DOI: https://doi.org/10.71312/mrscholar.v2i1.1097 ISSN: 3090-8922

MRSCHOLAR
Multidisciplinary Research Studies in Social Sciences

MEASURING SHADOW BANKING ACTIVITIES IN INDONESIA DURING COVID 19 PANDEMIC

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Received June 29, 2026; Accepted July 27, 2026
Available online November 18, 2026

ABSTRACT

This study defines and measures shadow banking activities in Indonesia—locally categorized as Non-Bank Financial Institutions (NBFIs) or *Industri Keuangan Non-Bank* (IKNB)—during the COVID-19 pandemic (2018–2020). Although shadow banking assets account for only 0.25% of Indonesia's national GDP, the sector's rapid growth and lack of uniform regulation pose significant systemic and social risks. Utilizing the Financial Stability Board (FSB) framework and descriptive statistical methods, this research analyzes secondary data from national financial authorities to map macro-level assets and sector-specific interconnections. The macro-mapping reveals that insurance institutions dominate the sector with 55% of total shadow banking assets, followed by pension funds and various financing entities. Notably, while traditional financing institutions faced asset declines during the 2020 pandemic crisis, Fintech peer-to-peer lending and microfinance demonstrated remarkable resilience and growth. Additionally, risk-focused analysis indicates that pension funds exhibit higher systemic risk profiles than insurance funds due to their heavier reliance on capital and money market instruments. The study concludes by recommending the implementation of a robust regulatory framework, similar to China's phased approach, to license, monitor, and mitigate risks associated with Fintech and broader shadow banking activities in the post-pandemic era.

Keywords: *COVID-19 pandemic, Financial Stability Board, Fintech, Non-Bank Financial Institutions, Shadow Banking*

INTRODUCTION

The rise of shadow banking as a significant subject of discussion stems from a 2007 presentation by financial analyst Paul McCulley during a Federal Reserve symposium. His address focused on the imminent bursting of housing finance bubbles in 34 countries. While

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most responses at the time centered on regulatory steps to manage the consequences, McCulley pinpointed a deeper problem: the expansion of financial intermediaries functioning outside the framework of traditional banking. He described this shadow banking system as a major driver behind one of history's largest lending booms, which ultimately triggered a devastating global financial meltdown (Samson, 2021).

Following the 2007-2008 subprime mortgage debacle, the shadow banking sector has garnered heightened scrutiny. This interest is driven by its influential role in expanding credit and its contribution to systemic vulnerabilities, which were instrumental in the subsequent financial turmoil and global economic crisis.The Financial Stability Board notes that shadow banking, acting as an intermediary, offers distinct benefits such as providing liquidity and alternative funding for companies and market participants (Financial Stability Board (FSB), 2011).

Due to the specialized expertise of certain non-bank entities, they can often manage specific functions within the credit intermediation chain more economically, fostering credit efficiency throughout the economy. Furthermore, shadow banking has become a staple in many nations as a preferred choice for intermediary services; public familiarity with products like pension funds, wealth management, and investment funds is now comparable to that of traditional bank deposits (Financial Stability Board (FSB), 2017).

Shadow banking, however, should not be viewed solely as a detrimental system, as it possesses dual characteristics. On the positive side, these institutions enhance the availability of credit and offer additional sources of liquidity, which in turn supports economic expansion and allows for risk diversification throughout the financial network (Liu, 2025).

Because shadow banks do not accept deposits, they operate without the same regulatory risk controls imposed on traditional banks, despite being capable of assuming equivalent risks. Moreover, the lack of a government backstop for these entities poses a challenge to ensuring financial market stability and preventing panic during periods of volatility (Tobias Adrian, 2012).

The digital transformation of technology has introduced fintech to numerous nations, with many such entities now operating within the shadow banking sector. These "fintech shadow banks" function as intermediary institutions outside the traditional banking system. This rise in fintech-led intermediation is particularly evident in the growth seen across China and various Asian countries (Huy Pham, 2023).(Knaack and Gruin, 2017).

The growth of shadow banking globally is frequently linked to periods of financial instability. Indonesia, for instance, has navigated several economic disruptions over the last few decades, ranging from the 1998 monetary crisis and the 2008 global financial crisis to the more recent economic pressures caused by the COVID-19 pandemic (Abubakar L, 2016). Within the literature, these crises serve as critical catalysts that shape the discourse surrounding shadow banking activities. While each crisis varies in its origins and scale, they collectively exert a profound influence on the national economic landscape (Croicu AE, 2023).

Utilizing the Financial Stability Board (FSB) framework, this study evaluates the scale of shadow banking in Indonesia throughout the pandemic period. Research from the World Bank indicates that Non-Bank Financial Institutions (NBFIs) represent varying shares of financial assets across Southeast Asia, specifically 37% in the Philippines, 35% in Thailand, and 20% in Indonesia (Isayef, 2026). Generally, shadow banking entities and products in the region—such as insurance, leasing, finance and factoring firms, microfinance, credit cooperatives, pawnshops, and equity funds—are characterized by simpler structures and less intricate systemic linkages, with Singapore being a notable exception. Despite some NBFIs being under the jurisdiction of specific regulatory authorities, there remains a critical

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requirement for strengthened supervision, more robust regulatory frameworks, and improved collaborative efforts between these bodies and the Central Bank (Andrea Resti, 2021).

