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Jurnal
Perspektif Pembiayaan dan Pembangunan Daerah

(Journal of Perspectives of Financing and Regional Development)

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Hopefully in the next issue can be presented articles with issues and from more diverse circles.

Happy joy reading

Editorial

Merger & acquisition strategy for growth, improved performance and survival in the financial sector

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Abstract
This paper aims to provide comparative information on mergers & acquisition activities in the banking sector of Pakistan. This study used accounting ratios to analyze the financial performance of banks in Pakistan after merger and acquisitions. The study utilized secondary data which were taken from Thomson Financial Services Worldwide M&A database, financial statements of bank's corporate website and Pakistan stock exchange. In this study, financials for eleven years (2005-2016) were analyzed by using ratios. In spite of certain limitations, accounting ratios are still reflected as an easy and reliable analytical tool. Ratio analysis, being a time-tested method, is most frequently employed in all financial decision-making processes. The results show that the financial performance of banking sector of Pakistan in the capacities of profitability, and leverage, has been quite satisfactory before the merger deal. It means that merger deal fails to improve the financial performance of the bank, and banks merge with other small or equal size banks only to capture market share, to open Islamic window, for cost-cutting, to create synergy, to gain efficient resources and to unlock hidden values.

Keywords*: Merger, Acquisition, Financial firms, Financial performance*

INTRODUCTION

The financial sector is the most important component of any country's economy and shares the significant percentage in the gross domestic product of the country. Pakistan's financial sector comprises banks, leasing companies, DFIs, Mutual funds, Modaraba companies, exchange companies, house finance institutes, insurance companies, investment banks, and venture capital. All these financial institutes are under the control of state bank of Pakistan & Security Exchange Commission of Pakistan. More specifically state bank regulated the banks and non-banking financial institutes are being regulated by SECP. The role of financial sector is to provide platform to foreign investor to bring investment through secure channel, to give a proper channel to domestic investor to trade internationally, through financial sector, state bank of Pakistan regulates the economy through monetary policy and to be the source of financing to new business, agriculturists, farmers and individuals at market rates.

The importance of Financial Institutions (FIs) cannot be understated, financial institutions play the role of intermediary between the sources of funds depositors and holder of securities and users of funds like businesses. The economy cannot survive and grow without the proper and smooth working of the financial institution. The financial institute works as a catalyst for the growth of the economy. The state bank of Pakistan plays a very crucial role in maintaining smooth working of financial institute firstly it ensures the sound working of banks through prudential regulations, secondly, it pursues a growth objective under which it enables financial markets developments and improvement of access to finance. The State Bank of Pakistan (SBP) is united under the State Bank of Pakistan Act, 1956, which gives the Bank the right to function as the central bank of the country. The SBP Act orders the Bank to regulate the monetary and credit system of Pakistan and to foster its growth with a view to securing monetary stability and fuller operation of the country's productive resources. SBP executes both the traditional and developmental functions to achieve macroeconomic objectives. The traditional functions, which are generally done by central banks almost all over the world, may be classified into two groups: (1) the main functions including issue of notes, regulation and administration of the financial system, bankers' bank, lender of the last resort, banker to Government, and conduct of monetary policy, and (2) the second function includes the agency functions like supervision of public debt, management of foreign exchange, etc., and other functions like recommending the government on policy matters and maintaining close relationships with international financial institutions. The non-traditional role performed by the State Bank include the development of financial agenda, the institutionalisation of savings and investment, the establishment of training facilities to bankers, and provision of credit to priority sectors. The State Bank of Pakistan also has been playing an active part in the process of Islamization of the banking system.

State Bank of Pakistan has been trusted with the accountability to formulate and conduct financial and credit policy in a manner constant with the Government's objectives for growth and inflation and the sanctions of the Monetary and Fiscal Policies Co-ordination Board with respect to macroeconomic policy objectives. The basic objectives are the maintenance of monetary stability, leads towards the stability in the national prices, as well as the promotion of economic growth. One of the essential responsibilities of the State Bank is regulation and supervision of the banking financial system to ensure its reliability and stability as well as to protect the interests of depositors. SBP also plays to regulate foreign exchange value of country and regulate these functions under the foreign exchange Act 1947, under this Act SBP authorize the banks to buy and sell foreign exchange in order to maintain sustainability.

State of Pakistan has a control on the operation of banks by the tools of capital adequacy ratio CAR and paid-up capital. Banking sector of Pakistan is the important source of finance, import and export proceeds, financial management and payment settlement. Basel accord was applied to ensure capital obligations and to cope up with unforeseen unabsorbed losses. According to this accord, two capital standards have been forced on Pakistani banks; the first one is known as a minimum capital requirement (MCR) and the second one known as capital adequacy ratio (CAR). The banking sector of Pakistan is one of the financial sectors and it is comprised of 34 commercial and 4 specialized banks, it functions as facilitation of payment system, allocation of loanable funds, saving mobilization. Banking sector of Pakistan complies with the Basel III standards.

The banking sector in Pakistan has undergone changes since its beginning. In March 1947, 99 commercial banks listed on the Second Agenda of Reserve Bank of India were operating a network of 3,496 branches in united India. After the statement of partition on 3rd June 1947, all the banks having their registered offices in Pakistan transferred them to India. Further, Indian banks closed a large number of their offices in Pakistan, due to which the number of scheduled bank offices declined from 487 in March 1947 to only 81 on 30th June 1948.

Over the years major changes have taken place in the banking sector, 80% of the banking assets are controlled by the private sector and the privatization of nationalized commercial banks has carried a culture of expertise and service orientation in place of bureaucracy. Banking sector in Pakistan is divided into four group: Large banks (Total assets in excess of 900 Million), medium size banks (Bank's asset is in the excess of 150 Billion and less than 900 Billion), small banks (Total Asset is less than 150 Billion) and Islamic banks (All banks in Pakistan carrying out the Islamic banking transactions). Competition in the banking sector in increasing day by day due to changes in the global environment, every other bank wants to raise its market share by providing efficient services to its clients. Many banks go for merger and acquisitions for improved performance and use this as a strategic tool in the financial sector. Banks move to mergers and acquisitions in order to increase market share and to reduce the number of competition in the market.

During last decades many theories have been conducted on the M&A's impact on banks profitability. Mehmood and Loan (2006) concluded that M&A'S provide cost efficiency, shrink banks cost which becomes the basis of increment in banks profitability. Resti (1998) argued that merger and acquisitions strategies increase efficiency if the management has full control over the organization. Lo et al, (2006) argued that there is a positive relationship between merger and acquisition and cost saving, it also effects on profitability because merger strategies increase the capacity of production and resources to attract loans, power, skills and management control. Business grows as new blood inducted with new stakeholders who have power and intelligence to control the banking operations. According to Dymski and Gary (2002) stated, organizations go for merger and acquisitions in order to strengthen their financial positions through increased financial resources, production increases and companies are able to fulfil demand .sometimes mergers are need of government policies. New markets can be accessed to increase sales, performance through mergers.

Many studies proved that these mergers and acquisition improve the price effectiveness because of these profits of banks increases. Effective performance is not compulsory for all organizations as Hubbard (2001) stated, half of the organizations could not attain desired objectives, because of different objectives of both entities, culture, policies, mission and vision. Different ratios and analysis have been taken out to find the effect of merger and acquisitions has on the performance of banks in Pakistan. Due to merger and acquisitions organizations are in a position to take the decisions strategically, banks take actions on stock prices more accurately as they have expertise as a result of merger and acquisitions, management changes take place and bring about new policies and procedure to respond the market efficiently.

Purpose of Merger and acquisitions is to benefit organization with different cultural values and to share the control of a joint entity with another owner. In banking sector of Pakistan, major changes have been seen and reforms took by state bank of Pakistan, factors that lead to merger and acquisitions are regulatory requirements, legal framework amendments, and for-profit, state bank of Pakistan made a criteria to maintain the capital adequacy ratio and minimum paid up capital for banks to sustain its existence, otherwise banks combine together if they fail to do so.

State bank of Pakistan focus was to merge the Pakistani banks during the 1900s and to decrease the number of banks; the minimum capital requirement was 6 Million by 2009.

All banks have to fulfil these obligations imposed by SBP to sustain its existence otherwise there are merger and acquisitions takes place. The results of merger are improving value of stakeholders and enhance efficiency, enhancing personal control, and to strength the financial control over weaker banks A phenomenal change has been seen in the banking industry of Pakistan in recent years, owing to The liberal reforms executed by the State Bank of Pakistan and the effective restructuring of banks. The Industry has been changed from slow-moving, government-dominated sector into a much more active, competitive and profitable industry.

State bank of Pakistan is the authorize body that regulate all banking sector for smooth working of economy and management of financial transactions, for regularization of economy , the state bank of Pakistan announces the minimum paid-up capital and ordered to open certain number of branches also the capital adequacy ratio required to maintain and sustain in competitive market . In order to meet these challenges and to maintain paid-up capital, banks move towards merger and acquisitions. Mostly those banks which could not meet the minimum capital requirement are forced to merge with another bank. For acquiring a bank, this is one of the strategies for growth and expansion in the market but there are some risks and challenges arise after merger and acquisitions as different banks with different work behaviour, Strategy, policies combine in order to gain corporate development and growth. The vital importance of merger on the performance of banking industry has not been fully explored thereby creating a research gap in this area. Hence, this research work will examine the effect of merger and acquisitions on the performance and growth of the financial sector. How internal and external factors effect on profitability, market value and leverage of the bank.

The reason for the review is to look at the effect of merger and securing of banks on their budgetary execution. Since keeping money rebuilding is a fundamental piece of the nation, saving money specialists need to centre that whether this merger or securing increment the budgetary wellbeing of the substances or not, sound managing an accounting framework is essential for the monetary development and soundness.

For any business to get business in the marketplace and to gain a market share, it is very compulsory to beat the competitor and achieve the success. Merger and acquisition are the strategic tools adopted by most businessmen for improving performance and business enlargement. This Merger strategy has been used by the organization for decades in order to increase the efficiency and profitability. This strategy has been visible in most of the developed countries as compared to developing countries. From recent years, developing countries have also adopted this strategy as a tool for survival and growth in their respective field.

Awan and Mahmood (2015) described that merger and acquisitions are carried out by most of the banks in financial sector because of synergy they want, banks go for this strategy in order to expand their business or branches, in this way the performance of banks increase and get full resources for its working, a high network of bank branches. They argue that performance of banks also affected sometimes as the top management of acquiring bank overestimate their abilities and cannot deliver as they planned. Merger and acquisitions have a greater impact on the performance of banks on a short-term basis and less on a long-term basis only if banks make continuous efforts to prove it. Government plays a great role in helping organizations to provide the platform to operate and earn revenue in the strategy.

Sapienza (2002) explained the effect of merger and acquisition on borrowing facilities of creditors, he explained that mergers bring efficiency to banks that are profitable for borrowers, and after merger and acquisitions the interest rate applicable to borrowers decreases. Further, if mergers occur between two large banks then the interest rate is higher and borrowers suffer, it monopolize power in the market.

Forcarelli, Panetta and Salleo (2002) described the purpose of mergers in financial sector is the financial service and integration in market, and quality of loan also affected, banks go for merger and acquisition for full integration in target market, large banks already holding the market with strong services and product portfolio so the acquirer bank need to capture the market and merge with the same bank to hold their target customers. The author argued that the efficiency of banks after merger only increases if the quality of loan increases.

Hagendorff and Nieto, (2015) described the effect of banks mergers in Europe on soundness of both acquirer and acquiring banks, it emphasize that the prudential regulations play a important factor in working and profitability of banks after merger and acquisitions, in European countries after introduction of Euro ,this study focus on the capitalization impact on short term period after merger, liquidity and earnings, acquirer bank to a lesser extent than target bank be stronger financially if the supervision and regulatory requirements of acquirer are strong, also the strict regulatory requirement make it tougher for banks to make bad mergers.

Doukas and Zhang, (2016) examined that top manager received handsome pay after merger and acquisitions of the organization, it includes compensation which increases with firm size, target size, value creation for bidders, and synergies that created from mergers are checked in the banking sector and described that managers are chasing extra pay after the merger. Manager’s envy is the reason for merger and acquisition. Empirical analysis shows that bidder’s market capitalization has not any change from the target banks, acquiring banks are smaller in size in early stages of merger than at the late steps of merger waves, also the transaction value at the initial stages is smaller than that of later stages, early mergers are linked with increased bidder returns than late mergers and larger long-term performance. Higher synergies tend to increase at the early stage of a merger than those of late merger. Mergers and acquisitions are also affected by envy pay. This study has less linked with envy pay from its results on the propensity of the merger. The main cause that envy pay among top managers generates bank’s mergers and acquisitions waves, envy pay is the driven force behind merger and acquisitions in the banking sector at top managerial level.

Merger waves in the banking sector have not examined eagerly as compare to industrial merger waves envy is the feeling by admiration and the comparison of qualities possessed by other person, decisions are merger is also based on top managers pay scales that acquirer bank offer and target bank pay. The stock valuation has a strong impact on mergers, at the time of bull and bear market acquirer bank find the undervalued banks and target them. Mergers and acquisitions at the earlier era give higher bidder return, small targets, and high compensation gains from acquirer top managers as compared to late acquisitions in merger waves.

Hagendorff and Keasey, (2009) examined European banks adopted a cost-cutting policy by improving efficiency level and also cost-cutting at both levels that is labour cost and lending. The United States of America on the other side, try to increase interest and non-interest income after the merger and acquisitions period. Efficiency can be seen through the return of assets ratio, return on equity ratios, banking sector of the USA and Europe differ structurally, as in the United States of America, series of deregulatory measures examined, and in Europe, introduction of Euro, its integration in capital market in Eurozone has increased competitive pressure for banks from customers and capital market. Here two strategies are defined to increase efficiency that is cost cutting (labour) and by increasing revenue (financial products offering), European banks try to minimize the non-interest expenses and retreat the lending procedures after merger period. The US engaged in revenue increment strategy that focuses on increasing non-interest and interest based income. European banks give small gains performance wise but the US does not show any changes in performance level after the merger of banks, Europe focus on product diversity and cross-border mergers, in Europe it takes three years for banks to generate revenue performance wise, several studies are predominant in Europe and USA.

Pasiouras et al., (2011) concluded the empirical investigations linked with bank's capital market and has the impact of the regulatory framework and capital adequacy requirements, disciplinary power, accounting information and liquidity. This study focuses on the regularity framework and supervisory power to find the bank acquisition as target and acquirer as compare with non-acquirer. Acquirer and acquiring bank both are larger in size, capitalize and little cost-efficient, target bank is less profitable and low growth opportunities than those of acquires. Highly liquidity firm less likely to open itself for merges. Acquisitions and mergers occurred to gain market power in European countries to maintain their position within national borders. Banks working in the strong regulatory environment are less intend for mergers also banks need to maintain high capital adequacy ratio standards. Low regulatory requirements like less control on accountability, less disciplinary actions and diversifications force the acquirers to involve in merger and acquisitions.

Karceski, Ongena and Smith, (2005) estimated the impact of merger and acquisitions on bank's borrowers share value price. Target bank always gets lost in equity value and acquiring bank get positive returns, debtors welfare in affected by strategic focus, target bank's debtors lose their long-term relationship with negative returns. This study examines how share price effects and shows volatility after the news of banks merge and borrowers buying pattern also switch in Norway. These mergers also bring various changes like services offered by bank and removal of personnel who are valued by target borrowers.

Haushalter and Lowry (2011) showed the relationship between the stakeholders and analyst of investment bankers, a bundle of information from an analyst of investment bankers flow to many departments of banks, any changes in shareholdings of acquirer are linked with changes in the wording of analyst. This theory shows that recommendations by an advising bank's analyst are more valuable for an acquirer following a merger. There is a conflict of interest exist between investment banker's analysis and acquirer bank that relies less on recommendations. Variations between recommendations occur are based on the different viewpoints that change in analysts and information set and incentives behind these recommendations.

Kumar (2013) described that for the banking system to maintain its position and gain market share, consolidation is necessary between banks as it has a major impact on profitability and efficiency of acquirer bank. He concluded that improvement and proper working is necessary for banks to sustain and earn profitability in all departments after merger and acquisitions. He argued that competition is necessary between local and foreign banks and every bank need a global identity to remove excess capacity and also public structure and policy is the base for banks to merge, banks merge to be a strong financial sector. Central bank's main concern is the financial stability as integration reduced cost, brings down competition, better access to market and use of technology and reduced economic dependence.

The author discussed that various reason is required to exist for merger and acquisition to implement effectively that is growth, cost and improved return on asset. These attributes are necessary to compete internationally. Controlling bank maintains stability by managing functions of banks by trying not to give them the power to monopolize in the market after the merger, but this step only leads to the public interest. The last strategy to absorb loss is the capital acts, therefore, merged entities should be adequately capitalized to meet requirements. Merger and acquisitions create the large financial conglomerates, no single shareholder or group is powered to influence the banks and authorities should confirm that existing practices are strong and control such entities.

Nadia, (2015) explained the performance of the targeted banks in Pakistan that is an Allied bank, NIB bank and Faysal bank. After the merger, banks do not show performance in long run but after continuous improvement of three to four years, it shows improvement and growth. This study shows the empirical results and measure performance on return on Assets, return on equity and earning per share. Results show that asset efficiency of two banks increases and one bank decreases after merger and acquisition, but on the average performance decline in the merged year and increases after few years. Return on equity also shows the mix results, increase in 1 bank and decreases in other banks.

Kemal, (2011) concluded that merger and acquisitions do not guarantee the performance increment in the area of profitability, liquidity, leverage and cash flows. Twenty ratios have been used to analyse the performance within four years; the average of these ratios shows that merger of royal bank of Scotland into Faysal bank fails to increase its profitability; this merger proves to be a failure in banking history.

Smirnova, (2014) analyzed the factor that motivates the merger and acquisition process in banking sector, thirty-eight second-tier banks have been analyzed and their behavior in merger and acquisition deals .empirical findings suggest that there have been two waves of merger and acquisitions in Kazakhstan .the first wave was base of weak insolvent banks, government reorganization program and privatization of banks. The second waves took place on the 2000s when foreign banks attracted and started their investment; the government took action and nationalize insolvent banks, study shows that banks faced liquidity issues at the time of merger and acquisitions and to stabilize the situation, the government of Kazakhstan implemented the nationalize program and obtained control in the insolvent banks. Some merger and acquisitions in Kazakhstan are the results of desire to grow and expand its operations internationally and to raise fund, increase shareholder's value and grow revenue, increase the client portfolio and to provide diversified products and services, and other bases of merger and acquisition are the competitive forces, economic, legal and political pressure and technology-driven forces.

Ahmed and Nadeem (2015) defined merger and acquisitions by which banks raise their resources and enjoy the benefits, merger and acquisitions gives an organization a joint effort to work effectively, a large number of resources, knowledge, skilled team members all these factors combine together and provide positive results after merger and acquisitions. The author described that in Pakistan figures of merger and acquisitions are not effective and proven as compared to developed countries because in Pakistan, the decision of merger and acquisitions done without proper working and considerations. Results of this study concluded that in Pakistan, not all merger and acquisitions are effective and result oriented as banks need to get more information before going for merger and acquisitions and consider all other factors like the environmental factors, stake holder’s value, market viability, market value and market position of target bank.

Ghosh and Dutta (2015) explored that for Indian banking industry , merger and acquisitions is a tactical move for capital restructuring and to increase performance through selected HR and financial parameters .three parameters have been selected in this study that is Return on capital employed and earning per share and capital adequacy ratio showed a positive performance indicators in post-merger period. These parameters show a little change in post-merger phase.

Abbas et al., (2014) explained banks use merger and acquisitions as a strategy to survive in the dynamic business environment. Pre and post- merger and acquisitions financial ratios have been analyzed and result defined that there is no such improvement after merger and acquisitions, there is visible low profitability, liquidity and efficiency; only the portion which increases after merger and acquisitions is the investment bucket. The reason which is explored of low performance after merger is the financial crises of 2007 and another reason is the globalization and liberalization .it is concluded that merger and acquisitions do not perform well in banking sector of Pakistan, in this country regulatory bodies should evaluate the policies and procedures and have a strict compliance on merger and acquisitions , security and exchange commission of Pakistan must have a strict checking on these deals, top management does not play an important role to adopt the latest techniques to change the structure of banks, instead they opt for merger and acquisitions without proper knowledge and expected returns.

Rahman and Ayorinde (2013) analyzed the Nigerian banking sector to check the impact of merger and acquisitions on bank performance, and the results show that there is a strong and positive relationship of bank performance with the merger and acquisitions as the latter is the strategic decisions taken by top management to gain market. Bank merger results into improved performance, in Nigerian banks merger and acquisitions, has increased in return on equity, return on asset and profit margin. Merger and acquisitions have increased both the operational and financial efficiency, banks have significantly increased their profit strength after merger and acquisitions. The merger has been used as a strategic tool in gaining profitability and performance, capital structure, asset profile, credit risk. This strategic decision has strongly and positively influenced bank performance.

Shanmugam and Nair (2004) identified the factors that have to lead the merger and acquisitions also in Malaysia, factors are information technology developments, liberalization and globalization have created an eagerness for the competitive financial system in Malaysia. Merger and acquisitions have been seen as a pre-condition and strategic tool to create a competitive, efficient and strong banking systems, merger and acquisitions with other tools like expertise, professionalism, corporate governance and effective policies brings a change in performance of banks. The author declared the merge and acquisitions as the first step in the mission, less branch network, saving on manpower, services of banks has been available at low cost, now after merger and acquisitions merged banks now draw more attention towards a smooth transition in the integration process of the businesses.

Estanol, Heidhues, Nitsche and Seldeslachts (2010) described that acquirers screen the target bank for proposed merger according to their skills to generate revenue and synergies, during booms, large and small mergers becomes smaller, during booms merger process is intense and low in recessions. In favourable environments, benefits and return of merger are less efficient. As horizontal merger model explained that positive difference in fundamentals generates high in merger activity.

Carletti, Hartmann and Spagnolo (2007) defined the impact of merger and acquisitions on bank's loan competition, liquidity and holdings, merger and acquisitions create money supply internally and creates liquidity that leads to financial cost efficiency , after merger and acquisitions banks increase their reserve and holdings through the internal system and through diversification effect it decrease the same. Merger and acquisitions also have an impact on loan competition as it modifies as diversification increases further, merger and acquisitions among large banks tends to increase liquidity through a monetary system of the central bank. This study analyzed the bank's merger on market competition, liquidity within the banking system and reserves, merger and acquisitions increases and decreases the holding, liquidity either decreasing or diversification effect.

Panetta, Schivardi and Shum (2009) confirmed that merger and acquisitions lead to informational improvements, merger and acquisitions has correspondence between individual risk and interest rates of market, this study explored that after merger and acquisitions, larger bank charge higher interest rates from high risk borrowers and less risk holder borrowers get low interest rate on loan facility, after merger and acquisitions , merged bank has strong working on interest rate and individual profiles, results shows that after merger and acquisitions price of loan differs across banks, high working or high-quality firm get negotiable rates from banks while risker firm get high-interest rates from banks.

Abbas, Hunjra, Azamijaz and Zajid (2014) explained the merger and acquisitions as a growth strategy implemented by organizations to meet the requirements of a dynamic world, this study concluded that there is no positive improvement in the financial performance of banks after merger and acquisitions. The financial ratio has been analyzed to identify the performance of banks after merger and acquisitions, results show there is no improvement in the financial sector, there is a visible decrease in efficiency, liquidity, profitability and leverage of banks instead there is a negative improvement and decrease efficiency.

Oloye and Osuma (2015) concluded from its study that merger and acquisitions are the reforming strategies to revive the banking sector, profit after tax and funds of shareholders are taken are variables to analyze the efficiency of banks pre and post-merger and acquisitions eras in Nigeria .merger and acquisitions use the resources effectively and create the synergies. This synergy created the shareholder's value and profit after tax in Nigeria.

Further research need to be done as to clarify the picture that why banks go for merger and acquisitions as this decision does not only aim to gain profitability, increase market value and reduce leverage ratios but other economic factors also affect the post-merger financials of banks, so all those need to consider before going towards merger and acquisition. There is area to research further, about bank's policies, interest rate, inflation rate, cost of deposit all factors have room to conduct further research. There is a need to analyse why state bank of Pakistan allows for merger and acquisitions to smaller banks which fail to maintain CAR and MCR, not play the role of lender of last resort and does not support financially to debt-burdened banks.

METHODS

The study is the quantitative base so first is to set variables that encourage the merger and acquisitions, collect secondary data from bank's financial statement, a convenient method is used to gather data and apply scientific tools to analyse the results and represent the data in the generic form. Population consists of all merger and acquisitions have been made during the period of 2005 to 2016 in the banking sector of Pakistan. We have selected the banks as discussed: Meezan Bank Ltd, Habib Bank Ltd, Summit Bank Ltd, Standard Chartered Bank Pakistan Ltd, and Allied Bank Ltd, NIB, Faysal Bank Ltd, JS Bank Ltd, Askari Bank Ltd and Bank Islami Ltd. Various proxies for growth, improved performance and survival are taken. Earning per share (EPS) is calculated as a proxy for growth, return on assets (ROA), return on equity (ROE) and net profit margin (NPM) as a proxy for improved performance and debt to equity as a proxy of survival. These ratios are undertaken to assess the pre and post-M&A (Mergers and Acquisition) effects.

RESULTS AND DISCUSSION

Ten years data 2005- 2016 often banks has been analyzed by using descriptive statistics specifically averages/mean, and then average pre-merger and post-merger data are used to interpret and conclude the results.

Table 1. List of M&A banks in Pakistan

List of merged banks in Pakistan	M &A activity
HSBC and Meezan bank ltd	2014
Barclays and Habib bank limited	2015
Arif Habib and Summit Bank	2010
Union Bank and Standard Chartered Bank of Pakistan	2006
Ibrahim Leasing and Allied Bank limited	2005
Picnic and NIB	2007
RBS and Faysal bank limited	2011
Jahangir siddiqui investment bank and JS Bank	2006
Askari Leasing Ltd and Askari Bank	2010
KASB Bank and Bank Islami	2015

Source: Thomson Reuters DataStream

Individual analysis of each bank has been done and results are discussed individually.

Table 2. Performance indicators of HSBC & Meezan Bank Limited

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
EPS	0.72	0.8	0.83	0.96	1.61	3.31	3.43	3.87	4.47	4.74	6.04
ROA	0.7	0.6	0.73	0.98	1.18	1.91	1.48	1.31	1.19	1.04	1.03
ROE	9.3	9.9	10.4	13.53	16.28	27.28	23.13	22.3	21.36	20	20.64
NPM	16.4	15.1	15.55	19.35	24.45	32.48	28.16	28.2	26.01	22.43	24.25
D/E	0.7	0.93	0.83	0.96	1.61	3.31	3.43	3.87	4.47	4.74	6.04

Source: Bank's Annual Report

Table 3. Average of pre-merger and post-merger data (HSBC & Meezan Bank Limited)

	Pre merger	Post merger
EPS	1.94	5.08
ROA	1.11	1.09
ROE	16.52	20.67
NPM	22.46	24.23
D/E	1.95	5.08

As per table 2 and 3 show the Pre-Merger and Post-Merger effects on Banks Profitability. The result shows average Earning per share, Return on Assets, Return on Equity, Net Profit Margin and Debt to Equity Ratio, Which shows the overall performance of the company. We have taken the ratio of the profit because we want to analyze the profit trend. How companies get higher profit by using acquired banks synergy. As per above chart, It is easily observed that Post merger results are better than pre mergers, which is very rare in the banking industry of Pakistan, Normally in the banking industry of Pakistan after M&A the performance of the firm does not increase significantly. Here is the reason for the significant change in the profitably of the Bank having multiple factors. One the main reason for the M&A of Meezan Bank to HSBC, Which was a European Bank, is to take over the Multinational Clients. As this statement is also being discussed by (Asad & Mehmood, 2017) in their study that banks want to acquire the synergies of another bank. So for the Meezan banks, corporate clients of HSBC was Synergy for them. As per an article published in the Express Tribune in Pakistan on Dated, SEP-17-2014, The Main Reason for the merger is to take corporate clients of HSBC I.E Multinational Company having a head office in Europe were maintaining accounts with HSBC. Furthermore, Pakistan is the second most populous Muslim county in the world. It was part of their strategy to increases Branch Network as well, so it was the golden opportunity for the Meezan to take over HSBC and to expand more and increase its profitability. Meezan Bank has a competitive advantage such as its Islamic Bank and having a wide network of branches. As per the appended chart, the results shows the significant impacts on companies Profitability and overall performance.

