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Economic Impact of Kredit Usaha Rakyat (KUR)

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- It is undeniable that SMEs play a crucial role in the Indonesian economy. The presence of microcredit/microfinancing, such as KUR, which can reach small and medium-sized communities in Indonesia, provides a solution for SMEs to solve financing problems for their businesses.
- The economic impact of the Kredit Usaha Rakyat (KUR) program is minimal at the macro level. While MSMEs contribute significantly to the Gross Regional Domestic Product (GRDP), with a 1% increase in MSME contribution leading to a 1% rise in GRDP, the effect of KUR on this contribution is small. A 1% increase in KUR disbursement correlates with only a 0.2% increase in MSME's GRDP contribution. Fixed effect estimation shows that a 1 million rupiah increase in KUR disbursement raises the average monthly expenditure of business-owning households by 0.3-1%, but this effect diminishes with additional controls and year-fixed effects. At the district level, the impact of KUR disbursement on household expenditure is also insignificant, with less than a 0.01% rise in average expenditure per million increases in KUR disbursement.
- Commercial credit is found to outperform KUR in providing loans, both at household and village levels. KUR borrowers tend to have lower expenditure/income compared to commercial credit borrowers (with similar characteristics matched with the covariates). Villages that only have KUR facilities have a lower industry count of around 50 compared to villages that have commercial credit facilities. But, as before, the result is not statistically significant. We can only infer this as an indicative result that commercial credit does outperform KUR in giving access to financing.
- Using SUSENAS survey data from 2014 and 2023, the analysis shows that KUR success rates peak at ages 40-49, with lower rates for younger recipients (20-30 years old). Higher education levels significantly improve success, though the rate for tertiary-educated recipients dropped from over 50% in the first generation to around 40% in the second. There are substantial provincial disparities in KUR disbursement, with Sulawesi Selatan, Jawa Barat, Jawa Tengah, and Jawa Timur receiving the most, while success rates are higher outside Java. Priority sectors like agriculture, accommodation, and plantation have seen significant disbursement increases, but the success rate in agriculture has declined despite increased funding.

Economic Impact of *Kredit Usaha Rakyat* (KUR)

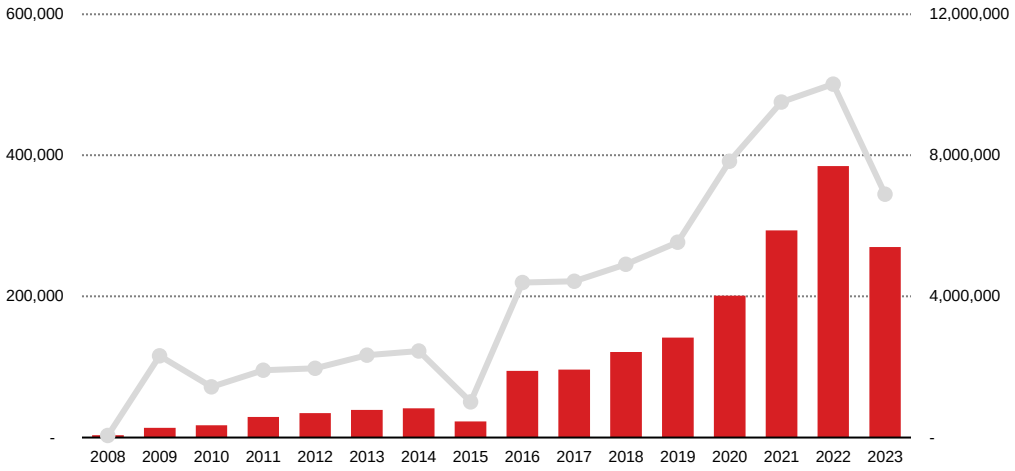
Introduction

Indonesia's economy is often known to be predominantly composed of small and medium-sized businesses (SMEs). Asian Development Bank reported that in 2018 SMEs composed 99.9% of the total economic establishment in Indonesia. This number, while similar, is higher than similar neighbouring countries with Vietnam at 97.2% and the Philippines at 99.5%. The differences started to be significant when considering Indonesia SMEs' employment and GDP impact. In Indonesia, SMEs compose around 97% of the total employment in the country. This is way higher than other ASEAN countries, with Thailand being the 2nd highest in ASEAN with 85.5% SME employment. A similar result can be seen in the contribution of SMEs to GDP. ADB estimated that SMEs contributed around 60% of the Indonesian GDP, with no other ASEAN countries reporting SMEs' contribution to GDP more than 40% (Daya Makara Universitas Indonesia, 2022). It is not an understatement to say, like what has been widely said before, that SMEs are the backbone of the Indonesian economy.

One of the most important things influencing the success of SMEs is their financial capability. The problem of access to finance is a well-known barrier for SMEs in developing countries, including Indonesia. By gaining access to financing opportunities, SMEs can expand their businesses and consequently scale up their economic impact. Previous research has also highlighted the importance of financing for SMEs, and access to finance consistently ranks high as an internal constraint in SME surveys (Thanh et al., 2009). The problem is seeking financing for SMEs lies in their cost structure. SMEs tend to have higher costs in their operation, making them search for external financing. SMEs usually look for other sources of financing, such as their retained earnings and/or family sources. This could pose a problem with the existence of loan shark institutions, where the financial institution offers an easy-to-access loan with high interest which often burdens the loanee.

The importance of financing, specifically microfinancing, has also been acknowledged in the field of economics. Muhammad Yunus, a Bangladeshi economist, won the Nobel Prize for Economics in 2006 for establishing the Grameen Bank and introducing the concepts of microfinance/microcredit. The idea behind it is simple, that is to give loans to poor business owners, which majority if not all are SMEs, that are otherwise hard to qualify for conventional bank loans. It is argued that microcredit will be one key driver in alleviating people from poverty. Since then, microcredit has attracted significant attention, and numerous countries implemented programs similar to/adopted it. The number of poor households that have a microloan has risen from 7.6 million in 1997 to 137.5 million in 2010 (Banerjee et al., 2015).

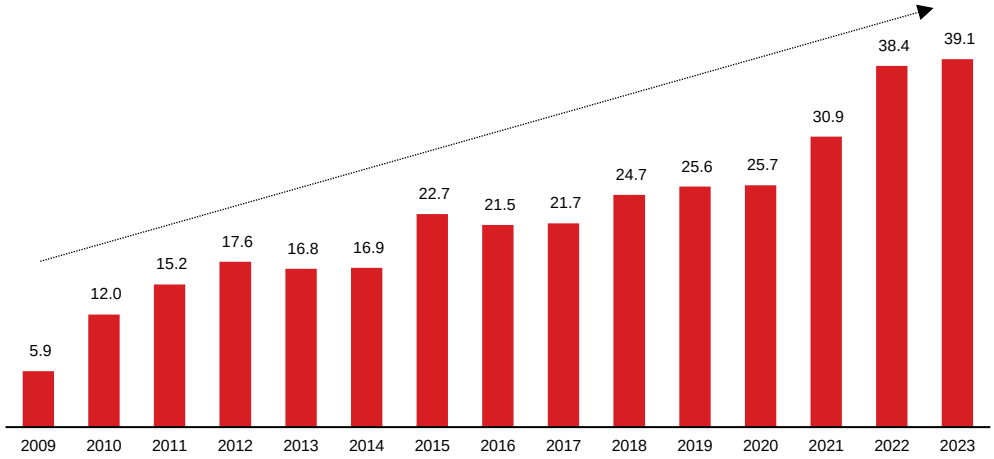
Exhibit 1. Kredit Usaha Rakyat Number of Beneficiaries (Line, Right Axis) and Total Value of Disbursement (Bar, Left Axis, in billion Rp)



Source: Coordinating Ministry for Economic Affairs, IFGP Research.

Indonesia also has a microcredit program under the name of *Kredit Usaha Rakyat* (KUR). KUR was launched in 2007, and initially, it offered loans to micro-businesses with a limit of around 5 million rupiah (Pratomo & Sugeng, 2019). The program has evolved, with now in 2024 offering loans from 10 million rupiah to 500 million rupiah. The coverage of the program has also significantly increased. In 2008, KUR only catered to only 50 thousand beneficiaries (Exhibit 1). It increased to 2 million in 2009, and through some fluctuations reached 10 million beneficiaries in 2022. While the value of disbursement decreased in recent years, the average value of KUR disbursement to each beneficiary increased gradually. Over the years, it rose from 5.9 million rupiah per beneficiary in 2009 to around 39 million rupiah in 2023 (Exhibit 2). These numbers illustrate that KUR has been serving more and more businesses and has offered bigger loans over time. The total value of KUR disbursement also rose almost 30-fold from 13 billion rupiah in 2009 to 384 billion rupiah in 2023.

Exhibit 2. Average Value of KUR Disbursement (in million Rp)



Source: Coordinating Ministry for Economic Affairs, IFGP Research.

