Internal And External Factor That Influence Liquidity: Case Of Conventional Banks In Indonesia

Soeharjoto, Debbie Aryani Tribudhi, Dini Hariyanti, Erny Tajib

Abstract: In supporting Indonesian economic, banks have a large contribution so, must be maintain the sustainability, with strategies to obtain high profitability but still maintain the LDR liquidity. However, there are external and internal factors that affect the LDR. Purpose of this study is to know about the determination of conventional bank liquidity in Indonesia. LDR is dependent variable and internal independent variable are proxy with ROA, CAR, BOPO, NPL, TPF, while the external variable are proxy with inflation, exchange rate, GDP. Using regression method, with With secondary data, taken from conventional banking industry and macro economics with monthly time series at 2014-2018, from OJK, BPS, BI. Results shown that internal ROA factors has a positive and significant influence to LDR, NPL has a negative and significant influence to LDR, and for external, GDP has a positive and significant influence to LDR, while the other variables have no influence. Banks need to improve their internal performance with strategies in order to increase their profitability optimally, but still with maintaining liquidity, and utilizing digital technology to make efficiency and innovation Government needs to attempt GDP increasing and equalizing, also maintain exchange rate stability and inflation. But, in distributing funds, more favor to small medium enterprises, which more liquid and resistant to economic crisis, and can accelerate increasing equity of community income.

1 INTRODUCTION
Impact of the 1997 monetary crisis that occurred in Indonesia, is still felt today, especially in the banking sector. It because of extreme conditions that impact the number of banks were being liquidated, so public confidence to banks were lost.[1]. This is the impact of the bank's weakness in managing their liquidity[2]. Financial Technology in the digital era makes tighter financial business competition[3]. So, banks need to have the ability to have good quality assets, income and capital while still being able to maintain their liquidity[4]. The purpose is to maintain the reputation of bank performance[5]. However, bank facing the potential risk from not conducive conditions directly and indirectly, which results in losses[6]. Even though, in fact, funding risk and liquidity risk are quite heavy[7]. Banks as intermediary institutions, have a strategic position in promoting economic growth[8]. There are demands on banks which be able to maintain a balance between liquidity and profitability, in order to maintain the fulfillment of capital requirements[9]. By maintaining the health of the bank, that is necessary to maintain liquidity, so that the bank can fulfill its obligations [10]. Bank management strategy strives to have liquidity in accordance with the needs to fulfill its obligations, also to prevent excess or lack of liquidity. Indonesian banking using a dual systems, conventional and sharia banks[11]. However, market share was dominated by conventional banks at 2014-2018, with an average ROA of 2.53 percent, while Islamic banks were 0.85 percent.

With the large potential, it would have an impact on the higher LDR. LDR of conventional banks average is 102.87 percent which is in the unfavorable category, and syariah banks average 87.36 percent which is in the quite good category. The highest value of conventional commercial banks in 2018 was 105.14 percent and the lowest was 100.88 percent in 2017. The highest value of Islamic banks LDR was at 98.65 percent in 2014 and the lowest was at 78.88 percent in 2018.

Fig1. LDR Conventional Banks and Syariah Banks in Indonesia, 2014-2018 (Percent)

Source: OJK

Level of health and liquidity of bank determined by LDR indicators. The bank is liquid, when there is a withdrawal of customers funds, so bank can fulfill its obligations. Banks is liquid, when have a low LDR. But, when the LDR is too low, it reflects amount of idle funds in the bank. It will reduce the bank to be able to obtain profitability. The existence of LDR, influenced by the bank's internal performance, namely ROA, CAR, OER, NPL, TPF. Beside that, the external influence of macroeconomic turmoil are exchange rate inflation and GDP also has a large role in influencing LDR. It is necessary to conduct a research on the determination of liquidity of conventional banks in Indonesia.

2 THEORITICAL REVIEW
Performed liquidity management, banks have a reserve of funds, which can meet according to the needs of the bank, so the existence and image of the bank can be maintained [12]. The impact, if the bank has a shortage of funds will incur additional costs in the form of penalties from the central bank or interbank lending interest, it will even have an impact on the loss of public trust, whereas if bank have excess funds, it will actually suffer losses, due to the occurrence of idle money, banks are burdened to pay deposit interest. This situation, according to the theory of commercial loan, which revealed that loans may be given by banks by attaching short-term letters with the terms of self-liquidating [13]. This means that loan funds need to be backed up in the amount of funds if there is a customer withdrawal. The way is by Sifttability theory, in the form of the ability of banks to transfer assets to other parties at prices that match their predictions [14]. For this reason, it is necessary to apply the anticipated income theory, so that all funds are pursued so that the allocation is in a feasible sector and warranted for banks [15]. Bank will be able to more freely apply liability management theory, so it can manage their liabilities that can be used as sources of funds, but still have good liquidity quality [16].