In the Indonesian context, shadow banking operations align with the Financial Stability Board's classification of Non-Bank Financial Institutions (NBFIs). Local regulatory bodies, including Bank Indonesia (BI) and the Indonesia Financial Services Authority (OJK), frequently employ the term *Industri Keuangan Non-Bank (INKB)* to describe this sector. Despite this, the country's financial service regulations lack an explicit definition or grouping for shadow banking entities (Yusgiantoro I, 2021). From a regulatory perspective, these activities are primarily identified by core characteristics such as maturity transformation, leverage, credit intermediation within capital markets, and a general vulnerability to bank runs.

The regulator has identified several key entities and activities within the shadow banking sector, which include:Securitization vehicles, specifically structured investment vehicles (SIVs) and asset-backed commercial paper (ABCP) conduits; Lending of securities and repurchase agreements, Broker-dealers for securities, Leveraged investment funds or those providing credit, such as hedge funds and exchange-traded funds, Financing entities, including those focused on leasing and automotive finance, Entities providing financial guarantees and credit insurance (Simon B, 2012).

The regulatory landscape for shadow banking in Indonesia remains fragmented, as there is currently a lack of unified legislation or specific laws dedicated to its oversight. Despite this absence of centralized regulation, various existing legal frameworks accommodate Non-Bank Financial Institutions (NBFIs) and shadow banking activities, as outlined in Table 1. Public engagement with these financial services remains robust; notably, within Indonesia's predominantly religious society, many shadow banking entities have successfully integrated sharia-compliant transactions into their service offerings (Napitupulu RW, 2026).

Table 1. Regulation of Shadow Banking in Indonesia

No	NBFI	Regulation
1	Insurances	Law No.40/2014
2	Pension Funds	Law No.11/1992
3	Financing Institution	President Decree No.9/2009
4	Pawn	Government regulation No.51/2011
5	Deposit Insurances	Law No 1/2016
6	Indonesia Export Financing Institution	Law No.2/2009
7	Housing Secondary Financing Institution	President Decree No. 1/2008 and President Decree No. 19/2005
8	Social Secuirty Agency	Law No.24/2011
9	Micro Finance	Law No.1/2013
10	Fintech P2P Lending	POJK Nomor 77/POJK.01/2016

Source: Processed by the author

Based on the background of the problem above, the main objectives of this study are: to measure the activity of Shadow banking in Indonesia or NBFI. The specific goals consist of:

1. Defining and measuring Shadow Banking activities in Indonesia from 2008 – 2020
2. To conduct a literature study by comparing various existing cases and reports from various world financial institutions so that policies can be formulated that can be recommended for policymakers in Indonesia on Shadow Banking for the Post- Pandemic period.

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LITERATURE REVIEW

The highlight of Shadow Banking system in Indonesia

In Indonesia, shadow banking remains a complex issue primarily due to the absence of standardized national regulations. The sector is commonly referred to as *industri keuangan non-Bank* (IKNB), encompassing all financial entities that offer bank-like products while operating outside the formal banking system. These diverse industries include insurance providers, pension funds, various financial institutions, microfinance organizations, and specialized financial services (Salsabila, 2024)

This understanding in IKNB is very close to Shadow banking as an intermediary financial institution outside the bank. Therefore, apart from the pros and cons due to regulatory issues, in this study, the authors limit shadow banking to financial institutions outside the Bank, which are registered and reported regularly by Otoritas Jasa Keuangan / Indonesia Financial Services Authority (OJK) (Safri Adriansyah, 2026).

In Indonesia, the debate surrounding shadow banking involves the primary government bodies governing the financial sector. The Financial Services Authority (OJK) indicates that while these entities operate without formal banking licenses, they are legally permitted to manage and allocate funds to the public in a manner similar to traditional banks.

Conversely, Bank Indonesia (the central bank) expresses significant apprehension regarding the prevalence of shadow banking (Makmur, 2024). This concern stems from the fact that these institutions frequently provide more accessible credit terms than traditional lenders, a trend accelerated by the rapid expansion of the financial technology (Fintech) sector in the country. For reference, the OJK classifies several types of financial entities as Shadow Banking or part of the Non-Bank Financial Industry (IKNB) (Olugbenga, 2026).

Financial Stability Board of Measuring Shadow Banking Activities

Ever since Paul McCulley introduced the concept in 2007, global financial stakeholders and scholars have extensively examined the phenomenon of shadow banking. Mirroring this focus, the Financial Stability Board (FSB)—the international body responsible for monitoring global financial systems—formulated a definition that corroborates McCulley's observations regarding the sector (Erturk, 2016). FSB defines shadow banking as the system of credit intermediation that involves entities and activities outside the regular banking system. The FSB added that the shadow banking system mediates lending outside the existing banking system and usually relies on short-term funding from the market. According to the FSB, such a system often causes instability in the financial system (Financial Stability Board (FSB), 2011)

As a result, the FSB highlighted in its 2011 report the necessity for governments to prioritize the creation of a regulatory framework for financial services operating outside the banking sector. To support this, the FSB established a set of protocols for identifying and quantifying shadow banking operations within a national economy.(FSB, 2011)

By using granular data from existing shadow banking activities, FSB provides a very broad benchmark, but it can be focused on several main things in measuring shadow banking activities, namely: Leverage, Credit Risk Transfer, Maturity transformation, Liquidity transformation, Deposit gathering (Financial Stability Board (FSB), 2025)

This paper will use the benchmarks above to measure shadow banking activities in Indonesia.

