

## **MICROFINANCE DYNAMICS: ANALYZING KUR'S EFFECTS ON MSMEs AND BUSINESS EXPANSION**

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### **Abstract:**

*This study aimed to examine the impact of the Kredit Usaha Rakyat (KUR) government credit program on micro, small, and medium enterprises (MSMEs) in the Greater Jakarta Area. A sample of 701 MSME owners was surveyed to analyze the impact of KUR on financial discipline, debt management, investment, and consumption behavior of households. The study found that KUR increased the households' financial discipline in terms of separating personal and business bank accounts, but it did not improve their ability to expand their businesses or change their consumption behavior from consumptive to productive. Additionally, KUR, when combined with credit from other sources, increased the outstanding debt of households owning MSMEs and indirectly increased household consumption. The study suggests that the psychological and sociological aspects of business owners' consistency in running a business and expanding market reach are also important. The findings of this study hold significant implications for policymakers in developing MSMEs where focus should not only be on financing. Developing MSMEs in Indonesia requires a novel scheme that focuses not only on financing but also considers the psychological and social aspects of the MSME owners in developing the started enterprise.*

**Keywords:** Kredit Usaha Rakyat, micro, small and medium enterprises, financial management, debt burden, consumption behavior, consistency.

### **Introduction**

Kredit Usaha Rakyat (KUR) is a credit program for micro, small and medium enterprises in Indonesia that has been conducted since 2007. Since 2015, KUR has been used as governmental subsidy instrument. The maximum interest rate of KUR credit is limited to 10%, where the banks obtain interest rate subsidy ranging from 4.5% to 12% p.a. from the government. Up to December 2014, KUR has channeled Rp178.8 trillion (approx. US\$13.7 billion) to 12.4 million borrowers. The program is an embodiment of Law No. 20 of 2008 about MSMEs article 7 and 8 that the government would enact regulations and policies to develop MSME business environment, including financing. Since June 2015, the government has set an effective interest rate cap of 12% p.a. and has provided interest rate subsidy, including credit guarantee. The government appoints two state-owned credit guarantee companies (Perum Jamkrindo and PT. Askrindo) to guarantee KUR loans, where guarantee fee is included in interest rate subsidy. KUR only finances agriculture, maritime, processing industry and trading where KUR loans are to be used as working capital for productive debtors who lack access to additional financing. The recipient of KUR should be households that own a micro, small or medium enterprise (MSME), but in fact, there were households not owning MSME that also receive KUR. There was misconduct in the distribution of KUR, resulting in increase of KUR's default risk (Mardanugraha & Yappy, 2017). Apart of KUR, MSME has alternative of borrowing from other sources, such as non-KUR bank loans, cooperatives and micro financial institution. The loan source of choice would be one easiest to access, as access to various source of credit can influence the economic behavior of households, as discussed in (Li, Lin, & Gan, 2016) dan (Ouanphilalay, 2017). This paper analyzes the effect of KUR on economic behavior of MSME owners. The economic behavior being discussed

comprises behavioral difference between KUR recipients and non-recipients in regards to (1) discipline in financial management (including debt management) and (2) household consumption.

The MSME owners' economic behavior is estimated based on survey on 701 MSME owners in Greater Jakarta Area (Jabodetabek). Program KUR, together with credit from other sources such as non-KUR bank loans, cooperatives and micro financial institution can increase the amount of outstanding debt of households owning MSME. KUR would indirectly increase household consumption while being unable to grow the MSME. Therefore, the objective of channeling subsidy through KUR were not achieved, where the effect achieved being similar to direct subsidy to poor households not channeled through interest rate subsidy given to banks.

### **Literature Review**

The effect of credit towards various aspects of household economic behavior has been researched. (Li, Lin, & Gan, 2016) researched how credit constraint affect household consumption behavior by surveying 120 households in Fuzhou city, South China. The households would be totally credit constrained if they failed to obtain the loan and could be partly credit constrained if the loan amount they obtained was less than what they had applied for. 54.9% of the respondents are credit constrained. The percentage rural household's consumption expenditures who are credit constrained is 7.43% less than those who are not credit constrained. (Ajefu, 2017) analyzed the effect of income shocks on household real consumption expenditure using Nigerian Household Panel Survey of 5,000 household for the year 2010/2011 and 2012/2013 respectively. The probit model estimation results suggested that idiosyncratic shocks have effect on household consumption expenditure. Such idiosyncratic shocks comprise health (death of family member, disability to family member, or illness to household member), economic/business shocks (job loss of family member, non-farm business failure, dwelling damaged, fall in the price of output, kidnapping, and loss of property due to flood), and agricultural/natural shocks (destruction of household harvest by fire, death of livestock due to illness, poor rain that caused harvest failure, and pest infestation).

