

## 44. ROLE OF AGRICULTURE BANKING TOWARDS ECONOMIC DEVELOPMENT

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### ABSTRACT

Whether financial structure influences economic growth is still considered a crucial policy issue. The aims of this research are to analyze the influence of banking development indicators, agriculture sector and industrial sector on economic growth in Indonesia and to examine the relationships between banking development and economic growth. VAR, a time-series econometric model used in this study, estimating three banking indicators that are assets, credits and third party fund, economic growth average per capita at constant price 2000 and two variables of economic growth in agriculture and industry. Two dummy variables are also implemented in VAR model, they are monetary crisis and implementation of Arsitektur Perbankan Indonesia (API) or Indonesia Banking Architecture. Based on the two-stage data processing, the research reveals empirical evidence that banking development, agriculture sector and industrial sector affects the economic growth although the percentage of the contribution are relatively small.

### KEYWORDS

Banking, Agriculture sector, Industrial sector

### INTRODUCTION

- Whether financial structure influences economic growth is still considered a crucial policy issue.

Banking industry growth after Banking Deregulation at 1988, the impact appears when Central Bank of Indonesia made a deregulation called Pakto 88 which was about facilitating opening a new bank and branch office. This was a positive impact that workers at that time have a great chance to work at the bank. Using both traditional cross-section, instrumental variable procedures and recent dynamic panel techniques, Levine, Loayza and Beck (2000) find that the exogenous component of financial intermediary development is positively with economic growth. Also the data show that cross country differences in legal and accounting systems help account for differences in financial development. Kar and Pentecost (2000) used five alternative proxies for financial development and Granger causality tests applied the cointegration and vector error correction methodology (VECM).

- Agriculture was the main economic sector in Uzbekistan employing 43% of the total population with the share of 36% of gross domestic product (GDP) in 1991. Currently, 27% of the population are employed in agriculture and related field, and its contribution to GDP is only 17% (Figures 1). GDP in Uzbekistan, as well as the production of agricultural products, is increasing year by year in a stable manner, as a result, the economy is meeting sustainable growth during the last ten years.

**MODEL, DATA AND METHODOLOGY**✓ **MODEL:**

The econometric model used in this paper is adopted model from Levine, Loayza and Beck (2000), which is also adopted by Nasrudin (2004). Adopted common equation as follows :  $gt = \alpha + \beta [\text{financial}]_t + \gamma [\text{conditioning set}]_t + \epsilon_t$  where  $gt$  equals to real per capita GDP growth at constant price 2000, financial equals either assets, credits, and third party funds, and conditioning set represents the other determinants of growth such as agriculture, and industry. The common equation used in this paper adopted from model which is used by Nasrudin (2004) and Levine, Loayza and Beck (2000) with modification.

✓ **DATA:**

Data used in this paper are time series data in the period of 1998 to 2008 quarterly. The reason for theyear 1988 is the at in 1988 central bank of Indonesia issued policy deregulation Pakto 88 and the beginning of booming of new bank. The source of the data collected from Central bank of Indonesia (BI) publication such as Financial and Economics statistic of Indonesia (FESI or SEKI), Central bureau of Statistics of Indonesia (CBS or BPS). Financial data are including total of saving deposits, time deposits, demand deposits and credits (all kind of banks like common bank, rural bank and sharia bank), the total assets all kind of bank proxies for economic growth are GDP growth per capital, contributing of agriculture sector to GDP , industry to GDP (all variables at constant price 2000). The financial indicator used in this paper refers to standard of Central Bank of Indonesia directorate of Research and Banking Management.