Previous Research on Shadow Banking

The study on shadow banking globally was pioneered by the Financial Stability Board, which regularly released reports on global monitoring of non-bank financial intermediation reports since 2011. In its latest report in 2020, FSB stated that overall non-bank financial assets experienced a decline. $183.7 trillion in 2018 compared to the previous year, while the banking industry supported the largest growth of the overall financial asset growth of 1.4%.

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For other financial institutions OFI, Lending by OFIs has continued to grow, though banks remain the single largest source of credit intermediation (Financial Stability Board (FSB), 2025).

The Financial Stability Board also introduced techniques for defining and measuring shadow banking using granular data (Tom Pak Wing Fong, 2021).This approach, centered on granular data, has seen extensive adoption by international scholars. A prominent application is found in the work of Godfrey, Golden, and others (2012), who utilized these methods to identify and quantify shadow banking activities within Ireland (Godfrey, 2012). By examining financial sub-sectors through granular analysis, their research established preliminary estimates for the scale of shadow banking and highlighted critical information gaps. Ultimately, their findings revealed that Ireland possesses a substantial shadow banking sector characterized by risk exposures that are primarily non-domestic in nature..

As for the Asian region, China dominate research on Shadow Banking. Both research methods applied the FSB and statistical work conducted by researchers. One of the studies is conducted by Zhang seeks to develop a stylized shadow banking map for China to provide a coherent picture of its structure and the interconnectedness of the related financial system. This study concludes that shadow banking in China takes a very different (Shidai Zhang, 2024)

Other research conducted by Xiaoyao Pu (2026) aims to define the scope of shadow banking in China from the supply side of funds. The study concludes that the supply of funds, be it savings or investment, is the most important thing to distinguish shadow banking and traditional banks (pu, 2026). In Southeast Asia, research on shadow banking was carried out by Weiyan Wang (2026), who used statistical regression analysis to measure the effect of shadow banking on traditional banks in terms of funding and financing, with the results showing no significant effect between the two entities Shadow Banking and Traditional Banks (Wang, 2026).

Another research conducted by Xuan Anh and Tuan (2016) aims to determine the impact of shadow banking on securities companies in Vietnam; using linear regression to determine the impact of both, it is concluded that the effect of shadow banking activities on the profitability of securities companies is positive. However, this effect is included when other control variables such as age and number of services are included (Tran Thi Xuan Anh, 2016).

Another more specific research to determine the impact of shadow banking is the research conducted by Sreelakshmi (2020) which aims to determine the impact of shadow banking on commercial bank products in India, especially in housing finance products. Using regression analysis, this study concludes that there is no significant influence of shadow banking on housing finance products in commercial banks in India (Sreelakshmi P, 2020).

In the Indonesian context, research on shadow banking was carried out by (Abubakar, Sukmadilaga and Handayani (2016), which aims to examine the regulation and supervision of shadow banking activities in Indonesia. This literature review study concludes that shadow banking in Indonesia is still smaller compared to commercial banks. However, this study recommends that the regulator in Indonesia make recommendations to regulate the existence of shadow banking in Indonesia (AbuBakar L, 2016).

METHODOLOGY

The Data

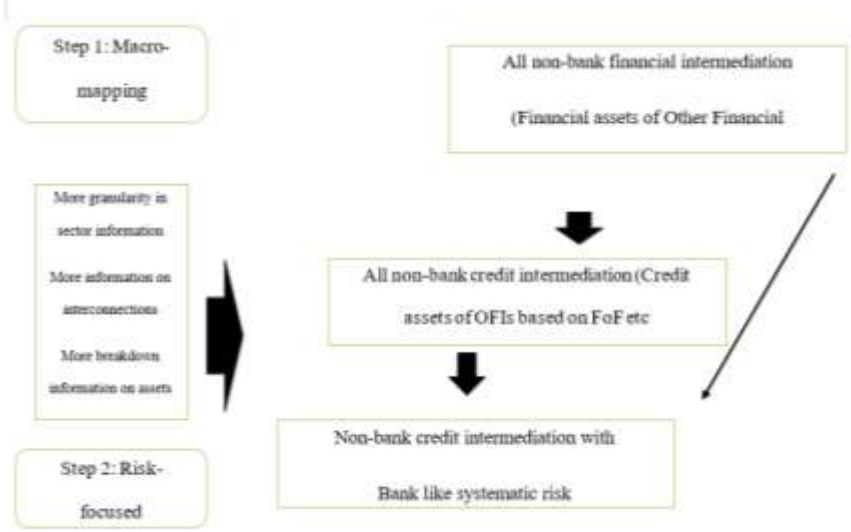
The data needed and research data sources for measuring shadow banking in Indonesia are secondary data published by the Indonesian financial services authority (Ototritas Jasa Keuangan/OJK), Indonesia central bank, Indonesia statistical bureau, and data from related journals and research. Data Set Just Before and After Pandemic Covid 19 (2018-2020)

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Method

The method used to perform measuring shadow banking is based on the steps introduced by the Financial Stability Board. As depicted in figure 2 (FBS diagram of the method for measuring shadow banking

Figure 1: Defining and Measuring Shadow Banking



Sources: FSB Report (Financial Stability Board (FSB), 2025)

Explanation

Furthermore, all data, diagrams, and curves will be explained by descriptive statistical methods.