Table 4. Performance indicators of Barclays & Habib Bank Limited

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
EPS	18.3	14.49	11.83	14.7	14.17	18.82	16.17	14.94	21.21	24.18	21.69
ROA	0.21	0.01	0.02	0.02	0.02	0.02	0.14	0.14	0.18	0.17	0.13
ROE	0.28	0.19	0.18	0.18	0.17	0.20	0.18	0.17	0.20	0.20	0.18
NPM	0.24	0.27	0.28	0.30	0.32	0.35	0.33	0.31	0.348	0.33	0.31
D/E	0.63	0.5	0.72	0.63	0.43	0.36	1.49	0.77	0.28	1.98	1.72

Source: Bank's Annual Report

Table 5. Average of pre-merger and post-merger data (Barclays & Habib Bank Limited)

	Pre merger	Post merger
EPS	16.07	22.94
ROA	0.08	0.15
ROE	0.19	0.19
NPM	0.30	0.32
D/E	0.65	1.85

Table 4 and 5 above show profitability and leverage data of Habib Bank Ltd (HBL) over the ten years and averages of financial ratios shown in this column. The ratios that are used in this research are earning per share, return on Asset, and return on equity, net profit margin, debt to equity ratio. 10 years data has been taken from 2006 till 2016 to analysis the pre and post effects of merger and acquisition in this specific bank of Pakistan. Habib bank ltd has acquired and merger into Barclays bank in 2015, states that earning per share of HBL after acquiring Barclays has increased from 16.07 to 22.935 which is a significant change. Return on Asset, Return on Equity, net profit margin has also increased but not significantly, the debt of HBL has also risen significantly. The reason of increased Profitability ratios is the position of Barclays bank, as it was the 28th largest bank of Pakistan in 2014 and the trend of capturing international clients and expanding of the portfolio was prevailing on that year.

Another reason was the global crisis in 2008 which has strengthened the rules and regulatory requirements and it became very difficult for banks to maintain capital adequacy ratio and to maintain paid-up capital so international banks like Barclays decide to wind up its operations so HBL acquired it in 2015 and due to strong market value and international consumer portfolio of Barclays leads the earning of HBL's share to high side. After merger profit of HBL has decline in 2016 which has reduce, also the debt burden has increased as it also take over the debt of Barclays, the merger has not provided the significant results as the improved earnings per share ratio leads to other reasons also like, HBL involvement in CPEC in 2015 and its interest in opening branch in Urumqi.

Table 6. Performance indicators of Arif Habib and Summit Bank

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
EPS	1.1	0.65	-0.38	-4.13	-0.65	-1.53	-2.54	-1.52	0.16	0.15	-0.11
ROA	0.01	1.93	-0.9	-6.64	-5.68	-1.3	-1.93	-1.06	0.000	0.034	0.0089
ROE	0.02	4.89	-3.07	-40.5	-80.22	-30.79	-65.14	-89.97	0.000	2.39	0.1513
NPM	0.04	0.89	-0.39	-4.02	-0.613	-0.7	-19.8	-0.17	0.004	0.215	0.691
D/E	0.13	33.7	31.7	43.48	161.2	385.7	1128.5	1291.7	341.8	523.3	489.23

Source: Bank's Annual Report

Table 7. Average of pre-merger and post-merger data (Arif Habib and Summit Bank)

	Pre merger	Post merger
EPS	-0.69	-0.86
ROA	-1.40	-1.42
ROE	-9.67	-37.65
NPM	-0.87	-2.91
D/E	27.27	617.38

Analysis has been done for the profitability and leverage ratios of Summit bank (See Table 6 and 7 above) from the years 2006 till 2016 to show the difference in pre and post-merger in the financial ratios in order to conclude that how much changes merger and acquisitions bring for acquiring a bank. This financial ratio shows that earning per share has further reduced from -.69 to -.862 which shows that EPS has been in the negative side for the three years till 2013 after that it shows a positive indicator for the growth of summit bank. Return on asset shows a further decline in values as bank incur losses from 2010 till 2014, although assets base has increased over the year due to the merger due to profit (loss) after tax, there is no improvement shown in results after the merger. Return on equity shows the same loss in profit and constant shareholder's equity which has increased the gap on ROE before and after merger after merger total liabilities of summit bank has increased sharply which shows a Hugh negative debt to equity ratio.

From the data, it shows there are no general reserves available for the company to use it in operations in order to increase its shareholder's equity. In fact, the merger has increased the debt ratio for summit bank, from 2014 values and ratios turn into a positive and increasing trend when bank inject 500 million advances from shareholder and number start to rise. From 2014 onwards, due to PSX and economic indicators shows positive indicators and move market upward. This marginal fall in deposits is reflective of the Bank's focus on cost reductions and growth of low cost and CASA deposit base. Economic indicators affect less improved ratios after the merger that are high inflation 2010 onwards, low growth, lesser revenue collection and high fiscal debt leads to low investment and spending of public and leads to high debt.

Table 8. Performance indicators of Union Bank & Standard Chartered Bank of Pakistan

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
EPS	3.06	2.8	1.5	0.72	0.19	0.95	1.41	1.54	2.28	2.45	2.39
ROA	2.78	1.18	0.27	0.38	1.29	1.78	1.81	2.1	2.52	2.24	2.46
ROE	5	6.62	1.38	1.66	7.87	10.96	11.64	19.08	16.49	15.05	17
NPM	24	30.1	5.03	-1.54	5.52	11.14	15.88	20.44	27.41	23.18	24.18
D/E	73.15	35.49	23.8	49.54	47.05	47.81	71.6	74.8	60.86	82.83	70

Source: Bank's Annual Report

Table 9. Average of pre-merger and post-merger data (Union Bank & Standard Chartered)

	Pre merger	Post merger
EPS	3.06	1.62
ROA	2.78	1.60
ROE	5	10.78
NPM	24	16.13
D/E	73.15	56.38

Standard chartered bank has entered into Pakistan in 2005, pre and post merger data shows its overall efficiency and effectiveness, earning per share shows decline on average from 3.06 to 1.623, which means net profit shows a downward trend as bank has not express any profitability therefore, return on asset also declines from 2.78 to 1.603 as SCB asset has increased after merger but have not used its resources efficiently, return on equity increased significantly from 5 to 10.775 on average as improves shareholder's equity has given a rise to ROE, again due to low-profit revenue has also declined which bring down to net profit margin significantly, due to increased shareholder's equity ,debt to equity has reduced more significantly from 73.15 to 56.378, this is positive trend for bank after merger that its debt has reduced and has the capability to pay its long term debt from its equity portion (See Table 8 and 9).

Table 10. Performance indicators of Ibhrahim Leasing and Allied Bank limited

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
EPS	-0.01	2.8	3.84	3.56	4.27	6.25	6.58	8.95	10.38	9.41	13.28	13.37
ROA	-0.03	1.99	1.43	1.24	1.87	1.96	2.17	2.1	2.27	2	1.71	1.44
ROE	-0.55	31.83	23.54	20.91	30.68	29.04	29.75	29.33	26.48	20.51	17.84	15.32
NPM	-0.6	31.76	21.74	13.77	10.77	15.97	17.97	18.99	16.94	23.03	18.37	19.92
D/E	15.7	142.88	157.14	160.1	187.4	97.43	157.5	116.9	55.78	84.71	153.0	124.1

Source: Bank's Annual Report

Table 11. Average of pre-merger and post-merger data (Ibhrahim Leasing and Allied Bank Ltd)

	Pre merger	Post merger
EPS	-0.01	7.989
ROA	-0.03	1.819
ROE	-0.55	24.34
NPM	-0.6	17.747
D/E	15.7	129.444

In Table 10 and 11, Allied bank shows a positive trend after acquiring ibhrahim leasing in 2005, earning per share shows a positive improvement on average as it rises -.01 to 7.989 it means bank has earned significant profit and number of share has also increased which gives a positive and upward movement in earning per share, that leads to growth of bank and improve market value, return on asset also increase from -.03 to 1.8 but not significantly due to inefficiency of bank in utilization of assets, and return on equity also gives positive sight with increasing trend from -.55 to 24 , it has increased significantly as profitability and improved shareholder's equity has to move ROE in positive side . due to profit and improved revenue bank's NPM shows a significant change from -.6 to 17.747, overall profitability ratios have shown positive trend and upward movement, only debt to equity has shown negative trend as it debt has increased from 15.7 to 129.44 on average. This bank has shown overall upward and shows there is a positive sign after merger and acquisition in this bank.

Table 12. Performance indicators of PICIC and NIB

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
EPS	0.13	0.11	0.37	0.25	0.31	0.18	0.13	0.19	0.15	0.21	0.25
ROA	1.75	-0.06	-4.96	1.15	-5.09	-0.92	0.53	1.04	1.32	1.38	1.43
ROE	2.92	-0.99	-23.79	3.63	-39.05	-18.76	1.8	10.21	-4.41	14.47	17
NPM	0.003	-0.005	-0.09	0.008	-0.61	-0.14	0.002	0.94	-0.03	0.16	0.17
D/E	214.17	51.09	72.03	162.83	604.34	375.55	573.6	370	431.93	608.83	689

Source: Bank's Annual Report

Table 13. Average of data pre-merger and post-merger

	Pre merger	Post merger
EPS	0.13	0.215
ROA	1.75	-0.418
ROE	2.92	-3.989
NPM	0.003	0.0405
D/E	214.17	393.92

The tables 12 and 13 above shows the averages of financial ratios done to analyse the performance of bank after merger and acquisition, data has been taken from 2006 till 2016, where the merger of NIB has taken place in 2007, table describes the pre-merger data and post-merger data. There is an increase in EPS after M&A which is an indicator of positive improvement in the profitability of bank after Merger and acquisition. Nib bank faces loss after merger from (490) in 2007 to (7475) in 2008 which contributes to EPS and lower return on asset, although total asset has increased after merger loss has reduced the over efficiency of bank which leads to reduced ROA and ROE, debt burden has increased after merger shows high number from 214 pre-merger to 393 in post-merger years. Financials of nib bank shows the overall positive sign in variables, it means merger has taken favourable climate to NIB to increase profitability and decrease its debt ratio but other economic factors hit the bank and show a loss in few years after the merger. After the merger in 2007, the overall profitability of bank in 2008 decline as high inflation and high-interest rate results in high cost of deposit and operating expenses. Non-performing loans also increased due to the weaker economic environment and higher cost of borrowing.

Table 14. Performance indicators of RBS and Faysal Bank Limited

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
EPS	2.56	2.35	1.9	1.9	1	1	1.06	1.18	1.54	2.06	3.52
ROA	2.47	1.78	0.91	0.91	0.54	1.13	1.03	0.56	0.67	1.04	0.98
ROE	32.17	22.61	10.92	11.21	8.52	7.43	7.79	8.56	10.22	14.91	15.59
NPM	29.26	17.17	10.93	4.66	11.63	0.87	3.02	5.01	5.32	11.14	12.79
D/E	211.58	129.34	153.14	329.29	254.42	265.09	234.97	236.01	256.94	320.44	405

Source: Bank's Annual Report

Table 15. Average of pre-merger and post-merger data (RBS and Faysal Bank Limited)

	Pre merger	Post merger
EPS	.942	1.73
ROA	1.322	0.90
ROE	17.086	10.75
NPM	14.73	6.36
D/E	215.554	286.41

In table 14 and 15, comparison of profitability and leverage ratios of Faysal bank before and after its merger and acquisition with RBS bank 2011 is given that shows the 10 years data before and after merger data on Faysal bank's operations and profitability and leverage. Here the earning per share has reduced after merger and acquisition in 2011 which indicates decrease in profit of bank and increase in share capital and outstanding share, the overall decline in profitability of bank has reduced return on asset, return on equity and net profit margin and earnings per share although there is growth in share outstanding, there is upward trend in total liabilities which has increase debt to equity ratio, table shows increasing trend in earning per share after merger, and slow improvement in ROA and ROE and NPM has also increased, but overall on average EOS, ROA, ROE, NPM has not shown any significant improvement and debt to equity has increased significantly which is negative indicator for faysal bank.

Table 16. Performance indicators of Jahangir Siddiqui Investment Bank and JS Bank

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
EPS	31.9	47.7	0.09	0.11	-0.98	-0.66	0.42	0.7	0.33	0.99	1.74	1.77
ROA	0.07	0.08	0.5	0.53	-1.64	-1.16	0.79	1.06	0.4	0.585	0.1752	0.173
ROE	0.24	0.25	0.87	1	-10.43	-7.12	5.41	8.86	5.12	13.14	14.91	0.28
NPM	23.7	26.2	0.03	0.028	-0.2354	-0.1234	0.083	0.05128	0.12	0.115	0.202	0.3
D/E	0.98	1.13	23.5	11.51	95.33	101.24	58.87	107.17	309.03	473.21	361.59	148

Source: Bank's Annual Report

Table 17. Average of pre-merger and post-merger data (JS Investment Bank and JS Bank)

	Pre merger	Post merger
EPS	31.9	4.75
ROA	0.07	0.14
ROE	0.24	2.94
NPM	23.7	2.43
D/E	0.98	153.69

The tables 16 and 17 show the pre and post-merger data collection of JS bank for 10 years, data is collected to analyse the profitability and leverage of the bank after merger and acquisition, the first variable earning per share has reduced from 31.9 to 4.7 which tells that bank's profitability has reduced after merger and bank has not capitalized its shares with proper planning and strategy, due to loss in bank's financials return on assets has improved but in an insignificant manner from .07 to .135, return on equity showing a positive trend as it improved from .24 to 2.9 bank has shown some improvement in equity side, but due to debt burden after merger and JS Bank has taken debt burden from acquiring bank, it rises debt to equity ratio from .98 to 153.

Table 18. Performance indicators of Askari Leasing Ltd and Askari Bank

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
EPS	9.5	11.23	8.29	0.95	2.18	1.34	2.3	1.55	-6.32	3.19	4	4.14
ROA	0.019	0.02	0.012	0.0022	0.0064	0.005	0.007	0.004	-0.02	0.0129	0.015	0.0013
ROE	0.33	0.302	0.187	0.0355	0.109	0.002	0.135	0.087	-0.45	0.243	0.313	0.0234
NPM	0.633	0.7	0.9069	0.125	0.3988	0.003	0.239	0.738	3.36	0.498	0.6	0.7
D/E	158	161	160	188	186	219	180	189	226	189	175	180

Source: Bank's Annual Report

Table 19. Average of pre-merger and post-merger data (Askari Leasing Ltd and Askari Bank)

	Pre merger	Post merger
EPS	5.581	1.476
ROA	0.0107	0.0033
ROE	0.1609	0.058
NPM	0.4611	1.0225
D/E	178.66	189.83

The table 18 and 19 show on average earning per share of Askari bank has reduced after merger and acquisition, return on asset and return on equity are profitability ratios also shows declining trends in pre-merger and post-merger phases, here Net profit margin shows a positive side which shows increase in company profit and its revenues, but Askari bank's debt ratio has increased, it means more debt burden has taken after merger and acquisition. Year on Year EPS of Askari bank has increased from 1.34 in 2010 merger year to 2.3 in 2011 after the merger, ROA has increased Year on Year after the merger but on average it falls if compare it from pre-merger phases, debt to equity means debt burden has also increase.

Table 20. Performance indicators of KASB bank and Bank Islami

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
EPS	-0.04	-0.13	-0.12	-0.91	0.09	0.75	0.58	0.35	0.57	-0.1	0.64
ROA	-2.07	-2.56	-0.002	-0.0139	0.001044	0.78	0.63	0.23	0.33	-0.06	0.36
ROE	-4.19	-1.17	-0.011	-0.092	0.009862	8.06	7.64	3.2	4.78	-0.96	5.33
NPM	5	7.2	-6.5	-3.9	0.012346	14.58	14.34	6.77	7.81	-1.77	9.7
D/E	1.01	2	2.8	1.25	8.449224	10.402	12.572	14.61	15.29	15.74	16.36

Source: Bank's Annual Report

Table 21. Average of pre-merger and post-merger data (KASB bank and Bank Islami)

	Pre merger	Post merger
EPS	6.43	1.457
ROA	0.01192	0.0036
ROE	0.1927	0.0504
NPM	0.55274	0.876
D/E	170.6	194

In tables 20 and 21, it show merger of KASB bank takes place in 2015 with Bank Islamic, profitability ratios show positive and increasing trend after merger phase. earnings per share has increased from .12 to .27 on average, and return on asset also improves from -.29 to .15 on average, there is signs of profitability and efficient use of resource in order to increase ROA , ROE, assets and shareholder's equity has used by bank effectively after acquiring KASB bank , but only Debt to equity shows negative trend as increased debt to equity ratio means after acquiring KASB, Bank Islami has taken over its debt burden, therefore debt has increased from 7.599 to 16.05 on average .

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Every business wants to grow in term of size, market share, product line and ultimately in term of profitability. In pursuance of such goals businesses adopt certain strategies and merger & acquisition is one of the strategies that is being used worldwide. In Pakistan, merger & acquisitions are common, especially in the banking sector. The major reason behind that is a regulatory requirement of maintaining minimum capital requirement and capital adequacy ratio. Every Bank has to expand its branches and operations within the stipulated time and for that expansion, they need to maintain MCR & CAR as per the instructions of State Bank of Pakistan. So those banks which are unable to meet CAR & MCR are bound to be merged with other bank and the bank which is aiming to expand its operations, they found an an opportunity that bank and acquired it in order to increase the branches and operations countrywide. By doing so, acquiring bank has successfully increase its size and market share, but if they have improved their performance is the main concern.

This study has reviewed and analyzed mergers & acquisitions happened in the Banking sector of Pakistan in order to find the profitability and leverage situation of Pakistani banks after merger and acquisition, to analyze whether merger and acquisition are a necessary and important step for banks for their survival and to improve their performance. Ten Pakistani banks were selected and 11 years data has been taken from their financial statements and Pakistan stock exchange from 2005 till 2017. The variables on which data has been analyzed are earning per share, return on assets, return on equity, net profit margin and debt to equity ratio.

The analysis of ten banks gives insight that overall profitability of banks after merger and acquisition has decreased. Though some banks have improved their earning per share like Meezan bank (merge in 2014), Habib Bank Ltd (merge in 2015), Allied Bank Ltd (2005), NIB (merge in 2007). But rest of banks; which were merged in between 2007, 2009 and 2010, have not succeeded in improving their return of an asset, return on equity and net profit margin. In addition to that, debt to equity ratio that shows debt burden has jumped to a higher figure. The economic factors also has impact on bank's performance like financial crises of 2008 that leads to high cost of deposit, high-interest rate, high inflation causes banks to face difficult phases and reduces its profitability and increases debt, government policies and rates are play important role in loss of most banks even after merger and acquisitions and this conclusion is supported by author Kemal (2011) explained that merger and acquisitions does not guarantee the performance increment in the area of profitability, liquidity, leverage and cash flows. From the analysis, it has been observed that no profitability has increased and no leverage has reduced from merger and acquisition. These results are in consistent with the results of Rashid & Naeem, (2017) and Ahmed et al., (2018) which says that there is no significant impact on firm's profitability after M&As in case of Pakistan banking sector.

This study has revealed that mergers and acquisitions in Pakistan are not being successful from the performance aspect of the banking sector. Though the developed countries are more successful and getting more advantages of growth, synergy, market share and increased efficiency in utilizing the resources as compared to developing country like Pakistan. So management should also consider the factors which are other than business expansion because acquiring merely with the objective of expansion may lead towards adverse effect as revealed in this study. Management should review the resources, infrastructure, skilled labour force, employed software and financial performance to be acquired a bank. This will help them in achieving synergy, growth, expansion, increasing market share and ultimately increase the wealth of shareholders.

Recommendations

Results of the study show that merger and acquisitions are not results oriented to Pakistani banks, reasons are internal as well as external economic factors. The recommendations from the study are discussed as. State of Pakistan (Lender of last resort) needs to consider the financials and provide grant and liquidity support to suffered bank before going for merger and acquisitions. Reconstruction policy needs to adapt by banks under the guidance of SBP and recover its position by injecting fresh capital and new shareholder. Proper regulatory control analysis required by regulatory to identify the economic factors like interest rate, inflation, labour that reduced bank's minimum capital requirements capital adequacy ratio and need shelter to raise funds. Furthermore, banks should do proper paperwork on management of target banks as employees plays a important role in the profitability of bank, acquirer need to consider the top management that create value addition after merger and acquisition. This study is limited to a short-term period, the bank should be given a proper time after M&A so that profitability can be in the long span of time. Lastly, timing and environmental factors are important so banks should focus on time, when to merge, and what crises are prevailing in the international market.

Further research need to be done as to clarify the picture that why banks go for merger and acquisitions as this decision does not only aim to gain profitability, increase market value and reduce leverage ratios but other economic factors also affect the post-merger financials of banks, so all those need to consider before going towards merger and acquisition. There is area to research further, about bank's policies, interest rate, inflation rate, cost of deposit all factors have room to conduct further research. There is a need to analyse why state bank of Pakistan allows for merger and acquisitions to smaller banks which fail to maintain CAR and MCR, not play the role of lender of last resort and does not support financially to debt-burdened banks.

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Impact of corruption on the effectiveness of official development assistance in CEMAC Zone

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Abstract

The purpose of this paper is to check the impact of corruption on the link between development assistance and economic growth in the countries of the CEMAC Zone. Thus, from our dynamic panel data model relating economic growth and the explanatory variables including official development assistance and the index of corruption, we use the Generalized Moments Method (GMM) to estimate our model; our sample consisting of the six countries of the CEMAC Zone (Cameroon, Congo, Gabon, Equatorial Guinea, Central African Republic and Chad) and our study period extends from 1996 to 2013. The results indicate that public support for short-term development has no significant effect on growth in the CEMAC Zone; on the contrary, public aid to long-term development has a positive and significant effect on economic growth. Moreover, the variable of interaction between public aid for short-term development and corruption has a negative and significant effect on growth while the long term, has a positive and significant effect on growth. This implies that long-term control strategies against corruption have achieved results such as flows of official development assistance have a positive impact on growth. It therefore appears urgent for the leaders of recipient countries to strengthen the fight against corruption to improve the impact of aid on growth in the CEMAC Zone.

Keywords: *Official development assistance, Corruption, Economic growth, CEMAC*

INTRODUCTION

The effectiveness of official development assistance in terms of economic growth has sufficiently fuelled many heated debates among politicians, economists and even development specialists. Is official development assistance (ODA) a source of economic growth? For some, as mentioned above, ODA flows have no impact on growth and sometimes can cause damage in the recipient countries. For others, ODA flows stimulate economic growth in recipient countries. For the last category, ODA flows have a positive impact on economic growth, but this positive impact is conditioned by the existence of good institutions, good political environment as well as many other elements (Burnside and Dollar, 2000; World Bank, 1998, Easterly et al., 2004). In poor beneficiary countries, the decrease in aid can be explained by the fact that the granting of aid is increasingly subject to an impressive number of constraints and demands from donors, which are pushing the countries concerned to reduce their demand. These include the conditions of good governance. Aid is only useful and effective in low-income countries with good economic policies and quality institutions (Burnside and Dollar, 2000).

Thus, we see indicators of "governance" appear in the new literature of ODA as elements conditioning the impact of ODA flows on economic growth. Indeed, the study of Burnside and Dollar (1997) which was a response to critics of the official development assistance shows that the effectiveness of aid is conditioned by the improvement of governance in recipient countries. For some, good democratic governance allows for better use of ODA that will maximize its productivity; Moreover, democracy is one of donors' criteria for granting ODA; donors will likely give more ODA to countries with better democratic qualities (Akramov, 2012). For Burnside and Dollar (2000), good macroeconomic policies are a prerequisite for ODA to boost growth; they found that ODA boosts growth in countries with good policies and has a negative impact in countries with bad policies. One of the characteristics of good governance (which conditions the effectiveness of aid) is that, the institutions and procedures put in place combat corruption and deviant behaviours. Indeed, governance is of crucial importance for creating an attractive and investment-friendly business environment. It is therefore vital for economic development and, therefore, for tackling poverty. On the other hand, poor governance, especially corruption, is a widespread reality across developing economies in both the public and private sectors (Akpo and Somakpo, 2006). In general, politically stable, transparent, corruption-free developing countries as well as a legitimately established government will receive more ODA; and these funds will be allocated to the country's priority development projects and sectors according to their objectives (Biboh, 2006). Moreover, since 1994, the political climate in the CEMAC Zone (Cameroon, Congo, Gabon, Equatorial Guinea, Central African Republic and Chad) has been characterized by coups d'état or attempts, internal and cross-border conflicts, repeated mutinies, elections that are sources of violence and disputes, the human rights situation is controversial. This context does not promote the growth of the sub-region but helps fuel the fears of investors and the international community.

ODA is often seen as inefficient and rhyme with some waste of taxpayer money. Several authors have recently published books stressing that aid can have adverse effects and act as a brake on the development of recipient countries (Monga 2009, Moyo 2009, Nwokeabia 2009, Tandon 2008). The renewal of this radical critique is challenging especially as it comes this time from African intellectuals. Even if the tone and origin of the authors change, critics say nothing fundamentally new. As early as the 1960s, development aid was challenged by various schools of thought. The terms of the debate have changed little in half a century and, despite criticism, development aid remains a preferred instrument "by default".

Another mischief of international aid is the increase in corruption and bureaucracy. The domestic workforce is moving more towards the growing public sector, and is crowding out the private sector (Bauer, 1972). Public spending increases with aid, and crowds out domestic savings (Mosley, 1996). International aid is, in the best of cases, of zero or almost no effectiveness in alleviating poverty of the Third World, or facilitating development in poor countries (Bauer, 1984, Berg, 1996). Such is the point of view of the liberals, a vision shared by Marxists, but with different fundamentals.

In short, these theses converge on the inability of international aid to promote development or alleviate the suffering of poor countries. While the World Bank sees aid as necessary for the growth of developing countries and the eradication of poverty in the world, the current liberal of protestant and the "anti-developmentalists" consider it unfavourable to development. Faced with this, we need to consider empirical analyses of the effectiveness of international aid to see what the facts tell us.

In order to estimate effectiveness of aid in terms of growth, Burnside and Dollar (1997) estimate a growth equation that relates an aid variable to an aid term in interaction with an economic policy indicator. The quality of macroeconomic policies is determined by controlling inflation, balancing the budget and implementing a policy of open trade. The interaction of official development assistance with the economic policy index makes it possible to study the impact of economic policies on the effectiveness of development aid in terms of growth. Their econometric results show a positive and statistically significant coefficient at the 1% threshold of the cross-term aid with the economic policy indicator. Burnside and Dollar (1997, 2000) conclude that aid is only effective in terms of growth in a good macroeconomic environment. In this case, aid is only effective in terms of growth in developing countries with good economic policies. We can then identify the principle of selectivity of the beneficiary countries and the principle of conditionality based on the quality of economic policies.

Burnside and Dollar (2000) conclude that development aid promotes economic growth only in countries that adopt good macroeconomic policies.

Easterly, Levine and Roodman (2004) found that the results obtained by Burnside and Dollar (2000) are not subject of robustness tests. They use the Burnside and Dollar (2000) model for a larger sample. Their estimation results show that the interaction term between the aid received and the economic policy index is statistically insignificant at the 1% level. They conclude that the effectiveness of development assistance in terms of growth is not dependent on economic policies of the recipient countries.

According to Bauer (2000), aid is a discretionary resource that can be used by the executive to manipulate the electoral process and increase military spending. A recent analysis by Djankov et al (2008) confirms this hypothesis. In addition, the work of Rajan and Subramanian (2007) argues that aid has a corrosive effect on the political institutions of recipient countries.

In view of all the above, the purpose of this paper is to assess the influence of corruption on the official development assistance and economic growth in the CEMAC Zone.

STUDY METHODOLOGY

We are working on a panel of six CEMAC countries over the period 1996-2013 (18 years) to measure the influence of the two governance indicators on the relationship official development assistance - economic growth. Empirically, it is for us to study two econometric relationships according to the two governance indicators selected. It is based on the literature review that found several variables that are determinants of economic growth. In this chapter, it will therefore be a question for us to present the econometric models in dynamic panel studied, the variables of the model, the source of the data, the applied tests (pre and post-estimation) and the estimation methods.

Specification of the econometric model

The data we use is from a secondary source and comes from the official databases of the World Bank online including the World Developments Indicators 2014 (WDI, 2014) as well as the Kaufmann Foundation for Governance.

From the theoretical model of endogenous growth, the empirical model inspired by the work of Burnside and Dollar (2000) will be formulated as follows:

$$Croiss_{i,t} = \alpha_{i,t} + \alpha_1 Croiss_{i,t-1} + \alpha_2 APD_{i,t} + \alpha_3 Gov_{i,t} + \alpha_4 \left(APD * Gov\right)_{i,t} + \alpha_5 \left(APD^2 * Gov\right)_{i,t} + \beta' X_{i,t} + \varepsilon_{i,t}$$

Where:

$Croiss_{i,t}$ is the growth rate of real GDP per capita of country i in year t.

$Croiss_{i,t-1}$ is the rate of growth of real GDP per capita of country i in year t lagged by one period.

$Gov_{i,t}$ is the governance indicator selected for the country i in t

$APD_{i,t}$ is the ratio of inflows of official development assistance and GDP

$\left(APD * Gov\right)_{i,t}$ is the interaction variable between ODA as a percentage of GDP and the governance indicator selected in the short term;

(APD2Gov) i,t is the interaction variable between ODA as a percentage of GDP and the governance indicator selected in the short term;

X is the vector consisting of other variables identified in the literature as being determinants of growth; these include domestic investment, the openness rate, the human capital of the population growth rate.

The indicator of governance in this work is the level of corruption (corrup), so the equation of the model is as follows:

$$Croiss_{i,t} = \rho_0 + \rho_1 Croiss_{i,t-1} + \rho_2 APD_{i,t} + \rho_3 Corrup_{i,t} + \rho_4 \left(APD * Corrup\right)_{i,t} + \rho_5 \left(APD^2 * Corrup\right)_{i,t} + \beta' X_{i,t} + \varepsilon_{5i,t}$$

Where:

$Corrup_{i,t}$ is the level of corruption in the country I in t.