● **METHODOLOGY**

Often found that economics theory was not good enough to specify the dynamic relationship among variables. Sometimes estimation and inference

process become complicated because the endogen variable on both side. VAR method by Sims then appear as a solution to this problem with non-structural approach (Widarjono, 2007). VAR model consists of 6 macroeconomics variable and 4 dummy variables can be written as follows: process become complicated because the endogen variable on both side. VAR method by Sims then appear as a solution to this problem with non-structural approach (Widarjono, 2007). VAR model consists of 6 macroeconomics variable and 4 dummy variables can be written as follows:

$$\begin{aligned} \triangleright Vljgdpt &= \beta_1 + \sum_t^n = 1\beta_{1i} Vljgdpt - i + \sum_t^n 0\beta_{2i} Vasett - i + \\ &\sum_t^n = 0\beta_{3i} Vkredit t - i + \sum_t^n = 0\beta_{4i} Vdana t - i + \sum_t^n = 0\beta_{5i} Vtani t - \\ &i + \sum_t^n = 0\beta_{6i} Vindust - i + D1 + D2 + \epsilon_1 \\ \triangleright Vasett &= \beta_2 + \sum_t^n = 0\beta_{7i} Vljgdpt - i + \sum_t^n = 1\beta_{8i} Vasett - i + \\ &9iVkredit t - i + \sum_t^n = 0\beta_{10i} Vdana t - i + \sum_t^n = 0\beta_{11i} Vtani t - i + \\ &\sum_t^n = 0\beta_{12i} Vindust - i + D1 + D2 + \epsilon_2, \end{aligned}$$

Same formulas are for  $Vkredit$ ,  $Vdana$ ,  $Vindus$ , Econometrics model in this paper is a VAR model divided into two stages processing data , That are:

- VAR model with 6 variables without dummy variables that are economics growth of three banking indicators that are assets , loans and third party funds, and also 2 macroeconomics indicators in agriculture, industry; and
- VAR model with 6 variables with dummy variables are, monetary crisis 1997, and implementation of API in 2004.

The data is analyzed over the 1991-2014 period. From 1991-2004 the general tendency of economies has fluctuated. From 2004, agricultural system in Uzbekistan changed to new

stage, with acceptance of the Law of the Republic of Uzbekistan on the farming. Therefore, some analyses are done for 2005-2014, that have a general tendency of growth. As a data, it's used specified issues provided by the World Bank, UN COMTRADE, FAOSTAT, State Committee on Statistics of the Republic of Uzbekistan and other international organizations. Numbers are described in US dollar current prices and some figures in US dollar constant 2010.

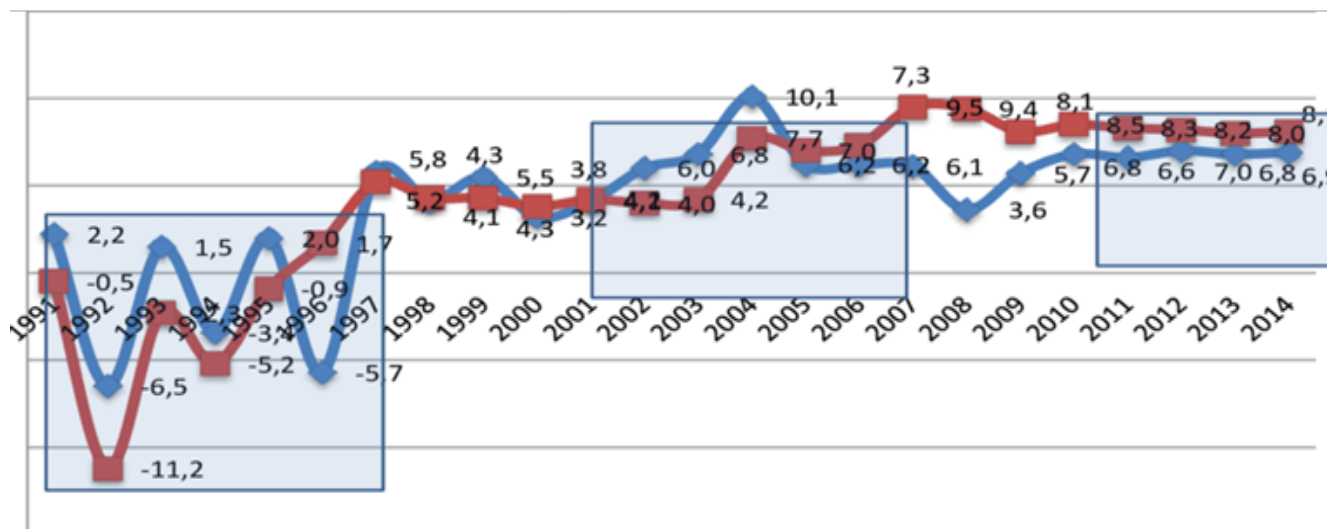
In order to analyze the contribution agriculture for economic growth, we first observe the relative contribution agriculture for economic growth in Uzbekistan. Here, it is observed the share of agriculture in GDP, and annual growth this sector in it. We also use the comparative analysis to find out the coefficient between agriculture and economic development. This method is supported descriptive statistics analysis.