RESULTS

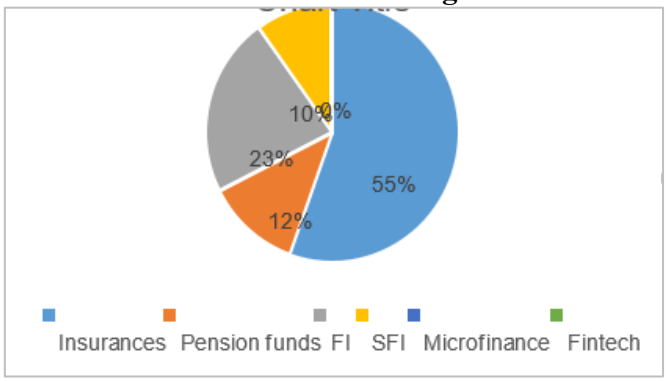
Macro condition shadow banking in Indonesia

Based on figures released by the Indonesia Financial Services Authority (OJK), the comparative asset profiles of shadow banking and Islamic banking as of December 2020 are illustrated in Figures 2. These charts utilize data from the conclusion of the study period to map the financial landscape in Indonesia.

Insurance entities represent the largest segment of the sector, accounting for 45% of total shadow banking assets in Indonesia. This figure is calculated relative to the combined assets of all shadow banking funding and lending institutions, as well as those of Islamic financial entities, including commercial Islamic banks, business units, and rural Islamic banks. By comparison, assets held by Islamic banks constitute only 19% of this total, a value nearly equivalent to that of financing institutions. Such a distribution suggests that shadow banking activities exert a substantial influence on the Islamic banking landscape in Indonesia. To further illustrate this impact, the following analysis examines the specific asset composition of each shadow banking sub-sector in relation to the aggregate assets of Islamic banking.

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Figure 2. Percentage of shadow total shadow banking asset to total islamic banking asset



Source: Processed by the author

Insurance institutions in Indonesia hold 55% of the sector's assets, surpassing the total assets held by domestic Islamic banking. The other 45% of assets are spread across five different types of institutions, though the holdings of Fintech and microfinance remain negligible when compared to the aggregate assets of the Islamic banking sector in Indonesia.

From a macro perspective, shadow banking assets in Indonesia totaled IDR 2,622,886.75 billion, or approximately USD 187,141 million, by December 2020. This figure represents only 0.25% of the nation's total GDP of USD 1,058 trillion, suggesting a minor direct impact on the overall economy. Nevertheless, despite their relatively small scale, shadow banking activities carry the potential for social-level impacts that could threaten stability and trigger systematic risks. Consequently, the following analysis provides a detailed breakdown of the assets held by various shadow banking institutions in Indonesia.

Specific sector, assets, and interconnection of shadow banking

Insurances

As of December 31, 2020, Indonesia's insurance landscape comprised 380 licensed entities. This total included 151 insurance and reinsurance providers alongside 229 supporting firms, excluding actuarial consultants and agents. Within the primary providers, there were 60 life insurance companies, 79 general insurance companies, seven reinsurance firms, two social security agencies, and three mandatory insurance providers. The support sector was composed of 160 insurance brokers, 42 reinsurance brokers, and 27 loss adjusters.

In 2020, the insurance sector reported a total gross premium of USD 48.1 billion, representing an 11.0% increase over the USD 43.3 billion recorded in 2019. This upward trend is consistent with the five-year average growth rate of roughly 10.2%. When analyzed against Indonesia's 2020 population of 267.0 million, these figures indicate that the average insurance spending per capita was approximately USD 180.

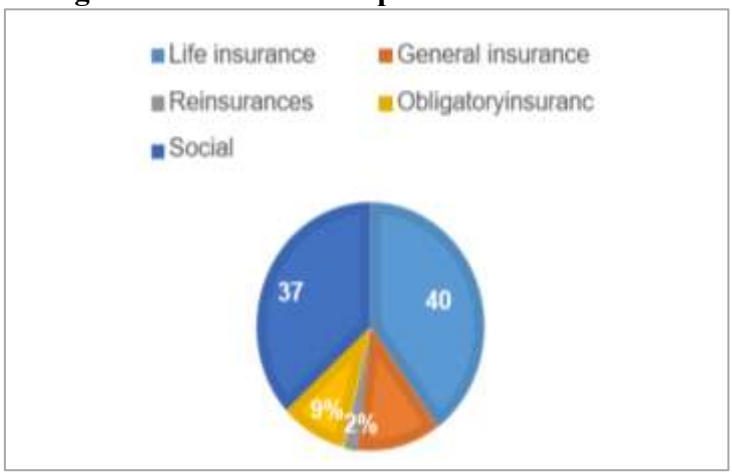
In terms of asset distribution, life insurance remains the dominant product category, accounting for 40% of total industry assets. Social insurance products, led by *BPJS Badan Penyelenggara Jaminan Social* (Social Security Organizing Agency), represent 37% of assets. This latter category has seen significant expansion, largely due to its status as a government-backed program integrated with national infrastructure.