Research around the program has also been extensive. However, the majority of the existing literature focused on the effectiveness of KUR implementation centring on their

impact on the recipient and is usually done in a micro design. No previous research has evaluated the economic impact of this program from a more aggregated unit of analysis. Additionally, there has been no comparative analysis of KUR performance relative to commercial credit. Therefore, this Economic Bulletin will aim to evaluate the economic impact of the KUR program, specifically, we will try to answer the following questions: **(RQ1)** What is the economic impact of KUR (at an aggregate level)? **(RQ2)** How does KUR performance compare to commercial credit? Additionally, we will also descriptively explore the question of **(RQ3)** What characteristics determine a higher success rate of KUR?

Literature Review

MSMEs in Indonesia

The distinction between micro, small, and medium businesses is regulated in Indonesia's law. The distinction between the three is shown in Exhibit 3. The law decomposes the three based on their net wealth/asset and amount of sales. Micro enterprises are those with less than ~$3600 in wealth and yearly sales revenue up to ~$20000.

Exhibit 3. Average Value of KUR Disbursement (in million Rp)

Description	Mikro Businesses	Kecil Businesses	Menengah Businesses	Source
Net Wealth	Max Rp 50 million	Rp. 50 million - Rp. 500 million	Rp. 500 million Rp. 10 billion	UU No 20 th 2008
Sales	Max Rp 300 million / tahun	Rp. 300 million - Rp. 2,5 billion	Rp. 2,5 billion Rp. 50 billion	UU No 20 th 2008

Source: Ministry of Finance 2024 Presentation.

Small enterprises are businesses with assets in the range of ~$3600 - $36000 and yearly sales revenue of ~$20000 - $166000. Lastly, Medium enterprises are those with an asset of ~$36000 - $720000 and annual sales revenue of $166000 - $3600000. With that being said, microbusinesses still dominate the Indonesian economy. Based on the data from the Ministry of Cooperatives and SMEs, there are around 69 million micro-enterprises, 190 thousand small enterprises, and 44 thousand medium enterprises in Indonesia in 2021[1]. That's more than 96% of MSMEs in Indonesia are composed of those that are micro in size.

Kredit Usaha Rakyat (KUR) Program

Kredit Usaha Rakyat (KUR) was introduced in 2007. The program was established to enhance MSMEs' access to financing and in turn, boost domestic economic performance. Since its establishment, it has gone through several changes. One of the most significant was in 2014 when KUR started to provide an interest subsidy scheme on top of the existing premium subsidies. The interest rate of KUR Generation 1 (2007 – 2014) was

[1] The latest data that we found was for 2021 sourced from https://databoks.katadata.co.id/datapublish/2023/10/13/usaha-mikro-tetap-merajai-umkm-berapa-jumlahnya

set to be around ~22% for micro businesses and ~16% for small businesses. This significantly drops to around 6 – 7% in KUR Generation 2 (2015 – now). Conditionalities were also introduced in the KUR Program, where the number of times of receiving and interest subsidies was regulated. KUR for micro businesses was limited to only 2 times of access, whereas in specific sectors it was allowed to be 4 times of access. Interest subsidies were also reduced each time of access (6% for the first time, 7% for the second time, etc).

Exhibit 4. Comparison of KUR Generation 2, before and after the Pandemic

Indicators	KUR 2015-2019 (Pre-Pandemi)	KUR 2020-2024 (Post-Pandemic)
Interest Rate (per annum)	12% (2015), 9% (2016), 7% (2018), 6% (2019)	6% (2020-2022), 3% (2023, khusus KUR Super Mikro), 6% (First KUR Mikro & Kecil, KUR Khusus), 7% (Second KUR Mikro & Kecil) 8%, Third Mikro & Kecil), 9% (Fourth KUR Mikro & Kecil)
Types of KUR	KUR Mikro, KUR Kecil, KUR TKI, KUR Khusus	KUR Super Mikro, KUR Mikro, KUR Kecil, KUR TKI, KUR Khusus
Documents/Conditions	KTP (NIK) Elektronik (Electronic ID Card), Kartu Keluarga (Family Card), nor currently receiving other commercial credit programs except KPR, KKB and Credit Card, Own a business permit and has operated for at least 6 year	KTP Elektronik (Electronic ID Card), Kartu Keluarga (Family Card), not currently receiving other commercial credit programs except KPR, KKB and Credit Card, Own a business permit and has operated for at least 6 years.
Collateral	The principal collateral is financed by the KUR program. No additional collateral for KUR Mikro and KUR TKI, and additional collateral depend on the bank for KUR Kecil and KUR Khusus	The principal collateral is financed by the KUR program. No additional collateral for KUR Super Mikro, KUR Mikro and KUR TKI, and additional collateral depending on the bank for KUR Kecil and KUR Khusus (loan higher than Rp 100 million).
Priority Sectors	Agriculture, fisheries, manufacturing, construction, tourism and other production services	Agriculture, fisheries, manufacturing, construction, tourism and other production services
Loan Limit	Rp 50 Million (KUR Mikro), Rp 500 Million (KUR Kecil)	Rp 10 Million (KUR Super Mikro), Rp 10-100 Million (KUR Mikro), Rp 100-500 Million (KUR Kecil)
Time Frame	3-4 years (Working Capital Credit for KUR Mikro, up to 5 years for KUR Kecil & Khusus); 5-7 years (Investment Credit for KUR Mikro & KUR Kecil & Khusus)	3-4 years (Working Capital Credit for KUR Mikro, up to 5 years for KUR Kecil & Khusus); 5-7 years (Investment Credit for KUR Mikro & KUR Kecil & Khusus)
Regulation	Permenko Perekonomian No. 8/2015, No. 9/2016, No. 11/2017, No. 8/2019	Permenko Perekonomian No. 15/2020, No. 2/2021, 1/2022, 1/2023

Source: IFGP Research.

Exhibit 4 shows the comparison between KUR Generation 2 (2015 – 2023, with interest subsidy) before and after the pandemic. There are several differences between the two periods—notably, the introduction of KUR Super Mikro. KUR Super Mikro is a loan scheme with a limit of 10 million rupiah, which was previously served by the KUR Mikro. KUR Super Mikro also enjoys a relatively bigger interest subsidy, with an interest rate of only 3% compared to 6% of other KUR schemes. Other than that, KUR Super Mikro is also specifically targeted for (i) MSMEs businesses (ii) businesses of those workers who were affected by termination of employment (iii) housewives businesses.

The Impact of Microfinance/Microcredit

There has been plenty of research done on the effects of microcredit. Since the Nobel Prize in 2006, there has been an increase in interest in research around microcredit. But, the main findings are not necessarily in line with each other. Some research found that microcredit does help to alleviate people's poverty. Karlan & Zinman (2011) found that microcredit improved the risk management of the beneficiaries. Mahmood & Rosli (2013) found that in Malaysia microcredit increases the performance of Malaysian small and micro enterprises. But, recent research has argued the opposite. Particularly one of the most significant research on this topic was done by Banerjee et al. (2015). Using an experimental design in India, they found that access to microfinance benefited

businesses that were initially more profitable. The average businesses were still relatively small and unprofitable.

On an aggregate level, microfinance has a significant impact on the Gross Regional Domestic Product (GRDP) in various contexts. In Bangladesh, it has been found to contribute between 8.9% and 11.9% to the national GDP, and between 12.6% and 16.6% to the rural GDP (Raihan et al., 2016). However, this is not always the case. Buera et al. (2012) found that microfinance programs will have only a minimal impact on income per capita. They argued from a theoretical perspective that the positive effect of microfinance will be outweighed by the negative impact of lower capital accumulation due to a redistribution of income to low savers (microfinance borrowers). Despite this, microfinance is generally seen as an important factor in promoting economic growth (Sultan, 2016).

Specifically on KUR, Pratomo & Sugeng (2019) found that KUR significantly enhances turnover and profit for micro-small enterprises, but it does not impact their financial inclusion or savings behaviour, highlighting the need for additional technical assistance to improve financial management. Santoso et al. (2020) found that KUR has a significant effect on increasing beneficiaries' welfare, conditional on the purpose and terms of the loan. Other than that, numerous studies have also researched the effectiveness of KUR based on specific geographic areas and found its success. But, Atmadja et al. (2019) found an opposite conclusion. Their findings suggest that microfinance, including different microcredit schemes and gender, may not have a substantial effect on microenterprise performance in Indonesia, though the separation of finances might play a role. They argued that the performance of MSMEs is more determined by non-monetary factors. However, the majority if not all the studies done in evaluating KUR are usually done on a household level. As far as we know, there are currently no studies that evaluate KUR at an aggregate level and macroeconomic perspective.

Comparison of Microfinance Institutions Performance to Commercial Banks

Microfinance institutions (MFIs) and commercial banks serve different segments of the financial market, each with distinct operational strategies, target audiences, and performance outcomes. Many studies show how microcredit and commercial banks differ. Obamuyi (2011) found the loan performance in Ondo State, Nigeria, reveals significant differences between commercial bank loans and microcredit schemes. Commercial banks show strength loan performance with an impressive average repayment rate of 92.93%, compared to the substantially lower rate of 34.06% observed in microcredit institutions. This disparity highlights the effective screening, monitoring, and enforcement practices of commercial banks, which ensure better utilization of loans, thereby contributing to self-employment and economic activities. On the other hand, microcredit schemes, despite providing crucial financial access to individuals often excluded from traditional banking systems, struggle with higher default rates due to inadequate screening, lack of collateral requirements, and poor credit culture (Obamuyi, 2011).