Credit can both increase and decrease household consumption. On certain level, a household can add to its consumption by paying its consumption in installments. However, pass an optimal point, household must reduce its consumption to pay for the installment. Different sources of credit also differing affect towards various types of household consumption. (Ouanphilalay, 2017) employed multinomial logit model which results suggested that compared to what household consumption would have been without credit, borrowing households tend to have higher overall consumption. However, when consumption is disaggregated into food and nonfood, only formal credit has positive impact on food spending. Borrowing from semiformal sources and informal sources without interest has a negative impact on food spending. For nonfood consumption, the impact of credit is found to be positive and statistically significant for all credit sources. (See-To & Ngai, 2018) analyzed spending behavior by its payment alternatives. This study investigates difference spending behavior among consumers using three alternative payment technologies: cash, credit cards, and stored value contactless smart cards. The payment process can do so by significantly affecting the subjective awareness of spending only. In contrast, the source of money can affect perceived payment security only. Both perceived security and convenience have little effect on spending behavior.

### **Data and methodology sampling method and data collection**

The data was obtained from survey to 701 MSME owners spread across the Greater Jakarta Area (Jakarta, Bogor, Tangerang, Bekasi). The survey instrument employed both open-ended and close-ended survey questions delivered with one-on-one interview.

Independent Variables	Recipient of KUR credit?
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	YES				NO			
	Non-KUR Bank Loan		Cooperative Loan		NBFI Loan			
	YES	NO	YES	NO	YES	NO	YES	NO
Dependent Var. 1 (Discipline)	Separation of bank account?							
	YES				NO			
Dependent Var. 2 (Consumption)	Monthly household expenditure (IDR)?							
Dependent Var. 3 (Debt Management)	Current outstanding debt (IDR)?							
Dependent Var. 4 (Investment)	Retained earnings/profit to add to business capital (IDR)?							

**Figure 1. Conceptual Framework**

### Measuring the effect of KUR credit

Figure 1 shows the conceptual framework of survey questions and answers. Whether a respondent is recipient of KUR credit is used as independent variable. The significance of the variable is analyzed as indicator of the effect of KUR credit towards the dependent variables that explain household economic behavior. The choice of "YES" or "NO" a respondent being KUR recipient becomes values in a dummy variable measuring effect of KUR credit. The variable is encoded as 1 for KUR credit recipient and 0 for non-KUR credit recipient.

In addition to KUR credit, MSME has other alternatives of financing, such as non-KUR bank loan and cooperative loan. These variables are employed as independent variables due to the connection to financing. Similar to the KUR credit dummy variable, the answer of "YES" and "NO" is encoded as 1 and 0 respectively to analyze the effect of alternative loans on household economic behavior.

**Table 2. Respondent Frequency Distribution by Category of Loan Obtained**

		KUR Recipient		TOTAL
		YES	NO	
Recipient of Non-KUR Bank loan	NO		1.9%	65.2% 67.0%
	YES		13.1%	19.8% 33.0%
	TOTAL		15.0%	85.0% 100.0%
Recipient of NBFI loan	NO		10.1%	63.1% 73.2%
	YES		4.9%	22.0% 26.8%
	TOTAL		15.0%	85.0% 100.0%
Recipient of cooperative loan	NO		13.6%	79.7% 93.3%
	YES		1.4%	5.3% 6.7%
	TOTAL		15.0%	85.0% 100.0%

The above Table 2 shows that most respondent (85%) are not recipient of KUR and other loans. This shows that external financing has not been preferred to MSME owners for their business. The subsidy program for low income families through MSME credit program had only reached a fraction of poor households. The portion recipient of KUR that also obtain credit from non-KUR bank loan is also large (13.1% of 15%), showing that a recipient obtain KUR credit is already bankable.

### 3.3 Discipline in financial management

Discipline in financial management is measured by ownership of separate bank account for their MSME activities not used for personal purposes. Only 20% of respondents own a separate business account. Table 4 below shows

the percentage of respondents by ownership of separate business account and whether the respondents obtain KUR credit.