The total gross premium of the insurance industry in 2020 reached USD 48.1 billion, an increase of 11.0% from the previous year, which was USD 43.3 billion. The average gross premium growth has been around 10.2% in the last five years. If the total gross premium is compared to the total population of Indonesia in 2020, which is 267.0 million people, an average of USD 180 will be obtained. Has the understanding that, on average, every resident of Indonesia spends USD 180 to pay insurance premiums.

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In Indonesia, the distribution of insurance industry assets varies by product type, with life insurance accounting for a dominant 40% share. Social insurance follows closely, representing 37% of the total industry assets. This segment is primarily driven by *BPJS Badan Penyelenggara Jaminan Sosial* (Social Security Organizing Agency), which has experienced substantial growth as an official government initiative backed by comprehensive funding and infrastructure. Viewed from a broader economic perspective, the aggregate assets of the insurance sector contributed 0.14% to Indonesia's national GDP in 2020.

Figure 3. Breakdown of product insuranc asset



Source: Processed by the author

The total investment fund for the Indonesian insurance industry in 2020 is USD 113.4 Billion. This amount increased 6.27% from the previous year, which amounted to USD 1.06 Billion. Life insurance companies own the most significant investment funds at 42.7%, followed by social security providers (BPJS) at 38.7%, mandatory insurance companies at 10.6%, general insurance companies at 6.9%, and the last reinsurance company by 1.2%.

The insurance industry places investment mostly in Government Securities. At the end of 2020, the investment placed in Government Securities was USD 29.9 Billion, or around 26.34% of the total investment in the insurance industry. The second most extensive investment portfolio is shares of IDR 24.5 billion or 21.61% of the total investment in the insurance industry.

Furthermore, investment in mutual funds is Rp. 24.2 billion or 21.37% of the total investment in the insurance industry.In 2020, the Indonesian insurance sector's total investment funds reached USD 113.4 billion, reflecting a 6.27% rise from the USD 1.06 billion recorded the year prior. Life insurance firms held the largest share of these funds at 42.7%, followed by social security providers (BPJS) with 38.7%. Mandatory insurance companies, general insurance firms, and reinsurance companies accounted for 10.6%, 6.9%, and 1.2%, respectively.

Investment portfolios within the insurance industry are primarily concentrated in Government Securities, which totaled USD 29.9 billion (26.34% of total investments) by late 2020. Other significant allocations included shares, valued at IDR 24.5 billion (21.61%), and mutual funds, which amounted to IDR 24.2 billion (21.37%).

Pension Funds

Between 2016 and 2020, the number of Pension Funds in Indonesia fell from 249 to 215. By the end of this period, the 215 active funds comprised 148 DPPK PPMP, 44 DPPK PPIP, and 23 DPLK. Participation also saw a downturn, with total participants dropping by 41,935 (0.96% yoy) to 4,345,738 people in 2020. This reduction was driven by a 4.05% yoy

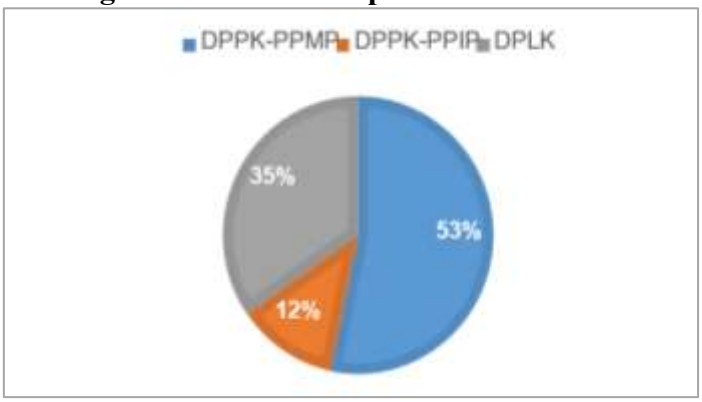
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decrease (55,728 people) in Employer Pension Funds (*Dana pensiun pemberi Kerja*/DPPK), whereas Financial Institution Pension Funds (DPLK) grew by 0.46% yoy, adding 13,793 participants.

Regarding investment trends, the Pension Fund sector maintained an average growth rate of 8.92% over the last five years.Furthermore, if we look at the growth of Pension Fund investment, the average Pension Fund investment growth in the last five years is 8.92%. On a YoY basis, Pension Fund investment increased by USD 2.3 Billion, up 8.11% from total investment in 2019 of USD 2.83.Billion to USD 3.06 Billion in 2020. Pension Fund investment mostly came from capital market instruments with the composition investment of USD 1.93 Billion or 63.25%, which was dominated by four instruments, namely Government Securities (SBN), Bonds/Sukuk, Shares and Mutual Funds with investment portions of 24.71%, 21.99%, 10.51%, and 5.57%.