Presentation of variables

The dependent variable in the model specification is measured by the growth rate of real GDP per capita (Croiss) as an indicator of economic growth. Real GDP per capita is the value of all goods and services produced in an economy during a given period by resident economic agents; its growth measures the economic growth of a country.

The explanatory variables are:

Corruption *(Corrup)* is our explanatory variable: it measures the extent to which public power is exercised for private purposes, including both bribes and major forms of corruption. Its measurement is between -2.5 and +2.5. Small values (negative) indicating the corrupt countries and the greatest values for the least corrupt countries. The expected sign is negative.

The domestic investment rate**:** measured by Gross Fixed Capital Formation (GFCF) relative to GDP. The accumulation of physical capital is expected to have a positive effect on growth.

The degree of openness of the economy: measure the sum of imports and exports relative to GDP (Rivera-Batiz and Romer, 1991). According to the neoclassical theory, the free movement of goods is supposed to boost economic performance and therefore exert a positive effect on economic growth.

Delayed growth rate**:** This variable is often used in econometric models for long-term growth to test the conditional convergence hypothesis. According to this hypothesis, the long-term growth of the initially poorer countries tends to be stronger than that of the initially richer countries. In the long term, there is a convergence of growth rates between rich and poor countries (catch-up effect). The literature informs us that in Africa, initial conditions, as measured by GDP lagged by one or more periods, have a negative impact on GDP. The expected sign of the coefficient is therefore negative.

Estimation method

The estimation method chosen is based on that proposed by Arellano and Bond (1991): the generalized moments method (GMM). This method is generally used to estimate dynamic panel coefficients (with non-linear variables) and prevent the problems of inverse causality that are often problematic in the study of official development assistance. Here, the model is said to be dynamic because it introduces into the explanatory variable the dependent variable with one or more delays. The GMM is more efficient than other estimators in dynamic paneling according to (Kpodar, 2005). In this method, the series are transformed into first difference and are used to eliminate unobserved specific individual heterogeneity, which corresponds to the specific effects detected by the Breush-Pagan test. The explanatory variables are used as their own instrument.

However, Blundell and Bond (1998) question the properties of this estimator, which they believe can be biased and low precision. The authors propose a "system" approach to overcome these limitations. The method is based on certain conditions of stationarity of the variables of the initial observation. The SGMM estimator combines the standard equation set into first differences with t-1 instruments, with a set of additional equations in level with the first differences at t-1 as instruments. This system method, later SGMM, is used for its superiority over the GMM method. However, Kpodar (2005) states that the endogenous variables should be delayed for at least two periods to be used as instruments.

In effect, the basic idea of the generalized moments method (GMM) is the work of Hansen (1982), but the origin of the concept goes back to the work of Sargan (1958). This method consists in combining all the moments in an objective function, it makes it possible to control the effects related to the problems of simultaneity bias, inverse causality and omitted variables (generally applied in economic growth models). The number of moment conditions and the number of parameters to be estimated is identical. So, the conditions that relate to the moments can be exploited not only to test the specification of a model, but also to define its parameters. The GMM dynamic panel method is developed by Arellano and Bond (1991), Arellano and Bover (1995) and Bond and Blundell (1998). This method makes it possible to reconstruct the instruments from the explanatory variables, unlike the other methods of classical instrumental variables (the double least and triple square methods), the latter recommend variables simultaneously satisfying three conditions and which are generally difficult to test. Indeed, the instrumental variable must be theoretically justified, correlated with the independent variable and not correlated with the dependent variable. There are two types of GMM estimators, the first difference GMM estimator and the system GMM estimator. Blundel and Bond (1998) compared the results of two estimators using Monte Carlo simulations. They conclude that the GMM system estimator performs better than the first difference.

The first-difference GMM estimator seeks to eliminate country-specific effects and estimates the first difference by instrumenting the explanatory variables of the first-difference equation by their lagged-level value of a period or more Making it weak and considerable bias instruments in small samples While the GMM estimator in system manages to exceed this limit: it combines the first difference equations with the level equations in which the variables are instrumented by their first differences. The relevance of the GMM system estimator is based on the validity of two tests: the Sargan/Hansen on-identification test of instrument validity (H0: the instruments are valid, that is, uncorrelated with the disturbances) and the autocorrelation test of Arellano and Bond (1991) which assumes a null hypothesis of the absence of autocorrelation of errors of order 1.

We consider panel data, n individuals observed in T periods to estimate all our equations whose general form is as follows:

$Y_{it} = X_{it}\beta + \varepsilon_{it}$ with $\varepsilon_{it} = \alpha_i + \mu_{it}$ or $i = 1, 2, \ldots, n$ and $t = 1, 2, \ldots, T$

Y_{it} defines the dependent variable of country i at period t, X_{it} presents the set of explanatory variables and the perturbation which has two components: a fixed or random individual term and, a white noise of variance not correlated to the individual effect.

In the case where the individual effect and the temporal component of the perturbation are not correlated with the explanatory variables, the equations can be estimated by the Ordinary Least Squares or the Quasi-Generalized Least Squares (Dormont, 1989). In the opposite case, it is essential to eliminate this individual effect, either by using an intra-individual model or the difference model. Another important element is that economic growth and official development assistance can be determined simultaneously. The equations to be estimated therefore have potentially correlated regressors and residues. In order to correct the endogeneity biases and to find more robust results, we chose an estimation method with instrumental variables. We use the approach of Arellano and Bover (1995) and we estimate our equations by the Generalized System Moment Method (SGMM). This approach seeks to eliminate the individual effect, it presents an estimator in differences with internal instruments defined by past values of Y_{it} and of X_{it}.

$$Y_{it} - Y_{it-1} = \left(X_{it} - X_{it-1}\right)\beta + \varepsilon_{it} - \varepsilon_{it-1}$$

The approach of Arellano and Bover (1995) considers that the instruments are weakly exogenous and are shifted by at least two periods, in other words the perturbations depend only on the present and future values of the instruments. It examines the level equations and considers the assumptions of the following moment and orthogonality conditions:

$$E\left(X_{it}\alpha_i\right) = E\left(X_{it-1}\alpha_i\right) \forall t$$

$$E\left(\Delta X_{it-r}\varepsilon_{it}\right) = 0 \text{ for } r = 1, 2, \ldots, t-1$$

$$\begin{cases} E\left[\left(\Delta Y_{it} - \Delta X_{it}\right) X_{it-r}\right] = 0 \; pour \; r \geq 2 \\ E\left[\left(Y_{it} - X_{it}\right) \Delta X_{it-r}\right] = 0 \; pour \; r \geq 1 \end{cases}$$

Pre-assessment test: IM, Pesaran and Shin stationarity test

The tests proposed by Im, Pesaran and Shin make it possible to answer the criticism of the homogeneous character of the autoregressive root under the alternative hypothesis. Indeed, these authors were the first to develop a test that allowed under the alternative hypothesis not only a heterogeneity of the autoregressive root, but also a heterogeneity as to the presence of a unit root in the panel. Im, Pesaran and Shin consider a model with individual effects and no deterministic trend. In the absence of autocorrelation of residues, this model is written:

$$\Delta y_{i,t} = \alpha_i + \rho_i y_{i,t-1} + \varepsilon_{i,t}$$

where the individual effect α_i is defined by $\alpha_i = \rho_i \gamma_i$ with γ_i belonging to the set of real and where $\varepsilon_{i,t} \sim N_{i.d.}\left(0, \sigma^2_{\varepsilon,i}\right)$. The IPS test is a joint test of the null hypothesis of unit root ($\rho_i = 0$) And the absence of individual effects since under the null hypothesis, $\alpha_i = 0$.

IPS test: $\begin{cases} H_0 : \rho_i = 0, \forall i = 1, 2, ..., N \\ H_1 : \rho_i \prec 0, \forall i = 1, 2, ..., N_1 \\ \quad \rho_i = 0, \forall i = N_1 + 1, N_1 + 2, ..., N \end{cases}$

Under the alternative hypothesis can coexist two types of individuals: for individuals indexed $i = 1, 2, ..., N_1$ for which the variable $y_{i,t}$ is stationary and indexed individuals $i = N_1 + 1, N_1 + 2, ..., N$ in which the velocity of the variable $y_{i,t}$ admits a unit root. N_1 size of the set of stationary individuals is a priori unknown but verifies $0 \prec N_1 \leq N$ because if $N_1 = 0$ it then finds the null hypothesis. It is further assumed that the ratio N_1 / N verifie $\lim_N N_1 / N = \delta$ with $0 \prec \delta \leq 1$.

Thus, the first advantage of the IPS approach lies in taking into account the heterogeneity of the autoregressive root under the alternative. But that's not the only benefit. As we will see, the authors propose a very simple statistic test based on the average of the individual Dickey-Fuller or Dickey-Fuller augmented statistics.

Under the assumption of no autocorrelation of residuals, IPS derives the asymptotic law of their mean statistic (when T and N converge to infinity) but also the semi-asymptotic law when T is fixed and N converges to l 'infinite. In this case, it is indeed possible to derive the exact law of the unit root statistic test for any size T

On the other hand, under the assumption of autocorrelation of the residuals, it is no longer possible to approximate the finite distance rejection thresholds for fixed T and N characterize the exact law of the mean statistic for a given size T: IPS derives in this case the asymptotic laws for T and N tending towards infinity (either sequentially or along a diagonal) and propose two mean statistics standardized. Once again, we find a normal distribution.

Post Estimation Test: Sargan/Hansen instruments validity test and Arellano and Bond autocorrelation test

For the validity test of Sargan instruments, if AN is optimally chosen for a given matrix of instruments Zi, the statistic S of the test is given by:

$$S = \left[\sum_{i=1}^{N} \varepsilon_i^{*'} Z_i\right] A_N \left[\sum_{i=1}^{N} Z_i^{'} \varepsilon_i^{*}\right]$$

With S following asymptotically, a Chi-square law at (p-k-1) 3 of degree of freedom under the hypothesis H0 of validity of the instruments.

Arellano and Bond (1991) have proposed a test that verifies the absence of first- and second-order self-correlation, based on the self-covariance of standardized mean residues and following a reduced normal centered distribution under the hypothesis H0. Thus, if the distribution is not auto-correlated, this test gives a negative value of the differentiated residues, significant to the first order and non-significant to the second order.

In all, it was a question of giving the nature, the source of the data used and to make a description of the variables as well as the presentation of the models and estimation methods that we will mobilize to analyze the data in our work. From this chapter, we will use for our study the generalized system moments to evaluate the impact of official development assistance on economic growth in the CEMAC. The presentation of the different results resulting from the application of these econometric tools as well as their discussion will be the subject of the next chapter.

RESULTS AND INTERPRETATION

It will essentially be a question of presenting the results of the tests and estimates made. Also, we will discuss the methods used for assessing the relevance of the model used to estimate the parameters of said model and examine them in accordance with the expectations of the study (study hypotheses and expected variable signs) to the existing literature and to the surrounding context.

Result of IM, Pesaran and Chin stationnarity tests can be seen at Table 1

Table 1. IM, Pesaran and Chin stationnarity tests

Variables	At levels		in difference		Decision
	Stats	prob	stats	prob	
ODA	-4.83 ***	0, 000	-	-	I (0)
TX GDP	-3, 71 ***	0,001	-	-	I (0)
FDI	-3.34 ***	0,004	-	-	I (0)
IDO	-2.62 ***	0,004	-	-	I (0)
DOE	-1.54 *	0.062	-	-	I (0)
DVP Fi1	-2.76 ***	0,003	-	-	I (0)
Fi2 DVP	-1.58 *	0.057	-	-	I (0)
DEMO	-0.98	0.162	-3.29 ***	0.005	I (1)
CORR	-0.928	0.176	-4.606 ***	0,000	I (1)
APD2	-5.37 ***	0,000	-	-	I (0)
ODA * CORR	-4.92 ***	0,000	-	-	I (0)
APD2 * CORR	-3.652 ***	0,000	-	-	I (0)

NB: *, **, *** represent the stationarity 10%, 5% and 1%

It can be seen from the table above that all our variables are stationary with the exception of the democracy and corruption variables, which are stationary in first difference.

This correlation table shows that the relationship between official development assistance and the GDP growth rate is negative. Democracy (Demo), note that in this article this variable was not maintained thereafter. Other variables such as corruption, long-term government support are negatively correlated with GDP growth rate. The interaction variables; official development assistance-short-term democracy, official development assistance-short-term corruption, official development assistance-long-term democracy, official development assistance-long-term corruption, are positive.

This suggests that ODA per say does not have a positive effect on growth, but depending on the democratic and institutional context, this effect can be positive. This highlights the non-linearity of the aid-growth relationship. but we limit ourselves in this article to the role of corruption in the aid-growth relationship.

Table 2. Correlations between variables

	txpib	apd	ide	ido	doe	dvpfi1	dvpfi2	demo	corr	apdsq	apdcorr	apddemo	apdsqc~r	apdsqd~o
txpib	1.0000													
apd	-0.0557	1.0000												
ide	0.4372	-0.0363	1.0000											
ido	0.6311	-0.2920	0.7598	1.0000										
doe	0.6176	-0.3232	0.7161	0.9496	1.0000									
dvpfi1	-0.3768	0.1360	-0.1066	-0.3978	-0.3844	1.0000								
dvpfi2	-0.2402	-0.1747	-0.1906	-0.1868	-0.2647	0.5865	1.0000							
demo	-0.2766	0.1109	-0.3208	-0.4844	-0.4934	0.3756	0.3010	1.0000						
corr	-0.2349	0.0441	-0.2175	-0.3877	-0.3928	0.3380	0.4351	0.7681	1.0000					
apdsq	-0.0484	0.9175	-0.0306	-0.2095	-0.1976	0.1289	-0.1267	0.0878	0.0672	1.0000				
apdcorr	0.0358	-0.9772	0.0148	0.2662	0.2902	-0.1193	0.2326	-0.0686	0.0665	-0.8828	1.0000			
apddemo	0.0108	-0.9748	-0.0214	0.2292	0.2637	-0.0796	0.1796	0.0075	0.0120	-0.8865	0.9619	1.0000		
apdsqcorr	0.0467	-0.9123	0.0226	0.2055	0.1878	-0.1377	0.1556	-0.0810	-0.0200	-0.9895	0.9060	0.8828	1.0000	
apdsqdemo	0.0355	-0.9137	0.0115	0.1934	0.1856	-0.1124	0.1167	-0.0469	-0.0574	-0.9917	0.8804	0.9094	0.9801	1.0000

To get a more precise and robust idea of this correlation, we carried out a correlation significance test whose result is as follows:

Table 3. Significance test correlations

	txpib	apd	ide	ido	doe	dvpfi1	dvpfi2
txpib	1.0000						
apd	-0.0557	1.0000					
ide	0.4372*	-0.0363	1.0000				
ido	0.6311*	-0.2920*	0.7598*	1.0000			
doe	0.6176*	-0.3232*	0.7161*	0.9496*	1.0000		
dvpfi1	-0.3768*	0.1360	-0.1066	-0.3978*	-0.3844*	1.0000	
dvpfi2	-0.2402*	-0.1747*	-0.1906*	-0.1868*	-0.2647*	0.5865*	1.0000
demo	-0.2766*	0.1109	-0.3208*	-0.4844*	-0.4934*	0.3756*	0.3010*
corr	-0.2349*	0.0441	-0.2175*	-0.3877*	-0.3928*	0.3380*	0.4351*
apdsq	-0.0484	0.9175*	-0.0306	-0.2095*	-0.1976*	0.1289	-0.1267
apdcorr	0.0358	-0.9772*	0.0148	0.2662*	0.2902*	-0.1193	0.2326*
apddemo	0.0108	-0.9748*	-0.0214	0.2292*	0.2637*	-0.0796	0.1796*
apdsqcorr	0.0467	-0.9123*	0.0226	0.2055*	0.1878*	-0.1377	0.1556
apdsqdemo	0.0355	-0.9137*	0.0115	0.1934*	0.1856*	-0.1124	0.1167

	demo	corr	apdsq	apdcorr	apddemo	apdsqc~r	apdsqd~o
demo	1.0000						
corr	0.7681*	1.0000					
apdsq	0.0878	0.0672	1.0000				
apdcorr	-0.0686	0.0665	-0.8828*	1.0000			
apddemo	0.0075	0.0120	-0.8865*	0.9619*	1.0000		
apdsqcorr	-0.0810	-0.0200	-0.9895*	0.9060*	0.8828*	1.0000	
apdsqdemo	-0.0469	-0.0574	-0.9917*	0.8804*	0.9094*	0.9801*	1.0000

NB ** Reflects the significance at 10%*

The significance test of correlation suggests that there is no significant correlation between GDP growth rates and all of the above variables.

Recognizing that mechanical correlations can be constructed between variables, we used a much more robust econometric methodology to determine the impact of ODA on growth in a context of democracy and in a context of corruption. The aim of this article was determined the role of corruption in the relationship ODA - Economic growth in the CEMAC Zone. Before proceeding with the interpretation of our variables, it is necessary to assess the relevance and robustness of the entire model.

Table 4. Effect of corruption in the APD-growth relationship

Dependent Variable: txpibpt (governance = corruption)		
Variables	Coefficients	t
txpib (-1)	.1152 *** (.0304)	3.79
apd	-6.9307 (4.4927)	-1.54
corr	16 417 *** (4.3960)	3.73
apdsq	.6123 * (.33053)	1.85
apdcorr	7354 ** (3.6027)	-2.04
apdsqcorr	.60099 ** (.28344)	2.12
ide	.02049 (.12563)	0.16
ido	.11305 (.09188)	1.23
doe	.0625 (.04116)	1.52
dvpfi1	.91134 ** (.3917)	-2.33
cons	22.9658 ** (8.8741)	2.59
Observations	90	
Instruments	24	
Wald (chi-square)	1140.64	
Prob (Wald)	0.0000	
Stat Sargan	6.292774	
Prob (Sargan)	0.9348	
AR (2)	0.9395	

Source: *estimation of the author using Stata 13*

NB: ** ,** and *** represent the significances of 10%, 5% and 1% respectively*

The estimate whose results are contained in the table above was made from a sample of 90 observations. The probability associated with the Wald statistic (p =

0.0000 <0.01) is below the 1% threshold, suggesting that the model is globally significant; the Wald statistic (Wald = 1140.64) provides the same information on the overall significance of the model. These two indicators therefore show that the model is globally significant. On the other hand, the number of instruments (24 <90) is less than the number of observations suggesting that our regression is robust. Our estimation suggests, through the Arellano and Bond autocorrelation test, a lack of second-order autocorrelation (p = 0.93> 0.05) and also through the Sargan instruments over-identification test that our instruments are valid because the probability associated with this test is greater than the significance threshold, which may be 1%, 5% or 10% (p = 0.93). All these elements lead us to validate the results that these estimates give us.

Of the ten (10) explanatory variables of which our model is made (txpib (-1), apd, corr, apdsq, apdcorr, apdsqcorr, ide, ido, doe, dvpfi1), six of them are significant (txpib (-1), corr, apdsq, apdcorr, apdsqcorr, dvpfi1) and four of them are non-significant (apd, ide, ido, doe). In other words, the lagged value growth rate, long-term official development assistance, corruption, short-term official development assistance associated with corruption, long-term official development assistance associated with corruption, financial development has a statistically significant effect on economic growth in CEMAC. On the other hand, official development assistance (ODA), foreign direct investment (FDI), the degree of trade openness of the economy (doe), domestic investment (ido) have no effect significant impact on the growth of the CEMAC countries. Examination of these significant individual variables suggests that: the delayed growth rate has a positive and significant effect on the current growth rate; Indeed, an increase in the growth rate of the previous period by 1 point will lead to an increase in the growth rate of the current period of 0.11 points. This coefficient does not satisfy the conditional convergence assumption that the coefficient of the lagged variable is negative and significant to ensure the catch-up effect.

Short-term official development assistance has no significant effect on growth in CEMAC; on the other hand, long-term official development assistance has a positive and significant effect on growth; in fact, an increase in long-term aid of 1 point will lead to an increase in growth of 0.61 points; This implies that a substantial increase in the volume of aid will be likely to have a significant impact on growth. This result is consistent with those found by Burnside and Dollar (2000), World Bank (1998).

The interaction variable between short-term ODA and corruption has a negative and significant effect on growth; in fact, an increase in aid of 1 point will lead to a decrease in growth of 7.35 points. This implies that in a context of advanced corruption, ODA will be a drag on economic growth because these flows are diverted for individual purposes and does not serve the cause they are supposed to serve. These results are consistent with those found by Raghuram and Subramanian (2005) who considered the negation of a positive effect of ODA on growth.

The interaction variable between long-term ODA and corruption has a positive and significant effect on growth; in fact, an increase in long-term aid of 1 point will lead to an increase in growth of 0.6 point. This implies that, in the long run, anti-corruption strategies will have achieved results such that ODA flows have a positive impact on growth. This confirms the studies conducted by Lensink and White (2000), Dalgaard and Hansen (2001), which led to political implications. Indeed, for them, aid is more effective in a good macroeconomic and institutional environment with good governance.

Financial development has a positive and significant effect on economic growth in the CEMAC Zone; in fact, an increase in APD 1 point will cause an increase in growth of 0.9 points.

CONCLUSION

The general conclusion from these estimates show that public aid has no significant effect on growth in the CEMAC, but that in the context of corruption, it would have a negative effect on growth. However, in the long term, the anti-corruption efforts undertaken by the zone states will allow the increase in FDI to have a positive and significant effect on growth in this context. Studies by Lensink and White (2000), Dalgaard and Hansen (2001) have led to political implications. Indeed, for them, aid is more effective in a good macroeconomic and institutional environment with good governance.

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Trade, investment and economic growth in India and China

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Abstract
Using time series data from 1980 to 2014, this study examines the relationship between trade, investment and economic growth in India and China. The present study attempts to assess the contributions of not only foreign direct investment and exports as done by the previous studies but also incorporates domestic direct investment and imports. The study uses more comprehensive and recent autoregressive distributed lag (ARDL) bound testing approach to examine the existence of short-run and long-run relationships. The main advantage of this approach is that it can be used regardless of the stationarity properties of the variables in the sample. The study gives different results for both countries. In case of China, exports, FDI and domestic investment have positive impact on economic growth whereas for India only the variable of domestic investment has been found to be significant. China is a world leader in merchandise exports and its services exports have complemented its goods exports. The main weakness of Indian economy is the poor performance of manufacturing sector as a result of which India's merchandise exports are concentrated around a few categories. Though India is a leader in IT related services exports but these exports are unable to compensate for poor performance of merchandise exports.

Keywords: *Trade, FDI, Economic growth, ARDL.*

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INTRODUCTION

Trade and investment are important drivers of economic growth. Hsiao and Hsiao (2006) noted that trade promotes economic growth through transfer of technology and knowledge in an open economy. Similarly, foreign direct investment positively affects economic growth through capital accumulation and technology or knowledge transfer under open trade regime. However, the studies have pointed out that these positive effects may be insignificant or may even be negative due to crowding out effects of domestic capital or enclave economies.

The relationship between trade and economic growth has received much attention from researchers and policy makers. Majority of the studies highlight trade-growth linkages and exclude foreign and domestic investment. Therefore, present study explores the relation by taking into account foreign and domestic investment under multivariate framework. The present study attempts to assess the contributions of not only foreign direct investment and exports as done by the previous studies but also incorporates domestic investment and imports.

The present study takes into account two Asian Giants namely India and China. There are several reasons that explain the need to study India and China. India and China have experienced rapid economic growth in past three decades. These are world's most populous countries. Both India and China are among the largest economies in the world. Both economies have prospered through an outward oriented strategy. Though both economies began to liberalize trade in late 1970s but China moved much faster than India. Both the economies had similar initial conditions but the performance varied over the period. Therefore, the present study approaches comparative and analytic framework to examine the relationship between trade investment and economic growth in these economies.

India is second most populous nation after China. India rigorously followed import substitution and inward looking policies during initial decades after independence. Starting in the mid-1970s and then later on in the 1980s, a few tentative steps were taken to liberalize the regulatory regime.

As a part of IMF agreement, Indian economy moved on the path of liberalization in a big way in 1991 when comprehensive economic reforms were introduced under 'New Economic Policy' (Rajan and Sen, 2002; Kaur, 2012). An important thrust of this policy was liberalization of external sector by important trade policy changes including tariff reduction, removal of quantitative restrictions, incentives for export sector, promotion of foreign investment etc (Khan, 2005; Sahni, 2014). Because of these policies, there was substantial increase in exports as well as in imports and the Indian economy became more and more trade oriented.

As a result of trade policy changes, tariffs were significantly reduced, quantitative restrictions were removed except in a few cases of banned items and the licensing system was phased out (GOI, 2015). In 1994, India accepted IMF obligation on agreement on current account convertibility (IMF, 2015).

Apart from these reforms, India initiated establishment of Export Processing Zones (EPZs) as a part of export promotion strategy in Asia- Pacific region. The first export-processing zone was set up in Kandla in 1965. Another EPZ was established in Santacruz in 1973. During 1980s, the government established five more zones at Noida (Uttar Pradesh), Falta (West Bengal), Cochin (Kerala), Chennai (Tamilnadu) and Vishakhapatnam (Andhra Pradesh).

However, later on these were converted into Special Economic Zones (SEZs) through 2000 Export- Import (EXIM) policy (Aggarwal, 2004). India started efforts towards integration in 1980s as a part of its foreign trade policy. A significant step was taken with the establishment of SAARC in 1985. As a part of 'Look East Policy' in 1991, India strengthened its relation with East and Southeast Asian economies. India became a full dialogue partner of ASEAN in 1995. India also joined WTO in 1995. It became a member of ASEAN Regional Forum (ARF) in 1996. Further, India-ASEAN signed 'Comprehensive Economic Co-operation Agreement' (CECA) in 2003 (Haokip, 2012 and Wapmuk, 2015).

Asian Financial Crisis of 1997-98 didn't affect much Indian economy due to restrictions on current account and less exposure of domestic market (Gutowski, 2001). Again, Global economic crisis of 2007-08 didn't hit Indian economy too severely (Ghosh, 2009; Venu, 2011; Joseph, 2013). The impact of both the crisis was limited on the Indian economy.

As a part of its trade promotional measures, India signed its first free trade agreement with Sri Lanka in 1998 which became operational in 2000. 'Comprehensive Economic Cooperation Agreement' (CECA) between India and Singapore was signed in 2005. 'Agreement on South Asian Free Trade Area' (SAFTA) was signed in 2004 and implemented in 2006. 'India- ASEAN Free Trade Agreement' (AIFTA) covering trade in goods only was signed between India and the ASEAN members in 2009 and it came into effect in 2010 (Sikdar and Nag, 2011; IMC, 2013).

In the same year, 'Comprehensive Economic Partnership Agreement' (CEPA) was signed between India and South Korea. In 2011, India-Japan 'Comprehensive Economic Partnership Agreement' (CEPA) and India-Malaysia 'Comprehensive Economic Cooperation Agreement' (CECA) was signed. More recently, India signed 'India - ASEAN Services and Investment Agreement' in 2014 which became operational in 2015. In addition to free trade agreements (FTAs), India also signed Preferential Trade Agreement (limited tariff lines with Margin of Preference i.e. percentage of Tariff concession) with Afghanistan (2003), MERCOSUR (2004) and Chile (2006). MERCOSUR trading block was formed in 1991 to facilitate free movements of goods, services, capital and people among four member countries of Latin America namely Argentina, Brazil, Paraguay and Uruguay (GOI, 2014).

China is the most populated country in the world. After Chinese civil war, Republic of China collapsed and communist party established modern China named as the People's Republic of China in 1949 (Zhu, 2012; Govt. of China, 2016). China adopted agriculture development-led industrialization strategy and transformed from traditional agricultural to an industrial and finally service economy (Briones & Felipe, 2013; Cheng, 2013). China's trade reforms were not based on any pre-determined blueprint rather they were the result of experimental changes promoted by Deng Xiaoping (Purushottam, 1999; Chow, 2004). China shifted from a centrally planned economy to a market based economy in 1978.

Before adopting reforms, state monopolies were governing its foreign trade. Since the trade policy reforms were initiated, China's foreign trade system has completely transformed and a significant progress in trade liberalization has been achieved (Zhang, 1999; Gibbons and Kulkarni, 2011; Kumari and Malhotra, 2014; www.gov.cn). The initial focus of reforms was to promote exports by attracting foreign direct investment (FDI). An export processing law favouring incentives for the processing and assembly of imported inputs was passed in 1979 (Wignaraja, 2011; Kumari and Malhotra, 2014). As a part of export promotion strategy, China established four Special Economic Zones (SEZs) in Shenzhen, Zhuhai, Shantou and Xiamen in 1980 (Fu and Gao, 2007).

In the same year, China actively registered membership of most influential international organization, International Monetary Fund (IMF) and World Bank. China also formally joined Asian Development Bank (ADB) in 1986. These institutions funded China to make structural reforms (Bottelier, 2006; Zhihai, 2011). In 1987, China allowed duty free imports of raw material, intermediate goods or inputs used for further production (Ianchovichina, 2004; Naughton, 2007; Wignaraja, 2011). China unified the dual exchange rate system i.e. the official and market regulated exchange rate of China's currency, the Renminbi (RMB) in 1994 (Zhang, 1999; Denoon, 2007; Gang, 2008; www.gov.cn).