**Table 4. Percentage of Respondents by Separate Business Account**

	Separate business account		
	B YES	A NO	Total
<b>KUR Recipient</b>	6%	9%	15%
<b>Not KUR Recipient</b>	14%	71%	85%
<b>Total</b>	20%	80%	100%

As much as 40% (6% of 15%) KUR credit recipient owns a separate business account, while only 16% (14% of 85%) respondents that are not KUR credit recipient owns a separate business account. This indicates that KUR credit program shows some potential in improving household discipline in financial management.

### 3.4 Household Consumption Expenditure

The questionnaire surveys the amount of household consumption expenditure. Table 4 below shows the descriptive statistics for monthly household expenditure.

**Table 4. Descriptive Statistics for Household Consumption Expenditure (IDR)**

Category	Mean	Max	Min	Std. Dev
<b>KUR recipient</b>	4,757,143	20,000,000	500,000	3,410,331
<b>Not KUR recipient</b>	3,947,766	25,000,000	50,000	2,317,636
<b>Total</b>	4,069,871	25,000,000	50,000	2,526,724

The average expenditure of KUR receiving household is higher compared to non-KUR receiving household. This indicates that KUR has the potential to directly increase household consumption. The large target of KUR loan for banks to distribute cause banks to become less selective in qualifying borrowers. Adverse selection occurs in KUR channeling (Mardanugraha & Yappy, 2017). Household that do not own MSME business were able to obtain KUR credit to increase its consumption.

Indirectly, KUR might be able to expand household owned enterprises, allowing for higher income that would cause increased household consumption behavior.

### 3.5 Debt Management

KUR credit program would basically increase the debt amount of MSME owners. Table 5 below shows the amount of outstanding debt by KUR credit recipient.

**Table 5. Descriptive Statistics Existing Nominal Debt (IDR)**

Category	Mean	Max	Min	Std. Dev
<b>KUR recipient</b>	235,000,000	13,400,000,000	-	1,400,000,000
<b>Not KUR recipient</b>	7,127,883	200,000,000	-	26,000,000
<b>Total</b>	51,500,000	13,400,000,000	-	623,000,000

The average debt for KUR recipient was much larger compared to non-KUR recipient. The MSME owner can obtain KUR up to IDR 500 million. The opportunity to obtain and paying KUR and thus obtain good credit rating would increase offering from other loan types. After graduating to non-KUR eligible category (annual sales exceeding IDR. 50 billion), the business owner can no longer apply for MSME loans. The respondent with greatest amount of outstanding debt in Table 5 above is an owner of several restaurants, which assets are being used to obtain such large amount of loan.

Another alternative is for one unit of business to obtain several KUR credits. (Mardanugraha & Yappy, 2017) has explained the existence of invalid loan recipients, one of which are loans for recipient with same name with differing addresses.

### 3.6 Investing Behavior

Part of profit that is being retained to add to capital becomes a variable indicating investment behavior of MSME. Table 6 below presents the descriptive statistics for the amount of daily profit being used to expand business capital.

**Table 6. Descriptive Statistics for daily profit Used to add business capital (Rp)**

Category	Mean	Max	Min	Std. Dev
KUR Recipient	570,048	10,000,000	-	1,613,990
Not KUR Recipient	365,901	12,000,000	-	1,044,096
Total	397,262	12,000,000	-	1,150,982

Upon receiving KUR credit, households have two alternative choices. Firstly, households can decrease portion of retained earnings for the business due to the business capital being expanded through KUR credit. Secondly, households can increase retained earnings due to increased sales after receiving KUR.

The table above shows that KUR recipient set apart a greater amount profit for retained earnings compared to non-KUR recipients. With education program in operating and expanding business indicates the potential in expanding the scale of business or improving investing behavior of the business owner. The main success indicator for KUR program is the increasing business scale of KUR recipient to being enterprises beyond MSMEs.

### 3.7 Control Variables

This article employed three control variables, namely the average daily sales (sales), average daily profit (profit) and business capital (capital). Table 7 below presents the descriptive statistics of the three control variables.

**Table 7. Descriptive Statistics of Control Variables (IDR)**

Category	Variables	Mean	Max	Min	Std. Dev
KUR Recipient	SALES	6,326,857		100,000	
			500,000,000		48,700,000
	PROFIT	3,809,133		20,000	
			350,000,000		34,100,000
	CAPITAL	57,000,000		170,000	
			400,000,000		77,800,000
Not KUR Recipient	SALES	1,184,299	25,000,000	25,000	
					2,122,598

	<b>PROFIT</b>	426,359	13,000,000	2,000	1,010,473
	<b>CAPITAL</b>	46,600,000	5,000,000,000	-	218,000,000
<b>Total</b>	<b>SALES</b>	1,955,683		25,000	
			500,000,000		19,000,000
	<b>PROFIT</b>	933,051		2,000	
			350,000,000		13,200,000
	<b>CAPITAL</b>	48,200,000	5,000,000,000	-	203,000,000

This article analyzes the correlation between sales, profit dan capital with KUR receiving household economic behavior. A larger enterprise should result in more disciplined household in terms of financial management, larger consumption expenditure and ability to obtain more credit.