However, the non-credit aspects of microcredit programs, such as social development programs, can significantly impact self-employment profits, potentially making them more effective than commercial loans in certain contexts (Alam, 2013). The research reveals distinct differences in their impacts on self-employment profits in rural Bangladesh. Microcredit programs, exemplified by institutions like the Grameen Bank and BRAC, combine credit with social development programs, such as vocational training and health services. These non-credit aspects significantly enhance self-employment profits beyond the mere provision of credit. On the other hand, commercial credit typically involves individual contracts with higher interest rates and collateral requirements. While these loans also positively impact profits, the absence of non-credit services means they rely solely on financial transactions. Consequently, microcredit has a holistic approach, integrating social capital and credit, proving more effective in raising self-employment profits and supporting sustainable economic growth among rural borrowers (Alam, 2013). Despite the higher operational costs due to their doorstep delivery models, microcredit institutions significantly contribute to financial inclusion and poverty alleviation. They provide essential financial services to unbanked and low-income households, such as working capital for businesses and loans for basic needs such as food, shelter, and education (Bi & Pandey, 2012). While commercial banks outperform in financial metrics and efficiency, microcredit institutions play a crucial role in providing financial access to marginalized communities, thereby supporting socio-economic development. It is also noted that self-sufficient microfinance institutions can be strong performers, particularly in terms of return on assets and return on equity (Tucker, 2004).

Characteristics determine a higher success rate of Microcredit.

The success of microcredit programs is influenced by a combination of borrower, firm, loan, and lender characteristics. Borrower characteristics such as age, education level, gender, business experience, and monthly income play a crucial role, with older, more educated, and experienced borrowers leading to better repayment performance (Nawai et al., 2010). Baklouti (2013) indicates that higher educational levels, extensive job experience, and marital status significantly impact repayment rates. Educated borrowers tend to understand and analyze complex information better, which tends to successful higher repayment rates. Then, borrowers with extensive job experience accumulate valuable social capital through networks and cooperation, enhancing their repayment reliability.

Marital status also plays a role, with married borrowers often showing higher responsibility and reliability, though the effect can vary depending on the number of dependents and financial pressures. Faridi (2011) also emphasizes the importance of women's unobserved characteristics, which can be inferred from the marriage market, in predicting their performance. The success of women in microcredit programs is influenced by various determinants, including their individual, household, and their community or village characteristics. Women's success is measured by improvements in individual or household welfare, which can be influenced by factors such as age, education, marital

status, and household size. These findings show the importance of considering a wide range of factors to enhance the effectiveness of microcredit programs and support women's welfare (Faridi, 2011).

Loan features such as loan amount and loan purpose also determine success rates. Larger loans often correlate with lower repayment rates due to greater incentives for borrowers to deviate from repayment plans. In addition, the purpose of the loan, whether for business start-up or expansion, can affect the level of risk and profitability, as expansion usually involves more stable sales and cash flows. These findings underscore the importance of considering borrower characteristics and loan features in designing effective microcredit programs. By tailoring loan structures and support services to align with these determinants, microcredit institutions can increase their success rates and contribute more effectively to poverty alleviation and economic development (Baklouti, 2013).

The positive impact of social capital and neighbourhood characteristics on self-employment earnings, suggests that these factors can contribute to the success of microcredit borrowers. Household and village characteristics, such as the presence of family planning centres and electricity, significantly impact outcomes, as these factors contribute to an enabling environment that supports economic activities. These unobserved traits often include aspects like intelligence, skills, and social networks, which are crucial in navigating and maximizing the benefits of microcredit (Gomez & Santor, 2001).

Exhibit 5. Hypothesis of Analysis

	Hypothesis
RQ 1	*H1 : The Impact of KUR at the Aggregate Level is minimal*
RQ 2	*H2 :* KUR performance will exhibit lower repayment rates and financial efficiency compared to commercial credit
RQ 3	*H3 :* Borrower characteristics, loan features, and environmental characteristics significantly influence the success of KUR.

Source: IFGP Research.

Data and Methodology

In examining the economic impact of KUR **(RQ1)**, we will employ two main estimations. First, we will use a 2-stage least square (2SLS) regression to estimate the value added generated from KUR to MSMEs and then to GDP. This method is widely used in econometrics to tackle endogeneity problems. Particularly, in our case, KUR and GRDP might have a two-way causality relationship. It is hard for us to isolate and conclude that GRDP doesn't have any influence in determining the number of KUR disbursements of a province. Therefore, we will be using 2SLS to handle this problem of reverse causality. For this estimation, we will be using secondary data from the Ministry of Cooperatives and SMEs of The Republic of Indonesia and the Central Bank of Indonesia.

Exhibit 6. Summary of Research Questions, Method, and the Sources

	Research Questions	Method	Source
RQ1	What is the economic impact of KUR (in an aggregate level)	(i) 2SLS (ii) Fixed Effect Regression	(i) Bank Indonesia, KemenkopUMKM (ii) Susenas, Kemenko
RQ2	How does KUR performance compare to commercial credit?	Propensity Score Matching (PSM)	Susenas & PODES
RQ3	What characteristics determine a higher success rate of KUR?	Descriptive	Susenas

Source: IFGP Research.

The model that we will use is specified as the following:

$$UMKMofGRDP_{it} = \beta_0 + \beta_1 KUR_{it} + \beta_2 \%WorkingPop_{it} + \beta_3 TenagaKerjaUMKM_{it} + \beta_4 RealGDPChina_{it} + \beta_5 Inflation_{it} + \beta_6 Covid19_{it} + \varepsilon_{it} \quad \ldots\ldots (1)$$

$$GRDP_{it} = \beta_0 + \beta_1 \widehat{UMKMofGRDP}_{it} + \beta_2 Inflation_{it} + \beta_3 Covid19_{it} + \varepsilon_{it} \quad \ldots\ldots (2)$$

Where $UMKMofGRDP_{it}$ is the Share of MSMEs to GRDP (of province *i* and year *t*). KUR_{it} is the number of KUR disbursements. $\%WorkingPop_{it}$ is the proportion of the working population. $TenagaKerjaUMKM_{it}$ is the number of workforces currently working in MSMEs. $RealGDPChina_{it}$ is China's real GDP. $Inflation_{it}$Is the nationwide inflation. Lastly, $Covid19_{it}$ is the dummy for Covid-19, starting in 2020. Share of MSMEs to GRDP will be treated as an instrument, and a predicted version from regression (1) will be used to see its impact on regression (2). All of the variables are transformed into logarithmic form. The observations will be applied to 33 Indonesian provinces from 2005 – 2023.

Secondly, we will use panel fixed effect regression to see the impact of KUR disbursement on average business-owning household monthly expenditure at the level of province and city (kabupaten/kota). The fixed effect regression model was chosen because the fixed effect estimator can eliminate bias from unobserved time-invariant effects, which is particularly relevant when performing regression at the province and city level (Wooldridge). The model is specified as the following.

$$Expend_{it} = \beta_0 + \beta_1 KUR/Debitur_{it} + \beta_2 KUR/Debitur_{it-1} + \beta_3 KUR/Debitur_{it-2} + \delta_{it} + \tau_t + \mu_i + \varepsilon_{it}$$

Where $Expend_{it}$ is the mean monthly per capita expenditure of province/district *i* in year *t* in logarithmic form, $KUR/Debitur_{it}$ is the average KUR disbursement of a province/district in rupiah, $KUR/Debitur_{it-1}$ and $KUR/Debitur_{it-2}$ are the lagged versions of it, δ_{it} is a vector of control variables, τ_t is the year fixed effect, and μ_i is the province/district fixed effect. The control variables that we will use are mean of age, phone ownership, % of population living in urban areas, average house area, % of crime victims, average household size, and % of the population that is married. To do this estimation, we collapsed household-level data from Susenas to the relevant aggregation and combined it with actual KUR disbursement data from the Coordinating Ministry for Economic Affairs.

In estimating how KUR fared compared to commercial credit **(RQ2)**, we will use Propensity Score Matching (PSM) to calculate the difference in economic indicators between the treated and control groups. PSM creates a statistical comparison group based on a model of the likelihood of engaging in the program conditional on a set of observed covariates (Cintina & Love, 2019). This allows us to see the difference between groups that benefited from KUR compared to their counterfactuals. Specifically, we will employ PSM in two settings. First, we will use Susenas data and employ PSM to see whether there are significant differences in expenditure between households receiving KUR and those receiving commercial credit. Secondly, we will employ PSM using PODES data to see whether there are significant differences between villages (*kelurahan*) that have KUR facilities compared to districts/villages that only have commercial credit facilities. The details of the PSM model of the two can be seen in Exhibits 7 & 8.