Finally, China's accession to the WTO in 2001 was a major step towards liberalization. China agreed to follow the commitments under WTO accession. Therefore, noticeable tariff reduction was facilitated by China (Gibbons and Kulkarni, 2011; Sally 2011 and Wignaraja, 2011). Further China and ASEAN (Association of South East Asian Nations) signed 'Framework Agreement on the Comprehensive Economic Cooperation between ASEAN and China' in 2002. Under WTO rules, China signed free trade agreement with Hong-Kong referred as 'Closer Economic Partnership Arrangement' (CEPA) in 2003.

Besides CEPA agreement, China also signed agreements with Australia in 2003 and New Zealand in 2004 (Gabrlela and Luclan, 2007). China's external sector suffered during Asian Financial Crisis of 1997-98. However, it managed to avoid crisis (Fernald and Babson, 1999; He and Zhang, 2010). But the global crisis of 2007-08 severely hit China's exports particularly the manufacturing sector (Agarwal et al. 2009; Bulman, 2010).

During 2004-2009, ASEAN and China signed three agreements. Agreements on trade in goods (2005), trade in services (2007) and investment (2009) were signed between China and ASEAN. Comprising these agreements ASEAN-China Free Trade Area (ACFTA) formally established in 2010. It was third largest regional trade agreement by value after European Union (EU) and NAFTA (North American Free Trade Agreement) (Brown, 2010; GAO, 2015; Salidjanova, 2015; Govt. of China (MOFCOM), 2016). An agreement on bilateral economic and technical cooperation between China-Afghanistan was signed in 2011(Nedumpara, Garg and Gyanchandani, 2011).

In 2013, China (Shanghai) Pilot Free Trade Zone (CSPFTZ) comprised four areas namely Waigaoqiao Free Trade Zone, Waigaoqiao Free Trade Logistics Park, Yangshan Free Trade Port Area and Pudong Airport Free Trade Zone was established for further liberalization of trade in services and capital account transactions. Under CSPFTZ several trade facilitation measures were adopted by simplifying custom and investment procedures (WTO, 2014; Govt. of China, 2016).

REVIEW OF LITERATURE

The majority of studies either examine export-led growth hypothesis or FDI led growth hypothesis. Empirical evidences based on export-growth and FDI-growth relationship are mixed. For example, using time series data for the period 1978-96, Shan and Sun (1998) tested export-led growth hypothesis for China. Toda-Yamamoto estimation results revealed bidirectional causality. To examine export-led growth hypothesis for India, Dhawan and Biswal (1999) employed vector autoregressive (VAR) model taking time series data for the period 1961-93. The study found evidence for short run causality running from exports to GDP.

Chandra (2003) investigated the issue of causality between incomes and export growth in India using Johansen's multivariate cointegration framework for the period 1950-96.The evidence suggested bi-directional causality between real exports and real income in the long run. Padhan (2004) examined the long run and short run dynamic relationship between exports and economic growth in India during 1950-51 to 2000-2001.The study found evidence of unidirectional causality between exports and economic growth running from export to economic growth found through Granger causality test. So the study supported the export led growth strategy for India.

Hsiao and Hsiao (2006) examined the relationship between GDP, exports and FDI for eight rapidly developing East and Southeast economies including China. The findings suggested unidirectional causality from FDI to GDP and bidirectional causality between exports and GDP. Yao (2006) used panel data estimation technique to investigate the effect of exports and FDI on economic growth for 28 Chinese provinces over the period 1978-2000. The empirical evidence showed positive and strong effect of exports and FDI on economic growth.

Mah (2007) examined the relationship among exports, export composition and economic growth for the period 1980 to 2001. The results obtained from error correction model indicated bidirectional causality between export expansion and economic growth while no causal relationship was found between export composition and other variables. Tang, Selvanathan and Selvanathan (2008) tested relationship between FDI, domestic investment and economic growth in China for the period 1988 to 2003. The findings indicated bidirectional causal link between domestic investment and GDP while unidirectional causality was found from FDI to domestic investment and FDI to GDP.

Jayachandran and Seilan (2010) investigated the relationship between trade, FDI and economic growth for India over the period 1970-2007. The causality results supported unidirectional causality from FDI to growth and exports to growth. No reverse causation was observed for India. Agrawal and Khan (2011) investigated the effect of FDI on economic growth of China and India for the period 1993-2009. The findings obtained from ordinary least square method indicated positive and significant effect of FDI. Marelli and Signorelli (2011) analyzed the relationship between trade openness, FDI and economic growth for India and China over the period 1980-2007. The results obtained from panel data estimation methods revealed positive and significant effect of trade openness and FDI.

Mishra (2011) investigated the dynamics of the relationship between exports and economic growth for India over the period 1970 to 2009. The Granger causality test indicated that there was a causal relationship running from GDP to exports in the long run but not in the short run which provided the evidence of growth driven exports over the sample period. Thus findings rejected export-led growth hypothesis in India. Kumari and Malhotra (2014) conducted comparative study to examine trade-led growth hypothesis for India and China during 1980-2012. Time series econometric techniques (Johansen Cointegration & Toda-Yamamoto (TY) approach) have been applied to test the hypothesis. The empirical findings for India suggested unidirectional causality running from GDP per capita to exports. However, no causation was found between imports and GDP per capita. For China, a strong evidence of bi-directional causality was found from GDP per capita to exports/ imports and vice versa. The study concluded that China performed better as compared to India.

Theoretical framework

The neoclassical growth equation as proposed by Feder (1983) is used as the basis for our empirical study. Assuming that economy can be segregated into two sectors, and hence the total output (Y) of the economy is made up of output of the export sector (X) and that of the non-export sector (NX). Thus, total output can be written as follows:

$$Y=X+NX \tag{1}$$

These two sectors employ homogenous labour and capital and the export sector has a spillover effect on the non-export sector. The production functions for the export and non-export sectors can be stated as follows:

$$X= G(K_X+ L_X) \tag{2}$$

$$NX= F(K_{NX}+ L_{NX}, X) \tag{3}$$

where K_X and K_{NX} are the capital stock mobilized by the export and non-export sectors respectively and L_X and L_{NX} are labour employed by these sectors respectively. Based upon the assumption of Feder (1983), the marginal factor productivities in the export sector are greater than in the non-export sector by a factor δ, that is:

$$\left(\frac{G_K}{F_K}\right)= \left(\frac{G_L}{F_L}\right)= 1+\delta \tag{4}$$

The variations in marginal productivities between the export and non-export sectors exist principally due to differences in the level of technology innovation, management skills and the level of competition (Feder, 1983). The Feders' growth model could then imply the following empirical per capita growth equation:

$$\dot{Y} = \psi_0 + \psi_1 \dot{K} + \psi_2 \dot{X} \qquad (5)$$

where a dot over a variable denotes the growth rate of that variable. Economic growth is driven by capital and exports. In line with the purpose of this study, the present study segregated capital into domestic and foreign. It should be noted that both domestic and foreign capitals could complement each other in fostering economic growth via forward and backward linkages apart from other spillover effects such as through demonstration. As new foreign owned industries are established, there would be greater demands for products of local entrepreneurs. This could spur domestic direct investment. Hence the empirical model may be written as follows:

$$LNGDPPC_t = \beta_0 + \beta_1 LNEXP_t + \beta_2 LNIMP_t + \beta_3 FDI_t + \beta_4 DI_t + \varepsilon_t \qquad (6)$$

DATABASE & METHODOLOGY

Data

The time series data covers the period from 1980 to 2014. The annual data at the 2005 constant US dollar prices have been compiled from two international sources. Data on real GDP, real exports, real imports, and real gross capital formation have been compiled from World Development Indicators constructed by World Bank while data on foreign direct investment have been collected from United Nations Conference on Trade and Development (UNCTAD). The domestic direct investment series was obtained by netting out foreign direct investment from total investment. Tang (2015) noted that previous studies like Choong et al (2005), Lee and Tan (2006) Merican (2009) and Tan and Lean (2010) used gross fixed capital formation (total investment) as a proxy for domestic direct investment which is not appropriate measure as foreign direct investment is already included in it. All the variables are taken in their natural logarithms. The variables used for analysis are-

1. LNGDP = Log of Real Gross Domestic Product
2. LNEXP = Log of Real Exports of Goods & Services.
3. LNIMP = Log of Real Imports of Goods & Services.
4. LNFDI = Log of Real Foreign Direct Investment
5. LNDI = Log of Real Domestic Investment

Note: Real indicates data at the 2005 constant US dollar prices

Methodology

Unit root test

The study applied Augmented Dickey Fuller (ADF) and Phillips & Perron (PP) tests to obtain the order of integration of each time series used in the analysis so as to determine the appropriate technique that can be used to find out relationship among variables.

The Augmented Dickey-Fuller (ADF) test

Consider a simple Autoregressive AR (1) process:

$$y_t = \rho y_{t-1} + x_t'\delta + \varepsilon_t, \qquad (7)$$

where x_t are optional exogenous regressors which may consist of constant, or a constant and trend,ρ and δ are parameters to be estimated, and the ε_t are assumed to be white noise. If $|\rho| \geq 1$, y is a nonstationary series and the variance of y increases with time and approaches infinity. If $|\rho| < 1$, y is a (trend-) stationary series. Thus, the hypothesis of (trend-) stationarity can be evaluated by testing whether the absolute value of ρ is strictly less than one.

The standard DF test is carried out by estimating Equation (7) after subtracting y_{t-1} from both sides of the equation:

$$\Delta y_t = \alpha y_{t-1} + x_t'\delta + \varepsilon_t, \qquad (8)$$

Where α= ρ-1. The null and alternative hypotheses may be written as:

$$H_0: \alpha = 0$$
$$H_1: \alpha < 0 \qquad (9)$$

and evaluated using the conventional t - ratio for α:

$$t_\alpha = \alpha/(se(\alpha)) \qquad (10)$$

where α is the estimate of α, and se(α) is the coefficient standard error.

The Augmented Dickey-Fuller (ADF) test constructs a parametric correction for higher-order correlation by assuming that the y series follows an AR (p) process and adding p lagged difference terms of the dependent variable y to the right-hand side of the test regression:

$$\Delta y_t = \alpha y_{t-1} + x_t'\delta + \beta_1 \Delta y_{t-1} + \beta_2 \Delta y_{t-2} + \ldots + \beta_p \Delta y_{t-p} + v_t \qquad (11)$$

This augmented specification is then used to test (9) using the t -ratio (10). An important result obtained by Fuller is that the asymptotic distribution of the t -ratio for α is independent of the number of lagged first differences included in the ADF regression.

The Phillips-Perron (PP) Test

Phillips and Perron (1988) propose an alternative (nonparametric) method of controlling for serial correlation when testing for a unit root. The PP method estimates the non-augmented DF test equation (8), and modifies the t-ratio of the α coefficient so that serial correlation does not affect the asymptotic distribution of the test statistic. The PP test is based on the statistic:

$$\tilde{t_\alpha} = t_\alpha \left(\frac{\gamma_0}{f_0}\right)^{1/2} - \frac{T(f_0 - \gamma_0)(se(\alpha))}{2 f_0{}^{1/2} s} \qquad (12)$$

where α is the estimate, and t_α the t-ratio of α, $se(\alpha)$ is coefficient standard error, and s is the standard error of the test regression. In addition, γ_0 is a consistent estimate of the error variance in (8) (calculated as $(T-k)s^2/T$, where k is the number of regressors).The remaining term, f_0, is an estimator of the residual spectrum at frequency zero (Eviews, 2006).

Bound testing approach or Autoregressive Distributed Lag Model (ARDL) for cointegration

This study employs advanced Bound testing approach or Autoregressive Distributed Lag Model (ARDL) proposed by Pesaran and Shin (1999). Shahbaz, Ahmad and Asad (2011) noted that ARDL is more dynamic and provides better results for small sample sizes than traditional techniques in the literature. The ARDL framework for cointegration analysis used in the study has been given below-

$$\Delta LNGDP_t = \beta_0 + \beta_1 LNGDP_{t-1} + \beta_2 LNEXP_{t-1} + \beta_3 LNIMP_{t-1} + \beta_4 LNFDI_{t-1} + \beta_5 LNDI_{t-1} + \sum_{i=1}^{p} \beta_6 \, \Delta LNGDP_{t-i} + \sum_{i=1}^{p} \beta_7 \Delta LNEXP_{t-i} + \sum_{i=1}^{p} \beta_8 \, \Delta LNIMP_{t-i} + \sum_{i=1}^{p} \beta_9 \, \Delta LNFDI_{t-i} + \sum_{i=1}^{p} \beta_{10} \, \Delta LNDI_{t-i} + \varepsilon_t \quad (13)$$

The null hypothesis and alternative hypothesis under the bound test approach tested on the basis of F test for joint significance of all the regressors has been specified below-

Null Hypothesis (H_0) = β_1=β_2=β_3=β_4=β_5 (No long run relationship)

Alternative Hypothesis (H_1) = β_1≠β_2≠β_3≠β_4≠β_5 (Long run relationship exists)

RESULTS AND DISCUSSIONS

There are number of tests which can be employed to check stationarity. Two standard unit root tests most commonly used are Augmented Dickey Fuller (ADF) test and Phillips- Perron (PP) test. Both tests examine the hypothesis that a unit root exists at a level of a variable. If the calculated ADF and PP statistics are less than their critical value, then variables X and Y are said to be stationary at level or integrated to the order zero i.e. I (0). If this does not occur, then the ADF and PP tests are performed on the first differences of X and Y (i.e. ΔX and ΔY). If the variables are found to be stationary in this case, then variables X and Y are said to be integrated to order one i.e. I (1).

Table 1. Results of unit root tests for variables

	INDIA					CHINA				
	ADF (Test Statistics)									
	Test Statistics	**1% critical**	**5% critical**	**10% critical**	**p-value**	**Test Statistics**	**1% critical**	**5% critical**	**10% critical**	**p-value**
LNGDP										
I(0)	-1.038	-4.252	-3.548	-3.207	0.924	-4.711*	-4.284	-3.562	-3.215	0.003
I(1)	-5.627*	-4.262	-3.552	-3.209	0.000	-	-	-	-	-
LNEXP										
I(0)	-2.924	-4.252	-3.548	-3.207	0.167	-2.503	-4.252	-3.548	-3.207	0.324
I(1)	-4.841*	-4.262	-3.552	-3.209	0.002	-5.543*	-4.262	-3.552	-3.209	0.000
LNIMP										
I(0)	-2.325	-4.262	-3.552	-3.209	0.409	-2.801	-4.262	-3.552	-3.209	0.206
I(1)	-4.965*	-4.262	-3.552	-3.209	0.001	-4.654*	-4.262	-3.552	-3.209	0.003
LNFDI										
I(0)	-3.659**	-4.252	-3.548	-3.207	0.039	-1.822	-4.262	-3.552	-3.209	0.671
I(1)	-	-	-	-	-	-3.249***	-4.273	-3.557	-3.212	0.093
LNDI										
I(0)	-2.129	-4.252	-3.548	-3.207	0.511	-3.482***	-4.262	-3.552	-3.209	0.058
I(1)	-7.389*	-4.262	-3.552	-3.209	0.000	-	-	-	-	-
	PP (Test Statistics)									
LNGDP										
I(0)	-0.814	-4.252	-3.548	-3.207	0.954	-2.406	-4.252	-3.548	-3.207	0.369
I(1)	-6.809*	-4.262	-3.552	-3.209	0.000	-3.413***	-4.262	-3.552	-3.209	0.066
LNEXP										
I(0)	-2.970	-4.252	-3.548	-3.207	0.154	-2.503	-4.252	-3.548	-3.207	0.324
I(1)	-4.854*	-4.262	-3.552	-3.209	0.002	-5.544*	-4.262	-3.552	-3.209	0.000
LNIMP										
I(0)	-2.128	-4.252	-3.548	-3.207	0.512	-2.203	-4.252	-3.548	-3.207	0.472
I(1)	-4.964*	-4.262	-3.552	-3.209	0.001	-4.548*	-4.262	-3.552	-3.209	0.005
LNFDI										
I(0)	-3.497**	-4.252	-3.548	-3.207	0.055	-4.288*	-4.252	-3.548	-3.207	0.009
LNDI										
I(0)	-2.129	-4.252	-3.548	-3.207	0.511	-2.239	-4.252	-3.548	-3.207	0.454
I(1)	-7.614*	-4.262	-3.552	-3.209	0.000	-4.147**	-4.262	-3.552	-3.209	0.013

Note: *, ** and *** indicate significance at the 1%, 5% and 10% respectively.

The results of ADF and PP tests have been presented in table 1. The results for India indicated that all the variables are I(1) or integrated of order one except for LNFDI while for China variables are of mixed order. Thus, the stationarity property of variables proves that analysis suited to proceed with autoregressive distributed lag (ARDL) bound testing approach.

ARDL or Bound testing approach proposed by Pesaran and Shin (1999) avoids the problem of mixed orders and provides the possibility of testing long run relationships whether the variables are I(0) or I(1). The results of Autoregressive Distributed Lag (ARDL) Bound Testing Approach have been summarised in Table 2. ARDL involves two steps of estimating relationships among variables. First step investigates the existence of long run relationship and second step involved the estimation of short run coefficients. Null hypothesis of no cointegration is rejected if F-statistic is higher than upper bound value. Table 2 shows that F-statistics is lower than upper bound value which concludes that there is lack of steady state long run equilibrium relationship among variables in case of India whereas in case of China, F-statistics is higher than upper bound value which concludes that there exists steady state long run equilibrium relationship among variables. Hence, null hypothesis of no cointegration can be rejected for China. The ECT_{t-1}term is also significant and has negative sign which indicates the speed of adjustments from short run to long run. The short run coefficients are also significant.

Table 2. Results of Autoregressive Distributed Lag (ARDL) bound testing approach

INDIA				**CHINA**			
Long Run Coefficients		**Short Run Coefficients**		**Long Run Coefficients**		**Short Run Coefficients**	
Dep. Var. (LNGDP)	Coefficients (p-value)	Dep. Var. (LNGDP)	Coefficients (p-value)	Dep. Var. (LNGDP)	Coefficients (p-value)	Dep. Var. (LNGDP)	Coefficients (p-value)
Constant	8.170* (0.000)	ECT_{t-1}	-0.324* (0.000)	Constant	6.953* (0.000)	ECT_{t-1}	-0.726* (0.000)
LNEXP	-0.085 (0.399)	D(LNEXP)	-0.027 (0.381)	LNEXP	0.147* (0.000)	D(LNEXP)	0.107* (0.000)
LNIMP	0.113 (0.248)	D(LNIMP)	0.036 (0.237)	LNIMP	-0.084* (0.007)	D(LNIMP)	-0.061** (0.024)
LNFDI	-0.009 (0.421)	D(LNFDI)	-0.003 (0.433)	LNFDI	0.056* (0.000)	D(LNFDI)	0.040* (0.000)
LNDI	0.362* (0.001)	D(LNDI)	0.117* (0.001)	LNDI	0.384* (0.000)	D(LNDI)	0.278* (0.000)
Trend	0.033* (0.000)	Trend	0.010* (0.005)	Trend	0.037* (0.000)	Trend	0.027* (0.000)
F- statistic=1.479		R^2= 0.592		**F- statistic**=5.622		R^2= 0.999	
95 % Lower Bound =4.089		**Adjusted**R^2=0.501		**95 % Lower Bound** =4.089		**Adjusted**R^2=0.998	
95 % Upper Bound =5.422		**DW**= 1.859		**95 % Upper Bound** =5.422		**DW**= 1.555	

Note: *, ** indicates significance at the 1% & 5% level.

Thus, results give evidence that trade and investment have positive and significant effect on China's economic growth. While for India, only domestic investment was found to be significant in short run as well as in long run.

CONCLUSIONS AND POLICY IMPLICATIONS

Conclusions

In order to examine the relationship between trade, investment and economic growth in India and China, the study used time series data from 1980 to 2014. The findings highlighted that exports, foreign direct investment and domestic investment have positive and significant effect on China's economic growth in both short run and long run. While for India, only domestic investment was found to be significant in short run as well as in long run.

Several studies have highlighted the reasons behind poor performance of Indian economy as compare to China's economy. According to Ye (2014) FDI liberalization in China remained ahead of India. Though starting rate of China's FDI inflow in 1980 was below India's FDI inflow but it increased rapidly. China managed to attract remarkably high FDI along with high per unit FDI contributions to employment, exports, revenue, research and development (R&D), wages and capital formation. It has also been successful in mobilizing FDI inflow. China has been quite open for FDI in almost all manufacturing and most service industries (World Bank, 2010) while India's approach towards FDI has been relatively conservative initially but progressively started catching up in early 1990s onwards.

Considering the strength of trade linkages China is highly integrated with emerging Asian economies relative to India. China has specialization in high tech goods while Indian exports constituted mainly low- tech exports. China has produced new and more sophisticated manufactures that has benefitted other countries to expand their processing industries (Dimaranan, Ianchovichina and Martin, 2009). Indian export structure is highly concentrated on one category of goods i.e. jewellery & works of art. This category consists 20 percent of total Indian exports and only 1.4 percent of world trade. In case of service exports, Chinese exports of services complemented its export of goods while Indian exports continued to grow in deregulated sector such as IT related services (Bussiere and Mehl, 2008). Rada (2010) also found that India has failed to break away its past trade deficit despite fast economic growth and integration into global economy. Apart from above, most enterprises in India are very small and informal sector is huge and growing over time therefore causing low advantages of economies of scale as compare to China (Valli and Saccone, 2009).

Policy implications

In terms of policy implications, the study proposes further reforms and liberalization of FDI, so that Indian economy can also fully utilize its growth potential. The export-oriented strategy seems to be underutilized in case of India. There are structural deficiencies in case of India and hence ongoing reforms must continue to achieve targets. China must emphasize on policies and practices that primarily focus on sustainability of trade and investment opportunities.

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Analysis of budget spending and its affect on Jambi Government performance

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Abstract

The purpose of this research are: 1) to investigated the tendency of budget absorption to regional working units (SKPD in Indonesian) expenditure in the provincial government of Jambi; 2) to analyze factors that influence the SKPD's budget absorption in the provincial government of Jambi; 3) to examine the effect of budget absorption on agency performance in the provincial government of Jambi. The data used in the research are secondary data in the form of budget realization reports, and primary data by using questionnaires. The population in this research are all SKPD in the environment of the provincial government of Jambi. The data analysis tools used in this research is Partial Least Square (PLS). The research finding shows that 1) all SKPD in the environment of the provincial government of Jambi tend to be delayed in budget absorption. About 82.61% SKPD tend to be delayed in budget absorption of personnel expenditure. All SKPD tend to be delayed in budget absorption of goods and services expenditure, and 43.90% SKPD tend to be delayed in budget absorption of capital expenditure; 2) budget planning and budget execution are the factors that affect the budget absorption significantly, while capacity of human resources has no effect on the budget absorption, and 3) the budget absorption has a positive and significant impact on the agency performance in the provincial government of Jambi.

Keywords: *Capacity of human resources, Budget planning, Budget execution, Budget absorption, Agency performance*

INTRODUCTION

Regional budget is one of the tools that play an important role in order to improve public services and in it reflected the needs of the community with pay attention to the potential and sources of local wealth. A good budget will reflect into effectiveness of government performance in the public, then the government should be enable to create a mature and realistic budget to be realized so that the welfare of the community can achieved. Public sector budgeting is an instrument of accountability for the management of public funds and the implementation of programs financed from public money (Mardiasmo, 2009) .

The local government has a role to optimize the management of local budgets in order to benefit the welfare of society as it has been mandated into the Government Regulation No. 58 of 2005. However, look at the implementation still many things expected by public on the government for improved welfare that it is not be fulfilled yet. The realization of Regional Government Budget or APBD in Indonesian (direct expenditure) capital expenditure budget in Year A of 2015 budget all districts/municipalities in Indonesia is estimated to be 15 percent so that the amount of expenditure that can be utilized for public interest is not yet optimal in achievement.

The problem of less than optimal absorption of the budget occurs because the absorption is always low at the beginning of the year and will eventually accumulate at the end of the year. In fact, local regulations on APBD have been approved since the end of December of the previous year so that programs and activities should be implemented early in the year (Aini, 2016).

Absorption the budget can be seen from two points of view. The first view, budget absorption in question is the realization of the budget at the end of the year compared with budget. The second view, the absorption of the budget meaning is the disproportionate absorption of the budget marked slowly at the beginning of the year and accumulate at the end of the year (Halim, 2016).

Delays of budget absorption to be one of the classic problems that continue to occur each year in Indonesia. Indonesia as a developing country by the World Bank is included as one of the countries with *slow* budget absorption *and back loaded expenditures*. Budget absorption at the beginning of the year (first quarter) is so small but has increased significantly at the end of the year (fourth quarter). This has an impact on the slow realization of program implementation and government activities (Malahayati, et.al, 2015). This phenomenon also happened to Jambi Provincial Government.

Base on the data of budget absorption of Jambi provincial government in 2014-2015, the first quarter showed a very low budget absorption even when passing through the second quarter, expenditure still low only able to be absorbed less than 50 percent. That is, many program / activity completion will accumulate at the end of fiscal year. Many regional working units (SKPD in Indonesian) are overly cautious when doing so seems slow budget spending and optimal use of the time. The fifteen-month budget year of the sea will be effective only for 5-6 months. Many SKPD are just beginning to work in the second quarter. This causes the implementation of programs/activities to be ineffective and efficient.

The amount of Jambi Province government spending keep increasing from year to year. The increase in portion of expenditure is not matched by maximum budget absorption. The average absorption rate of Jambi Province direct spending in the period of 2011-2015 amounted to 89.89 percent, or in other words there is still an unabsorbed percentage of budget of 10.03 percent. Absorption of the budget that is not optimal seems to make the budget area so great looks in vain. Low absorption of the budget poses macroeconomic risks and does not achieve economic growth targets. Meanwhile, slowing budget absorption or accumulation in the last quarter will also create local financial accountability risks, such as imposing unnecessary activities, weak planning of activities, and decreasing quality of implementation of activities (Halim, 2016).

Absorption of a late and low budget needs to get serious attention from the government. Based on previous studies, the factors that allegedly affected the absorption of the budget include human resource factors, budget planning factors, and budget implementation factors.

The first factor, human resources in this case civil servants as the financial management apparatus also become one of the factors that affect the absorption of the budget. This is in accordance with the research finding of Maulana (2011) which states that not yet maximize the absorption of budget usage of APBD by some SKPD indicates that SKPD has not been able to maximize human resources.

The second factor affecting budget absorption is budget planning. The problems that arise in budget planning are due to the assumption that not all proposed budgets will be approved so that the proposed budget is greater than required without considering the ease of implementation and real needs in the field (Septianova and Helmy, 2013).

Yunarto (2011) stated that poor budget planning often creates obstacles in the implementation, so it should be revised or even cannot be realized at all. This thing is in accordance with the statement Muchsin and Noor (2011) that the cause of the low absorption caused in the budget planning stage is usually because it is still waiting for the approval of APBD, which is late received by SKPD.

The third factor, budget absorption according to Malahayati, et.al, (2015) is also affected by budget execution. The problems that often occur within the internal work unit include the delay in determining the decision of the finance manager, the habits of the budget manager to delay the work, and the absence of *rewards* and *punishment* for the success or failure of financial management in the work unit also leads to the slow absorption of the budget (Miliasih, 2012) .

The payment mechanism of money supply by Herriyanto (2012) becomes a problem that occurs in the execution of the budget due to the withdrawal application is not optimized only once a month withdrawal and the need for office funds that require substantial funds but cannot be accounted - account for the disbursement documents so that slow down the process of applying for inventory money. Furthermore, Siswanto and Rahayu (2010) stated that related to the procurement process of goods / services, the prudence of procurement officers in taking action, lack of certified procurement committee, and poor implementation of procurement of goods / services in SKPD also contributed to the slow absorption budget.

Budget absorption in performance-based budgeting frameworks is not the target of budget allocation. However, up to now, one of the indicators used to assess the performance of local governments is the absorption of the budget. Budget absorption reflects the ability of local governments to implement and account for any planned activities (Mardiasmo, 2009). The same thing is expressed by Haspiarti (2012) that the use of budget must be accountable by using the result of the expenditure of public funds so that in the end can be obtained picture about performance of government institution.

The performance of government agencies has been in the spotlight in recent years, especially since the emergence of a more democratic climate in government. Some of people questioned of the value they receive for services carried out by local governments. Although the routine and development budgets issued by the government are increasing, it seems that people are not satisfied with the quality of services or goods provided by the local government (Stepanus, 2014).

Based on research of Sukadi (2012), Zarinah (2015), Ruwaida, et.al (2015) and Malahayati (2015) proved that human resource factors, budget planning and budget execution have an impact on SKPD budget absorption. According Fitriany et al (2015) proves that simultaneously the budget-planning factor, budget execution, internal unit, HR, document, and administration affect the accumulation of budget absorption at the end of the year, but only the human resource factor and the influencing document factors against the accumulation of budget absorption at the end of the year. Furthermore, Rifai, et al (2016) states that planning, regulation, coordination, implementation, decentralization and human resources have no effect on the delay of budget absorption in SKPD NTB Provincial Government.

This research is an extension of Herriyanto (2012), Miliasih (2012), and Kuswoyo (2012) research where the study looks at the problem of delay and low budget absorption. The difference between this study and previous research is previous research using exploratory factor analysis method *(Exploratory Factor Analysis)* to analyze the factors causing the delay of budget absorption. Past research has yet to test the effect of the above factors - factors that affect the delay on budget absorption.