### 3.8 Empirical model

This article employed logarithmic transformation for 0-1 coded variables, employing STATA statistical software. Equation 1 below would be employed to analyze the probability of households having a separate business account. A positive coefficient value would indicate positive effect of KUR credit.

$$Discipline_i = \beta_0 + \beta_1 KUR_i + \beta_2 LOAN_i + \beta_3 COOP_i + \beta_4 MF_i + \delta_1 \ln(SALES) + \delta_2 \ln(PROFIT) + \delta_3 \ln(CAPITAL) + \varepsilon_i \quad (1)$$

Discipline is coded 1 if the household that separate bank account from personal account, and 0 otherwise. KUR, LOAN, COOP, MF are dummy variables that are coded as 1 for households that have KUR loan, non-KUR bank loan, cooperative loan, and non-bank microfinance loan, respectively. SALES, PROFIT and CAPITAL are for daily sales, daily profit and business capital the business owner (household) invested. The above equation is estimated using logistic regression in order to predict the effect of KUR to the probability of households using separate business account. Equation 2 below is used to analyze the effect of KUR to the increase in profit households used to increase capital.

$$\ln(ADCAP)_i = \beta_0 + \beta_1 KUR_i + \beta_2 LOAN_i + \beta_3 COOP_i + \beta_4 MF_i + \delta_1 \ln(SALES) + \delta_2 \ln(PROFIT) + \delta_3 \ln(CAPITAL) + \varepsilon_i \quad (2)$$

ADCAP is daily profit being allocated to increase capital. If the household use KUR to increase the portion of profit for business capital, the  $\beta_1$  in the above equation would have positive value. Equation 2 would be estimated using OLS regression.

Equation 3 below is used to analyze the effect of KUR credit to household consumption behavior.

$$\ln(CEXP)_i = \beta_0 + \beta_1 KUR_i + \beta_2 LOAN_i + \beta_3 COOP_i + \beta_4 MF_i + \delta_1 \ln(SALES) + \delta_2 \ln(PROFIT) + \delta_3 \ln(CAPITAL) + \varepsilon_i \quad (3)$$

CEXP is the monthly household expenditure. KUR might increase the household expenditure both directly and indirectly, therefore, the expected sign for  $\beta_1$  in the Equation 3 above is positive.

Equation 4 below is used to analyze the effect of KUR credit to household debt.



$$\ln(DEBT)_i = \beta_0 + \beta_1 KUR_i + \beta_2 LOAN_i + \beta_3 COOP_i + \beta_4 MF_i + \delta_1 \ln(SALES) + \delta_2 \ln(PROFIT) + \delta_3 \ln(CAPITAL) + \varepsilon_i \quad (4)$$

DEBT is the amount of current outstanding debt of the household. The debt in discussion should be loan being invested to be used as business capital. However, MSME owners have difficulties in differentiating loan for business and consumption. KUR add the loan owned by household, therefore, the expected value for the  $\beta_1$  coefficient in the equation (4) is positive. However, if KUR is being used to substitute for other loans, the sign can also be negative.

#### 4. Result and discussion

The estimated result for equation (1) above is as follows:

$$\begin{aligned} Discipline_i = & -10.5623 + 1.0834 * KUR_i - 0.0202 * LOAN_i - 0.9616 * COOP_i + 0.0513 * MF_i \\ & (0.000) \quad (0.000) \quad (0.940) \quad (0.000) \quad (0.900) \\ & -0.0179 * \ln(SALES)_i + 0.5257 * \ln(PROFIT)_i + 0.1634 * \ln(CAPITAL)_i \\ & (0.913) \quad (0.001) \quad (0.024) \end{aligned} \quad (5)$$

The number in the parentheses are the z statistics that shows the significance of independent variable on the dependent variable, what would be significant for values below 5% or 10%. The equation above shows that upon receiving KUR, the probability of MSME owners separating business bank account and personal bank account increases. KUR recipients are bankable people, or owners of large enough and consistent enterprise. The positive coefficient for profit and capital shows that these factors increase the discipline of business owners in their financial management. The larger the scale of business, the larger the probability of business owners conducting their transaction through the banking system.