Exhibit 7. Details of the Household level PSM using Susenas

Design of matching model at household level (Susenas)

- ***Treatment:***
  - KUR (1)
  - Commercial credit (0)
- ***Outcome:*** Household income (expenditure approach)
- *Covariates:*
  - Geographical area (urban/rural)
  - Gender of household head
  - Age of household head
  - Education level of household head
  - Possession of a bank account
  - House size
  - Primary economic sector
  - Energy consumption
  - Household size
  - Crime experience

Source: IFGP Research.

Exhibit 8. Details of the Village level PSM using Podes

Design of matching model at village level-PODES

- ***Treatment:***
  - KUR (1)
  - Commercial credit (0)
- ***Outcome:*** Number of economic activities/establishment in a village to show the multiplier effect of credit
- *Covariates:*
  - Access to ICT (BTS)
  - Strength of telecommunication signal
  - Primary economic sector in the village
  - Type of road lighting
  - Type of electricity
  - Availability of mass transportation
  - Number of markets, minimarkets, and shops
  - Access to banking services
  - Crime rate

Source: IFGP Research.

Result

RQ1 Economic Impact of Kredit Usaha Rakyat

Exhibit 9. 2SLS Regression Result

1st Stage

FIXED EFFECTS ESTIMATION

Number of groups = 33 Obs per group: min = 17
avg = 17.0
max = 17

First-stage regression of lnUMKMcont_GDP:

Statistics robust to heteroskedasticity
Number of obs = 561

lnUMKMcont_GDP	Coefficient	Robust std. err.	t	P>|t|	[95% conf.	interval]
lnKUR	.0165459	.0012575	13.16	0.000	.0140756	.0190163
lnworkingpopshare	1.847785	.0354878	52.07	0.000	1.778069	1.917502
lnTenagakerjaUMKM	.2858504	.0172285	16.59	0.000	.2520047	.3196961
lnrealGDPChina	.3046033	.0066713	45.66	0.000	.2914975	.3177092
Inflation_CPI	-.0008583	.0003014	-2.85	0.005	-.0014504	-.0002663
Covid19	-.0123918	.0019467	-6.37	0.000	-.0162161	-.0085674

2nd Stage

IV (2SLS) estimation

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity

Number of obs = 561
F(3, 525) = 1086.73
Prob > F = 0.0000
Total (centered) SS = 36.79420325 Centered R2 = 0.9109
Total (uncentered) SS = 36.79420325 Uncentered R2 = 0.9109
Residual SS = 3.279664995 Root MSE = .07904

lnPDRB	Coefficient	Robust std. err.	t	P>|t|	[95% conf.	interval]
lnUMKMcont_GDP	1.052974	.0249814	42.15	0.000	1.003898	1.102049
Inflation_CPI	-.0012994	.0015879	-0.82	0.414	-.0044189	.00182
Covid19	-.0491644	.0123067	-3.99	0.000	-.0733407	-.024988

Source: IFGP Research.

Exhibit 9 shows the 2SLS estimation of the impact of KUR on GRDP through MSMEs. The test of the validity of the instrument is attached in Appendix 2. The result shows that KUR (through MSMEs) has a positive but minimal impact on GRDP. A 1% increase in MSME's contribution to GRDP constitutes a substantial 1% increase in GRDP (2nd Stage). However, further analysis of the 1st stage regression also shows that KUR has a positive relationship with MSMEs' contribution to GRDP, but the magnitude is small. A 1% increase in KUR disbursement in a province only relates to a merely 0.2% increase in MSME's contribution to GRDP (1st Stage). From this, we can conclude that MSMEs have a big impact on GRDP, but KUR doesn't necessarily carry a considerable effect in boosting the MSME's contribution.

Exhibit 10. Fixed Effect Regression of the Impact of KUR on Province Level

VARIABLES	(1) ln_peng	(2) ln_peng	(3) ln_peng	(4) ln_peng	(5) ln_peng	(6) ln_peng	(7) ln_peng	(8) ln_peng	(9) ln_peng
kur_debitur	0.0115***	0.00384***	0.000657						
	(0.000619)	(0.000873)	(0.000846)						
L.kur_debitur				0.00909***	0.00580***	0.000615			
				(0.000687)	(0.00139)	(0.00104)			
L2.kur_debitur							0.0155***	0.00664***	-0.00196
							(0.00139)	(0.00225)	(0.00209)
Constant	14.81***	12.81***	14.22***	15.00***	12.96***	14.43***	14.82***	12.00***	14.68***
	(0.0248)	(0.580)	(0.519)	(0.0274)	(0.538)	(0.489)	(0.0506)	(0.563)	(0.480)
Observations	237	237	237	170	170	170	136	136	136
R-squared	0.702	0.920	0.942	0.746	0.838	0.893	0.599	0.825	0.907
Number of id	34	34	34	34	34	34	34	34	34
Year FE	No	No	Yes	No	No	Yes	No	No	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

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

Source: IFGP Research.

At the province level, KUR has a negligible impact. Exhibit 10 shows the fixed effect estimation of the impact of KUR disbursement on the average monthly expenditure of business-owning households. The independent variables in this regression are average KUR disbursement for each province, with additional lagged versions for further robustness. The result shows that for each increase in the average KUR disbursement by 1 million rupiahs, the average monthly expenditure of business-owning households will increase by around 0.3 – 1 %. However, this effect dissipates when we add additional control variables and a year-fixed effect. The same goes for all other lagged variable specifications.

Exhibit 11. Fixed Effect Regression of the Impact of KUR on District Level

VARIABLES	(1) ln_peng	(2) ln_peng	(3) ln_peng	(4) ln_peng	(5) ln_peng	(6) ln_peng	(7) ln_peng	(8) ln_peng	(9) ln_peng
kur_debitur	0.00156***	0.000903***	0.000481***						
	(0.000372)	(0.000224)	(0.000180)						
L.kur_debitur				0.00122***	0.000466*	3.34e-05			
				(0.000415)	(0.000269)	(0.000249)			
L2.kur_debitur							0.000332	4.43e-05	-0.000108
							(0.000294)	(0.000205)	(0.000175)
Constant	15.20***	11.83***	13.94***	15.24***	12.16***	14.23***	15.30***	11.94***	13.95***
	(0.0150)	(0.194)	(0.227)	(0.0161)	(0.229)	(0.236)	(0.0108)	(0.204)	(0.203)
Observations	3,075	3,075	3,075	2,559	2,559	2,559	2,045	2,045	2,045
R-squared	0.034	0.258	0.371	0.020	0.211	0.315	0.002	0.397	0.575
Number of id	514	514	514	514	514	514	514	514	514
Year FE	No	No	Yes	No	No	Yes	No	No	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

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

Source: IFGP Research.

Exhibit 11 shows the district-level impact of average KUR disbursement (of a district) on the average expenditure of business-owning households. The results are more or less the same at the province level. KUR has an insignificant impact on the expenditure of households. While the result for the unlagged version of average KUR disbursement shows significant coefficients, the magnitude is relatively small. The results show that with each million increases in average KUR disbursement in a district, there will only be around less than a 0.01% increase in average expenditure.

RQ2 Comparing Kredit Usaha Rakyat versus Conventional Credit

Exhibit 12. Propensity Score Matching Result on Household Level

```
. psmatch2 kur_kom, pscore(mypscore18) out(pengeluaran) common caliper (0.1) n(9) logit
```

Variable	Sample	Treated	Controls	Difference	S.E.	T-stat
pengeluaran	Unmatched	4710283.08	5860678.08	-1150395.01	19912.1667	-57.77
	ATT	4710338.38	4743659.11	-33320.7344	23110.6195	-1.44

Note: S.E. does not take into account that the propensity score is estimated.

Source: IFGP Research.

The exhibit above shows the result of the matching at the household level using Susenas from 2018 – 2023 pooled across years. The differences of the ATT show that household that borrows commercial credit have an expenditure that is higher around ~30 thousand compared to those that only borrow from KUR. But the statistical tests don't show significance. We then decomposed the matching based on each year shown in Appendix 3. The resulting ATT coefficient still shows a negative relationship, with the coefficient varying around 300 thousand to 200 thousand rupiahs lower for KUR borrowers. All of the PSM decomposition by year is shown to be significant. Overall, this result can be interpreted as an indicative result that KUR borrowers tend to have lower expenditure/income compared to commercial credit borrowers (with similar characteristics matched with the covariates).

