

ERSA Research Brief

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Decomposition of the Technical Efficiency: Pure Technical and Scale Efficiency of the Financial System

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Banks are vital institutions in any society as they significantly contribute to the development of an economy through facilitating development of saving plans and are instruments of the government's monetary strategy. Given the centrality of banking institutions an analysis of the bank efficiency is used to evaluate the sources of banking profitability. An efficient bank is supposed to generate its profits through effective utilisation of resources rather than through exploitation of market. Banks that are efficient reduces wastage of resources and enhance competition. Bank managers can improve cost efficiency by adopting better technologies; alternatively, enhance capital through improving profit efficiency by adopting new marketing and pricing methods.

The concept of efficiency in banking is controversial hence has been studied in different dimensions. Allocative efficiency is the extent to which resources are being allocated to the use with the highest expected value. A firm is technically efficient if it produces a given set of outputs using the smallest possible amount of inputs. Alternatively, technical efficiency is the ability of the firm to maximise outputs from a given set of inputs and is associated with managerial decisions. The technical efficiency scores can be decomposed into pure technical and scale efficiency to determine the main source of the technical efficiency. Scale efficiency refers to the relationship between the level of output and the average cost hence it relates to the size of operation in the organisation.

The study sought to measure the technical efficiency of the commercial banks in Zimbabwe during the period 2009 -2015 using the non-parametric approach of data envelopment analysis. The study decomposed the technical efficiency of commercial banks into pure technical efficiency and scale efficiency. The choice of Zimbabwe as the laboratory has been chosen because of the unique developments that characterised the country. There has been an increase in net interest rate margin, which approximates banking sector efficiency, nine bank failures since 2009, signifying an element of inefficiency in the system. The banking system has been characterised by deteriorating asset quality during the period 2009 to 2016, which could signal managerial inefficiency in the process of asset creation.

The study has revealed that commercial banks in Zimbabwe are technically inefficient. The results revealed that commercial banks in Zimbabwe were technically inefficient with the average efficient score of 82.9 percent during the period 2009-2015. This result implies that the average commercial bank suffered a 17.1 percent level of technical inefficiency. In other words there was increased scope for the commercial banks to increase their output if they had operated at the same efficient level as the most efficient bank in the sample.

The average pure technical efficiency score was 96.6 percent for the period 2009-2015. The pure technical efficiency score was increasing over the period 2009-2015 implying that the managerial efficiency of the banks was improving during that period. The average pure technical efficiency was one in 2014, meaning that all the commercial banks attained pure efficiency of one during that year. The average scale efficiency of the commercial banks in Zimbabwe for the period 2009-2015 was 0.8564.



Overall the results means that the technical inefficiency of commercial banks is a result of scale inefficiency rather than pure technical inefficiency. The results mean that most of the commercial banks are operating at the wrong scale of operations. Specifically the banks were operating under decreasing returns to scale, where there is still opportunity to increase operations to obtain optimum scale.

The study therefore recommends that banks should review and rescale their scope of operations so that they optimize the scale of operations to levels that guarantees both pure technical and scale efficiency. The lessons drawn from the study which can be applicable to other countries including South Africa is that there is need for constant review of the efficiency of the banking sector so as to determine whether banks are operating at the correct scale of operations or bank management are deploying resources to their best use in order to produce optimum output.