

CHAPTER V

CONCLUSION

5.1 Conclusion

The purpose of this research is to examine the efficiency of regional development banks in Indonesia for the period of 2011-2016 under a non-parametric data envelopment analysis (DEA) approach. The research commences determining input and output variables from 25 BPD based on three approaches i.e. intermediation, operation and asset. The Multi-stage DEA adopted to generate the efficiency score, projected value and benchmark(s) from efficient frontiers. Input-orientated variable return to scale (VRS) is specified in data analysis.

Based on the analysis and discussion that has been done in this research, the results of this research have the following conclusions:

1. Under intermediation variable approach, the result indicates that only 28.0% which considered as efficient frontiers, it means only 7 BPD that have been efficient in performing its function as intermediary source of finance, while the rest 76.0% or 18 BPD was still considered as inefficient with the minimum efficiency score of 0.760. The average score of efficiency in the last 6 years was 0.936, which displays that there was 40.0% or 10 BPD with inefficiency below average.
2. Under operation variable approach, The efficient frontier only considered for 24.0%, meaning that only 6 BPD that have been well

performed in managing costs to generate revenues of operation. It determines the average score of efficiency was 0.824 during the observed period. There was 52.0% or 13 BPD which has efficiency below the average. The lowest average score during the last 6 years was 0.515.

3. Under asset variable approach, it considers only 8.0% or 2 BPD which classified as efficient frontier, the rest 92.0% or 23 BPD was inefficient. The average and minimum efficiency scores indicate at 0.836 and 0.515 respectively. The study reflects that 52.2% of inefficient BPD which below average score.
4. Most of inefficient performance of BPD in this observation caused by the underachieving outputs variables of the three approaches given the set of input consumed during the operations. The benchmark for inefficient BPD is not always coming from the perfect score efficient frontiers.
5. The multi-stage analysis determines that the efficiency score of BPD which has the greatest amount of core capital consistently considered as the highest average of efficiency score in the three variable approaches during the period of observation.

5.2 Research Limitation

1. This research does not complete with the consideration on macroeconomic factors which may influence the performance of BPD during the period of observation.

2. DEA provides insights on which areas that need an improvement, but it does not have a specified information about how to improve those areas. Hence, the further investigation is needed to identify which approach that may be applicable for each BPD in order to catch up the efficient frontier.
3. This research generates input-orientated approach in data analysis specification. It found that most projected value of input consumed from inefficient BPD were supposed to be declined. The study suggest that reducing input variables consumed may not always be applicable in the real banking operations.

5.3 Recommendation

The research provides some insights for related parties such as BPD management and Bank Indonesia, investor and customer and for subsequent researcher as below:

1. BPD management and Financial Service Authority can utilize the efficiency measurement approach such as a non-parametric Data Envelopment Analysis (DEA) in order to complete the financial ratio analysis in assessing the performance of BPD in Indonesia. The efficiency measurement must be directed continuously to perform the simultaneous evaluation in banking operations. In accordance with the DEA approach, most BPD are encouraged to continuously establish innovation towards the sustainable performance improvement and BPD management also can put more attention to the projected value in order to catch up the efficient frontiers.

2. The information of performance evaluation of BPD need to be published because it will be useful for investor and customer in decision making process. The investor will be directed in investment decision and maintain the customer trust for banking services towards the sustainable development.
3. For subsequent researcher:
 - i. This research employs DEA by generating the input and output variables from three approaches that mostly used in the preceeding studies. The next research may specify and give more detail regarded those variables to determine the more traceable amount of projected point.
 - ii. The next research can employ the production approach in determining the input and output variables to examine the performance of branches of each BPD in Indonesia. The generalized DEA (GDEA) may also be conducted to measure the performance of bank branches.
 - iii. The next research can complete the analysis with the effect of macroeconomic condition on performance during the period of observation.
 - iv. The subsequent researcher also suggested to broaden the implementation of DEA methodology to assess the other sector performance, such as mining companies, manufacturing companies, hospital operations, university staffs and so on.