## RESULTS

The optimal lag length obtains from VAR Model with 6 variables without

dummy variable is 9 or 2 years 3 month. The impact can be said quite slowly. The result comes into alignment with theoretical study that economic growth not only influence by banking industries but also by another factors, that are natural resources proxy by agriculture, and industrial sector. The smaller the lag can be interpreted that the impact becomes faster.

The comprehensive measures helping to steadily increase the export potential of the sector. In recent years, Uzbekistan has become a major exporter of high quality and competitive fruit and vegetable products. Over the past 10 years, the volume of processing of vegetables and grapes increased by 3.5 times, including the canned fruits and vegetables by 2.5 times, dried fruits – 4 times, natural juices – 7 times. More than 16% of total production of vegetables and grapes are processing. Currently, more than 180 types of fresh and processed fruit and vegetable products are exporting. Its share in the structure of exports constitutes more than 73% (MFA, Uzbekistan 2015).



## IMPULSE RESPONSE ANALYSIS OF GROWTH WITH DUMMY VARIABLES

Analysis of economic growth in response to the shock of assets, loan and funds, agricultural, industrial sector and two dummy variables is carried out through one of the properties of the VAR that ImpulseResponse Function. The following analysis reviews the three indicators of banking shocks, economic growth of four variables and two dummy variables.

At a later period as shown in Figure 1 is the second quarter, economic growth up until the third quarter, then continued to decline until the fourth quarter. This

condition can occur because the bank assets can be operated optimally and reached its peak in the third period. Economic growth gave a positive response to credit shocks in the second quarter, causing the next shocks to the decline in economic growth in the third.