Some of the factors that have been identified in previous research will serve as the independent variables that affect the absorption of an expenditure that is the capacity of human resources, budget planning and budget execution as in research Zarinah (2015), Malahayati (2015) and Rifai et.al (2016). However, this study will also look at the effect of budget absorption on agency performance.

The budget cycle consists of budget planning / budgeting, budget execution, budget monitoring, and budget reporting and accountability. Budget realization becomes an important thing for government agencies because it becomes one of the SKPD performance benchmarks. However, since 2011 until the year 2015 the phenomenon that occurred in Jambi Province showed less optimal budget absorption and tends to be escalated at the end of the year. The disproportionate disbursement of budgets affecting government programs and activities and/or public services cannot be accomplished quickly and well.

Delay in budget absorption and low budget absorption rate issues that are often discussed in the execution of government budgets. The government has attempted, but the regulatory issues continue to recur. The delay in the absorption of this budget will affect the implementation of programs and activities in the government agencies that is to affect the performance of agencies. Report on evaluation result of performance accountability of Jambi Provincial Government Institution conducted by Ministry of Administrative Reform and Bureaucratic Reform (KemenPAN and RB) shows the performance of Jambi Province institution Year 2015 is still CC category with value 52,87.

Based on the explanation proposed then it can be formulated the problems in this study are: 1) How the tendency of uptake of government agencies (SKPD) budget in Jambi Provincial Government?; 2) What factors influencing of budget absorption of SKPD budget in the Provincial Government of Jambi?; 3) How is the influence of SKPD budget absorption on the performance of Jambi Provincial Government institution?

RESEARCH METHODS

The data in this study is secondary data in the form of budget realization report SKPD in Jambi Provincial Government and primary data by using questionnaire. The population in this research is all SKPD in Jambi Provincial Government. The number of respondents in this research is 71 respondents by using *purposive sampling* method with the apparatus criteria, which is located as the head of planning and financial sub-division of SKPD, and has the main duty and function as PPK (Commitment Making Official) and PPTK (Officials technical implementation activities).

Data analysis method used is descriptive analysis method to look at the trend of budget absorption SKPD and SEM-PLS to look at the factors that influence the uptake of the budget and budget absorption influence on the performance of government agencies. The structural equation model in this research is:

$$\boldsymbol{\eta}_1 = \boldsymbol{\gamma}_1 \boldsymbol{\xi}_1 + \boldsymbol{\gamma}_2 \boldsymbol{\xi}_2 + \boldsymbol{\gamma}_3 \boldsymbol{\xi}_3 + \boldsymbol{\varsigma}_1$$

$$\boldsymbol{\eta}_2 = \boldsymbol{\beta}_1 \boldsymbol{\eta}_1 + \boldsymbol{\varsigma}_2$$

Remark:

ξ = exogenous latent variable

η = endogenous latent variable
β = coefficient of influence of endogenous variable to endogenous variable
γ = coefficient of influence of exogenous to the variable to endogenous variable
ς = Zeta, model error

RESULT AND DISCUSSION

Analysis of budget absorption of SKPD of Jambi Provincial Government

The evaluation result on the budget realization report of SKPD within Jambi Provincial Government Fiscal Year 2015 can show the level of SKPD budget absorption as shown in table 1.

Table 1. Absorption level of government budget for Jambi in FY 2015

Quarter	Cumulative Budget Absorption		Absorption budget per Quarter	
	Rp	%	Rp	%
I (January-March)	135,681,541,959	7.79	135,681,541,959	7.79
II (April-June)	515,550,159,798	29.60	379,868,617,839	21.81
III (July-September)	918,013,307,121	52.71	402,463,147,323	23.11
IV (October-December)	1,663,360,224,945	91.13	745,346,917,824	40.83

Source: Data of LRA SKPD 2015 processed, 2017

Table 1 shows that the average absorption of Jambi Provincial Government budget for Fiscal Year 2015 cumulatively tends to increase from quarter to quarter. The absorption of the budget per quarter was seen to increase each quarter, but the absorption of expenditure in the first quarter tended to be low. If viewed proportionally the budget absorption rate per quarter is not proportional. Absorption of the quarterly budget is below the 25 percent proportional level for the first, second and third quarters. Cumulatively, the budget absorption rate until the end of the first quarter was still 7.79 percent.

Low budget absorption at the beginning of the year will trigger high absorption by the end of the fiscal year. Table 1 shows that the largest budget absorption occurred in the fourth quarter of 40.83 percent. This indicates that the accumulation of budget realization in the fourth quarter.

The analysis of SKPD budget absorption in Jambi Provincial Government tends to be delayed, and the level of delay in budget realization is shown in Table 2.

Table 2. The level of delay in fiscal secondary spending in Quarter III in FY 2015

Delay Rate	Amount of SKPD	% of Total SKPD
High	1	2.17
Medium	14	30.43
Low	31	67.39
amount	46	100

Source: Data of LRA SKPD 2015 processed, 2017

The result of analysis of the tendency of budget absorption shows that cumulatively the tendency of low budget absorption rate in the first and second quarter. This triggered a high level of realization at the end of the budget year, indicated by the uneven rate of absorption in each quarter. Absorption of uneven expenditure budget is caused only by employee expenditure, which tends to be more consistent absorption in every quarter. While absorption in addition to personnel spending uneven trend in every quarter. Budget realization per type of expenditure is cumulative compared with budget realization per type of quarterly spending shown in Table 3.

Table 3. Absorption of Jambi Province expenditure budget by type of expenditure FY 2015

Quarter	Cumulative Shopping Spend (%)			Spending Absorption per Quarter (%)		
	Employee Expenditure	Shopping Goods & Services	Capital Expenditure	Employee Expenditure	Shopping Goods & Services	Capital Expenditure
Q I	22.47	4.86	8.83	22.47	4.86	8.83
Q II	43.43	27.61	29.78	20.96	22.75	20.95
Q III	65,33	48.90	54.96	21.90	21.29	25.18
Q IV	81.86	88,50	95,36	28.81	41.07	42.55

Source: Data of LRA SKPD 2015 processed, 2017

Table 3 shows that the accumulative spending of expenditures across quarterly for each type of expenditure except for personnel expenditure experienced a low trend at the beginning of the year and increased sharply in the fourth quarter. While the level of expenditure realization per quarter for each type of expenditure except personnel expenditure experienced the greatest tendency in the fourth quarter.

Analysis of trend of employee expenditure budget absorption

The analysis result of the delay level of realization of Jambi Provincial Government personnel as a whole shows that budget absorption rate is above 68 % at the end of September. However, when viewed per SKPD then the results of late analysis in quarter III will be seen in Table 4.

Table 4. Level of late employee expenditure realization Quarter III FY 2015

Delay Rate	Amount of SKPD	% of Total SKPD
High	2	4.35
Medium	14	30.43
Low	22	47.83
Total	**38**	**82.61**

Source: Data of LRA SKPD 2015 processed, 2017

Table 4 shows that 82.61% SKPD tend to experience delays in absorption of personnel budget, but tendency of delay in absorption into low category. That is, there are 17.39% SKPD which is not categorized as late in budget absorption due to the absorption of personnel budget up to the end of III quarter above 68 %.

Analysis of trend of budget absorption of goods and services

The budget for goods and services expenditure in 2015 is owned by all SKPD in Jambi Provincial Government that is 46 SKPD. It can be seen from Table 3 that the realization of cumulative goods and services expenditure tends to be low at the beginning of the year up to the end of the third quarter. The absorption rate of the budget until September only reached 48.90 %, where the total absorption rate is 88.50 % of the budget so that 41.07 % of the absorption of goods and services expenditures occurs in the fourth quarter.

Table 5. Level of delays realization of goods and services expenditures Quarter III FY 2015

Delay Rate	Amount of SKPD	% of Total SKPD
High	1	2.17
Medium	17	36.96
Low	28	60.87
Amount	46	100,00

Source: Data of LRA SKPD 2015 processed, 2017

The level of delay in the realization of the expenditure budget for goods and services in the third quarter of FY 2015 is shown in Table 5. Table 5 shows that at the end of the third quarter of 46 SKPD (100%) in Jambi Provincial Government, the manager of goods and services expenditure experienced a delay in the absorption of budget for goods and services. At the end of Q3 / 2015, there was no SKPD with realization of goods and services expenditure above 68 %.

Analysis of trend of budget absorption of capital expenditures

In Fiscal Year 2015 there are 41 out of 46 SKPD within Jambi Provincial Government that manage capital expenditure. SKPD that does not manage this capital expenditure is under the Regional Secretariat of the Law Bureau, Government Bureau, Development and Cooperation Administration Bureau, Bureau of Economic and Natural Resources Administration, and Bureau of Public Welfare and Community.

Table 2 shows that cumulative capital expenditures tend to be low at the beginning of the year to the end of the third quarter. The absorption rate of the budget until September was only 54.96 %, where the total absorption rate was 95.36 % of the budget change so that 42.55 % of capital expenditure absorption occurred in the fourth quarter. The level of delay in capital expenditure realization in the third quarter of FY 2015 is shown in Table 6.

Table 6. Late expectation rate of capital expenditures Quarter III FY 2015

Delay Rate	Amount of SKPD	% of Total SKPD
High	2	4.88
Medium	7	17.07
Low	9	21.95
Amount	**18**	**43.90**

Source: Data of LRA SKPD 2015 processed, 2017

Table 6 shows that 18 out of 41 SKPD (43.90 %) managing capital expenditures tend to experience delays in budget absorption. That is, 23 SKPD (56.10 %) that is not included in the category of late because the absorption rate of its budget is above 68 % at the end of the third quarter. This indicates that the absorption of capital expenditure budget in FY 2015 has started to be orderly, where more than 50 % of SKPD that manage capital expenditure do not experience any delay.

Analysis of factors affecting budget absorption and its influence on the performance of Jambi provincial government agencies

The number of questionnaires distributed in this study were 71 questionnaires, with 100% return rate so that all questionnaires are suitable for further analysis. The analyzes include descriptive statistical analysis and inferential analysis.

Table 7. Descriptive statistics by variables

Variables	N	Theoretical Range	Theoretical Meaning	Actual Range	The Actual Mean	Standard Deviation
Human Resource Capacity	71	4-20	12	5-19	1 0.761	2,836
Budget Planning	71	5-25	15	9- 24	15.718	4,061
Budget Implementation	71	3-15	9	5- 15	9,620	2, 167
Budget Absorption	71	6-30	18	10- 28	17,197	4,569
Agency Performance	71	5-25	15	5- 25	15.507	4, 039

Source: Primary data processed, 2017

The results of descriptive statistical analysis are shown in Table 7. R averages of respondents stated that human resource capacity is still low, budget planning is good enough, budget execution is quite good, budget absorption is still low, and agency performance is quite good.

Inferential Analysis *(Goodness of Fit)* using SEM PLS done through 2 stages of evaluation of outer model and evaluation of inner model. Outer model evaluation consists of convergent validity test and discriminant validity test. The result of the convergent validity test shows that all indicators are valid as the value of *outer loading* ranges above 0.50 as shown in Figure 1.

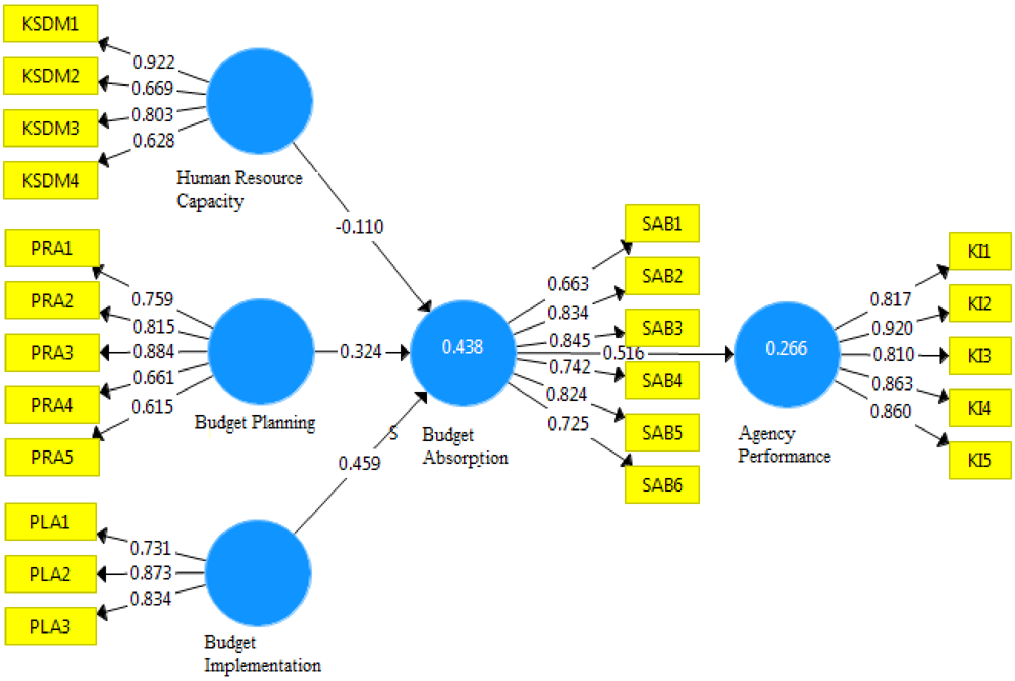

Figure 1. Output PLS algorithm

Discriminant validity test shows the correlation value of cross loading of all indicators of human resource capacity to latent variable is greater than cross correlation value of other latent variables because it ranges from 0.63 to 0.92 so that all HR capacity indicator is valid. The correlation value of cross-loading of all budget planning indicators to latent variables is greater than the cross correlation value of other latent variables because of the range 0.62 to 0.88, so that all indicators of budget planning are valid. Likewise, the cross correlation value of loading all the indicators of implementation of the budget of the latent variable is greater than the value of the cross correlation for loading other latent variables ranged from 0.73 to 0.87, so that all the indicators of implementation of the budget is declared invalid.

The correlation value of cross-loading of all expenditure absorption indicators to latent variables is greater than the cross correlation value of other latent variables because it ranges from 0.66 to 0.85, so that all expenditure absorption indicators are valid. The correlation value of cross-loading of all agency performance indicators to latent variables is also greater than the cross correlation value of other latent variables because it ranges from 0.81 to 0.92, so all the indicators are also valid.

Meanwhile, all latent variables are considered reliable because of the value of AVE>0.50; value of composite reliability and Cronbach Alpha value> 0.70 as shown in Table 8.

Table 8. Average Variance Extracted (AVE), Composite Reliability (pc) and Cronbach Alpha

Construct Variables	AVE	*Composite Reliability*	*Cronbach Alpha*	Information
Human Resource Capacity (KSDM)	0 , 584	0 , 846	0 , 791	Reliable
Budget Planning (PRA)	0 , 567	0 , 866	0 , 804	Reliable
Budget Implementation (PLA)	0 , 664	0 , 855	0 , 744	Reliable
Budget Absorption (SAB)	0 , 601	0 , 900	0 , 865	Reliable
Agency Performance (KI)	0 , 731	0 , 931	0 , 907	Reliable

Source: Primary data processed, 2017

Evaluation of structural model or inner model is done by bootstrapping test, which yields coefficient value of determination R square, Q square, path coefficients, and latent variable correlations. The coefficient R_1^2 of 0.438 indicates that the variation (change) that occurs in the variable of SKPD budget absorption at Jambi Provincial Government is 43.80 % influenced by the changes that occur together on the variable of human resource capacity, budget planning and budget execution. The rest is equal to 56.20 % influenced by factors of other variables not included in this research model. While the coefficient $R_2^2$of 0,266 showed variations (changes) that occur in the variable performance of Jambi Province Government agencies of 26.60% influenced by changes in variable uptake of the budget, while the remaining 73.4 0% influence by factors of other variables not included in this research model

Q square predictive relevance for inner model is used to find out how well the observation value is generated by the model and the parameter estimation. The value of Q square > 0 indicates the model has predictive relevance, otherwise if the value of Q square ≤ 0 indicates the model lacks predictive relevant e.

The result of calculation Q^2 shows the value of 0.587 or 58.70%. This means the model in this study is feasible or has predictive relevance to evoke endogenous variables of budget absorption and agency performance.

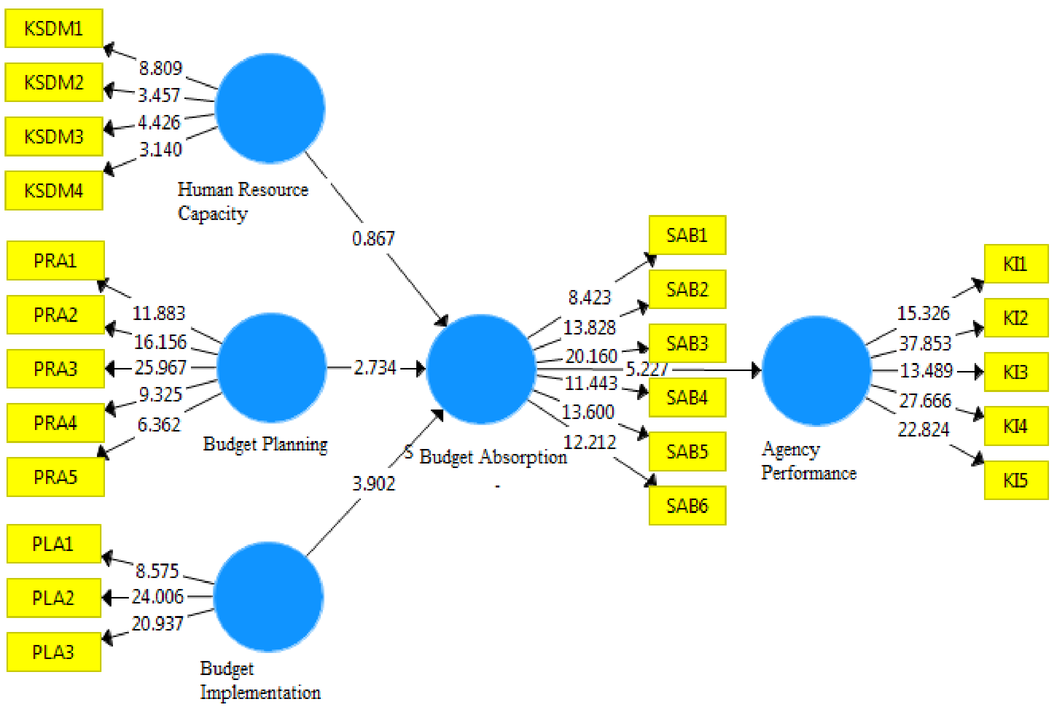

Figure 2. Bootstrapping output

Influence of human resource capacity on budget absorption

The result of hypothesis testing showed that human resource capacity had negative and insignificant effect on the absorption of Jambi Provincial Government's budget with regression coefficient of -0.110 and t- *statistic* equal to 0.8 67 . The t- *statistic value* 0, 867 is smaller than the t-table is 1.96 at the level of significance of alpha 5% then H_a rejected. That is, the increase or decrease in human resource capacity does not affect the absorption of the budget.

Influence of budget planning toward budget absorption

The results showed that budget planning has a positive and significant effect on budget absorption by looking at the coefficient of regression of budget planning of 0.459 and t- *statistic* value of 3, 902 . The t- *stat value* of this budget planning variables is greater than t-table that is 1.96 at the level of 5% alpha significance. Based on hypothesis formulation hence alternative hypothesis (H_a) accepted so that planning is a factor influencing budgetary uptake. This means that it is better for budget planning in budget / financial management to be more appropriate and high uptake of SKPD budget to Jambi Provincial Government.

Effect of budget implementation on budget absorption expenditures

The results showed that the budget implementation has a positive and significant effect on budget absorption by looking at the regression coefficient of budget implementation of 0.324 and the t- *statistic* value of 2,734. The t- *statistic* value of this budget execution variable is greater than t-table that is 1.96 at the level of 5% alpha significance. Based on the hypothesis formulation, the alternative hypothesis (H_a) is accepted so that budget execution is a factor affecting budget absorption. The better the budget execution in budget management/finance the more precise and high the budget allocation of SKPD to the Government of Jambi Province.

The Influence of budget absorption on institution performance

The result of hypothesis testing shows that the absorption of expenditure budget has positive and significant effect to the performance of the institution by looking at the regression coefficient of 0,516 and the *t-statistic* value is 5, 227 . The t- *statistic* value of this budget absorption variable is greater than t-table that is 1.96 at the level of significance of alpha 5% then the alternative hypothesis (H_a) is accepted. This means that the more precise and higher absorption of budget expenditures in budget management/finance, the better agency performance at Jambi Provincial Government.

Policy implication of research finding

The results of this study can be an input for the local government about the absorption of the budget, especially the Government of Jambi Province. The problem of budget absorption becomes a continuous problem because every year budget absorption, especially the procurement of goods / services tends to experience delays. The results of this study indicate that budget planning and budget execution is a factor affecting budget absorption. This indicates that local governments should continue to make improvements in budget planning and budget execution for the acceleration of budget absorption in order to improve the performance of agencies can be achieved. This can be done by means of each SKPD should make the following policies:

1. Using cost standard analysis (CSA) in the preparation of budget so that budget can be allocated according to requirement because at present most of SKPD in Province government have not yet applied it.

2. Identify the types of expenditures procured through the tender process, direct appointments, or self-management.
3. Develop a plan of budget absorption accompanied by a *procurement plan* that is plan) is a systematic, planned budget spending was made for one fiscal year and are detailed for each month per type of expenditure as a tool to monitor the implementation of the achievement of performance working units (establishments).
4. Establish monthly/quarterly target of *output* and *outcome* (performance).

   Some of these policies are expected to overcome the problems that occur in the absorption of the budget that has been happening so that the performance improvement of the Government of Jambi Province in particular can be achieved.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The absorption of expenditure by total expenditures in Q^3 showed that all SKPD tended to be delayed due to budget absorption below 68 percent. The absorption of personnel budget at the end of the third quarter indicates that 38 out of 46 (82.61 percent) of SKPD tend to experience delays. That is, 17.39 percent are not categorized as late in the absorption of the budget because the absorption of personnel budget up to the end of III quarter is above 68 percent.

The absorption of goods and services spending at the end of the third quarter indicates that all SKPD tend to be delayed because there is no budget absorption rate above 68 percent. The absorption of capital expenditure at the end of the third quarter indicates that 43.90 percent SKPD managing capital expenditures tend to experience delays in budget absorption. That is, 56.10 percent do not fall into the category of late because the absorption rate of the budget is above 68 percent.

Budget planning and budget execution is factors that influence the absorption of the budget significantly while the capacity of human resources has no significant effect. Budget absorption has a positive and significant effect on the performance of Jambi Provincial Government institution.

Recommendations

Giving *reward/punishment* for SKPD that succeeded/failed in implementing financial management so that the management of regional finance in the future becomes more effective, efficient and timely in budget absorption so that the resulting *outcome* can be useful and enjoyed by the community.

The acceleration and optimization of budget absorption can be done through good budget planning and budget execution conducted appropriately and in accordance with schedule so that the implementation of programs and activities can reach the target in order to improve the performance of the institution.

The development of further research to expand the budget absorption analysis, by adding other factors that may be taken into consideration in the absorption of the budget such as external SKPD environment factors, budgetary supervision, time of budgeting, the remainder of the previous year's budget.

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Online financial disclosures in the Nigerian public sector

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Abstract
The objective of this study is to examine the online financial disclosure practices by Nigerian public sector entities. In achieving this, the cross-sectional research design was employed and data gathered from 27 states for a one year period. The ordered logistic regression technique was used to estimate the model and the findings reveal that wealth and political competition have significant positive relationships with online financial disclosure in Nigeria while the size of the state has a significant but negative relationship. Also, the age of the state has an insignificant relationship with online financial disclosure in Nigeria. Based on these, the study recommends that healthy competition should be encouraged in forms of public debates, assessment polls on public sector entities, frequent programmes aimed at assessing the progress of public entities probably on a yearly basis or biannual or even at the end of a regime (before the commencement of another).

Keywords: *Online disclosure, Public sector, Financial disclosure, Political competition, State wealth*

INTRODUCTION

Information plays a crucial role in the activities of any government as well as in the production, preparation, and presentation of reports, although this information has to be first available and accessible by its users. In recent years, due to changing technology and perception, we are experiencing the need for public sector entities to be more transparent in the information they publish and how they relate to citizens (Perez, Hernandez, & Bolivar, 2007). More so, since the inception of modern financial reporting, financial information has been distributed to its users (shareholder, public and other interested parties) through the use of hard copies (papers) and such reporting may cause delay and impose significant costs of printing and distribution (Jimoh & Okoye, 2016). However, in this era of information and communication technology, the internet and website have become powerful means that public sector entities can now use to disseminate its information, thereby increasing its transparency, which is part of their policy for good governance. Put differently, the internet offers the possibility of increased interaction between citizens and the government (Chadwick, 2003). In addition, internet reporting has the benefit of low cost, wider reach, high frequency and speed. However, despite these benefits, the practice of internet reporting seems to be poor and varies across companies and across countries (Debrecency, Gray & Rahman, 2002).

The clamor for transparency in Nigeria is one major cause for more disclosure.

Nigeria is more-or-less a mono-economy with thirty-six (36) states, each of which is blessed with natural resources. The government also collects taxes from its citizens to provide social amenities as required of them by the constitution. Thus, to aid transparency and accountability of the finances collected, and to ensure maximum utilisation, there is a need for disclosure of both qualitative and quantitative financial information. One way opened for such disclosure is via the internet and websites. However, it has been observed that most developing countries have not keyed into this (Debrecency et al., 2002).

The US, Canada, UK, Ireland, and New Zealand are some countries in which studies on disclosure through the internet have been conducted (Koreto, 1997; Lymer, 1997; Lymer & Tallberg, 1997; Marston & Leow, 1998; and Petravick & Gillett, 1998). The report shows an increasing number on the usage of the internet to disclose information. This shows that internet reporting is already an international practice. In addition, studies have been carried out on online financial disclosures globally, but only a few have been specifically carried out in the area of public sector. Garcia and Garcia (2010); Laswad, Fisher and Oyelere (2005); and Tudor, Blidisel and Popa (2009) are the very few authors that have investigated this in the public sector of various countries. These studies were observed to have been done in New Zealand, Spain, United States, Italy and, Romanian. However, to the best of the researcher's knowledge, very limited researches have been carried out on online financial disclosure in the public sectors of developing and frontier countries like Nigeria.

Although Jimoh and Okoye (2016) did a study on online financial disclosures in Nigeria, their study was limited to a few variables that could be accessed. In this study, however, we improved on the choice of variables and measurements and include political completion as a variable since studies done in the developed countries found it to be a significant determinant of disclosure. To this end, the objective of this study is to examine online financial disclosures in the Nigerian public sector. This study contributes to knowledge and extends the study of Jimoh and Okoye (2016) thereby filling the gap of the paucity of research in Nigeria. To achieve the objective of this study, emphasis is placed on the state governments in Nigeria and is restricted to financial disclosure made online (website) and not in paper form.

The rest of this paper is divided into sections- literature review and hypotheses development (section 2), methodology and model specification (section 3), results and analyses (4), discussion of findings (5), and conclusion and recommendations (6).

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Concept of disclosure

According to Hendrickson and Brenda (1992), disclosure is defined as the provision of information needed for the optimal operation of an entity. The general objective of disclosure is to provide information which is necessary to serve the interest of different parties. In considering the amount of information disclosed, entities are expected to be guided by the standards and expectations of regulatory bodies. Therefore, based on this, Hendrickson and Brenda classify the level of disclosure into three types, namely: adequate disclosure, fair disclosure and full disclosure. Adequate disclosure refers to the minimum level of disclosure which is required by regulation to ensure that the financial statement do not mislead its users. Beyond the minimum level of disclosure, we equally have fair disclosure, which is reasonable disclosure based on ethical purpose in order to give equal treatment to all users of the financial statement. That is, disclosures are provided in consideration of the general needs of all users of the information. Lastly, we have full disclosure. This deals with providing or disclosing all relevant information. For an entity, the full disclosure principle requires the provision of necessary information so that users can make informed decisions. In other words, the full disclosure principle requires that an entity should include in its financial statements, all information that would affect a user's understanding and decision making. However, this principle is constrained by the cost and benefit analysis of the information being provided.

Furthermore, we have different types of disclosure depending on which classificatory scheme that is employed. According to Chan and Gary (2000), disclosure can be classified based on the medium of communication- hardcopy/paper disclosure or online disclosure. Hardcopy disclosure is the use of paper to disclose information (financial or non-financial) about an entity. It has been the primary means of distributing information to shareholders while online disclosure is disclosing information on the internet or website. With respect to standards or regulations, we can also have mandatory or voluntary disclosure. Mandatory disclosure refers to the minimum disclosure required by the applicable accounting standard; while voluntary disclosure is the disclosure made willingly by an entity without any regulatory requirement or disclosure made beyond the minimum level. Foreclosing on voluntary disclosure, which is the nature of most online reporting, Financial Accounting Standard Boards (FASB, 2001) defines voluntary disclosure as any information rendered that is not overtly required by any standard. Meek, Roberts and Gray (1995) also define voluntary disclosure as the disclosure above the average requirement.