Exhibit 13. Propensity Score Matching Result on Village Level

```
. psmatch2 kur_kom, pscore(mypscore5) out(total_industri) common caliper (0.1) n(9) logit
```

Variable	Sample	Treated	Controls	Difference	S.E.	T-stat
total_industri	Unmatched	32.1183115	58.375	-26.2566885	20.9273786	-1.25
	ATT	33.4943068	84.4304532	-50.9361465	54.3390548	-0.94

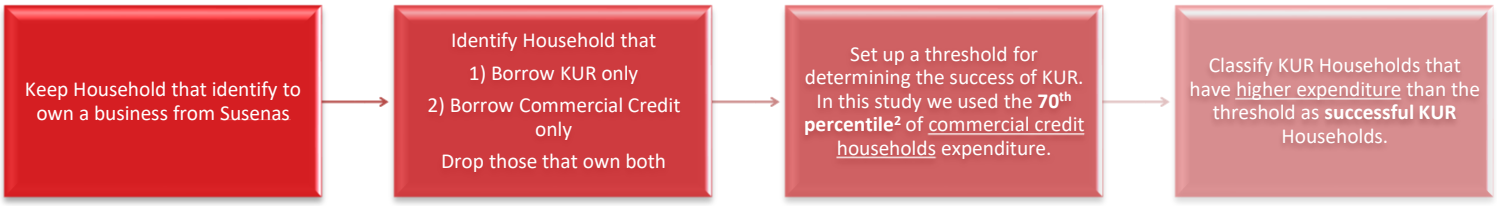
Note: S.E. does not take into account that the propensity score is estimated.

Source: IFGP Research.

Exhibit 13 displays the result of KUR and commercial credit comparison at the village level. As seen from the result, villages that only have KUR facilities have a lower industry count of around 50 compared to villages that have commercial credit facilities. But, as before, the result is not statistically significant. We can only infer this as an indicative result that commercial credit does outperform KUR in giving access to financing.

RQ3 Determinants of Successful KUR

Exhibit 14. Data Processing of the Successful KUR Analysis



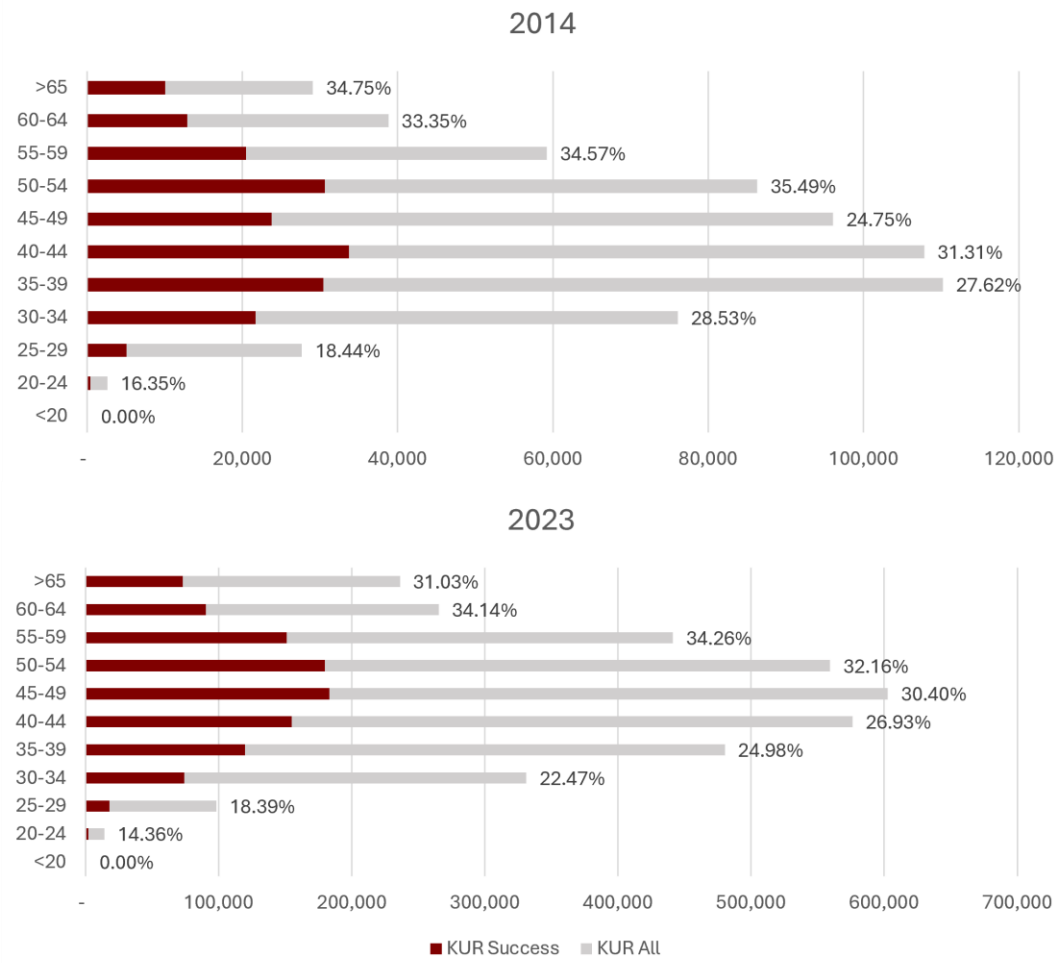
Source: IFGP Research.

In this section, we will try to identify what characteristics determine the success of KUR. We define a successful KUR as KUR household recipients that have expenditures higher than the 70th percentile of commercial credit recipients. The details of the calculations can be seen in Exhibit 14. We will be using 2 years of Susenas, 2014 and 2023, as the basis for our tabulation. The 2014 issue was chosen because it was under the 1st generation of KUR, on which interest subsidy wasn't yet implemented. The 2023 issue is the latest data of Susenas that is available and represents the 2nd generation of KUR after the pandemic.

First, we decomposed the success rate according to age group. It can be seen from Exhibit 15 that the number of KUR disbursed increased over the age group and peaked at 40 – 49. The same pattern also shows in terms of success rate. For the 1st generation of KUR, the success rate peaked at The age group of 40 – 44 (taking into account the total number of disbursements). This peak shifted to the 45 – 49 age group in the latest generation of KUR. While more detailed, preferably longitudinal data, is needed to identify which group of age are the most prominent at utilizing KUR, from our result we can infer that KUR will potentially be more successful if targeted to a more older audience. The success rate for a younger generation (borrowers at around the age of 20 – 30) is relatively lower compared to those older (over 30 years of age).

[2] This number is arbitrary and could be changed higher (or lower) depending on the goal of the analysis

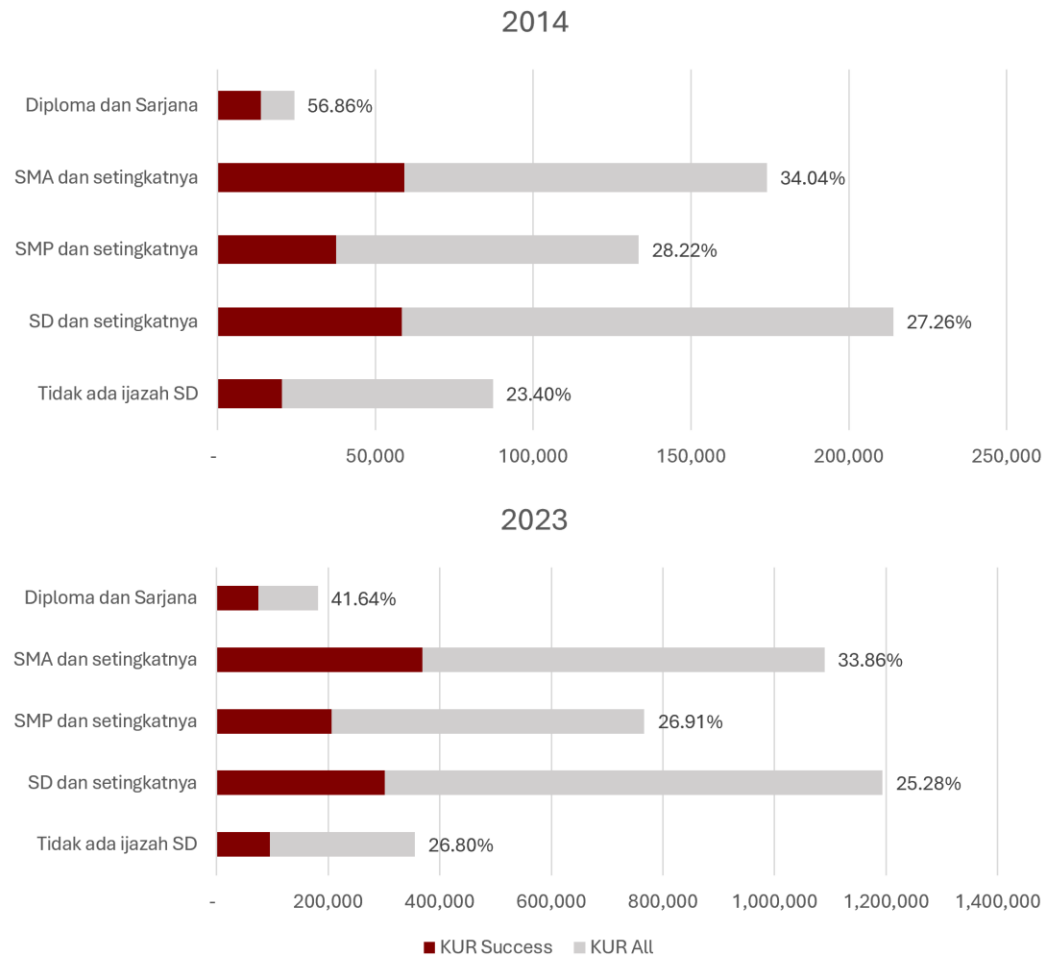
Exhibit 15. Successful Rate of KUR based on Age Group (Labels designate the Success Rate)



Please note that both years have different X-axis scaling, and aren't directly comparable.
Source: IFGP Research.