Then, to maintain the liquidity level, the Pension Fund places investments in the equivalent of Time Deposits of USD 0.87 Billion or 28.72% of the total investment. In line with investment growth, the total net assets of the Pension Fund also grew. The average annual growth of the Pension Fund's net assets for five years is 8.75%. Compared to the previous year, the total net assets of the Pension Fund grew by 7.92% from USD 2.90trillion in 2019 to USD.3.13 Billion in 2020.

Figure 4. Breakdown pension funds asset



Source: Processed by the author

At the end of 2020, the composition of total net assets based on the pension program is as follows: Defined Benefit Pension Plan of USD 1.67 Billion (53.45%), Defined Contribution Program Employer Pension Fund of USD 3.78 Billion (12.06 %). Moreover, Financial Institution Pension Funds amounting to USD 1.08 Billion (34.49%).

Regarding the investment portfolios of pension funds, these entities typically prioritize capital market instruments over money market options. While capital market investments offer the potential for superior returns, they also carry elevated risks. Interestingly, despite this preference for the capital market, the actual investment composition remains relatively low at 63.25%. The remainder of the portfolio is allocated to the money market (28.72%) and various other instruments (8.03%), such as Medium-Term Notes (MTN), KIK-EBA, Real Estate Investment Trusts (DIRE), infrastructure investment funds, direct investments, and real estate holdings.

Financing institution

According to audited 2020 Financial Statements, total assets in the Financial Institutions sector reached USD 5.89 billion. This total was distributed across Financing Companies with USD 4.52 billion (76.83%), Infrastructure Financing Companies with USD 1.15 billion (19.59%), and Venture Capital Companies with USD 0.21 billion (3.58%). By

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the conclusion of 2020, following eight business license revocations throughout the year, there were 176 active Financing Companies. Notably, the sector exhibited high concentration, as 22 firms with assets exceeding USD 5 billion apiece collectively held USD 3.08 billion, representing 68.03% of the total assets in the Financing Company segment.

The business operations of Financing Companies encompass Investment, Working Capital, and Multipurpose Financing, alongside Sharia-compliant options and other activities sanctioned by the OJK. According to the December 2020 financial report, receivables in this sector saw a notable decline of USD 0.75 trillion, or 16.07%, dropping from USD 4.69 billion in 2019 to USD 3.92 billion in 2020.

According to the 2020 Audited Financial Report, financing receivables held by Bank-affiliated Financing Companies amounted to USD 1.16 billion, representing 31.59% of the sector's total. The remaining USD 2.52 billion, or 68.41%, was held by independent financing firms.

The quality of these receivables is assessed through Non-Performing Financing (NPF) ratios across five distinct categories: current, special mention, substandard, doubtful, and loss. Throughout 2020, the sector saw a rise in both Gross and Net NPF ratios, which climbed to 4.01% (up from 2.40% in 2019) and 1.61% (up from 0.41% in 2019), respectively.

Total contracts for Financing Companies grew by 6.18% year-over-year, reaching 27.79 million in 2020. Multipurpose Financing emerged as the most dominant activity, comprising 93.52% of all business contracts with a value of USD 2.5 thousand. Despite this volume, the 2020 Audited Financial Report indicated a sharp 70.99% decline in net profits, falling by USD 0.12 billion to a total of USD 0.49 billion.

In contrast, Venture Capital Companies reported growth in 2020, with assets increasing by 9.80% and equity rising by 21.20% compared to the prior year. Additionally, the liabilities for these venture capital entities saw a modest reduction of 1.50%.

Special financing institution

Financing Companies observed a 6.18% year-over-year increase in total contracts, reaching 27.79 million by 2020. Multipurpose Financing remained the primary activity, representing 93.52% of all business contracts with a total value of USD 2.5 thousand. Despite this high contract volume, the 2020 Audited Financial Report highlighted a significant 70.99% drop in net profits, which fell by USD 0.12 billion to USD 0.49 billion.

Conversely, Venture Capital Companies experienced expansion in 2020, with assets and equity growing by 9.80% and 21.20%, respectively, over the previous year. These entities also saw a slight 1.50% reduction in liabilities.

Special Financing Institutions

As shown in Chart 8, Indonesian export financing institutions hold the largest share of specific financing assets at 36%, followed by pawnshop institutions at 28%. In 2020, total financing assets supported Indonesia's national GDP at a level of 0.02%.

Further analysis of the two largest financing components—Indonesian export financing and pawnshops—reveals several key insights:

As of December 31, 2020, LPEI's total assets were recorded at USD Million, reflecting a 15.3% decline from 2019. Financing values also fell by 7.6%. This downward trend was largely influenced by a 25.0% reduction in liabilities to USD 0.67 Million, even as equity rose by 30.9% to USD 0.24 Million following a USD 1 billion capital injection from the government.

LPI also saw a general decline in business activities throughout 2020. Export financing dropped 7.6% to USD 0.90 Million across 4,437 contracts. Export guarantees fell 2.2% to 0.9 Million with 724 certificates, while export insurance decreased 0.9% to USD 0.8 Million across 639 policies.

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Throughout 2020, the industrial sector remained the primary recipient of LPEI financing, accounting for

Throughout 2020, the industrial sector was still the most significant sector that received financing from LPEI, 50.8% of the total financing disbursed or USD 0.45 Million, from USD

0.9 Million. Agriculture, hunting, and agricultural facilities followed with a share of 14.4% or USD 0.13 Million.

On the other hand, for pawn isntitution as of December 31, 2020, there are one government pawnshop company, 58 licensed private pawnshops, and 32 registered private pawns institution, and 39 new private pawns institution business actors who are currently processing permits to the OJK.