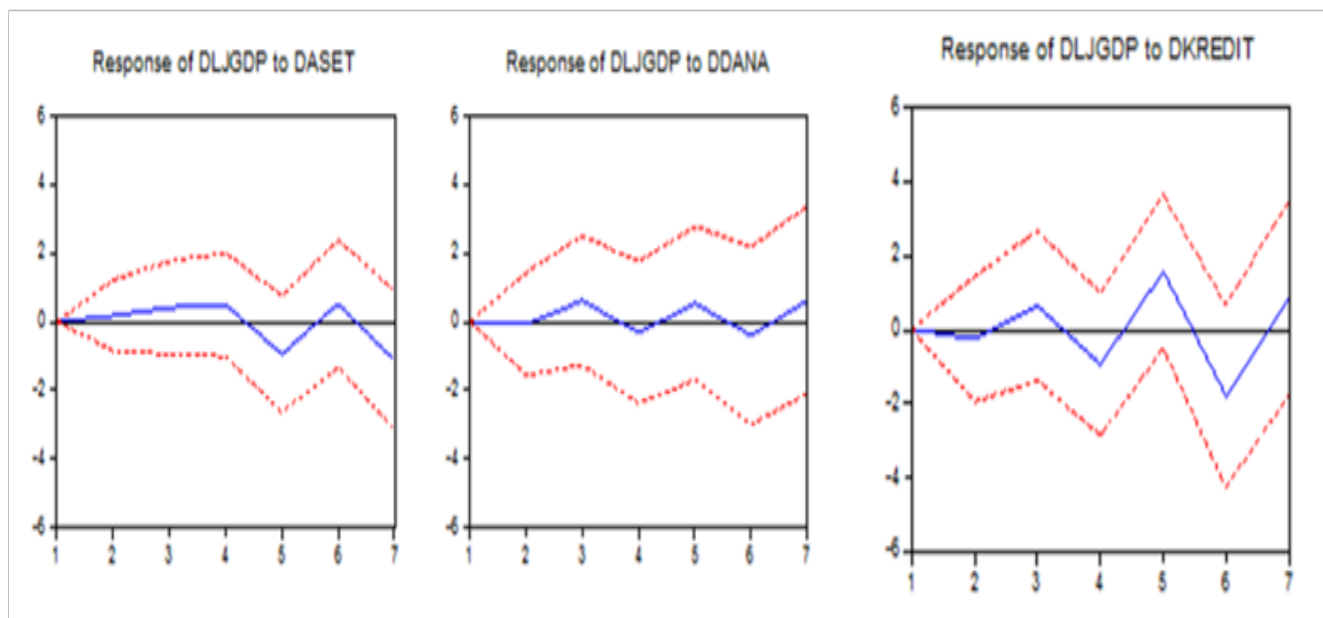


Fig 1. Economic Growth Response of Shock from the Three Indicators of Banking Positive response was also shown by the shock of agriculture and industry variables in the second quarter. In Figure 1. Above shows that the line response to the shocks of economic growth in the agricultural variables rose slightly in the second quarter, then fell in mid-second quarter and continued to decline until the fourth quarter. Positive response was also shown by the shock of agriculture and industry variables in the second quarter. The shock of the industry variables is also positive to economic growth. This is indicated by a line going up from the firstquarter period until the fourth quarter in Figure 2. as follows. The condition can be concluded that the industrial sector is able to move the economic growth is slow but still increasing.

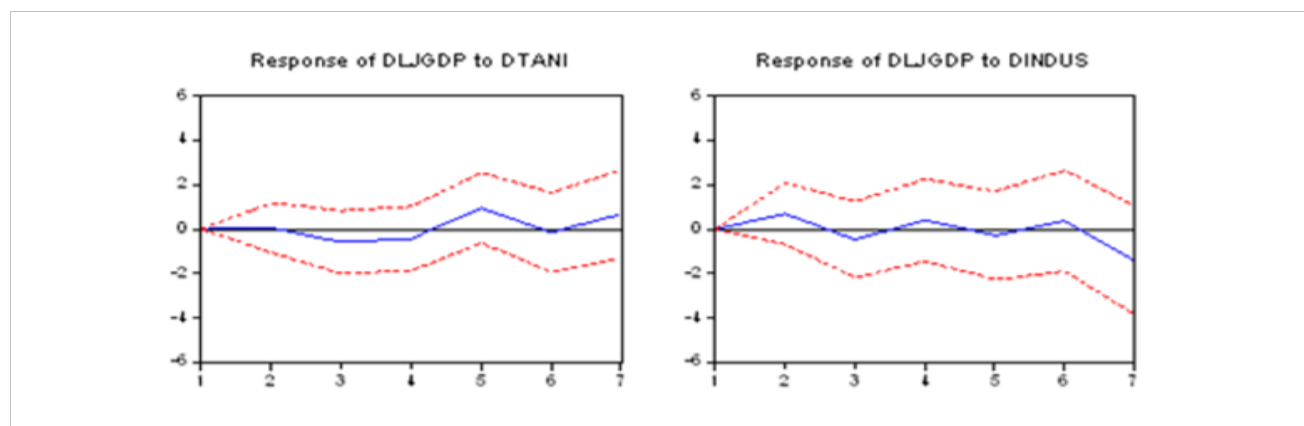


Fig 2. The Response of Economic Growth to the Shock of Agriculture and Industry The same positive response of variable of economic growth in the second quarter describes the roles of both agricultural and industrial sectors

that can drive economic growth for about 6 months. This can be explained that one of the industry sub-sector non-oil industries is comprised of industries including food, beverages, textiles, paper and printed material

impact growing rapidly and providing employment opportunities. Increased demand for products of finished goods or semi-finished both domestically and internationally has led the industry sector to be ranked first in the formation of GDP since the late 90s (BPS, 2009). Another request for an increase occurred in transportation equipment industry, cement industry and chemical industry.