Based on the education level, it can be seen from Exhibit 16 that the success of KUR increases the higher the recipient's education is. The chart shows that KUR recipients are mostly educated either at the elementary school or senior high school level. But, from both of these groups, senior high school-educated recipients have a significantly higher success rate for both years, at around 6 – 7 %. The success rates are also in general increasing, regardless of the number of recipients of each level. Tertiary-educated recipients have a success rate of over 50% in the 1st generation of KUR. But, this number dropped, whilst still high, at the 2nd generation of KUR to around 40%. The recipients who didn't have any educational attainment have a similar success rate compared to those who graduated junior high school in 2023, but the difference between the two seems larger in 2014. This difference could be attributed to the overall growth in the number of recipients in each group over the years.

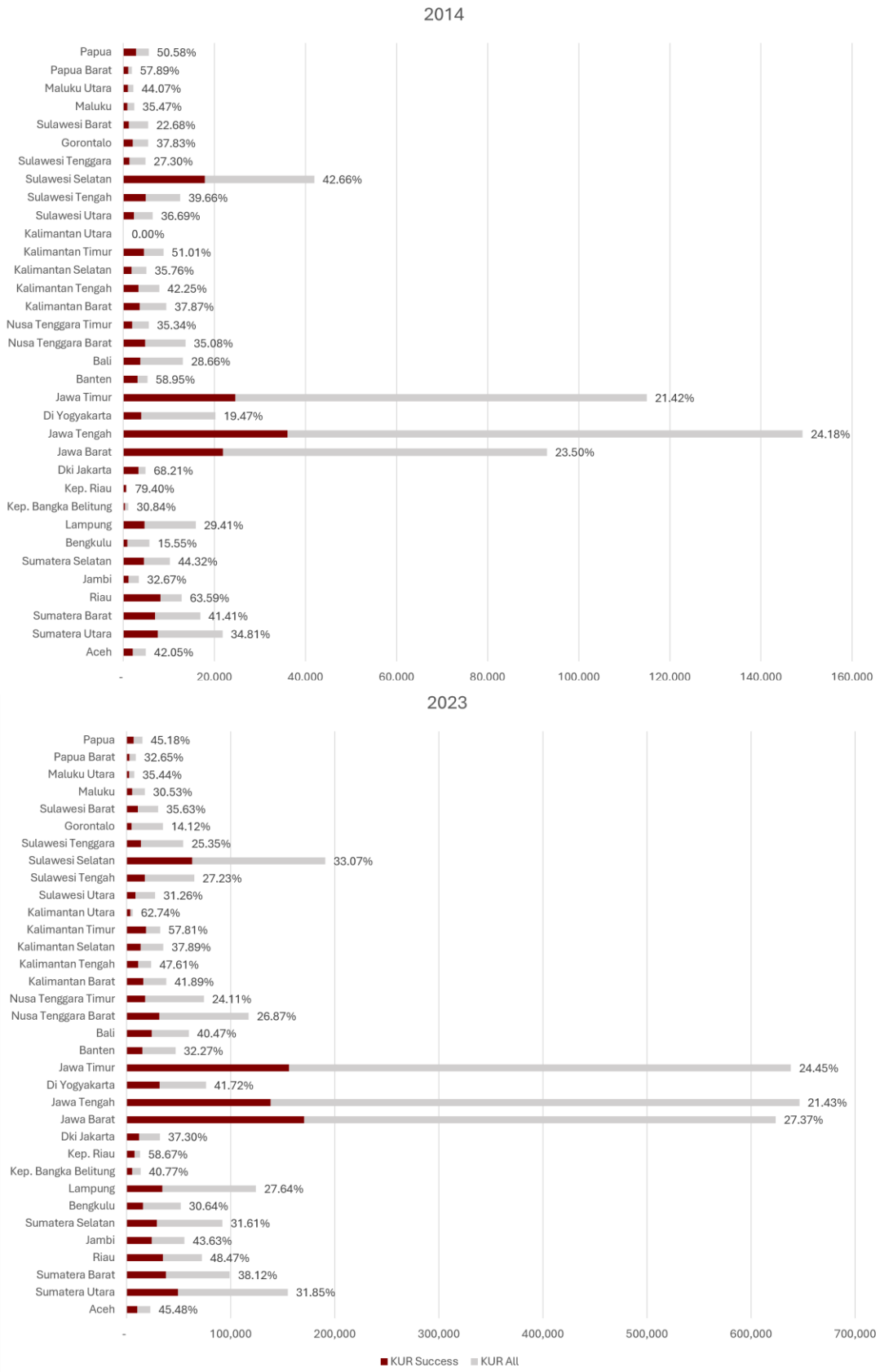
Exhibit 16. Successful Rate of KUR based on Education (Labels designate the Success Rate)



Please note that both years have different X axis, and aren't directly comparable.
Source: IFGP Research.

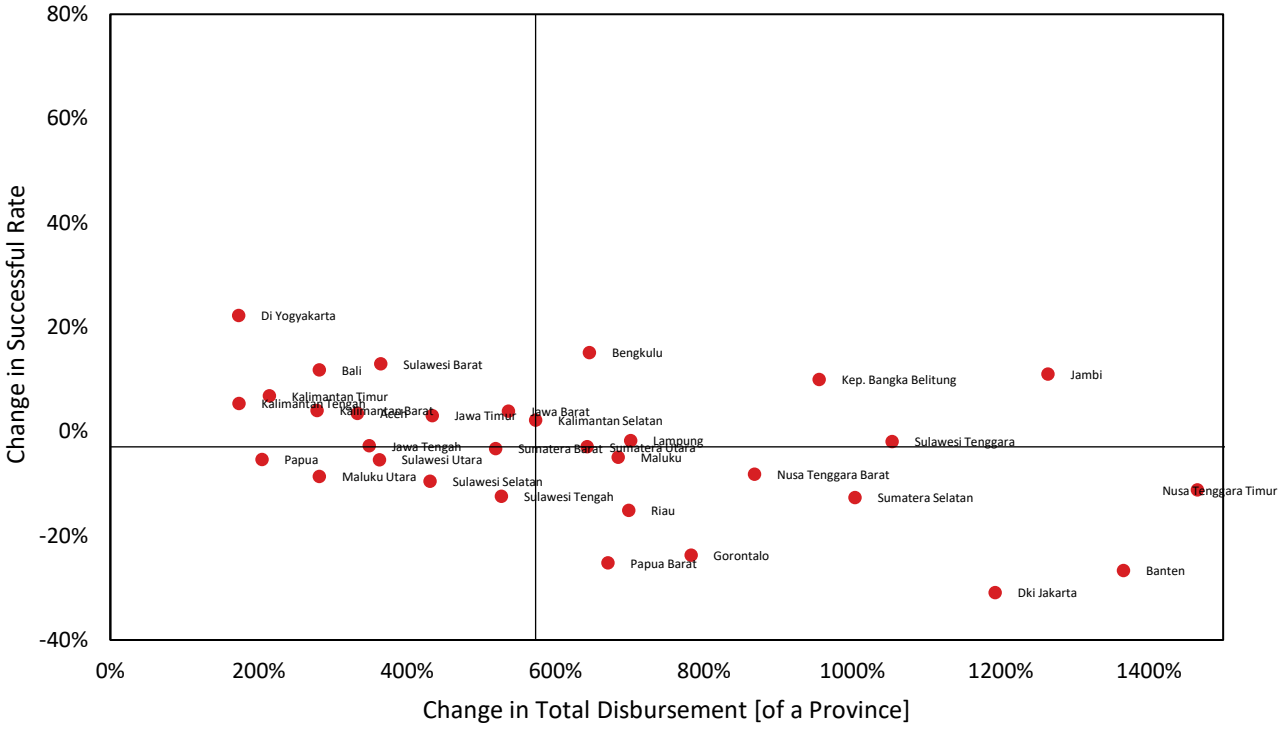
Exhibit 17 shows the distribution of successful KUR based on provinces. While it is hard to make a comparison between provinces, from the chart we can infer a couple of things. First is that there is a high disparity of KUR disbursement between provinces. Several provinces stand out in terms of KUR disbursement, that is Sulawesi Selatan, Jawa Barat, Jawa Tengah, and Jawa Timur. Secondly, while the KUR concentration in several provinces is visible, the disbursement of KUR in other provinces has also increased. Notably, provinces on the island of Sumatra and Kalimantan have a more considerable KUR increment compared to those in eastern Indonesia. Lastly, the success rate of KUR seems to be lower for those in the concentrated provinces, particularly the Java provinces. This could be caused due to higher competition. But, it is more intuitive that this is caused simply by the disparity of size. Regardless, the success rate is high in other provinces outside Java. While this could be, *again*, because of the size, it still illustrates the important need for the government to distribute the distribution of KUR to other provinces as well.