LDR determination research has been carried out by several researchers. Influencing factors came from internal (ROA, CAR, OER, NPL, DPK) and external (inflation, ER, GDP) from banking. Results shown that ROA have a positive and significant effect on LDR [17]. CAR has a positive and significant effect on LDR [18]. OER has a negative and significant effect on LDR [19]. NPL has a negative and significant effect on LDR [20]. TPF has a positive effect on LDR [21]. Inflation has a negative and significant effect on LDR [22]. Exchange rates have a negative effect on LDR [23]. GDP has a positive effect on LDR [24].

Thus, the research framework is:

ROA is used to determine the ability of bank management to obtain profitability. Increasing point of ROA will increase the banks profit, by distributing public loan funds, the better banks use its assets. High ROA will have an impact on the more reliable banks to distribute their funds, also increase the LDR. Thus, H1: ROA has a positive and significant effect on LDR. All bank assets which contain elements of risk are also financed with own capital and funds that can be collected is called CAR. High CAR indicates that the bank has sufficient capital to deal with the risks. Thus, H2: CAR has a positive and significant effect on LDR. Operating costs with operating income comparison indicator of a company called OER. The higher OER indicates that banking is inefficient, it makes the costs even greater, and has an impact on the greater risk, and distributed fewer funds. Inefficiency came from higher OER, make less the distribution of funds and LDR will be decreasing. Thus, H3: OER has a negative and significant effect on LDR. Higher NPL points, indicates that banks are not healthy, because they have huge non-performing loans, so that they require a loss reserve by setting aside the allowance for earning assets losses (PPAP), impact is in a reduction amount of funds that can be distributed and will even affect the LDR. High NPL will impact a lower LDR. Thus, H4: NPL has a negative effect on LDR. Third Party Funds (TPF) are used to determine the ability of banks to meet their liquidity needs. The greater the DPK, the more funds a bank can raise, which will increase its liquidity. Having a large number of deposits will increase liquidity, thereby increasing the LDR. Thus, H5: TPF has a positive and significant effect on LDR. Inflation reducing purchasing power, and will reduce demand, have an impact on entrepreneurs to reduce their production, and reducing their investment and decreasing loan funds from banks. High inflation will reduce the demand for loan funds from the public, so that it will result in a decrease in LDR. Thus, H6: Inflation has a negative and significant effect on LDR. The weakening of the Rupiah against the US Dollar, affecting the increase in cost of production, make the entrepreneurs reduce their production, impact in decreasing demand for loans, then reduce the LDR. Thus, H7: Exchange rate has a negative and significant effect on LDR. GDP is an indicator of a country's ability, so that an increase in GDP will attract investors to make investments, it will have an impact on the credit distribution by banks, because they think the economic outlook is good. Increasing in GDP will increase the investment, also distribution of bank credit, thus LDR. Thus, H8: GDP has a positive and significant effect on LDR.

3 RESEARCH METHODS

Study of determination conventional bank liquidity in Indonesia, Using population with secondary data from conventional banking industry and macro economics, in the form of monthly time series data, originating from the Financial Services Authority (OJK), the Central Statistics Agency (BPS), and Bank Indonesia (BI), in the 2014-2018 period, with 60 N. Using regression method, and test for fit model, global (F-Test) and Individual (t-test). Regression method is used. LDR as the dependent variable and the independent variable for internal factors is proxied by ROA, CAR, BOPO, NPL, TPF, and external factors are proxy for inflation, exchange rate, GDP. The model used:

$$LDR_t = \beta_0 + \beta_1ROA + \beta_2CAR + \beta_3OER + \beta_4NPL + \beta_5TPF + \beta_6INF + \beta_7ER + \beta_8GDP + \epsilon_t$$

Information:

$$LDR = \frac{\text{Total Loans}}{\text{Total}}$$

$$ROA = \frac{\text{Net Income}}{\text{Average Total Assets}}$$

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CAR = Capital Adequacy Ratio formula as follows:

\[ \text{CAR} = \frac{\text{Capital}}{\text{Risk-Weighted Assets}} \times 100 \]