### **Economic Growth Response to the Shock of Monetary Crisis Dummy Variable and Variable API**

The economics crisis that hits Indonesia has brought down the banking performance at zero point. The peak of the crisis is the revocation of business licenses of 16 banks insolvent category (Bank Indonesia, 1998). The next process is the establishment of IBRA as one item in a series of letter of intent (LOI) between the Government of Indonesia to the IMF, with the first LOI was signed on 1 November 1997 (Hermana, 2007). The next IMF loan agreed to provide standby (stand-by credit) amounting to U.S. \$ 10 billion. Other assistance also came from the World Bank and ADB, each with U.S. \$ 4.5 billion and U.S. \$ 3.5 billion (Bank Indonesia, 1998). This is done to save the banking industries in Indonesia. This condition is mainly associated with the loss of public confidence in the national banking industries remained liquidation casualties with 10 banks, four banks recapitalized (Hermana, 2007). In addition, in this period occurred a sharp depreciation in the capital of the bank caused by a fall in asset quality, the banks rush and the negative spread. As a result, the supply of credit falls drastically known the term credit crunch. The same thing also happened with the implementation of the API starting early in 2004. Economics growth in the early period did not give a positive response, even economic growth tends to slow and

only moved up after the fourth quarter.

### **VARIANCE DECOMPOSITION ANALYSIS WITH DUMMY VARIABLES**

The results of variance decomposition show that the three indicators of banking assets, loan and third party funds to contribute to economic growth below 7%. The highest contribution is shown by the third party funds variables in the 7th quarter of 11.434%, while the assets variables in the same period of 4.41% only. The sharp increasing of the percentage contribution of credit which nearly doubled in quarter- period does not occur in third party funds and the assets variable. This indicates that credit is channeled only a small portion coming from third-party funds. The following are the analysis of variance decomposition for the two dummy variables that, the monetary crisis in 1997 and API 2004 respectively to economic growth. Monetary crisis that hit Indonesia in 1997 was felt the impact from the liquidation of 16 banks in November. The impact of the closure of 16 banks namely the establishment of IBRA as an institution that seeks to save the banking industries in Indonesia. IBRA formation is regarded as the beginning of the process of rehabilitation of the banking industry. This phenomenal event gives strongly impact on the Indonesian economy. The result show that the percentage contribution of monetary crisis variable to economy growth in the third party quarter is below 1.5%.

API which was released in 2004 is a basic framework of the Indonesian banking system that is comprehensive and provides direction, shape and structure of the banking industry to create a stable financial system in order to help drive national economic growth (Bank Indonesia, 2009). The percentage contribution of zero percent in the first quarter period can be explained that the implementation of one program in the API is the first



pillar of strengthening the national banking structure to make the bank focused on strengthening the bank's capital. Increasing the minimum capital requirements for conventional banks and sharia banks (including BPD) from 80 billion dollars targeted implementation in 2007 to 2010 billion rupiah in 2010, tend to make the bank refrained from too expansionary in disbursing credit (Medyawati, Nopirin, Bambangutopo, Budi Hermana, 2010) Agricultural and rural development are integral and necessary components of sustainable development. Increased farmers' incomes and higher agricultural workers' wages create increased demand for basic non-farm products and services in rural areas. These include: tools, carpentry, clothes, processed food bought from roadside kiosks. These goods and services are often difficult to trade over long distances. They tend to be produced and provided locally, usually with labor-intensive methods, and so have great potential to create employment and alleviate poverty.

## CONCLUSIONS

Based on the discussion in the previous chapter, it can draw the following conclusion.

- Analysis of the lag obtained from the three VAR models, the agriculture and industry explained the role of banking, agriculture and industry to economic growth through the role relatively small.
- Asset, loan and funds have contribution to economic growth, although the percentage is relatively small compared with other economics variables such as agricultural variable and industrial sectors. Analysis of the percentage contribution of the three banking indicator to economic growth show that banking disintermediation occurs.

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