Exhibit 17. Successful Rate of KUR based on Province



Please note that both years have different X-axis scaling, and aren't directly comparable.
Source: IFGP Research.

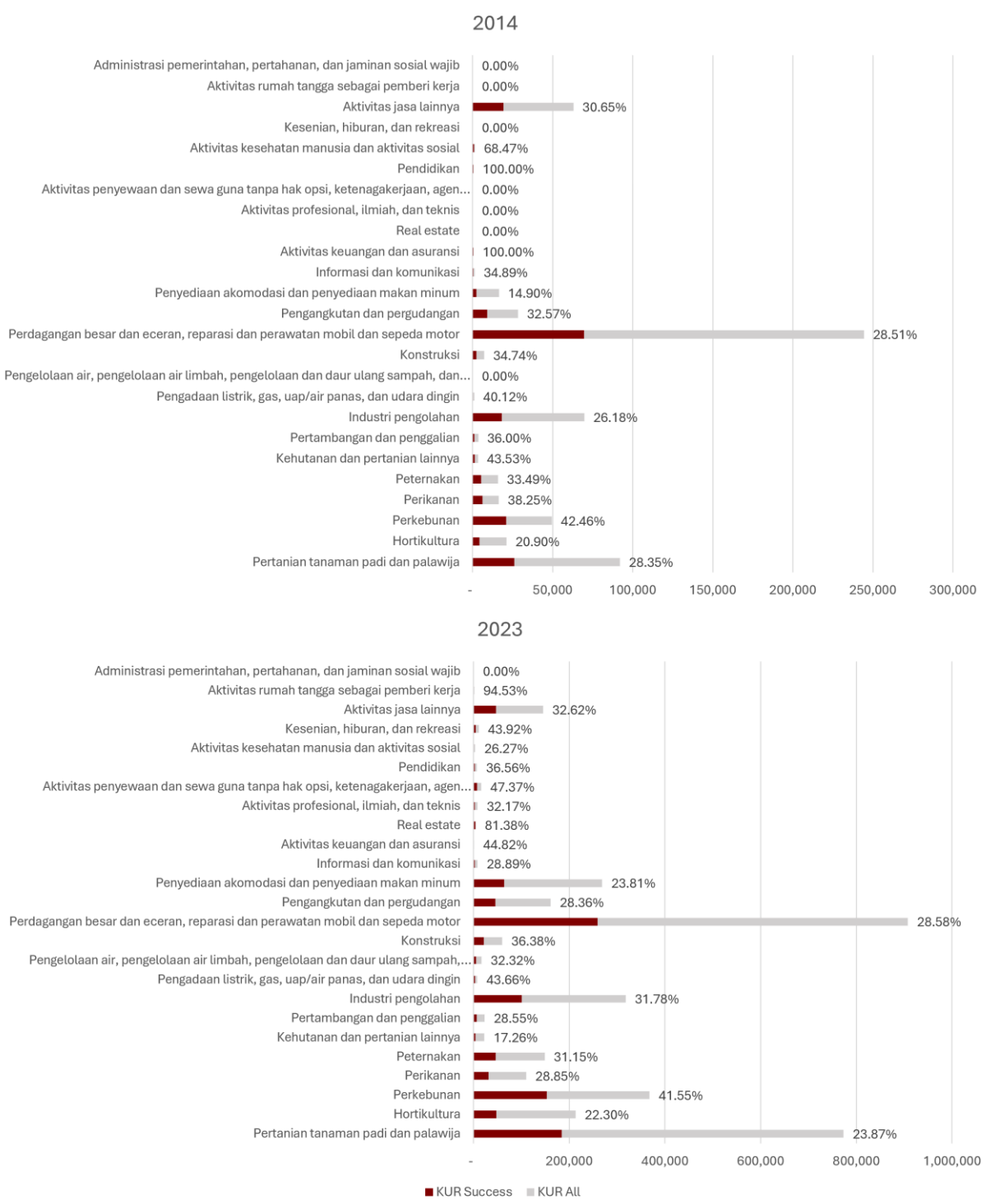
Exhibit 18. Provinces 4 Quadrants of 2023 and 2014 Differences (Vertical: Change in Successful Rate; Horizontal: Change in Total Disbursement [of a Province])



Source: IFGP Research.

The four-quadrant chart in Exhibit 18 illustrates the changes in the success rate and total disbursement rate for various provinces from 2014 to 2023. Provinces in the top-right quadrant, such as Bengkulu, and Kep. Bangka Belitung, and Jambi, have experienced increases in both success and disbursement rates, indicating strong performance in both areas. In the top-left quadrant, provinces like Yogyakarta and Bali show improved success rates despite a decrease in disbursement rates, suggesting enhanced program effectiveness with fewer funds. In contrast, provinces in the bottom-left quadrant, including Papua, Maluku Utara, and Sumatera Selatan, have faced declines in both success and disbursement rates, reflecting struggles in both program effectiveness and funding. Lastly, the bottom-right quadrant features provinces such as Banten and DKI Jakarta, which have seen increased disbursement rates but decreased success rates, indicating that while more funds are being allocated, the effectiveness of the programs has diminished. There is a note the North Kalimantan is not included due to data limitations.

Exhibit 19. Successful Rate of KUR based on Sectors

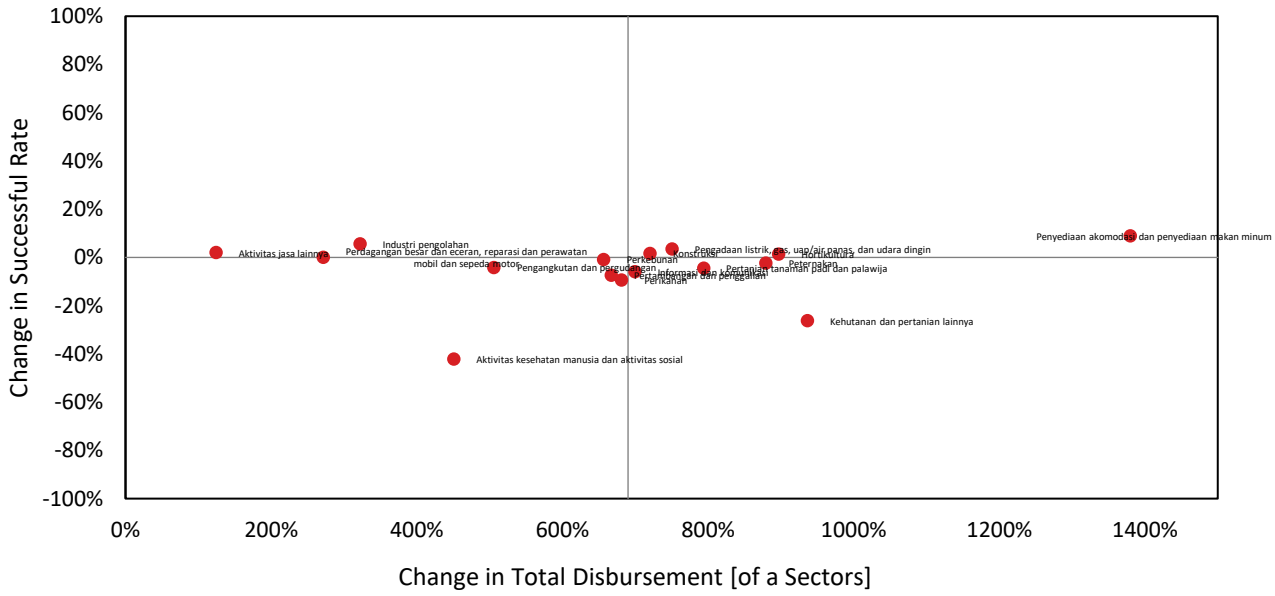


Please note that both years have different X-axis scaling, and aren't directly comparable.
Source: IFGP Research.

Lastly, we decompose the success rate by sector (Exhibit 19). As provinces, the disparity of KUR disbursement is high. This is expected as KUR by regulation has a priority of sectors mechanism. But, the differences in disbursement between generations help us build a couple of conclusions. In general, there is a significant increase in KUR disbursement in several sectors such as agriculture, accommodation, and plantation.

However, the success rate change differs between sectors. For accommodation, plantation, and other sectors that experienced an increase in disbursement, the success rate also increased or more or less stayed the same. This isn't the case for sectors such as agriculture (and arguably fisheries). The success rate drops significantly for this sector after a very significant increase in overall disbursement in the sector. This is arguably concerning since agriculture (and fisheries) is listed as one of the priority sectors. Other priority sectors such as manufacturing and construction, and other big sectors such as trade also experienced an increase in both disbursement and success rate.

Exhibit 20. Sectors 4 Quadrants of 2023 and 2014 Differences (Vertical: Change in Successful Rate; Horizontal: Change in Total Disbursement [of a Sectors])



Source: IFGP Research.