Evidences have been documented on internet financial reporting practices in various countries of the world (Hedlin, 1999; Laswad et al., 2005; and Oyelere, Laswad, & Fisher, 2003). They all indicate increment in the use of the internet for disclosing financial information. Wickramasinghe and Lichtenstein (2006) assert that extending financial disclosure beyond the traditional production of hard copy financial statements and gaining timeliness in its preparation can be achieved by improving financial information provided on the web through multimedia such as animations, sounds, and/or radios which can equally aid understanding and clarity of such information. However, online disclosure has its cons as Bawaneh (2014) notes that the major challenge of online financial disclosure environment is how to ensure the protection and reliability of the information disclosed on the internet.

Disclosure practices in the Nigerian public sector

The public sector is expected to promote accountability, transparency, performance, development and service improvement that ensure value for money. However, the Nigerian public service seems to be suffering from a seeming endless illness of which accountability is a major issue. Though Nigeria has three main levels of government, the onus is on the federal government, through the treasury department to prepare the financial statements of the nation, which must show a true and fair view of the state of affairs of the nation at any particular point in time. To this extent, the treasury designed most of the rule and regulation applicable to government accounting. However, as a result of the autonomy given to the state and local government, they are allowed to design for themselves, some of the rules and regulations applicable to each of them. But such rules and regulations must not be in conflict with the federal treasury rules and regulations. Where there is a conflict, the treasury rules and regulations supersede (Adam, 2016).

A study on Nigerian entities was conducted by the World Bank group and it was observed that Nigerian financial reporting practices are deficient (World Bank, 2004).

Apart from this, studies on disclosure practices in Nigeria were also conducted by Adeyemi (2006), and Ebiringa and Kule (2014) and they also observed that Nigeria's separate reporting practice is weak. However, all these studies were before the adoption of international standards, thus, may not likely be tenable now. In summary, although the practice of full disclosure is not new a concept, it is something that is yet to find its root in our public sector entities, more so, in this period where online reporting is trendy.

Theories on disclosure

A stakeholder as any person or group of persons who can directly or indirectly influence or be influenced by an organisation, since an entity is created to manage or meet the needs of the stakeholders (Freeman, 1984). Managers of entities are to also perform their duties to stakeholders which may include, but not limited to the host communities, employees, government, public, and suppliers. They should conduct the affairs of the entity in ways that ensure it satisfies all its stakeholders. In addition, managers are to act as agents to ensure the survival of the organisation and safeguard the long term stake of each stakeholder. In the public sector, we can tag the government as the manager while its populace and employees are some of its stakeholders. The government is expected to provide information to stakeholders based on the stakeholders' theory, hence the importance of this theory to this study. This disclosure may equally be presented via the internet.

Capital need theory can be used also to explain disclosure practices. The government aims to get finance to increase its revenue and the capital need theory suggests that disclosure helps in raising capital at a low cost (Choi, 1973). Such disclosure could be online in order for many users to access it.

To finalize on theories of disclosure, legitimacy theory can equally be used. The legitimacy theory assumes that an entity is legitimate when it meets the needs and perceptions of the society at large where it operates (Magness, 2006). Since the legitimacy theory is based on the perception and expectation of the society, entities tend to provide information that would help build a positive perception in the minds of people about them (Cormier & Gordon, 2001). So the government discloses information about its financial activities to its citizens online in order for them to have a positive perception from the citizen. Though the annual report has been detected as an important source of legitimacy (Dyball, 1998; O'Donovan, 2002), legitimacy through disclosure can also be done online. In conclusion, all these theories support the need for disclosure and provide theoretical bases for this study.

Wealth and online financial disclosure

Hargittai (1999) opines that economic wealth can be measured using Gross Domestic Product per capita. Countries with a high economic wealth are more transparent in relation to their budgetary information; and better economic performance can be considered essential for e-government development and for implementing online budget disclosure practices (Kim, 2007).

A positive relationship has been found between the level of wealth and the use of e-government in prior studies (Kim, 2007; Lasward et al., 2005). Perez, Bolivar and Hernandez (2008) used wealth as a determinant of government financial report online and concluded that there is a positive association between government financial information reported on the website and economic wealth. Laswad et al. (2005) in their study on the determinants of voluntary internet financial reporting in the public sector, in which municipal wealth was one of the variables, discovered that municipal wealth has a positive association with voluntary internet financial reporting in New Zealand. Similarly, Yu (2010) investigated the content accessibility of e-disclosure of financial information in China and also found that wealth is significantly related to the extent of web-based financial reporting. Furthermore, Jimoh and Okoye (2016) conducted a Nigerian study in the public sector using the thirty six states as a sample. State wealth was measured using GDP and the result obtained revealed that state wealth is a significant determinant of voluntary internet financial reporting in the country. In the same vein, Tudor et al. (2009) conducted a study on e-financial reporting within the Romanian public sector using the towns having a population of over 40 thousand inhabitants as the sample. The findings revealed that Romanian local public administrations are positively associated with the revenue of the entities.

All the above findings reveal the following- First; wealth is a significant determinant of internet reporting. Second, it has a positive association with internet reporting thus, the higher the level of wealth, the higher the level of disclosure on the internet. Third, this aligns with the political cost theory. The theory advocates that entities that are profitable or big (either size or wealth) are monitored more than those that are not. Therefore, these would always want to disclose more to prove their legitimacy as well as provide signals to the public that monitors them. *To this end, we hypothesise that the wealth of the state has a significant relationship with online financial disclosure in Nigeria (H1).*

Size and online financial disclosure

Some studies (Jimoh & Okoye, 2016; Laswad et al., 2005) have found size to have a major influence on online financial disclosure and provide benefits such as greater economy of scale cost saving for larger entities, reduced agency cost; information asymmetries between government and the public; and political costs. The reason why large states disclose more information can also be explained by the political cost theory as larger states are expected to be exposed to more public scrutiny compare to smaller states. They therefore tend to disclose more information. Larger states are equally likely to be more complex and complexity demands more disclosure.

We also find that the results obtained from various studies have been positive (Cinca, Mar, & Pilar, 2008; Debreceny et al., 2002; and Yu, 2010). Laswad et al. (2005) examined online financial disclosure using size as one of their variable and the result obtained was positive. One reason documented for their finding is that the citizens living in large municipalities or states which are far from the capital will rely more on the internet to get information resulting in a more intense demand for online reporting in large states (Laswad et al., 2005). Furthermore, large states can have a reduction in cost when it supplies its financial information through the website compared to smaller states because they can have skilled staff that can develop for them a website and also keep it updated. Large firms are also sensitive to political cost and will disclose more in order to reduce public criticisms or monitoring of their affairs.

Serrano-Cinca, Rueda-Tomas and Portillo-Tarragona (2009) also investigated the web-based disclosures by local public administrations. Their findings showed that Spanish L.G.A characterised with large state, facilitate online financial disclosure. Garcia and Garcia (2010) used two regression models to test the hypothesis relating voluntary financial e-disclosure and some determinants which included size. They found a positive relationship between size and reporting financial information through websites. Style and Tennyson (2007) also carried out a similar study, but in the US. Size was included as a variable and the finding was positive. Groff and Pitman (2004) investigated on the same reporting medium, but used cities instead of local government areas as the sample; the finding therefrom supported prior studies. However, Robbins and Austin (1986) included size as a variable and concluded that a non-positive relationship existed between size and internet reporting. In summary, prior researches indicate that size is one of the factors most associated with the disclosure of information through the internet. *Thus, we hypothesise that the size of the state has a significant relationship with online financial disclosure in Nigeria (H2).*

Age and online financial disclosure

Age here refers to the year of incorporation or creation of an entity. According to the organisation life cycle theory, an entity grows in stages and its performance and operations are affected by each stage (Daft, 2008). Similarly, based on Levinson's theory (season of life), there are stages that an individual passes through to become an adult and with each stage, associated responsibilities abound (Levinson, 1986). Trying to apply this, disclosure is a responsibility of entities to their stakeholders and just as the entities increase (numerically or financially), casual empiric make us predict based on reputation risk that the entities become matured (responsible) and avoid risky behavior. Thus, although the government does not die, we expect that as it continues, it becomes more mature (responsible) and if disclosure is a responsibility of any entity to its stakeholders, the government should also disclose more based on its duration of existence (age). Bank, Fisher and Nelson (1997) in their study showed that established universities tended to have better quality disclosure than new universities in the categories of service performance and financial performance, therefore, suggesting a positive relationship between age and disclosure. *Flowing from these, we expect that the age of the state in Nigeria has a significant relationship with online financial disclosure (H3).*

Political competition and online financial disclosure

Studies that have investigated the extent of competition on the political scene as a determinant of online financial disclosure include Laswad et al. (2005) who examined voluntary reporting and the degree of political competition in New Zealand local government. They concluded that there is a positive relationship between the political competition and online reporting of financial information. They equally noted that if there is an opposition group to serve as watchdog against the government, the latter will have no choice than to be responsible (includes disclosure & accountability) as these opposition groups will orient the electorate on any deviant behaviour. Gandia and Archidona (2008) examined the websites of large Spanish city councils in order to assess the extent of information disseminated on the internet and determine what factors affect information disclosure level. Political competition was one of the determinants used and the result showed that political competition has a significant positive relationship with disclosure level. Similarly, Cinca et al. (2008) examined the determinants of voluntary internet financial reporting (e-disclosure), diverse political aspect was included as one of the determinants used and the result showed that political competition significantly influence e-disclosure.

Furthermore, Tudor et al. (2009) in their study found that stiffer political competition leads to more supply of information by political manager. By extension, Serrano-Cinca et al. (2009) findings on e-disclosure by local public administration showed that political aspect has a positive influence on voluntary internet financial reporting. Equally, Garcia (2010) investigated political competition vis-a-vis voluntary financial e-disclosure and found out that political competition significantly influences the likelihood of reporting financial information through websites. *Based on this, we* *hypothesise that political competition has a significant relationship with online financial disclosure in Nigeria (H4).*

METHODOLOGY AND MODEL SPECIFICATION

For the purpose of this research, the cross-sectional design is used because the study examines disclosure across states (cross section) for a particular point in time (2016). The population of interest in this study is the thirty-six state governments in Nigeria. Due to the small number of states, the study was based on a census rather than a sample. Thus, the entire population should be same as the sample. However, in the course of the study, we found that some states do not have websites and some that had, were experiencing technical challenges. These were therefore removed from the sample. In summary, the target population and sample consists of 27 states that have operational websites. The data for this research was from secondary sources. It includes the: 2012 Nigeria Bureau of statistic report and other information present on its website, as well as the websites of all the sampled states.

In order to measure online financial disclosure, a weighed disclosure index was used. This weighted disclosure checklist was adapted from Laswad et al. (2005) A content analysis of the website was done and if the website has no budget or financial related disclosure, we assign 0, if it has just a budget highlight, we assign the value 1. If it has a full budget report, we assign the value 2 and if it has both budget report and financial statement, we assign the value 3. Therefore the maximum a state may have is 3 while the minimum is zero (no disclosure). Despite these, a major limitation was in accessing the data especially the GDP for the proposed year thus, to circumvent this, the year (2012) which was available, accessible and had complete information on the states was used.

Model specifications

Jimoh and Okoye (2016) conducted an indigenous study to investigate the nature of voluntary internet financial disclosure. The model below was used in their study:

$WRP=a_0 + a_1POP + a_2 AGE + a_3 GDP + a_4 INTL+ e$……………………………..… eq (1)

Where WRP= Website reporting; POP= Population; AGE= Age of state; GDP= Wealth of state; and INTL= International transport.

In order to extend the study, improve on the model and fit it for this study, we adapted the above model. Thus the model specification of this study is stated below:

$OFD_1=\beta_o+\beta_1WEALTH_i+\beta_2 SIZE_i+\beta_3 AGE_i+ \beta_4PC_i+\mu_i$…………………………….eq (2)

Where OFD= online financial reporting of i state; WEALTH= wealth of i state; SIZE = size of i state; AGE = age of i state; PC = political competition in i state; β0 = intercept; β1, β2, β3, β4 = parameter estimate. Aprior expectations are that β1, β2, β3, β4 >0

A summary of the measurement of the variables is found in Table 1.

Table 1. Measurement and proxy

Variable	Proxy	Measurement	Source	Apriori sign
Online financial disclosure	OFD	Weighted disclosure index	Laswad et al. (2005)	
Wealth	Wealth	GDP per capita	Jimoh and Okoye (2016)	+
Size	Size	Internally Generated Revenue (IGR)	Tudor et al. (2009)	+
Age	Age	2016 less year of creation of each state	Jimoh and Okoye (2016)	+
Political competition	PC	If governor elect is not from the same party with the ruling party the value 1 is used if otherwise, 0 is used	Tudor et al. (2009)	+

Source: Researcher compilation (2018)

To estimate the model, the ordered logistic regression technique was used. The choice of this technique is due to the ordered nature of the dependent variable. In addition, descriptive statistics and correlation analyses were also be presented.

RESULTS AND ANALYSIS

Descriptive analysis

This section provides summary statistics on the measures of central tendency (mean, median), measure of dispersion (standard deviation) and normality of distribution (Jarque-Bera statistics). The essence is to help describe the nature of the data.

Table 2. Descriptive statistics

	OFD	WEALTH	PC	AGE	SIZE
Mean	0.925926	8.55E-08	0.333333	31.48148	25.66000
Median	1.000000	4.83E-08	0.000000	25.00000	8.960000
Maximum	3.000000	5.94E-07	1.000000	49.00000	301.1900
Minimum	0.000000	4.44E-09	0.000000	20.00000	2.090000
Std. Dev.	0.997147	1.16E-07	0.480384	9.904818	57.96187
Skewness	0.385664	3.384175	0.707107	0.444717	4.226746
Kurtosis	1.617561	15.12638	1.500000	1.774193	20.44390
Jarque-Bera	2.819345	216.9671	4.781250	2.580408	422.7200
Probability	0.244223	0.000000	0.091572	0.275215	0.000000
Sum	25.00000	2.31E-06	9.000000	850.0000	692.8200
Sum Sq. Dev.	25.85185	3.48E-13	6.000000	2550.741	87349.04
Observations	27	27	27	27	27

Source: Eviews 7.0

Table 2 above provides information that helps to describe the characteristics of the variables used in this study. With emphasis on the dependent variable (online financial disclosure; OFD), the mean is 0.925926 and approximates the median (1). This reveals that most states provide just budget highlights as against other in-depth disclosures (full budgets and/ financial statements). In addition, the skewness is

0.385664 indicating that the values for OFD are aligned towards the right. The JB statistics of 2.819345 and p-value of 0.244223 reveal that the values for OFD are not normally distributed.

Looking at other variables, it can be observed that the values for WEALTH, PC and SIZE are normally distributed at 5% and 10% significance levels. From the maximum and minimum values of AGE, we see that the oldest state has been in existence for 49 years while the youngest is about 25 years of age.

Correlation analysis

Still on descriptive statistics, the correlation matrix as presented in table 3 shows the extent of association between the dependent variables and other variables. As expected, the correlation between a variable and itself is unitary. Furthermore, the table 3 shows that the association between OFD and WEALTH is weak based on a correlation coefficient of -0.006615; between OFD and PC is fair based on a correlation coefficient of 0.214115; between OFD and AGE is equally fair based on a correlation coefficient of 0.210432; and between OFD and SIZE is also fair based on a correlation coefficient of 0.212629.

Table 3. Correlation matrix

Correlation t-Statistic Probability	OFD	WEALTH	PC	AGE	SIZE
OFD	1.000000				

WEALTH	-0.006615	1.000000			
	-0.033076	-----			
	0.9739	-----			
PC	0.214115	-0.013247	1.000000		
	1.095993	-0.066240	-----		
	0.2835	0.9477	-----		
AGE	-0.210432	0.354125	-0.366445	1.000000	
	-1.076261	1.893318	-1.969204	-----	
	0.2921	0.0699	0.0601	-----	
SIZE	-0.212629	0.931110	-0.035528	0.453602	1.000000
	-1.088027	12.76410	-0.177750	2.544879	-----
	0.2870	0.0000	0.8604	0.0175	-----

Source: Eviews 7.0

Going on to the association amongst the independent variables, we observe that the strongest association is between SIZE and WEALTH while the weakest is between PC and WEALTH. Furthermore, aside the association between SIZE and WEALTH, other coefficients are lower than 0.50, thus, the presence of multicollinearity amongst the variables is unlikely.

Regression analysis

To test for the significance of the causal relationship between the dependent and independent variables, an ordered regression technique has been employed. The choice of this technique is due to the ordered nature of the dependent variable which allows it fall within zero (0) and three (3).

Table 4. Estimation output

Variable	Coefficient	Std. Error	z-Statistic	Prob.
WEALTH	25921037	9436046.	2.747023	0.0060
PC	1.329150	0.678094	1.960126	0.0500
AGE	0.039973	0.042658	0.937065	0.3487
SIZE	-0.086107	0.036349	-2.368893	0.0178
	Limit Points			
LIMIT_1:C(5)	1.959340	1.347399	1.454165	0.1459
LIMIT_2:C(6)	2.485166	1.439032	1.726971	0.0842
LIMIT_3:C(7)	5.046358	1.911793	2.639594	0.0083
Pseudo R-squared	0.268372	Akaike info criterion		2.161867
Schwarz criterion	2.497825	Log likelihood		-22.18521
Hannan-Quinn criter.	2.261765	Restr. log likelihood		-30.32306
LR statistic	16.27570	Avg. log likelihood		-0.821674
Prob(LR statistic)	0.002671			

Source: Eviews 7.0

The pseudo R-squared is 0.268372 as seen in Table 4. This indicates that the independent variables jointly explain 26.8% of the systemic variation in the dependent variable. The LR statistics of 16.27570 and associated p-value of 0.002671 reveal that the model has a sound predictive power and can be used for policy making. It also reveals that the relationship between the dependent variable and independent variable is linear and predicted by a probability distribution.

Based on the individual z-statistics, we found that three of the independent variables have significant relationships with the dependent variable. Specifically, WEALTH has a z-statistics of 2.747023 (p-value<0.05) indicating that wealthy states engage in more online financial disclosure. Therefore, at 5% significance level, we fail to accept the null hypothesis that there is no significant relationship between wealth and online financial disclosure. Second, PC has a z-statistics of 1.960126 (p-value<0.05). This shows that that the extent of political competition significantly and positively relates to online financial disclosure. It also indicates that the more the political competition, the more the disclosure. Therefore, at 5% significance level, we also fail to accept the null hypothesis that there is no significant relationship between political competition and online financial disclosure. Third, AGE has a z-statistics of 0.937065 (P-Value > 0.05) which indicates that the age of the state has a positive relationship with online financial disclosure although the relationship is insignificant. In this regards, we accept the null hypothesis of an insignificant relationship between the age of the state and online financial disclosure. Fourth, table 4 reveals that SIZE has a z-statistics of -2.368893. The associated p-value is 0.0178 and lower than 5%, thus, leading to the conclusion that SIZE is significant, and negatively related to online financial disclosure. Therefore, this leads us to accept the alternative hypothesis and reject the null hypothesis that there is no significant relationship between the size of a state and online financial disclosure.

DISCUSSION OF FINDINGS

First, the study found that wealth has a significant and positive relationship with online financial disclosure. The implication of this finding is that wealthier states tend to disclose more financial information for the public and one way they do it is via the website. This finding aligns with the popular findings in this area and supports the findings of earlier researchers like Jimoh and Okoye (2016), Yu (2010) and Laswad et al. (2005). This finding is as predicted by the political cost theory. The theory advocates that entities that are profitable or big (either size or wealth) are monitored more than those that are not. Therefore, these would always want to disclose more to proof legitimacy as well as provide signals to the public that monitors them.

Second, this study reveals that size has a negative and significant relationship with online financial disclosure. This means that smaller states disclosure more than larger states. This finding negates popular findings in this area and contradicts the findings of Yu (2010), Garcia and Garcia (2010) and Style and Tennyson (2007). In addition, this finding negates the prediction of the political cost theory and tends to align with political power theory wherein size is associated with power and those that have large size tend to exert control and influence which may be a reason while larger states do not disclose more information online knowing well that they may be able to control any negative outcome therefrom.

Third is the hypothesis on age and online financial disclosure. From table 4, we see that there is no significant relationship between age and online financial disclosure at 5% level of significance. This finding does not support our earlier prediction that as a state grows (become more matured and responsible), its disclosure responsibility to stakeholders should increase based on its duration of existence. However, it complements the finding of Jimoh and Okoye (2016).

Fourth, the table 4 reveals that political competition (PC) is significantly and positively related to online financial disclosure. It also indicates that the more the political competition, the more the disclosure. This finding aligns with the popular finding in this area such as Tudor et al (2009), Garcia and Garcia (2010) and Laswad et al. (2005). A plausible explanation for this finding is that if there is an opposition group to serve as watchdog against the government, the latter will have no choice than to be responsible (includes disclosure & accountability) because these opposition groups can orient the electorate on any deviant behaviour thereby dethroning the present government in a succeeding regime. For this cause, it is expected that increase in political competition should be accompanied by increased disclosures.

CONCLUSIONS, RECOMMENDATIONS AND LIMITATIONS

Conclusion

Flowing from the preceding sections, we reemphasize that the objective of this study was to investigate online financial disclosures in the Nigerian public sector. This study contributes to knowledge by improving on the methodology as used by Jimoh and Okoye (2016), concluding that the online financial disclosure practice is quite weak and wealth, size and political competition are significant determinants of the nature of online financial disclosure in the Nigerian public sector.

Recommendations

Based on above findings, the study recommends that since political competition is observed to be a significant and positive determinant of online financial disclosure, healthy competition should be encouraged in forms of public debates, assessment polls on public sector entities, frequent programmes aimed at assessing the progress of public entities probably on a yearly basis or biannual or even at the end of a regime (before the commencement of another). Also, further studies should be carried out using other tiers of government or forms of public sector entities.

Limitation of study

This study employed a cross-sectional research design that focused on just one year period across twenty-seven (27) states, based on availability of data. Due to the peculiarity of each state, the findings therefrom should be interpreted with caution. In addition, further studies may need to increase the time frame to allow for more robust findings.

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An empirical nexus between oil price collapse and economic growth in Sub-Saharan African oil based economies

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Abstract
The focus of this study, is to empirically investigate the nexus between oil price collapse and economic growth in sub-Saharan Africa oil based economies, specifically from Angola, Nigeria and Sudan between January, 2010 and December, 2015, through panel random effects model (REM): Economic growth rate (GDPR) and independent variables: Oil price (OPR), Exchange rate (EXR), Industrial Output (IND) and Terms of Trade (TOT. REM result showed that there is negative link between oil price collapse and the economic growth in the case of Angola, Nigeria and Sudan, which confirmed the nexus between oil price collapse and economic growth. Post estimation tests such as Hausman and Breusch and Pagan Lagrange Multiplier Test were adopted to empirically show the consistency and efficiency of the model. Interestingly, the two key variables (GDPR and OPR) disclose how unprecedented oil price fall disrupts economic growth of the selected economies. Meanwhile, poor institutional quality in the oil sector coupled with poor fiscal measure among others, further expose these economies to unprecedented external shocks that was characterized by skyrocket exchange rate, hence destabilize growth within the period under review. Therefore, the need for a robust fiscal measure is pertinent in order to sustain economic growth.

Keywords: *Empirically, Investigate, Economic growth, Nexus, Oil price collapse, Uni-directional, Responsiveness*

INTRODUCTION

Issues revolving round oil price collapse in recent times have generated series of debates among the scholars and policy makers. In spite the extensive previous empirical findings, the nexus between economic growth and oil price remain ambiguous. Some of the studies (e.g. Oriakhi & Osaze, 2013; Ebaidalla, 2014; Omojolaibi & Egwaikhide, 2014; Ebele, 2015) emphasize more on a single economy, which is either concentrated on volatility or shocks in oil price in relation to economic growth. However, findings on persistent collapse oil price across sub-sahara African oil producing economies (such as Angola, Nigeria and Sudan) have been generating serious debates from different researchers. Notably, recent experience shows that constant fall in oil price, which represent almost 57% drop from the preceding price (that is from $105 per barrel in 2013 to nearly $47 through mid-November 2014) has continued to generate concerns. It is also, worthy to note that the drop in oil price continue to fall on monthly average Brent crude until 2016 to about 65% below average.

On this note, Husain et al (2015) point out that this drop has zero effects on global economy, while lower oil prices implications are much felt at the country level due to limit pass through syndrome. That is, where real income gains are accrued to the oil companies at the expense of end users which is characterized by weak fiscal response.

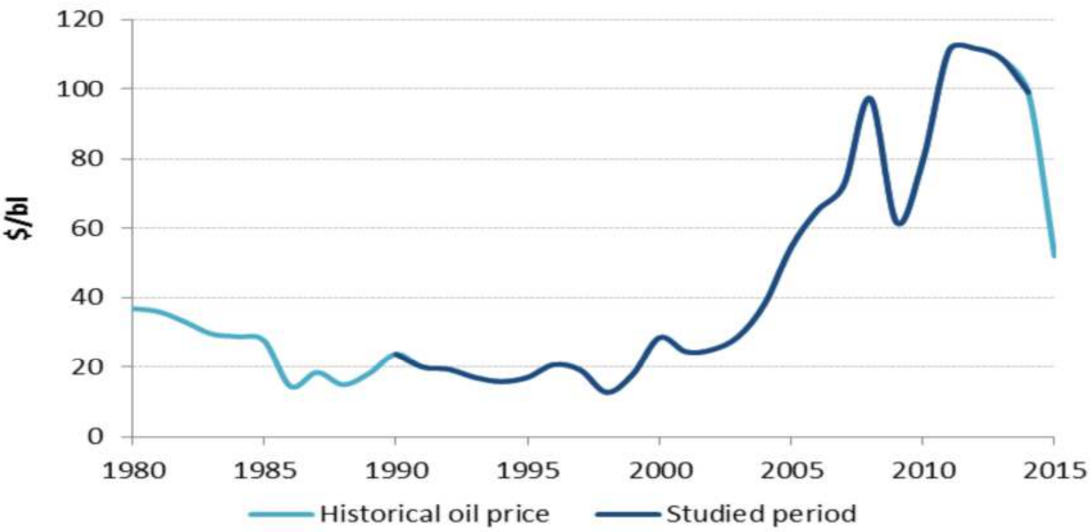

Figure 1. Historical Trends of Yearly Oil Price
Source: Adapted from BP (2015) and Energy Information Administration

Meanwhile, the persistence squeezing of the world market demand for oil by the developed economies like US, Canada etc. through inventions of hi-tech to reduce fuel consumable vehicle has further plunged oil multinationals into industrial crisis within the sub-Saharan African region which make it difficult for them to build necessary safety net for the host countries where they operate (Thomas Reuters, 2015). This evidence from the U.S retail market further shows that the aggregate demand has been altered to the extent that the overall world demand fall simultaneously, since the U.S market constitute part of the larger market for oil sales in the global market.

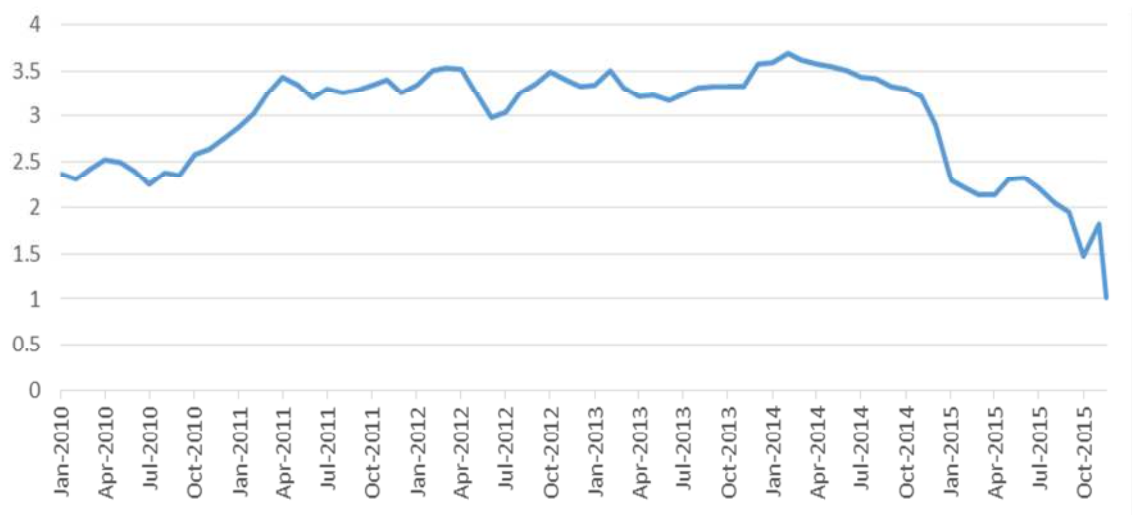

Figure 2. US oil sales by refiners ($ per gallon)
Source: Adapted from U.S Energy Information Administration, 2016

That is, the invincible hands in the world market that dictates the market price had been altered by the U.S economy through her inventions in alternative source of energy like shale oil which in turn, had led to excess supply of crude oil in the world market and this could be traced as part of the remote cause of oil price collapse in recent years (Jhingan, 2005; Thomas Reuters, 2015).