The estimated result for equation (2) above is as follows:

$$\begin{aligned} \ln(ADCAP)_i = & 1.9854 + 0.0382 * KUR_i + 0.1393 * LOAN_i - 0.2600 * COOP_i + 0.0740 * MF_i \\ & (0.003) \quad (0.801) \quad (0.226) \quad (0.013) \quad (0.672) \\ & +0.3793 * \ln(SALES)_i + 0.2610 * \ln(PROFIT)_i + 0.1069 * \ln(CAPITAL)_i \\ & (0.000) \quad (0.000) \quad (0.000) \end{aligned} \quad (6)$$

The number in the parentheses is the t statistics that shows the significance of independent variable on the dependent variable, what would be significant for values below 5% or 10%. KUR loan does not significantly increase the proportion profit being allocated as retained earnings to increase business capital.

The control variables being linked to business activities, namely SALES, PROFIT and CAPITAL has significant effect for business owners to increase their capital. For medium enterprise with annual sales above IDR 1 billion, the maximum KUR loan of IDR 25 million does not result in significant effect for business expansion.

The estimated result for equation (3) above is as follows:

$$\begin{aligned} \ln(CEXP)_i = & 12.5113 + 0.0405 * KUR_i + 0.0678 * LOAN_i - 0.2758 * COOP_i + 0.0149 * MF_i \\ & (0.000) \quad (0.567) \quad (0.217) \quad (0.000) \quad (0.864) \\ & +0.0077 * \ln(SALES)_i + 0.1069 * \ln(PROFIT)_i + 0.0734 * \ln(CAPITAL)_i \\ & (0.818) \quad (0.001) \quad (0.000) \end{aligned} \quad (7)$$

The number in the parentheses are the t statistics that shows the significance of independent variable on the dependent variable, what would be significant for values below 5% or 10%. KUR loan does not increase the household consumption. The increase of monthly household consumption is more linked to the increase of profit

obtained from the MSME. A larger profit of the MSME would result in increased household welfare through consumption. However, the increase of profit is not linked to MSMEs receiving KUR loan.

The estimated result for equation (4) above is as follows:

$$\ln(DEBT)_i = 11.7564 + 0.7434 * KUR_i + 0.7592 * LOAN_i - 0.7125 * COOP_i + 0.0359 * MF_i \\ (0.000) \quad (0.004) \quad (0.007) \quad (0.002) \quad (0.920) \\ + 0.2402 * \ln(SALES)_i + 0.1267 * \ln(PROFIT)_i + 0.1364 * \ln(CAPITAL)_i \quad (8) \\ (0.137) \quad (0.414) \quad (0.076)$$

The number in the parentheses is the t statistics that shows the significance of independent variable on the dependent variable, what would be significant for values below 5% or 10%. KUR significantly add the amount of outstanding debt.

## 5. Conclusion

The KUR credit program increased household financial management discipline in running their MSMEs but was not found to increase the ability of MSMEs in expanding their business. The households get increased wealth, shown by increased consumption, as profit from business capital and profit of the MSMEs increased. However, KUR loan does not directly cause increased household consumption expenditure. KUR was also not found to increase MSMEs' profit. Along with loans obtained from other sources such as cooperatives, NFB and banks, KUR credit increase the debt burden of households owning MSMEs. Therefore, the objective of channeling subsidy through KUR were not achieved, where the effect achieved being similar to direct subsidy to poor households not channeled through interest rate subsidy given to banks. Developing MSME in Indonesia necessitate a novel scheme that focus not only on financing. Psychological and social aspect of MSME owners matters more compared to financing. The consistency of MSME in developing the started enterprise is important, as expanding the business is different from MSME owners trying to obtain additional income from the business. The basic needs of low-income family should be fulfilled first, including means such as government subsidy. Afterwards, MSME can start expanding its business. The purpose of government subsidy should be to fulfill the family needs of MSME owners, not to expand the business, as MSME would not be able to consistently expand its business if daily needs of its owners is not fulfilled. As the MSME owner becomes consistent in running and expanding their enterprise, access to finance even with market interest rate would not be a hindrance.