During this timeframe, loan disbursements reached USD 0.55 Million, representing an 8.9% rise compared to the year prior. PT Pegadaian (Persero) reported a 24.1% increase in operating income for 2020, totaling USD 0.21 Million, with capital rental income contributing the largest share at USD 0.14 Million. However, the same period saw operating costs climb by 42.2% to USD 0.19 Million. Due to this substantial growth in expenses, the company's profit experienced a 34.9% downturn, falling to USD 0.2 Million.

Microfinance

From 2016 to 2020, micro-business financing distributed by Financing Companies grew at an annual average of 17.42%, rising from USD 0.20 billion to USD 0.36 billion. Conventional methods dominated these disbursements, accounting for an average of 97.90% of the total microfinance, while Sharia-compliant financing made up the remaining 2.10%. By 2020, conventional microfinance reached USD 0.35 billion, having grown from USD 0.19 billion in 2016 at an average annual rate of 17.99%. In contrast, Islamic microfinance saw volatile performance; it expanded nearly threefold between 2016 and 2018—from USD 0.9 million to USD 0.2 billion—before declining sharply to USD 7.7 million in 2020.

Financing distributions are categorized by their underlying schemes. Conventional schemes include Investment, Working Capital, and Multi-Use Financing, along with other OJK-approved types. Sharia-based distributions are classified into Sale and Purchase, Investment, and Services based on Sharia Principles.

The operational health of Microfinance Institutions (MFIs) is measured through liquidity and solvency ratios. According to POJK No. 13/POJK.05/2014, MFIs must maintain a minimum liquidity ratio of 3% and a minimum solvency ratio of 110%. Ratios falling below 3% for liquidity or 100% for solvency are deemed a threat to business continuity. In 2020, Conventional MFI Cooperatives recorded a liquidity ratio of 51.77% and a solvency ratio of 159.41%, maintaining levels above the regulatory minimums throughout the 2016–2020 period. Similarly, PT LKM Conventional reported a liquidity ratio of 42.70% and a solvency ratio of 189.06% in 2020..

As with the liquidity and solvency conditions of Conventional MFI Cooperatives, the liquidity ratio and solvency ratio of PT LKM Conventional from 2016 to 2020 are above 3% and 110%, respectively. The liquidity ratio and solvency ratio of Islamic LKM Cooperatives are increasing from 2016 to 2020. In 2020 the liquidity and solvency ratios were 189.62% and 241.52%, respectively. Since PT LKM Syariah began receiving a business license and operating in 2018, the liquidity ratio of PT LKM Syariah has consistently been above 3%. In 2020 the liquidity ratio of PT LKM Syariah was recorded at 1,188.69%. Meanwhile, the

solvency ratio of PT LKM Syariah in 2020 was at 113.44% and increased compared to the solvency ratio in 2019 of 109.18%.

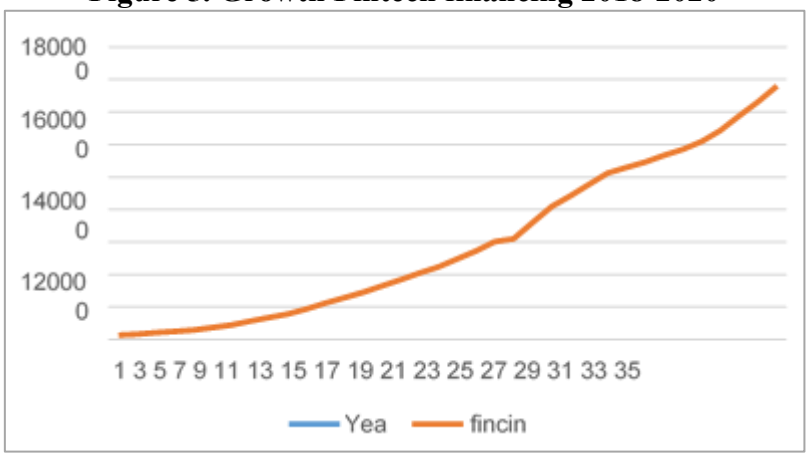
The breakdown of the composition of microfinance assets can be seen in chart 8, where the portion of financing from Indonesian export financing institutions dominates at 36%, followed by financing from pawnshop institutions at 28%. Total asset financing

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Fintech peer to peer lending

Peer-to-peer Fintech records phenomenal achievement in the Indonesian financial industries; the following statistical data is evidence that this institution has excellent potential to become a popular shadow banking and becomes leading in the non-bank financial industry in Indonesia.

Figure 5. Growth Fintech financing 2018-2020



Source: Processed by the author

Currently, there are 149 fintech companies registered and have operating permits from the OJK in Indonesia with accumulated financing as of December 2020 of USD 2.3 Billion. Meanwhile, the total assets of Fintech in Indonesia as of December 2020 is USD 3.7 million. This asset is still relatively small compared to the total assets of shadow banking as a whole and its proportion to Indonesia's national GDP. However, look at the graph of the growth of fintech financing in Indonesia for the last three years (2018-2019). You can see very significant growth in financing, even during the Covid-19 pandemic in Indonesia in 2020.