It is therefore, pertinent to investigate the recent impact of oil price collapse on the Nigerian and Sudanese economies based on the recent continuous world price crisis that struck the oil market since past months. Angola, Nigeria and Sudan constitute three different small open economy that have no real impact on the world oil price but her economic growth performance largely determine by oil price collapse. Continual fall in oil price disrupts the individual economic growth of the selected sub-Sahara countries as a result of their large dependency on crude oil revenues, which has exposed them to economic instability in the past months (Africa's Pulse, 2015).

Consequently, the specific objective of this study, is to empirically investigate the nexus between oil price collapse and economic growth based on the fresh experiences from the selected countries (Angola, Nigeria and Sudan) on economic recession, oil exploitation and revenues, which have yet to be extensively explored. Therefore, this research intend to narrow the gap of Sub-Sahara African literature, especially those of Angola, Nigeria and Sudan between 2010 and 2015 using panel data sourced form World Bank data, CBN and CBS Statistical Bulletins. And this would be veritable tool to formulate economic policy in the near future.

This paper is therefore structured into five sections thus; the section one addresses the background and the objective of the study. Section two discusses the literature (conceptual and empirical works). Section three highlights the theoretical framework i.e. model specification for this study is done in this section. Meanwhile, the empirical analysis and discussion of the results are reveal in section four. While, section five comprises the recommendations and conclusion.

LITERATURE REVIEW

The literature on oil price collapse and immediate effects on the economic growth, particularly among the sub-Saharan oil producing economies are quite complex and it has been continuing to draw more concerns in recent times (Oriakhi &Iyoha 2013). The historical prominent oil price hike of 1973 which was characterised by OPEC embargo on crude oil output brought about excess demand at the world market, had proved to be non-sustainable in the long run due the Islamic revolution that spread across Iran in 1979. And it was later escalated by cold war between Kuwait and Iran during same year. This rendered the OPEC regulation on output control less effective in terms of oil price stability (Pirog, 2004). Although evidently, oil price rose from $10 per barrel to an unprecedented level of $31 per barrel between 1998 and 2000. However, in 2001, it falls to $18 per barrel before moving (rising) to over $100 in 2013.

Oil price is define as the amount of monetary value attached to refine product from crude oil which is express in dollar exchange rate at the world market. This is to facilitate quick exchange rate among different countries during importations and exportations. The standard world oil price is differ from various domestic oil prices set by different home countries based on the value of their local currency, since it cannot be directly used to transact business at international fronts without being converted to dollar exchange rate. On this note, countries gains and losses from the current oil price woes varies across different economies, since their exchange rate in terms of dollar seem to be differ from one another, especially in sub-Saharan Africa where countries like Angola, Nigeria and Sudan slump to high exchange rate deficits with uncontrollable inflation rate at the domestic markets, which has made slightest fluctuation from the world market to disrupt the rate of economic across these countries growth paths in recent years.

It is pertinent to clearly explain the misconceptions that characterized the interpretations of different conceptual meanings in the word; oil shocks, oil price volatility and oil price collapse. Oil shocks (OPS) are the unprecedented rise or fall in price of oil at a particular period which does not stand the test of time i.e. it is too sudden within a short period of time. Oil price volatility (OPV) seems to be the regular deviance (swinging) of oil prices over a time while oil price collapse (OPC) said to be a special case of fall in price of oil commodity, where the price continue to drop permanently over time (Ebele, 2015).

Oil price collapse (OPC) is said to be the level of distortions that disrupt the smooth flow of goods and services between the demand and supply across the market, which requires active knowledge of efficient energy policy to reinstate stability (Hannan & Bridwell, 2012).

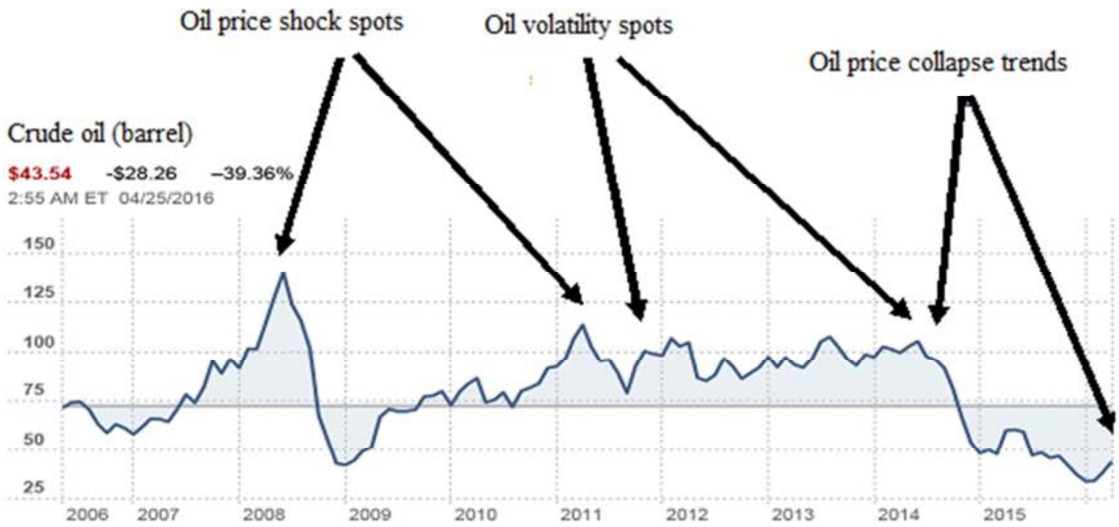

Figure 3. Crude oil price between 2006 and first quarter of 2016 (per barrel prices)
Source: Adapted from the Reuters, Thompson reuters, and Bloomberg, Februari, 2016

The above figure shows the trend of market balance within the global oil demand and supply between first quarter of 2013 and the projected third quarter of 2017, it is interesting to note that there is sharp fall in the demand of crude from 93mmbpd in 1Q2014 to about 91mmbpd in 3Q2014, while the supply move in the opposite direction and since then it has sustained this. Although, it was projected by EIA that this market gap would significantly close in the 3Q2016. However, Panopoulou and Pantelidis (2016) opine that poor tools used in predicting (forecasting) the oil price in the previous years has led to the recent unexpected negative oil price that almost brought down real growth per capita in terms of gross domestic product across the globe. The authors argued that random walk models are less sophisticated and inappropriate when compare to regime-switching. The regime-switching models are statistically fit in respect to economic evaluation procedure for oil price projection (forecasts) after considering the deviations that may arise from different markets which are based on the fundamental value.

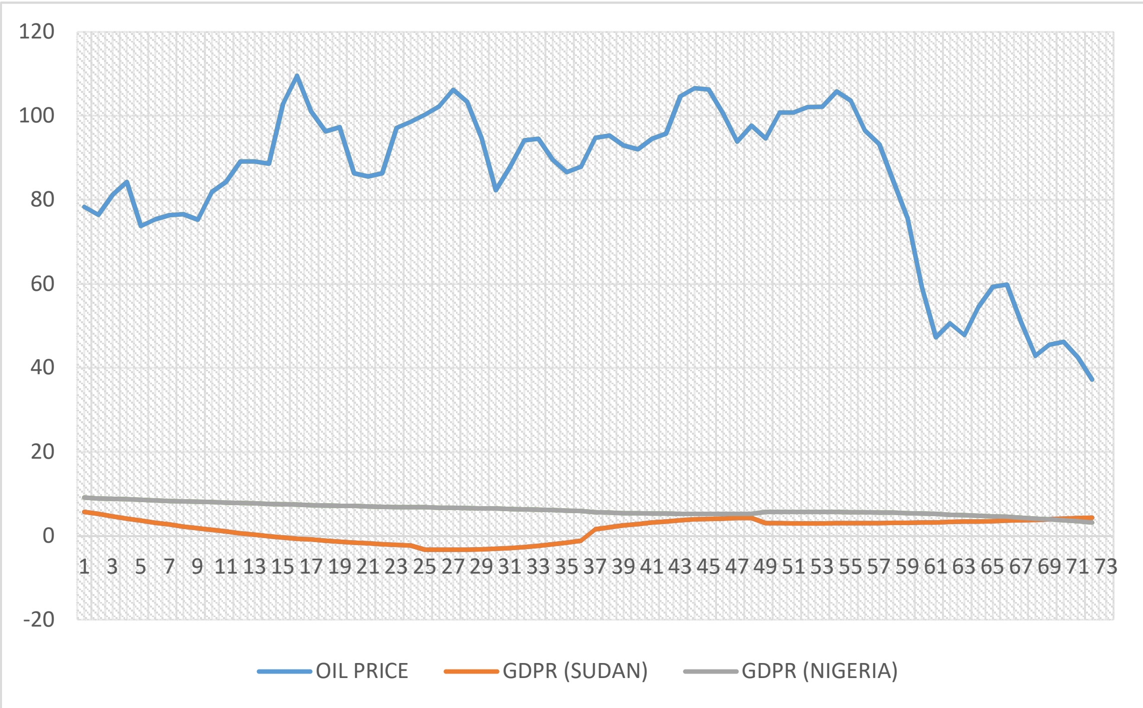

Figure 4. GDP (Growth rate) response to oil price collapse: Evidence from Nigerian and Sudan
Source: data extracted from World Bank database (Author's computation).

Economic growth is the general increase in output level steadily over time. Economic growth is classified as the quantitative and sustainable rise in the nation's per capita output which is aided by simultaneous expansion in its consumption, trade volume, labour force, and capital (Jhingan, 2003). However, the driving factors of economic growth in Sub-Saharan Africa are not sustainable, especially factors from oil exporting nations such as Nigeria and Sudan. Exportation of crude oil has been one of the growth drivers in these economies and it has fall short to sustain the gains from windfall on their respective domestic economies in recent years.

Hamilton (1983) postulates that distortions in the price of oil affect the macroeconomic variables in an economy in terms of performance. In his findings, it was disclosed that fluctuation in oil prices cause prominent change in the size of the economic growth, using annual data from the US economy between 1949 and 1973. Schubert and Turnovsky (2011) argue differently through the adoption of endogenous growth model, in which they conclude that rise in energy prices has negative impact on the growth performance in the long run. On the other way round, Al-Awadi and Eltony (2001) posit that oil price has a substantial impact on the economic growth. Data were drawn from the Kuwaiti economy between 1984 and 1998, using both VAR and VECM to critically examine whether oil price fluctuations affect growth or not, where the estimated data indicates that there is association between the macroeconomics variables and the oil price indicator.

Ebaidalla (2014) empirically investigate the effect fluctuation in oil price on the growth of Sudanese economy between 1999Q4-2009Q4. The finding employed variance decomposition techniques and impulse response functions via unrestricted VAR, in which it was revealed that oil shocks significantly determine macroeconomic growth performance of the Sudanese economy, particularly the inflation and exchange rate indicators. In a related study by Samia (2011) posits that oil prices fluctuations in the international market have mixed blessings on the economic growth in Sudan. Using different data base experiment like bar chat, pie chat on data collated from World Bank and International monetary fund to access the challenges and opportunities on Sudanese economic development. He argues that over-reliance on oil has brought series of uncertainty to the growth path of the domestic economy such as unsustainable oil gains, Dutch Disease' and lack of incentives to drive diversification, especially in reference to recent instability of oil price at international front. Whereas, Oriakhi and Osazee (2013) conducted another findings on the Nigerian economy between 1970 and 2010, using the VAR approach, provides that oil price volatility impact on the real gross domestic product and other macroeconomic variable employed. This, also reveal that oil price influences economic growth indicator through the government expenditure, that is oil price changes dictates the government expenditure which in turn predicts economic growth in the long run.

Notably, Ebele (2015) argues that oil price fluctuations has negative impact on the growth of the Nigerian economy, using Engel-Granger co-integration method (technique). Whereas, Omojolaibi (2014) came up with different arguments, using structural VAR approach on the data collected between 1985 and 2010, in which he submitted that shocks due to oil price does not significantly have influence on the Nigerian growth but rather disruption from money supply. Although Almosharaf and Tian (2014) attributed the recent decline in economic growth of Sudan to two underlining factors: internal factors and external factors, using data drawn from Sudan central bureau of statistics in the last thirty years. They argue that internal factors such as excessive mono-economy (over-reliance on oil), weak government policy and separation of the south affect the economic growth process. While, external factors like US economic embargo on several occasions, external debt and global fall in oil price decline the Sudanese economic growth. However, Chuku et al (2011) and Asteriou & Villamizar (2013) opine that dynamism in oil price could only distort economic growth in the short run while there no individual effect between the two variables in the long run.

In so far, it quite glaring that from virtually all previous empirical studies reviewed, none of these works principally concentrated on the effects of oil price collapse on the rate of economic growth from oil based economies, especially from Nigeria and Sudan . Interestingly, the scanty work done related to this research work, largely focus on volatility (fluctuation) and shocks in oil price on a single economy as a case study (e.g. Samia (2011), Oriakhi & Osaze, 2013; Ebaidalla, 2014; Emmanuel, 2015; Moshiri, 2015; Uche et al., 2016)

METHODOLOGY

Standard growth theory (e.g. Solow) and energy theory i.e. price energy models are employed in the study with slim re-modification from the previous scholars e.g. Ayres (2013), Al-Khouri and Dhade (2014), Emmanuel (2015) and Khuran et al (2015) in order to analyse the original sources of growth with respect to oil price across the selected countries.

The energy growth model expressed output of Y as final stage of production and as a function of labour (L) capital (K) and energy (E) thus;

$$Y_{(t)} = F\,[K_{(t)}\ L_{(t)}\ E_{(t)}] \qquad (1)$$

Therefore the factor inputs of Labour, Capital, and Energy are employed to explain the independent determinants of economic growth (Y).

In view of achieving the objective of this study, it is therefore pertinent to assess the growth rate with respect to its determinants thus;

$$\hat{Y}(t) = \theta \lambda \hat{K}(t) + \theta \delta \hat{L}(t) + \theta \mu \hat{E}(t) \qquad (2)$$

Where the growth rates are denoted by the hats, θs are used as weighting factors and subscripts transmitted to the inputs. Model (2) is well established in the body of literature to express relationship between growth inputs and output, i.e. energy growth (i.e. rise in oil price or revenue), capital formation and improved industrial output expect to grow output positively.

However, it is pertinent to inject other important determinant of growth with an outstanding modification so as to address the rate of distortions caused by the recent oil price collapse on macroeconomic variables performance of Nigeria and Sudan.

Model specification

GDPR = f (EXR, GCF, OPR, TOT) (2.1)

Where;

GDPR= Gross Domestic Product in Growth rate

EXR= Exchange rate

GCF= Gross Capital Formation

OPR= Oil Price

TOT= Terms of trade

Note: *economic growth rate (GDPR) is used so as prevent spurious results, since GDPR produces a more proven response to the regressors.*

Model (2.1) is being transformed to (2.2) for the purpose of statistical computation thus:

$$GDPR = \alpha_0 + \alpha_1 EXR + \alpha_2 GCF + \alpha_3 OPR + \alpha_4 TOT + \varepsilon_i \qquad (2.2)$$

α_0 = Intercept

α_i = Coefficient of individual independent variable (where i= 1, 2, 3, 4, 5)

ε_i = Stochastic error term

Panel data (random effects) analysis and Granger causality tests are used in the study. Why panel data analysis? According to Baltagi's arguments, panel data analysis takes heterogeneity into account, it allows less collinearity among variables, it also detects and captures effects that cannot be ordinarily observed by pure time series, and it helps to minimize bias error if individual variables are aggregated (Gujarati, 2013). Therefore, for the benefit of this study, panel models (e.g. random effects model) therefore reducing omitted variable bias and as well help us to establish the direction of causal effects between the variables of interest.

Transmission of fixed effects model to random effects model thus:

The fixed effects model permits each of the selected countries to have their individual-specific effects i.e. αi intercept which is time-invariant (fixed) and individual country possesses different intercept with similar slope parameters that does not vary over time. That is,

$$GDPR\ i, t = \alpha i + \alpha_1 EXR\ i, t + \alpha_2\ GCF\ i, t + \alpha_3\ OPR\ i, t + \alpha_4 TOT\ i, t + \varepsilon\ i, t \qquad (2.3)$$

i=1, 2.

t=1, 2…, 72.

Where i is ith country employed (cross-sectional observations) while t refer to time period of the variables employed (time series observations).

Model 2.3 is transformed to model (2.4) i.e. **error component model (ECM)** and it is expressed thus;

$$GDPR_{i,t} = \beta_{i,t} + \beta_1 EXR_{i,t} + \beta_2 GCF_{i,t} + \beta_3 OPR_{i,t} + \beta_4 TOT_{i,t} + \varepsilon_{i,t} \quad (2.4)$$

Interestingly, βit is used to explain the individual country intercept instead of αi which is the case of FEM. The component of βit can as well be specified thus;

$$\beta_{i,t} = \beta_1 + v_i \quad (2.5)$$

Where vi implies random error with zero mean and a constant variance σV^2 across country i.
Therefore, substituting 2.4 into 2.5, the model becomes;

$$GDPR_{i,t} = \beta_{i,t} + \beta_1 OPR_{i,t} + \beta_2 IND_{i,t} + \beta_3 INF_{i,t} + \beta_4 TOT_{i,t} + \beta_5 GCF_{i,t} + v_i + \varepsilon_{i,t} \quad (2.6)$$

$$GDPR_{i,t} = \beta_{i,t} + \beta_1 OPR_{i,t} + \beta_2 IND_{i,t} + \beta_3 INF_{i,t} + \beta_4 TOT_{i,t} + \beta_5 GCF_{i,t} + w_i \quad (2.6.1)$$

Where, $\mathbf{w}_i = \mathbf{v}_i + \boldsymbol{\varepsilon}_{i,t}$ (2.6.2)

v**i** explains individual country-specific error component across country I (unobserved effects specific across cross-sectional country), while εit is the combination of cross-section error component and time series, i.e. εit means the idiosyncratic term due to it spread across country over time t. Here, it is assumed that both error components (vi and εit) are not correlated each other and as well not autocorrelated through both time series and cross-sectional units, that is;

$$E(vi\varepsilon it) = 0;\ E(vivj) = 0\ (i \neq j)$$
$$E(\varepsilon it\varepsilon is) = E(\varepsilon ij\varepsilon ij) = E(\varepsilon it\varepsilon js) = 0\ (i \neq j;\ t \neq s) \quad (2.7)$$

Therefore wi is not correlated with any of the regressor in the model.
To further estimate the extent at which the economies (i.e. Nigeria and Sudan) response to the recent oil price collapse at different period of time thus: According to Husain et al (2015).

$$ln\,(GDPRnt/\,GDPRSt) = \alpha + \beta * ln\,(oil\ pricet) + \gamma * time\ trendt. \quad (2.8)$$

Where:
$GDPRt$ = ratio of GDP measure in growth rate ($GDPRnt$ = Nigeria's GDPR, $GDPRst$= Sudan's GDPR)
Oil price= O$il\ price$ at period t
β & γ = Express coefficients elasticity of the regressors
α = constant (shift) parameters

To establish the above arguments certain post estimation techniques are carried out in this study. Hausman test is conducted to test the most appropriate model in terms of consistency and efficiency to the study i.e. which model shows existence of correlation between component error term & idiosyncratic term with any regressor specified in the model. While Breusch and Pagan Lagrange Multiplier Test is used to further verify whether the null hypothesis of no random effects model holds against OLS model, i.e. whether $\sigma_u^2 = 0$. Under this, chi-square distribution is being followed with 1 degree of freedom (df), this is because single hypothesis that the variance of idiosyncratic term not different from zero ($\sigma_u^2 = 0$) is being carried out.

The secondary data collected from the International Monetary Fund (IMF) data based (2015), World Bank data based (2015), World Development indicators (2015), U.S. Energy Information Administration (EIA), International Energy Agency (IEA), Worldwide Energy Statistics, index mundi, the global economy and trading economics data are used to estimate all the models specified above.

ESTIMATED RESULTS AND EMPIRICAL ANALYSIS

This section discusses the empirical results estimated from the data collected thus:

$$GDPRt = -9.6574 - 0.0809797EXR_{i,t} + 7.81e{-11}GCF_{i,t} - 0.02666PR_{i,t} + 1.04e{-12}TOT_{i,t} + 0.368556IND_{i,t} \quad (2.9)$$
$$(-1.35) \quad (1.43) \quad (2.33)^{**} \quad (1.37) \quad (2.82)^{**} \quad (5.32)^{***}$$

Note: *Estimates in brackets represent the individual regressor t-statistics.*

The results show that none of the regressor is statistically significant at any conventional level. Fixed effects model tend to be inconsistent and inefficient for the study due to time invariant of the intercept, with high level of correlation between the common shift parameters (αi) and at least one of the independent variables (EXR,GCF, OPR, TOT, IND). It is therefore pertinent to employ random effect model in the study.

$$GDPRt = .9705057 - 0.006775EXR_{i,t} + 7.791e{-11}GCF_{i,t} - 0.0085798OPR_{i,t} + 6.71e{-13}TOT_{i,t} + 0.2047145IND_{i,t} \quad (2.10)$$
$$(0.59) \quad (1.06) \quad (3.25)^{***} \quad (-0.54) \quad (1.80)^{*} \quad (4.80)^{***}$$

Note: *Estimates in brackets (parentheses) represent the individual regressor z-statistics, while the significantly estimated coefficients are explained with [***] [**] [*] as being significant at 1%, 5%, 10% level respectively.*

It is observed from the random effect model (2.10) that industrial value and gross capital formation have significant impact on the rate of economic growth in Nigeria and Sudan. That is, one percent rise in oil price brings about 20 percent rise in economic growth of the selected countries, all things being equal. Though current exchange rate, oil price and terms of trade regressors seem not be significantly influence the rate of economic growth across the countries under review but oil price indicator with − 0.009 reveal it negative effect on these economies, which fulfill the apriori expectation of this study. This is in connection with poor fiscal measures put in place by the individual apex financial institution of these countries. For example Nigeria's exchange rate rise significantly from #160/ $1 to #480/ $1 between 2010 and 2016 (it is worthy to note that this period serves as the scope of the study) which indicate over 100% increase.

The rho results that accounted for the percent of variation due to individual specific error term stood at 0 (i.e. there is no fraction of variance due Wi in model (2.7).

To empirically establish the justification of the model employed (random model) in the study. It is therefore pertinent to conduct some post estimation test e.g. Hausman test and Breusch and Pagan Lagrange Multiplier (LM) Test.

*Hausman test results***:** $H=(\beta_{REM}-\beta_{FEM})'(V(\beta_{REM})-V(\beta_{FEM}))(\beta_{REM}-\beta_{FEM})= 9.15$

Prob>chi2 = 0.0274

Where,
H= Hausman fe re model**,** $(\beta_{REM}-\beta_{FEM})$ = difference, $'(V(\beta_{REM}) - V(\beta_{FEM}))$ = Variance co-variance matrix.

Table 1. Hausman's Test For Fixed and Random Effects Models

Regressors	$\beta_{FEM}-\beta_{REM}$	$V\_\beta_{FEM}-V\_\beta_{REM}$
EXR	0.74	0.056
GCF	2.17e-13	2.34e-11
OPR	0.036	0.0123
TOT	3.67e-13	0.00
IND	0.164	0.55

Note: $\beta_{FEM} - \beta_{REM}$= Differences between estimated coefficients from FEM and REM models. While $V\_\beta_{FEM} - V\_\beta_{REM}$= Square diagonal matrix.

Prob>chi2 = 0.0274, meaning that the Null hypothesis that random effects model (REM) is the most consistent and efficient for this study, which cannot be rejected.

Breusch and Pagan LM test results: GDPR (countrynum, t) = 6.53 + 1.13 + 0t
$Chibar^2$= 0.00, prob > $chibar^2$ = 1.0000

This study has found that oil price collapse has negative nexus with economic growth of Nigeria and Sudan, which support the early works of (e.g. Hamdi & Sbia, 2013; Oriakhi & Osazee, 2013; Ebaidalla, 2014; Kuboniwa, 2014 & Ebele, 2015) that oil price has strong link with economic growth. This was achieved through random effects model (REM), and other post estimation tests such as Hausman and Breusch and Pagan Lagrange Multiplier Test which empirically establish the justification of the model employed (random model) in the study.

The empirical estimates reveal how it was difficult for the selected countries to adjust quickly to any form of external shock. The poor safety net put in place in terms fiscal measures among other measures contributed to the recent ugly trend i.e. economic recession witness in Nigeria during the period under review.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

In so far, empirical investigations have revealed the nexus between oil price collapse and economic growth from sub-Saharan Africa oil based economies, specifically from Angola, Nigeria and Sudan between January, 2010 and December, 2015, through panel random effects model (REM). The panel model showed that there is negative link between oil price collapse and the economic growth in the case of Angola, Nigeria and Sudan. Further empirical results from demand elasticity model reveal that coefficient estimate of oil price conform to the apriori expectation in accordance with theoretical (economic) intuition.

Interestingly, the other estimated regressors such as industrial output and gross capital formation are statistically significant, the key variable of interest, Oil price seem to be less significant but has negative nexus with the rate of economic growth due to oil price collapse, which further disclose that unprecedented oil price fall disrupts economic growth of the selected economies. In addition, this is connected with some other factors such as poor institutional quality, poor fiscal measure among others that further expose these economies to unprecedented external shocks which was characterized by skyrocket exchange rate that destabilize growth within the period under review.

Recommendations

In cause of the in-depth analysis, it has been discovered that poor institutional quality in the oil sector coupled with poor fiscal measure among others, further expose these economies to unprecedented external shocks that was characterized by skyrocket exchange rate, hence destabilize growth within the period under review. Therefore, the need for a robust fiscal measure is pertinent so as to sustain economic growth that is being achieved during oil revenues boom across the selected economies.

Proactive monetary policy should be put in place in order to curtail unprecedented inflation that could skyrocket domestic prices within the economies of the selected countries, as this would curb deficit exchange rate at the international fronts.

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State stabilization macroeconomic policy: features and prospects for Ukraine

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Abstract
The research reveals the essence of the process of state stabilization macroeconomic policy, which includes two main directions: fiscal policy influence on the budget balancing and monetary regulation of economy through the transmission mechanism improvement and monetary regime defining. The key problems connected with the state budget deficit are investigated. The state and dynamics of the Ukraine state budget are considered. The ways of overcoming the consequences of state budget imbalances are analyzed. The concept of transmission mechanism was defined. Were shown and explained all the key channels of monetary transmission used in Ukraine and in the world, and were suggested the ways to improve their efficiency, which in future may lead to the improvement of the economic situation in Ukraine. Was justified the necessity of improving the transmission mechanism for the monetary policy strategic objectives achieving. Were given the recommendations on how to improve the channels of transmission mechanism in Ukraine with the aim of increasing the effectiveness of monetary stabilization policy. The basic monetary regimes implementation in various countries of the world and the resulting consequences are researched. The benefits of inflation targeting regime for the state's monetary policy effectiveness enhancing are justified. Recommendations for further implementation of the inflation targeting regime in Ukraine are provided.

Keywords: *Stabilization policy, Budget deficit, Transmission mechanism, Transmission channels, Monetary regimes, Inflation*

INTRODUCTION

The current stage of economic development of Ukraine is determined by the impact of the crisis on all aspects of society, hence the need for development and implementation of active measures of regulatory impact in order to minimize the negative impact of the crisis on the national economy. In such circumstances, the research of problems related to optimization of the Central Bank's monetary policy tools of influence on the real sector of the economy are particularly relevant. Despite the fact that Central Bank has no direct influence on the achievement of the ultimate strategic goals of monetary regulation with the help of own instruments, there is a need of the achievement of defined tactical objectives, which is the direct influence of the Central Bank, i.e. involves the use of an appropriate transmission mechanism of monetary regulation. Therefore, a necessary condition for effective influence of monetary policy on the course of economic processes is the construction of effective mechanism of monetary transmission that provides transmission of corresponding impulses of monetary regulation on the real sector.

On the other hand, structure and dynamics of the state budget is the main indicator of the financial condition of any state. Permanent deficit of the state budget creates problems associated with the inability of the state to ensure the effective implementation of its functions, as well as loss of confidence of international credit institutions and a further rise in the borrowed funds cost. Today the majority of countries in the world have a deficiency of the state budget, and in Ukraine it has become a chronic problem that determines the relevance of the study.

The issues of formation and maintenance of the stabilization policy of the state, the development of effective programs for the state budget balancing, the use of appropriate stabilization instrumentation are very relevant and widely reported in Ukrainian and world scientific works. Recently, the problem of the budget deficit overcoming and of the effective monetary policy providing has become widespread and is in the research interests of a significant number of scientists. Among the representatives of western and Ukrainian economic thought, which investigated the issue, it should be noted Andrushchak (2011); Arzhevitin (2009); Balastryk (2010); Bazylevych (2007); Danilenko (2010); Demianyshyn (2009); Dzyublyk (2012); Gnativ (2009); Gordienko (2012); Grytsenko (2008); Keynes (1999); Kolisnyk (2011); Koncewicz (2012); Kornev (2015); Mashko (2010); Mishchenko (2010); Papaika (2010); Petlenko (2017); Prushkovskaya (2010); Radionova (2010); Slipchenko (2011); Stelmakh (2009); Stiglitz (1999); Vishnevska (2015) and others.

While there is no single opinion regarding the extent and the urgency of overcoming the state budget deficit, but researchers offered various ways and methods of dealing with this phenomenon. Also there is a tendency to a more thorough analysis of this problem in the aspect of deepening of the global economy debt processes in general and Ukraine in particular.

