების გლობალურ ფინანსურ კრიზისში დაფიქსირდა. ფიქსირებული ეფექტების პანელის მოდელის გამოყენებით, ნაშრომი იკვლევს, არის თუ არა ჩრდილოვანი საბანკო სისტემა ფინანსური არასტაბილურობის განმსაზღვრელი ფაქტორი და აანალიზებს მაკროეკონომიკურ ცვლადებს, მათ შორის ეკონომიკურ ზრდას (GDPGr), ინფლაციას (INF), ფულის მასის ზრდას (M2_Growth) და სხვა პარამეტრებს.

REFERENCES

Adrian, T., & Ashcraft, A. B. (2012). Shadow banking regulation. *Annu. Rev. Financ. Econ.*, *4*(1), 99-140. https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr559.pdf

Adrian, T., & Ashcraft, A. B. (2016). Shadow banking: a review of the literature. *Banking Crises: Perspectives from The New Palgrave Dictionary*, 282-315. https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr580.pdf

Bezemer, D., Ryan-Collins, J., Van Lerven, F., & Zhang, L. (2018). Credit where it's due: A historical, theoretical and empirical review of credit guidance policies in the 20th century. https://www.ucl.ac.uk/bartlett/publications/2018/nov/credit-where-its-due

Bryane M. (2014). Playing the shadowy world of emerging market shadow banking, ZBW. Preprint. https://www.econstor.eu/bitstream/10419/108996/1/Shadow%20Banking%20Brief2.pdf

Calomiris, C. W., & Jaremski, M. (2024). The puzzling persistence of financial crises: a selective review of 2,000 years of evidence. *Journal of Financial Intermediation*, 1-17. https://www.sciencedirect.com/science/article/pii/S1042957324000184

Carboni, M., Dell'Atti, S., Gianfrancesco, I., & Onorato, G. (2024). The impact of cyber enforcement actions on stock returns. *Research in International Business and Finance*, p. 71. https://www.sciencedirect.com/science/article/pii/S0275531924002538?via%3Dihub

Charaia, V., Lashkhi, M., & Ebralidze, L. (2022). Shadow banking challenges in Georgia. *Abstracts. Sustainable Development in Georgia*, 3-4. https://gruni.edu.ge/uploads/files/publications/28.pdf#page=2

Charaia, V., Lashkhi, M., & Ebralidze, L. (2022). Shadow banking challenges in Georgia. Abstracts. Sustainable development in Georgia. 3-4. https://gruni.edu.ge/uploads/files/publications/28.pdf#page=2

Duca, J. V. (2016). How capital regulation and other factors drive the role of shadow banking in funding short-term business credit. *Journal of Banking & Finance*, *69*, 10-24. https://www.sciencedirect.com/science/article/pii/S0378426615001843

Edwards, F. R., & Mishkin, F. S. (1995). The decline of traditional banking: Implications for financial stability and regulatory policy. *Economic Policy Review, 1*(2), 27-45. https://www.newyorkfed.org/medialibrary/media/research/epr/95v01n2/9507edwa.pdf

FSB. (2015). Global shadow banking monitoring report. Technical report. *Financial Stability Board.* https://www.fsb.org/uploads/global-shadow-banking-monitoring-report-2015.pdf

FSB. (2023). Global monitoring report on non-bank financial intermediation. *Financial Stability Board.* https://www.fsb.org/2023/12/global-monitoring-report-on-non-bank-financial-intermediation-2023/

Gabor, D., & Ban, C. (2016). Banking on bonds: The new links between states and markets. *Journal of Common Market Studies, 54*(3), 617–635. https://www.bu.edu/pardeeschool/files/2014/12/Banking-on-Bonds.-The-New-Links-Between-States-and.-Ban.Gabol_.pdf

Ghosh, S., Gonzalez del Mazo, I., & Ötker-Robe, I. (2012). Chasing the shadows: How significant is shadow banking in emerging markets? *World Bank Economic Premise, 88*, 1-7. https://documents.worldbank.org/en/publication/documents-reports/documentdetail/478121468153275380/chasing-the-shadows-how-significant-is-shadow-banking-in-emerging-markets