Discussion

Interconnection and systematic risk focus.

An analysis of the asset distributions and financial metrics of various shadow banking entities reveals shared trends and interconnected relationships across these institutions.

Insurance providers, pension funds, and other shadow banking fund institutions follow a similar pattern of funneling collected capital into investment vehicles. However, their specific risk profiles diverge based on their primary instrument choices: insurance funds typically favor government securities, whereas pension funds lean more toward money market instruments.

This distinction becomes critical during periods of systemic risk, such as the COVID-19 pandemic. While government securities generally carry lower risk than corporate alternatives, money market investments expose funds to a quintet of vulnerabilities: purchasing power, business, interest rate, market, and liquidity risks..

In both financial and economic crises, the funds in the community collected by insurance funds will be stored safely, and the government guarantees the return. In contrast, the potential for losing funds stored in pension funds is more significant and can cause panic and rush money conditions in the community.

An analysis of shadow banking within the financing sector reveals a distinct divergence in performance during the pandemic. Conventional financing institutions, particularly those heavily involved in export-import and large-scale construction projects, saw a downturn in both assets and overall financial health. Conversely, specialized entities including

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microfinance, pawnshops, and peer-to-peer Fintech platforms reported growth as of December 2020.

This trend underscores the role of the SME segment as a primary catalyst for the Indonesian economy during the 2020 Covid-19 crisis. As SMEs rely on micro and medium-scale funding from both traditional and shadow banking sources, the resilience of Fintech—which saw increased financing throughout the period—is particularly significant. Consequently, it is imperative for the Indonesian government to establish appropriate regulatory frameworks to ensure consumer protection within this vital economic segment.

Regulation and monitoring framework for shadow banking in Indonesia

The first inquiry focuses on why the Indonesian government should establish comprehensive regulations for shadow banking, particularly fintech peer-to-peer lending. Data from the OJK indicates that while insurance, pension funds, and various financing institutions have operated under established legal frameworks since 2015, fintech peer-to-peer lending still lacks a clear regulatory umbrella. These fintech activities significantly influence the national economy during crises and impact the performance of Islamic banking.

China serves as a relevant example where the government integrated the fintech industry into the core economy while maintaining strict local oversight. China's central bank utilizes three specific regulatory pillars:

1. Mandatory licensing for all financial business operations.
2. Implementation of operational firewalls between different sectors, such as insurance and wealth management, to prevent cross-sector risk contagion.
3. Regulation of direct links between non-bank entities and banking information services.

The demand for rapid financing and technological progress in Indonesia has been exploited by unregistered financial institutions. These entities often defraud customers with high-interest margins through straightforward financing offers, commonly known as online loans or *Pinjaman Online* (PINJOL).

To address these challenges, Indonesia could adopt a phased regulatory approach based on the Chinese model:

1. Initial Stage: Require all financial businesses to be officially licensed or registered with the OJK, identifying any outside this list as illegal and subject to firm legal action.
2. Governance and Risk Management: Align operations with Good Corporate Governance, requiring internal audit units, electronic system controls, and formal risk management obligations.
3. Funding Quality: Regulate the use of artificial intelligence, big data, and credit scoring while managing bank partnerships to prevent market cannibalization.
4. Ecosystem Development: Establish a conducive environment by prohibiting funding from illegal venture capital, discouraging the use of unlicensed fintech, and ensuring total transparency for all service users.

In the initial phase, it is advisable to adopt China's strategy by requiring all financial entities to obtain an operational license or maintain official registration with the OJK. Any institutions excluded from this authorized list should be categorized as illegal, supported by the implementation of decisive legal measures.

The second phase focuses on risk management and governance structures. These must be integrated with Good Corporate Governance standards, which involve the creation of internal audit departments, the oversight of digital systems, and the systematic application of risk management protocols, including mandated business compliance.

Third, regarding funding quality, there is a necessity to oversee big data, artificial intelligence, and credit scoring mechanisms. This includes the supervision of partnerships with traditional banks to ensure that market cannibalization within Indonesia's financial sector is avoided.

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Fourth, to foster a supportive ecosystem, policies should restrict funding from unauthorized venture capital sources and prevent individuals from utilizing illegal Fintech services. Furthermore, absolute transparency must be maintained between every Fintech provider in Indonesia and their client base.

CONCLUSIONS

In summary, this study addressed its primary objectives by successfully applying the Financial Stability Board's model to quantify shadow banking activities within Indonesia. The methodology involved a comprehensive macro-mapping phase that identified and captured the total asset value of diverse entities, specifically insurance providers, pension funds, standard and specialized financing institutions, microfinance organizations, and Fintech platforms, while evaluating their broader impact on the national economy.

Subsequent analysis involved a detailed institutional breakdown to establish sectoral interconnections and differentiate operational characteristics. The final phase assessed the systemic risk profiles inherent to each shadow banking segment. The findings indicate that pension funds carry a higher systemic risk relative to insurance funds. Conversely, microfinance and Fintech sectors demonstrated significant resilience during the COVID-19 pandemic, maintaining stability and showing growth in both financing and total assets throughout the crisis period.

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