OER = Operating Efficiency Ratio formula as follows:

\[ \text{OER} = \frac{\text{Operating Income}}{\text{Operating Cost}} \times 100 \]

NPL = Non-Performing Loan formula as follows:

\[ \text{NPL} = \frac{\text{Bad Loans}}{\text{Total Loans}} \times 100 \]

TPF = Third Party Fund formula as follows:

\[ \text{TPF} = \frac{\text{Demand Deposits} + \text{Time Deposits} + \text{Savings}}{\text{Total Deposits}} \times 100 \]

INF = Inflation formula as follows:

\[ \text{INF} = \frac{\text{CPI}_{t} - \text{CPI}_{t-1}}{\text{CPI}_{t-1}} \times 100 \]

ER = Exchange rate formula as follows:

\[ \text{ER} = \frac{\text{Rupiah}}{\text{USD}} \]

GDP = Gross Domestic Product Based year 2010, with formulas as follows:

\[ \text{GDP} = \text{Consumption} + \text{Investment} + \text{Government Spending} + (\text{Exports} - \text{Imports}) \]

### 4 RESULTS AND DISCUSSION

Conventional banks internal and external factors vary in the mean values in 2014-2018. Internal factors have an average in the excellent category are ROA at 2.53 percent, with the highest value of 3.24 percent in March 2014 and the lowest of 2.13 percent in July 2015. CAR at 25.90 percent in the very adequate category. The highest value is 29.14 percent at January 2018, and the lowest point is at 22.60 percent at January 2014. Average OER at 81.04 percent, in the excellent category, with 84.40 percent is highest point at January 2017 and 76.23 percent is the lowest point at October 2014. LDR average is at 102.87 percent, in excellent category, 110.83 percent is the highest point at December 2018, and 98.72 percent is the lowest point at March 2017. NPL average is at 2.59 percent, in good category, 3.29 percent is the highest point at November 2016, and 1.91 percent is the lowest point at January 2014. Average TPF is 7.593.32 billion, with Rp. 8.885.31 billion as the highest point at 2018 and the lowest point is Rp. 6.356.79 billion at 2014. Macro factor with inflation average of 0.35 percent is included in the low category. The highest point at December 2014 at 2.46 percent and the lowest point at -0.45 percent in April 2016. Exchange rate average is Rp. 13,267.48 with the highest point at Rp. 11,404 in March 2014 and the lowest point is at Rp. 15,227 in October 2018. Average GDP is Rp. 2,363.19 Trillion, with the highest point at Rp. 2,683.21 trillion in 2018 4th quartal, and the lowest point is at first quartal of 2014 Rp. 2,057.83 trillion.

### Table 1. Conventional Banks Internal and External Factors 2014-2018

<table>
<thead>
<tr>
<th></th>
<th>ROA</th>
<th>CAR</th>
<th>LDR</th>
<th>OER</th>
<th>NPL</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVG</td>
<td>2.53</td>
<td>25.9</td>
<td>102.87</td>
<td>81.04</td>
<td>2.59</td>
</tr>
<tr>
<td>Max</td>
<td>3.24</td>
<td>29.14</td>
<td>110.83</td>
<td>84.4</td>
<td>3.29</td>
</tr>
<tr>
<td>Min</td>
<td>2.13</td>
<td>22.59</td>
<td>98.72</td>
<td>76.23</td>
<td>1.91</td>
</tr>
</tbody>
</table>

### Table 2. LDR Estimated Model for Conventional Bank

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstd.Coeff.</th>
<th>Std. Coeff.</th>
<th>T</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cons.</td>
<td>25.082</td>
<td>26.708</td>
<td>.939</td>
<td>.352</td>
</tr>
<tr>
<td>ROA</td>
<td>3.954</td>
<td>.242</td>
<td>1.764</td>
<td>.084</td>
</tr>
<tr>
<td>CAR</td>
<td>-.611</td>
<td>.387</td>
<td>-.427</td>
<td>-.1578</td>
</tr>
<tr>
<td>OER</td>
<td>.706</td>
<td>.241</td>
<td>.574</td>
<td>2.926</td>
</tr>
<tr>
<td>NPL</td>
<td>-.414</td>
<td>1.298</td>
<td>-.526</td>
<td>-.3191</td>
</tr>
<tr>
<td>TPF</td>
<td>-.003</td>
<td>.001</td>
<td>-1.117</td>
<td>-2.65</td>
</tr>
<tr>
<td>ER</td>
<td>1.719</td>
<td>.565</td>
<td>.298</td>
<td>3.043</td>
</tr>
<tr>
<td>GDP</td>
<td>.026</td>
<td>.005</td>
<td>1.771</td>
<td>4.799</td>
</tr>
</tbody>
</table>