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OUTPUT STATA for Equation (5)

.logit x12a p05a x21b x22b x23b lx01 lx02 lx05

Iteration 0: log likelihood = -339.37812

Iteration 1: log likelihood = -303.46795

Iteration 2: log likelihood = -301.57792

Iteration 3: log likelihood = -301.56977

Iteration 4: log likelihood = -301.56977

Logistic regression	Number of obs =	676
	LR chi2(7) =	75.62
	Prob > chi2 =	0.0000
Log likelihood =	-301.5697	Pseudo R2 = 0.1114

x12a	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]
p05a	1.083435	.3017336	3.59	0.000	.4920482 1.674822
x21b	-.0202534	.2681985	-0.08	0.940	-.5459127 .5054059
x22b	-.9616499	.2665586	-3.61	0.000	-1.484095 -.4392047
x23b	.0513144	.4098016	0.13	0.900	-.7518821 .8545108
lx01	-.0179018	.1633088	-0.11	0.913	-.3379812 .3021776
lx02	.5257392	.1629082	3.23	0.001	.2064451 .8450333
lx05	.1693977	.0751649	2.25	0.024	.0220772 .3167182
_cons	-10.56226	1.609194	-6.56	0.000	-13.71623 -7.408299

OUTPUT STATA for Equation (6)

.reg lx03 p05a x21b x22b x23b lx01 lx02 lx05

Source SS df MS Number of obs = 538

F( 7, 530) = 37.04

Model 289.867916 7 41.4097022 Prob > F = 0.0000

Residual 592.604448 530 1.1181216 R-squared = 0.3285

Adj R-squared = 0.3196

Total 882.472364 537 1.64333773 Root MSE = 1.0574

lx03	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]
p05a	.0382038	.1512284	0.25	0.801	-.2588769 .3352846
x21b	.139318	.1148909	1.21	0.226	-.0863794 .3650155
x22b	-.2599775	.1045575	-2.49	0.013	-.4653756 -.0545795
x23b	-.0740009	.1745226	-0.42	0.672	-.4168418 .2688399
lx01	.3793401	.0717114	5.29	0.000	.2384666 .5202136
lx02	.2610038	.0708303	3.68	0.000	.1218612 .4001464

```
lx05 .1069335 .0334003 3.20 0.001 .0413202 .1725467
_cons 1.985376 .6708541 2.96 0.003 .6675171 3.303236
```

OUTPUT STATA for Equation (7)

```
. reg lx04 p05a x21b x22b x23b lx01 lx02 lx05
```

```
Source    SS      df    MS                Number of obs =   684
```

```
F( 7, 676)    = 16.68
```

```
Model 37.9543856 75.42205509      Prob > F      = 0.0000
```

```
Residual 219.763646 676.325094151    R-squared     = 0.1473
```

```
Adj R-squared = 0.1384
```

```
Total 257.718032 683 .377332404    Root MSE     = .57017
```

lx04	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]
p05a	.040486	.0705967	0.57	0.567	-.0981291 .1791011
x21b	.0678199	.0548997	1.24	0.217	-.0399745 .1756144
x22b	.2758153	.0513094	5.38	0.000	.1750703 .3765603
x23b	-.0148519	.0867281	-0.17	0.864	-.1851408 .1554369
lx01	-.007742	.0336864	-0.23	0.818	-.0738846 .0584006
lx02	.1069274	.0329257	3.25	0.001	.0422784 .1715764
lx05	.0734541	.0153529	4.78	0.000	.0433089 .1035993
_cons	12.51128	.324419	38.57	0.000	11.87429 13.14827

OUTPUT STATA for Equation (8)

```
reg lx06 p05a x21b x22b x23b lx01 lx02 lx05
```

```
Source    SS      df    MS                Number of obs =   165
```

```
F( 7, 157)    = 8.59
```

```
Model 112.568991 7 16.0812845    Prob > F      = 0.0000
```

```
Residual 293.763303 157 1.87110384    R-squared     = 0.2770
```

```
Adj R-squared = 0.2448
```

```
Total 406.332294 164 2.47763594    Root MSE     = 1.3679
```

lx06	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]
p05a	.7434412	.2575397	2.89	0.004	.2347515 1.252131
x21b	.759191	.2771078	2.74	0.007	.2118506 1.306531
x22b	.7125207	.2236527	3.19	0.002	.2707643 1.154277
x23b	-.0358676	.356442	-0.10	0.920	-.739908 .6681728
lx01	.2401616	.1605632	1.50	0.137	-.0769811 .5573043
lx02	-.1267079	.1547524	-0.82	0.414	-.4323732 .1789573
lx05	.1363645	.0763503	1.79	0.076	-.0144418 .2871707
_cons	11.75636	1.52329	7.72	0.000	8.747572 14.76515