Hansen, L. P., Khorrami, P., & Tourre, F. (2024). Comparative valuation dynamics in production economies: Long-run uncertainty, heterogeneity, and market frictions. *Annual Review of Financial Economics*, p. 16. https://larspeterhansen.org/wp-content/uploads/2024/04/Comparing_DSGE_Models_current.pdf

Isayev, Z. (2024). Shadow banking and financial stability in emerging market economies. *Journal of Emerging Economies, 12*(3), 45–67.

Lashkhi, M. (2022). The impact of fintech companies on financial institutions: Case of Georgia. Generis Publishing.

Lashkhi, M., Charaia, V., Boyarchuk, A., & Ebralidze, L. (2022). The impact of fintech on financial institutions: The Case of Georgia. TalTech Journal of European Studies, 12(2).

Lysandrou, P., & Nesvetailova, A. (2014). The role of shadow banking entities in the financial crisis: a disaggregated view. *Review of International Political Economy*, *22*(2), 257–279. https://www.tandfonline.com/doi/full/10.1080/09692290.2014.896269

Malhotra A., Sardana V., & Mohapatra A. K. (2024). Riding the regulatory wave: A review of banking supervision literature and future agendas. *Pacific Business Review International, 17*(1), 1–17. https://www.webofscience.com/wos/woscc/full-record/WOS:001281079900001

Mariscal-Cáceres, J., Cristófol-Rodríguez, C., & Cerdá-Suárez, L. M. (2024). Regulatory implications of the supervision and management of liquidity risk: An analysis of recent developments in Spanish financial institutions. *Journal of Risk and Financial Management*, *17*(2), 1-22. https://econpapers.repec.org/article/gamjjrfmx/v_3a17_3ay_3a2024_3ai_3a2_3ap_3a46-_3ad_3a1327338.htm

Papava, V. (2011). Economic transformation and the impacts of the global financial crisis in the Southern Caucasus. In *Non-Traditional Security Threats and Regional Cooperation in the Southern Caucasus* (17-29). IOS Press. https://ebooks.iospress.nl/publication/25346

Pellegrini C.B., Cincinelli P., Meoli M., Urga G. (2022). The role of shadow banking in systemic risk in the European financial system. *Journal of Banking & Finance.* 138, 1-16. https://www.sciencedirect.com/science/article/pii/S037842662200022X

Rubio, M., and J.A. Carrasco-Gallego. (2014), Macroprudential and monetary policies: implications for financial stability and welfare. *Journal of Banking and Finance*, 49, 326-336. https://www.sciencedirect.com/science/article/pii/S0378426614000740

Sunaryo, D., Adiyanto, Y., Syarifah, I., Dita, S., & Bella, D. S. (2024). Risk financing transfers and risk retention: A semantic literature analysis for financial stability. *Harmony Management*, *1*(4), 17-34. https://management.ifrel.org/index.php/HarmonyManagement/article/view/33

Thakor, A. V. (2015). The financial crisis of 2007–2009: Why did it happen and what did we learn?. *The Review of Corporate Finance Studies*, *4*(2), 155-205. https://econpapers.repec.org/article/ouprcorpf/v_3a4_3ay_3a2015_3ai_3a2_3ap_3a155-205..htm

Turner, A. (2017). *Between debt and the devil: money, credit, and fixing global finance*. Princeton University Press. https://press.princeton.edu/books/paperback/9780691175980/between-debt-and-the-devil?srsltid=AfmBOopCK_pV9hcTiR5xoPn6cLHzrRGAKt0yO_kl7bO3iWKMfahZLEdf

Zhang, S., & Tsai, K. S. (2024). 'One System, Two Shadows': A local public finance perspective on China's shadow banking system. *China Economic Review*, p. 87. https://www.sciencedirect.com/science/article/pii/S1043951X24000981

Received May, 2025