Dependent Variable: LDR

ROA effect on LDR, indicated by 3.954 estimated coefficient value, which means increasing ROA will increase LDR and vice versa, decreasing ROA will decrease LDR. With a significance value of 0.084 / 2 = 0.042 <0.05, means ROA has a positive and significant effect on LDR. CAR effect on LDR is shown by the estimated coefficient value of minus 0.611, which means an increase in CAR will decrease the LDR and vice versa, decreasing CAR will increase the LDR. With a significance value of 0.121 / 2 = 0.0605 <0.05, which means that CAR is not proven to have a positive and significant effect on LDR. OER influence on LDR, indicated by
the 0.706 estimated coefficient value, which means increasing OER will increase LDR and vice versa, decreasing OER will decrease LDR. With a significance value of 0.005 / 2 = 0.0025 <0.05, means that although the LDR is significant, because the sign is contrary to the theory so that OER has not been proven to affect the LDR. NPL effect to LDR is shown by the estimated coefficient of minus 4.141, means that an increase in NPL will decrease the LDR and vice versa, a decrease in NPL will increase the LDR. With significance value of 0.002 / 2 = 0.001 <0.05, means that NPL has a negative and significant effect on LDR. Inflation effect to LDR, indicated by an estimated coefficient of 1.719, means rising inflation will increase LDR and vice versa, decreasing ROA will reduce LDR. With a significance value of 0.004 / 2 = 0.002 <0.05, means, even though inflation is significant to LDR, because it is contrary to the theory that inflation has not been proven to affect the LDR. TPF effect on the LDR is shown by the estimated coefficient of minus 0.003, means that the increasing in DPK will decrease the LDR and vice versa, the decrease in DPK will increase the LDR. With a significance value of 0.011 / 2 = 0.0055 <0.05, means that although DPK is significant on LDR, because it contradicts the theory, so DPK has not been proven to have an effect on LDR. The effect of ER on the LDR is shown by the estimated coefficient value of minus 0.000, means that increasing in ER will decrease the LDR and vice versa, decreasing in ER will increasing LDR. With a significance value of 0.854 / 2 = 0.427> 0.05, means that there is no proven effect between ER on LDR. Effect of GDP to LDR, indicated by estimated coefficient value of 0.026, means increasing of GDP will increase LDR and vice versa, decreasing GDP will decrease LDR. With a significance value of 0.000 / 2 = 0.000 <0.05, means that GDP has a positive and significant effect on LDR. Internal and external factors, some are influential and some are not to LDR. For internal factors, ROA has a positive and significant effect to LDR based on previous research (25), NPL has a negative and significant effect on LDR based on previous research (26), and GDP as an external factors has a positive and significant effect to LDR based on previous research (27). This condition shows that banks have implement the provisions set by the central bank, which has been implementing the precautionary principle, while still optimizing its profitability. Government needs to make policies to strive the increasing and equitable distribution of public income. CAR, OER and TPF are factors that have no internal effect, and inflation and exchange rate are external factors. Banks need to further improve their efficiency and innovation, by using digital technology, as well as maintaining bank credibility in order to increase public trust. Government needs to strive for a conducive macroeconomic, by maintaining a stable exchange rate and inflation. But, in distributing funds, more favor to small medium enterprises , which more liquid and resistant to economic crisis, and can accelerate increasing equity of community income.

5. CONCLUSIONS AND SUGGESTIONS

Conventional banks LDR in Indonesia is influenced by external and internal factors. Where internal factors are more dominant than external. ROA as an internal factors has a positive and significant effect on LDR, NPL has a negative and significant effect on LDR, while GDP as an external factor has a positive and significant effect on LDR. CAR, OER and TPF, as an internal factor, inflation, and exchange rate as an external factors are not affect to LDR. Banks need to improve their internal performance by increasing profitability with maintaining liquidity, as well as making efficiency and innovation by utilizing digital technology. In addition, government needs to increasing and equitable GDP and maintaining exchange rate stability and inflation.

REFERENCES