To see the differences between sectors' growth from 2014 to 2023 more clearly, we again composed 4 quadrants plotting the growth of success rate and the change of disbursement of each sector between the years, with a vertical and horizontal line signifying the median of each axis (Exhibit 20). It can be seen that most sectors undergo relatively small changes, with mostly distributed in 0% success rate changes and 6-10 times changes in KUR Household total disbursement. There are variations in the difference in disbursement, with some rising high, such as the sectors of accommodation and food and beverage provision, repair and maintenance, and others low, such as trade and retail and other activities. Apart from that, the Success rate of all sectors is mostly at the median (around 0%) and does not change much. Plus there is no clear pattern between the two.

Furthermore, due to data limitations in 2014, several sectors are not observed, including the Water management, wastewater management, waste management and recycling, and remediation activities sector, the Financial and insurance activities sector, the Real estate sector, the Professional, scientific, and technical activities sector, the Leasing and renting without option rights, the employment, travel agency, and other business support

activities sector, the Education & Arts, entertainment, and recreation sector, the Activities of households as employers sector, the Government administration, defence, and compulsory social security sector, and the Social security sector.

As an endnote, Exhibit 21 gives a very brief summary of the findings of **(RQ3)**.

Exhibit 21. Research Question 3 Summary

Category	Key Findings	Exhibits	Notes
Age Group	Success rates increased and peaked at ages 45-49.	Exhibit 15	KUR potentially more successful if targeted to older recipients.
	Lower success rates for younger recipients (20-30 years old).		
Education Level	Higher education levels correlate with higher success rates.	Exhibit 16	Indicates importance of education in KUR success.
	The success rate for tertiary-educated recipients dropped from over 50% (2014) to around 40% (2023).		
Provincial Distribution	Significant disparities in KUR disbursement between provinces.	Exhibit 17	Suggests need for balanced KUR distribution across provinces.
	Higher success rates outside Java.		
	Sulawesi Selatan, Jawa Barat, Jawa Tengah, and Jawa Timur have highest disbursements.		
Sectoral Distribution	Significant increase in disbursements in agriculture, accommodation, and plantation sectors.	Exhibit 19	Highlights importance of evaluating sector-specific strategies.
	Success rate in agriculture declined despite increased funding.		
Quadrant Analysis (Provinces)	Quadrant 1 : Strong performance in both success and disbursement rates (e.g., Bengkulu, Kep. Bangka Belitung, Jambi).	Exhibit 18	Indicates varying provincial performance and the need for targeted interventions.
	Quadrant 2: Improved success rates despite decreased disbursement rates (e.g., Yogyakarta, Bali).		
	Quadrant 3 : Declines in both success and disbursement rates (e.g., Papua, Maluku Utara, Sumatera Selatan).		
	Quadrant 4 : Increased disbursement rates but decreased success rates (e.g., Banten, DKI Jakarta).		
Quadrant Analysis (Sectors)	Most sectors show small changes in success rates.	Exhibit 20	Highlights sector-specific differences and lack of clear pattern in success rate changes.
	Variations in disbursement changes, with some sectors rising high (e.g., accommodation, food and beverage provision) and others low (e.g., trade and retail).		

Source: IFGP Research.

Conclusion and Recommendations

Answering the 1st research question, our result shows that KUR has a minimal economic impact. It is important to note that our study takes a relatively 'macro' perspective, and cannot be generalized to that KUR only has an admissible impact. Another study that has taken a more micro approach found that KUR does indeed have an economic performance effect, such as Pratomo & Sugeng (2019) which used primary survey data and found a difference in turnover and profit. Regardless, the negligible impact that KUR has on the economy, is still interesting to note down. It can be also concluded that while KUR does have a positive impact on a more micro level, it does not translate into a big impact on a larger scale.

This is in line with the result of our 2nd research question. Our research showed that commercial credit indeed outperforms KUR in providing loans. This result, while not significant, is consistent both on household level and village level. This could be caused by several factors, but, given current data limitations it is hard to pinpoint the determining factors. The government could reevaluate the mechanism of KUR disbursement, including the targeting mechanism, which goes in line with our 3rd research question. We found that adult KUR recipients (around 30+ years of age) and higher education recipients had a higher success rate of KUR. Other than that, several sectors and provinces have a higher KUR success rate.

Therefore, we offer several recommendations to improve the effectiveness of KUR.

- **Readjustment of the interest subsidy**

  The design of the KUR Program needs to be revised so that the interest subsidy can be reduced. Savings from the reduced interest subsidy can be redirected to support guarantees. The IJP (*Imbal Jasa Penjaminan*/Guarantee Service Fee) of the KUR program can be increased, and if necessary, the 'savings' from the interest subsidy cut can be used by the government to 'subsidize the payment of the IJP'.

- **Refinement of the targeted sector**

  KUR does have a targeted mechanism that disburses KUR loans into a more specific market. Our result shows that several priority sectors such as agriculture have a lower and decreasing success rate despite the high increase in disbursement. There is a need to reevaluate of the list of the targeted sectors to find way to improve terms of loans to support these sectors.

- **Geographical Disparity of KUR Disbursement**

  Our result shows a significant disparity in KUR disbursement between provinces, with Sulawesi Selatan, Jawa Barat, Jawa Tengah, and Jawa Timur receiving the most. While disbursement has increased in other regions, especially Sumatra and Kalimantan, the success rate is higher outside the concentrated provinces of Java, suggesting a need for a more balanced distribution.

- **KUR Disbursement Institutions**

  The selection of institutions distributing the KUR program needs to be more selective. The selection process can be strengthened based on the performance of the distributing institutions and the restructuring needs of the KUR program over the past few years, with stricter screening, particularly for institutions in rural areas.

APPENDIX

Appendix 1. References

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Appendix 2. IV-2SLS Instrument Validity

the instruments provide enough information for estimating the model.

```
Underidentification test (Kleibergen-Paap rk LM statistic):            232.964
                                                    Chi-sq(4) P-val =    0.0000
```

indicating very strong instrument relevance

```
Weak identification test (Cragg-Donald Wald F statistic):              2.6e+04
                         (Kleibergen-Paap rk Wald F statistic):        4.9e+04
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
```

```
Hansen J statistic (overidentification test of all instruments):       3.490
                                                    Chi-sq(3) P-val =    0.3220
```

```
Instrumented:         lnUMKMcont_GDP
Included instruments: Inflation_CPI Covid19
Excluded instruments: lnKUR lnworkingpopshare lnTenagakerjaUMKM lnrealGDPChina
```

the instruments meet the validity condition, providing no evidence against the assumption that all instruments are correctly excluded from the estimated equation.

Source : IFGP Research

Appendix 3. Household PSM Based on Year

2018

```
. psmatch2 kur_kom, pscore(mypscore18x) out(pengeluaran) common caliper (0.1) n(9) logit
```

Variable	Sample	Treated	Controls	Difference	S.E.	T-stat
pengeluaran	Unmatched	4598174.46	5712119.44	-1113944.98	59293.6484	-18.79
	ATT	4598495.56	4802911.57	-204416.009	67071.1147	-3.05

Note: S.E. does not take into account that the propensity score is estimated.

2020

```
. psmatch2 kur_kom, pscore(mypscore20x) out(pengeluaran) common caliper (0.1) n(9) logit
```

Variable	Sample	Treated	Controls	Difference	S.E.	T-stat
pengeluaran	Unmatched	4789069.59	5905264.75	-1116195.16	59563.8655	-18.74
	ATT	4789649.74	5093051.28	-303401.532	69459.7665	-4.37

Note: S.E. does not take into account that the propensity score is estimated.

2021

```
. psmatch2 kur_kom, pscore(mypscore21x) out(pengeluaran) common caliper (0.1) n(9) logit
```

Variable	Sample	Treated	Controls	Difference	S.E.	T-stat
pengeluaran	Unmatched	4836127.52	5867658.69	-1031531.17	60594.1047	-17.02
	ATT	4836127.52	5258436.85	-422309.332	73413.1472	-5.75

Note: S.E. does not take into account that the propensity score is estimated.

2022

```
. psmatch2 kur_kom, pscore(mypscore22x) out(pengeluaran) common caliper (0.1) n(9) logit
```

Variable	Sample	Treated	Controls	Difference	S.E.	T-stat
pengeluaran	Unmatched	5049414.72	6180471.04	-1131056.32	70426.101	-16.06
	ATT	5051655.43	5426403.25	-374747.826	91462.4561	-4.10

Note: S.E. does not take into account that the propensity score is estimated.

2023

```
. psmatch2 kur_kom, pscore(mypscore23x) out(pengeluaran) common caliper (0.1) n(9) logit
```

Variable	Sample	Treated	Controls	Difference	S.E.	T-stat
pengeluaran	Unmatched	5560564.12	6795550	-1234985.88	79532.8467	-15.53
	ATT	5559378.42	6141836.58	-582458.162	103850.219	-5.61

Note: S.E. does not take into account that the propensity score is estimated.

Source : IFGP Research

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