This study examines, among other things, such *unresolved parts of the general problem* as the search of ways to increase the efficiency of the state budget balancing and of the transmission channels, as well as the increasing of degree of the Central Bank influence on the economy by changing the existing monetary regime to more optimal.

The purposes of the research are: 1) Investigation of the influence of the state budget deficit for the implementation of the fiscal stabilization policy; 2) Examining of channels of the monetary policy transmission mechanism in Ukraine and searching for the ways to improve them with the purpose of the efficiency increasing of the Central Bank influence on the real sector of economy; 3) Consideration of the basic choices of monetary regime of monetary policy, which include the monetary targeting regime, the regime of exchange rate targeting, the inflation targeting regime, and a strategy without an explicit nominal anchor.

The main objectives of the study are: disclosure of such economic phenomena as the state budget deficit, monetary regimes and channels of the monetary policy transmission mechanism; highlight the key problems associated with the deficit of the state budget; review of the status and dynamics of the Ukraine state budget; finding ways to overcome the unbalance of the state budget and elimination of the consequences of this phenomenon; highlight the key features of each transmission channel; analyze the transmission channels in Ukraine and in the world; finding ways to improve the transmission mechanism in Ukraine for the efficiency increasing of the Central Bank influence on the real sector of economy; justify the benefits of inflation targeting regime for the state's monetary policy effectiveness enhancing; provide recommendations for further improvement of the stabilization macroeconomic policy in Ukraine.

The research object is the provision of effective stabilization policy as a means of overcoming the negative processes and phenomena in the economy. *The research subject* is the analysis of fiscal and monetary policies' instruments to find the ways for the improvement of state stabilization macroeconomic policy in Ukraine. *Practical implications.* Thoroughly examined the research topic, conclusions were drawn concerning the promising directions of development of fiscal and monetary policy in Ukraine, as well as recommendations on further actions of the state bodies of Ukraine.

METHODS

The research is based on a comparison of data on the effectiveness of monetary and fiscal policy in different countries in specific time periods. During the investigation were used such scientific methods as abstraction, analysis, structure method and others.

RESULTS AND DISCUSSION

State budget as an economic category reflects the real economic relations between the state and other economic actors about the accumulation and use of centralized cash resources of the country, is designed to perform the functions of the state by the distribution and redistribution of GDP.

The state budget as the main financial plan of the state is the monetary expression of the income and expenditure of the state for a certain period of time. The formation of the financial resources reflected in the budget revenues and their use – in its costs.

Budget revenues are formed by tax and non-tax and other revenues, which are made on an irrevocable basis, including transfers, gifts, grants, etc. Budget expenditures reflect the funds allocated for the financing of planned public programs and activities, except for funds designated for repayment of the principal amount of the state debt and refund of overpaid to the budget amounts.

Depending on the balance between revenues and expenditures the budget may be balanced or unbalanced, that is to have a deficit or surplus. Budget deficit occurs when the budget revenues do not cover its spending, the budget surplus is when revenues exceed the budget expenses.

Since the government, like everyone, has to pay its bills, it is necessary to reckon with budget constraints. There are two ways by which you can pay for your expenses: you can increase revenues or borrow money. Governments can also use these two ways: they can increase revenues by raising taxes, or can deepen debt, issuing government bonds. Unlike other economic agents, the government has a third way – can issue money and use them to pay for goods and services that it buys.

The budget deficit is the excess of budget expenditures over budget revenues. If for a certain fiscal year budget revenues exceed expenses, then the amount of the difference there is a budget surplus, or excess.

The national debt is the total amount of debts of the state. The classic definition of public debt refers to government debt, excluding the debt of the region budgets, cities and other administrative-territorial units. But in some definitions, but the debt of the government, state debt includes the debt of the nationalized enterprises, as well as the amount of local budgets debt. Then, perhaps, more appropriate seems the term "national debt" instead of "public debt". Also determine net national debt, which is equal to the difference between total national debt and domestic debt.

The government balancing the state budget by the fiscal stabilization policy. So, the Ukrainian scientist Yu. Petlenko identifies the following features of the state fiscal policy (Petlenko and Mylovanova, 2017): 1) the most important instrument of fiscal policy is the budget deficit as a result of the state financial activities consequently to its economic and social development; 2) financial activity of the state regarding the regulation of the budget deficit is manifested in interference in the economy, on the one hand through the implementation of the policy of budget revenues formation, on the other hand, as a mechanism to stimulate activities of economic entities; 3) state intervention in the economy affects macroeconomic equilibrium – the aggregate demand and supply, and also aim to reduce the negative impact of economic cycles on the stability of business activity.

At the same time, John Stiglitz explored the fiscal policy through tax burden and the optimal structure of the tax system, which aims to improve the welfare of the population (Stiglitz, 1999).

Discretionary fiscal policy, which aims at effective use of public budget, always solves a difficult alternative: stabilization of the economy or balancing of the state budget. This becomes particularly acute if the fall in production caused by a deficiency of aggregate demand. On the one hand, to stop the decline in production, it is necessary to apply a stimulating fiscal policy. On the other hand, it will increase the budget balance, that is, sends the budget to the deficit.

Budget balancing can be carried out in the following ways:

1. Annually balanced budget.

The annual policy balancing the budget enhances the action of economic cycles, that is pro-cyclical. For example, unemployment is increasing (in the recession) -> incomes decline, therefore -> decreases the tax base -> reduced budget revenues. In addition, growing budget expenditures (assistance to the unemployed, and the like) -> Have a deficit budget. If in these circumstances balancing the budget to prevent a deficit, -> will be necessary to increase taxes and/or reduce costs -> to worsen the already depressed state of the economy.

If on the contrary, have full employment and inflation, -> increases the tax base and budget costs are reduced -> occurs budget surplus. In these circumstances, balancing the budget will require reducing taxes and/or increasing costs -> and this will increase the inflation.

2. Cyclically balanced budget.

Cyclic balancing of the budget involves the simultaneous implementation of counter-cyclical government programs and balancing the budget, but not on an annual basis. During the recession, the government lowers taxes and increases spending, while deliberately aggravating the budget deficit. During ascent, the government acts on the contrary: it increases taxes and reduces spending, while deliberately increase its budget surplus.

But overall for the whole period of the economic cycle observed the budget balancing. However, the main problem is that economic cycles are not uniform in duration and depth. In addition, development stage and decline stage do not always pass for the same duration of time.

3. Functional finance.

Supporters of the functional finance system are seeking a balanced economy. The goal of a balanced budget pales into insignificance.

In their opinion, the state budget is not a matter of stabilization. The main thing is the economy balance. And it does not matter if this achieved by using the budget surplus or budget deficit. The government has a large, if not infinite, possibilities to finance the budget deficit.

Based on the concept of functional finance, the current fiscal policy allows the possibility of using an unbalanced budget. First of all it concerns the budget deficit. If the budget deficit is a necessary condition for the stabilization of the economy, on the one hand, the government consciously creating it; on the other, it provides for certain sources of funding.

The choice of rational relation between the individual sources of funding is an acute problem of fiscal policy. It is commonly accepted that the greatest threat to the economy is monetary emission. Its use as a source of funding budget deficits generates uncontrolled inflation, undermines incentives for long-term investment, devalues the savings of households, reproduce the budget deficit.

To limit monetary emission in many countries, the Constitution stipulates the independence of the national issuing banks from the government. Furthermore, the amount of monetary emission is governed by the Parliament.

Painless sources of budget deficit financing do not exist. Therefore, effective can be only a prudent fiscal policy, according to which the state must continually adjust its costs in response to changes in income, and government loans be used only if they have the potential to create sources for their return.

It is essential that the share of the national debt owned by foreigners was moderate. If it is very large, for the country significantly increases the risk of default and are washed out financial resources of the national economy.

The global financial science ambiguously evaluate the effect of budget deficit on socioeconomic processes in society. Therefore, considering the socio-economic consequences of the budget deficit, it is necessary to consider various factors and ways of influence of the deficit on the economy, social sphere and social protection of population taking into account specific situations. Considering these approaches, the consequences can be positive, negative or absent.

What about the positive influence of budget deficit on the economy wrote John M. Keynes. Developing the Keynes theory, neokeynesians argued about the need for a balanced budget in time, i.e. need to replace budget deficits during wars and crises by the active budget during economic upswings. Consequently, the budget deficit was considered an anti-crisis factor. After World War II, Keynesian theory was used in almost all industrialized countries, with the result that the budget deficit became an important fiscal policy instrument, was used during the solution of diverse problems and took an important place in the theory of economic growth and cyclical theories of economic regulation (Mashko, 2010).

Today the vast majority of theorists and practitioners of the world are inclined to think that the budget deficit has a negative impact on the socio-economic processes in society. The budget deficit is a cause of reduced efficiency of the tax system, weakening incentives to work, undermining the confidence of members of society in the future.

Since stabilization policy is reduced to the manipulation of the state budget and changes in the money supply, its implementation directly affects the size of the budget deficit and public debt. The state budget deficit can be financed either through its monetization, or for the account of the loan from the population or from the rest of the world. Because the monetization of public deficit means an increase in the money supply, contributes to the growth of national income, under certain conditions, this can eliminate the budget deficit. After the exhaustion of the possibilities of reducing budget deficit through monetization of the public debt it is growing by the size of the budget deficit this year.

With a large public debt expenses on its maintenance that is the primary expenditure of the state budget significantly limit the ability of the government in fulfilling its core functions and in the conduct of stabilization policy.

Payments on the public debt may be the main or even the sole cause of the budget deficit, creating a vicious circle: state budget deficit –> increase in the national debt –> increase in debt service costs –> state budget deficit.

The general state budget deficit reduced by the amount of interest payments on the national debt, called the primary deficit. In countries with large public debt, in the absence of the primary deficit often there is a general deficit of the state budget. This is the situation in Russia in 1999-2000.

The government in its activity is committed to a balanced allocation of costs and revenues. In order to achieve this, you need to have a clearly established system of budget management, which could ensure the efficient use of funds.

The budget deficit is a financial phenomenon, not necessarily related to the category of extraordinary events. In today's world no state, which in certain periods of its history are not experienced with the budget deficit.

In Ukrainian economic science, until recently, prevailed a purely negative view on the budget deficit. It was seen as a very negative feature typical for the developed countries budgets. Extremely negative consequences (financial, economic, social) of huge budget deficits require the implementation of a system of measures on its overcoming, carrying out an active fiscal policy, the use of internationally accepted methods of dealing with the deficit. Striving for balancing budget income and expenses by balancing the state budget today is one of the main tasks for the government.

In most countries of the world, including Ukraine, budget deficits became chronic, which contributes to the deepening of financial instability. They give impetus to inflation and diverts significant amounts of financial resources from the private sector. Inability to control and withdrawal of the question of the budget scarcity constraint are the cause of the deterioration of financial discipline in the country and deepening of the financial irresponsibility of governments (Danylenko, Grytsenko, and Zymovets, 2010).

Below we can see the dynamics of the Ukraine budget deficit for 2008 – 2016 years (Table 1):

Table 1. The dynamics of the Ukraine state budget in 2008 – 2016 years

Year	**Revenue**		**Expenditure**		**Lending**		**Balance**	
	mln UAH	**%GDP**	**mln UAH**	**% GDP**	**mln UAH**	**% GDP**	**mln UAH**	**% GDP**
2008	231686,3	24.44	241454,5	25.47	2732,5	0.29	-12500,7	-1.32
2009	209700,3	22.96	242437,2	26.54	2780,3	0.30	-35517,2	-3.89
2010	240615,2	22.23	303588,7	28.04	1292,0	0.12	-64265,5	-5.94
2011	314616,9	23.90	333459,5	25.33	4715,0	0.36	-23557,6	-1.79
2012	346054,0	24.56	395681,5	28.08	3817,7	0.27	-53445,2	-3.79
2013	339180,3	23.31	403403,2	27.73	484,7	0.03	-64707,6	-4.45
2014	357084,2	22.79	430217,8	27.46	4919,3	0.31	-78052,8	-4.98
2015	534694,8	27.01	576911,4	29.14	2950,9	0.15	-45167,5	-2.28
2016	616274,8	25.86	684743,4	28.73	1661,6	0.07	-70130,2	-2.94

Source: Implementation of the state budget of Ukraine, 2017

The rapid elimination of the budget deficit, not accompanied by real steps towards stabilization of the economy, will only complicate the already difficult financial situation in the country, creates unnecessary obstacles in the way of decent exit from the crisis.

The reason of financial policy inefficiency in Ukraine during the whole period of independence is the lack of clearly defined and articulated goals of social development, goals and strategic objectives for the long term, which led to uncertainty of role of the state, especially in relation to the content and instruments of this policy (Balastryk, 2010). An important step in the struggle to reduce the budget deficit in Ukraine is to develop an optimal model of fiscal rules, which would meet the criteria of clarity of definition, transparency, adequacy, consistency, simplicity, flexibility, mandatory execution, and support from other areas of economic policy.

According to fiscal rules each year in the process of drafting, review, approval and execution of the budget, it is advisable to carry out complex tactical actions associated with balancing the budget, reducing the budget deficit.

Deficit financing of national economy can be justified only under the condition that the rate of GDP growth will outpace the growth in state and local budgets and the costs of servicing the public debt. In the world practice one of the most important methods of dealing with the deficit is the fiscal rules have been widely used in connection with the trend towards decentralization of the budget system in order to avoid macroeconomic and financial instability. Fiscal rules depends on the needs of the budget system in resources. They are severely restricted at all levels of the budget process and institutional characteristics of the country. They acquire the shape of legislative norms, budget process procedures and marginal indicators (Demianyshyn, 2009): a) *The balanced budget rules.* Among the rules of a balanced budget the central place is occupied by the "golden rule" of public finance, which implies a balanced budget of revenues and expenditures, i.e. the budget deficit may not exceed the total volume of state investments (Japan, Germany, USA), the cyclical budget balance (Denmark, Netherlands, Switzerland) and setting a limit on the size ratio of budget deficit to GDP of the country (European Union countries); b) *Regulations on state borrowing.* Among the rules regarding restrictions and prohibitions of government borrowing are the following: the prohibition of internal state borrowings (used in countries with underdeveloped financial markets, for example, in Indonesia), the prohibition of government borrowing from the Central Bank (the European Union, Japan, USA) and size limits of government borrowing to last year's volumes of the countries budget deficit (Brazil, Egypt, Morocco); c) *Debt and reserve rules.* Debt rules require the establishment of limits on the size of the ratio of public debt to GDP, and the reserve — associated with the formation of special funds to prevent financial crises, when the need arises to support the social benefits of a reduction in revenue of the state budget.

If fiscal policy is focused on extending the state sector of the national economy, it should increase fiscal spending and taxes, creating a stimulant effect. When fiscal policy is aimed at supporting the private sector, it should reduce taxes and limit budget spending, which is fast enough to reduce inflation.

In addition to fiscal rules in the preparation and execution of the state budget, it is advisable to carry out complex tactical actions related to the reduction of budget deficits (Kolisnyk, 2011): a) improvement of legal support of the budget process, make the necessary changes in the laws and legal acts which would ensure the balancing of the state budget at all stages of the budget process; b) improvement of the transfer policy and improving the effectiveness of transfer payments, in particular the reduction of payments to unproductive branches of national economy; c) the rejection of the deficit financing concept (a situation in which expenses exceed planned revenues funded from additional received income and attracted budgetary sources); d) counteraction to "dirty" money laundering, better state program support of the national economy deshadowing and strengthening of managers responsibility at all levels of government for misuse of budgetary funds; e) the introduction of strict regime of budgetary funds economy, in particular reducing the cost of public administration, elimination of unjustified and ineffective economic and social benefits and the like.

The other important stabilization area is monetary sphere. Monetary regulation of economy is carried out by using the so-called transmission mechanism. For the first time this concept was introduced by John M. Keynes. Scientist called so the system of variables through which the money supply affects economic activity (Keynes, 1999). Today, there are many points of view on the definition of this concept. In my opinion, most fully the economic essence of the monetary transmission definition displays V. Stelmakh, according to whom "the transmission mechanism is the relationship associated with the transmission of changes in the use of monetary policy instruments on macroeconomic variables through a complex chain of intermediate variables" (Stelmakh, 2009).

In the process of transmission mechanism implementation the effect of the Central Bank activity affects the real economy with a certain time lag. First, the effect of using monetary policy is reflected directly in the money supply that causes changes in the performance of the financial sector, such as interest rates, exchange rate, volumes of deposits and loans. These changes in turn affect the adoption of economic actors in decisions about production, consumption, savings, and investments. For example, high interest rates have a negative impact on the propensity to investment, and taking into account the multiplier, on the economy as a whole (Bazylevych, Bazylevych, and Balastryk, 2007). Ultimately, this leads to a change in the gross domestic product.

Thus, schematically, the stages of the transmission mechanism action can be represented as follows: The change in the money supply –> Change in the financial sector (interest rates, exchange rates, volumes of loans and deposits and the like) –> Changes in the real sector (investment, consumption, net exports, etc.) –> Change of GDP

The impact of monetary policy instruments on the main economic indicators of the country is carried out through a chain of intermediate variables, or in other words, the channels of the transmission mechanism. The formation of various channels depends on the Central Bank transmission mechanism model. The Central Bank takes into account national peculiarities of the economy, the main of which are the scale of the economy, its openness, level of development, tools and goals of monetary policy (Mishchenko, Petryk, Somyk, Lysenko, and others, 2008).

Today the transmission mechanism model of Ukraine monetary policy is at the design stage. In the structure of monetary transmission mechanism in Ukraine today there are such channels as *monetary, channel of interest rates, channel of assets prices, credit channel and channel of economic agents' expectations*. Let us consider each of them separately.

Monetary channel, as considered in scientific literature, is the first channel of the transmission mechanism, which really began to be used in practice. Its action is characterized by direct effects of money supply on the monetary market and the price level in economy.

Monetary channel influences due to the fact that the optimum growth of the money base and the money supply to balance the structure of the money market plays a crucial role in the formation of inflation, prices and value of assets. The criterion of the monetary channel effectiveness is the observation of the money base growth, as well as the proportions of money supply growth.

Today in Ukraine, this channel is used quite actively because the operational target of monetary policy is the money base indicator. After the introduction of inflation targeting, the role of this channel will decrease, since the operational target of monetary policy should be the interest rate (Mishchenko, Somyk, and Lysenko, 2010).

Interest channel is the main channel of transmission mechanism. Its effect is that the change in the money supply affects the interest rates. The latter leads to a change in consumption, savings and investment. The ultimate impact indicators is the GDP, inflation or other strategic indicators.

The scheme of functioning of the monetary transmission interest rate channel can be represented as follows: The change in the money supply –> Changes in interest rates –> Changes in volume of consumption, savings, investments –> Change of GDP

Within this channel, there are two separate channels: *substitution* and *income*. The effect of the *substitution channel* is that the change in interest rates affects the ability of subjects to meet their needs, in particular, puts before a choice: to fulfill own needs now, or save and implement them in the future. That is, lowering the interest rate increases current consumption, including the expense of the loans. The latter stimulates the growth of aggregate demand and production volumes. The increase in interest rates leads to an increase in savings and decrease in consumption, which leads to a decrease in demand for loans. As a consequence will be a fall in aggregate demand and decline in production (Arzhevitin, 2009).

The effect of *channel of income* is based on the fact that the change in interest rates leads to a redistribution of income between creditors and borrowers. For example, higher interest rates contributes to the redistribution of income in favor of the lenders. Because creditors are less inclined to spend savings than borrowers, the result will be a decrease in aggregate spending, which will restrain the growth of aggregate demand, particularly investment. Ultimately will be a decrease in production volumes (Slipchenko, 2011).

Enhancing of the effectiveness and efficiency of the interest rate channel functioning requires the following steps: development of a clear strategy for monetary policy; development of indicative interest rate and money market indicators; improvement of operating system of the banks liquidity regulation; development of the secondary securities market.

Channel of assets prices operates through changes in relative prices of financial and real assets. The Central Bank with tools of monetary regulation changes the volume of the money supply, which affects interest rates. The changes of the past affect the price of assets, such as securities, foreign currencies, real estate and the like. This is because, for example, in the case of lower interest rates the yield of money as an asset reducing. Economic actors starts to look for alternative objects of investment capital, the prices of which, due to increase in demand, grow.

Some scientists allocate as a composite channel of assets prices channel in Ukraine monetary policy the *channel of the exchange rate*. The latter is a key element of monetary regulation in an open economy. The action of the exchange rate channel is that in case of domestic interest rates reducing, which is a consequence of the increase in money supply, the demand for the national currency decreases, which leads to a decrease of the national currency, and consequently, to growth of net export and aggregate demand (Andrushchak and Khar, 2011):

The change in the money supply –> Changes in interest rates –> Change of the national currency exchange rate –> Changes in net export and investment –> Change of GDP

The effect of the influence of national currency exchange rate on the total expenditures can be decomposed into the effect of changes in relative prices and balance sheet effect.

The effect of changes in relative prices turns out in changes in the demand for domestic goods and services, which during the reduction in the national currency exchange rate become cheaper on the world market. This leads to an increase in aggregate demand through higher net export, which is an integral part of the gross domestic product of the country.

Balance sheet effect of change in national currency exchange rate is associated with the presence of liabilities in foreign currency in economic entities balance. If these liabilities are not fully covered by assets in a foreign currency, the rates growth may lead to changes of equity and the cost of servicing foreign currency obligations.

The main directions of the exchange rate channel efficiency increase should be: increasing the liquidity of the foreign currencies market; clear permanent conditions of the Central Bank release on the currency market; reducing the level of the economy dollarization; improvement of currency risks hedging mechanisms.

Credit channel. The impact of the Central Bank's monetary policy on the availability of credit resources reflects the credit channel. It is based on the assumption that the Central Bank affects by instruments of monetary regulation on the change in supply of credit resources by changing the amount of the banking system free reserves:

Tools of monetary policy –> Change in free reserves –> Change of the credit volume –> Changes in volume of consumption, savings, investment –> Change of GDP

The main directions of improving the effectiveness of the credit channel should provide: improvement of credit and investment climate; the financial recovery of the banking system and its stability enhancing; development of mechanisms for the provision by Central Bank refinancing loans for investment projects financing (only for investment banks); improvement of credit conditions and strengthening of the creditors' rights protection mechanisms.

Channel of expectations characterizes the impact of changes in monetary policy on the economic agents expectations regarding future prices and macroeconomic situation and, accordingly, on their decision on consumption, savings and investment.

It is worth to notice that the instruments of monetary regulation are reflected directly in short-term rates on the money market. The reaction of long-term rates on the Central Bank operations depends on market expectations and confidence of market participants in targets of monetary policy. If monetary policy is consistent with the goals, and the macroeconomic situation is stable, the effect of the expectation channel will be negligible. When there is uncertainty in economic conditions due to low confidence in the governmental and monetary policy, generated pessimistic expectations that block incentives for economic growth.

The negative expectations of economic agents may be the cause of disruption in the transmission mechanism and reducing of the monetary regulation instruments impact that could cause significant deviation of actual values from the targets of monetary policy.

The presence of economic agents' negative expectations could be shown by such indicators as growth in money velocity, the share of loans and deposits issued in foreign currency increasing, a significant share of cash in the money supply structure and other.

It should be noted that in addition to the channels, which are characteristic for the Ukraine's economy, in the framework of the monetary transmission mechanism allocate such channels as *liquidity channel, channel of changes in equity, Tobin's q,* which relate to the *channel of asset prices*, etc.

Liquidity channel defines the relationship between the financial assets owned by households, and their (households') expenditures on the durable goods (cars, home appliances, real estate). In the basis of functioning of this channel is the desire of households to distribute the proceeds between the various assets in such way as to be able at any time to avoid financial difficulties. In this regard, households tries to store part of the cash revenues in the form of cash or highly liquid income-bearing financial assets. If in the household's assets structure investments in financial assets have a significant place compared to the debts of this subject, we can conclude that the probability of financial distress for this subject is low. Such households will be able to buy consumer durable goods.

Based on these assumptions, the effect of the liquidity channel can be characterized as follows: money supply growth leads to higher stock prices, resulting in a lower likelihood of financial difficulties, and households begin to increase their spending on durable goods. As a result, the aggregate demand and, consequently, production volumes will increase.

The influence of the *channel of changes in equity* on the real economy is as follows: increase in money supply leads to an increase in the value of firms' equity. The consequence of this, given that equity can be used as collateral, is the increasing of its cost. This has a direct impact on the creditworthiness of borrowers, because when it grows commercial banks begin to expand lending, which leads to production volumes increasing.

Thus, since the equity of the borrower indicates the stability of its activity and can be a guarantee of fulfillment of obligations under loan agreements, changes in bank clients equity influences the banks' decisions regarding the expansion or narrowing of their customers crediting. Consequently, this will affect the consumption and investment and will have an impact on production (Arzhevitin, 2009).

Some scientists identify this channel as a *broad channel of lending* and call it balance channel. Then, respectively, the influence of Central Bank on money supply through a change in reserves is called the *narrow channel of lending*.

The basis of the *Tobin's q channel* action is the relationship between the stocks' price and the investment costs of the company. The Tobin's q is defined as the ratio of a firm market value and of replacement cost of its capital. The first one is the price at which the firm can be sold on the market, while replacement cost is the value of the firm in case if all its capital (machines, equipment, buildings and the like) were replaced with a new equipment at prices that have formed at the current moment on the market. If Tobin's q is high, this means that the cost of the firm's capital equipment is lesser compared to the market value of the company.

The effects of monetary impulses into the real sector through this channel are as follows: the increase in money supply raises the prices of securities that leads to an increase in the market value of firms compared to the replacement value of its capital. In this case, firms can issue new shares and sell them in the market at high prices. Additional financial resources will be directed to investment expansion, the purchase of new machinery and equipment. Thus, under conditions of constant prices for capital equipment growth in the Tobin's q will increase the level of investment spending. The consequence would be an increase in aggregate demand and production.

The strategic goals of economic development and successful application of the entire set of anti-crisis measures crucially depend on the effectiveness of market-oriented instruments of the Central Bank's monetary impact on the economy, a standard set of which is represented by the minimum reserve requirements, discount policy and open market operations. However, there is a problem of achieving maximum effect in a relatively short time (Dzyublyk, 2012).

In conditions of low economic growth rates, inflation and devaluation of the national currency it is extremely important to find ways to overcome the negative effects of the aforementioned processes and phenomena. Given the uncertainty factor, the influence of Central Bank on the country's economy is quite powerful. The main direction of a monetary policy improvement is to change its regime on more effective. The research urgency is caused also by the desire of the National Bank of Ukraine (NBU) to move in the near future to full-fledged inflation targeting. In the "Main principles of monetary policy for 2015", it is noted that strategic objective of the NBU is to achieve and maintain in the medium term low and stable inflation (5 % per year with a tolerance of ±1 %) and a gradual transition to inflation targeting. Thus, one of the research problems is stated as follows: is the inflation targeting regime the best choice for Ukraine? The current paper aims to demonstrate differences in implementation of basic monetary regimes and to prove that the inflation targeting regime will be the most effective for Ukraine.

In most cases, Central banks choose one of three basic nominal indicators characterizing the results of its activity: the existing amount of money in circulation, the value of the exchange rate or the inflation rate. Providing the stable dynamics of these variables on the read level for a certain period of time is called its targeting (Koncewicz, 2012).

We can consider three basic choices of monetary regime. The first is *the regime of monetary targeting*. It is based on the belief that the change in the money supply entails a corresponding change in the rate of inflation. In order for this regime to be effective, a necessary condition is the existence in the economy a stable connection between the change in the money supply and inflation.

The second monetary regime based on *the exchange rate targeting*. It suggests that the Central Bank as the intermediate target of monetary policy sets the nominal exchange rate and tries to provide stability against the currencies of the so-called countries of the anchor due to interest rate changes and direct foreign exchange intervention.

The third monetary regime is based on *inflation targeting*. Also some Central banks are adopting *a strategy without an explicit nominal anchor*, which consists in establishing and achieving several goals simultaneously (Gnativ, 2009).

The essence of *monetary targeting* is that the Central Bank, on the basis of the inflation target, estimate of potential output growth and the dynamics of money velocity within the quantitative equation of exchange (MV = PY) determines the target rate of monetary aggregates growth and announces it to the public.

For the implementation of monetary targeting in the country, you need to meet an important condition: the demand for money within the country should be stable. This means that the velocity of money has to be on the same level for a certain horizon targeting. This condition is quite difficult task for the Central Bank. The reason is that the demand for money depends essentially on the changes occurring in the socio-economic relations, the stability of international financial markets, and the like. Given this, the effectiveness of this regime is low in countries with economies in transition.

During 1970–2000 the monetary targeting was tried in many countries such as UK, Greece, Albania, Georgia, China, etc. Most of them were forced to abandon this regime due to low efficiency of monetary aggregates influence on the ultimate goal – price stability.

Examples of effective targeting of the money supply are Germany and Switzerland. Indicators of monetary targets in these countries were achieved only by 50 %, however, inflation has been kept at an average level that does not exceed 3 %. The effectiveness of this regime in Germany and Switzerland was based on the confidence in the monetary authorities (Radionova, 2009).

Ukrainian scientist T. Slipchenko noted that the main advantages of monetary targeting as a monetary regime is "sovereignty" – the Central Bank chooses the inflation target, and has the ability to adjust policy depending on internal changes in the volume of production and a close relationship with the instruments of monetary policy, that is, a high level of control by the Central Bank, since monetary aggregates are measured quickly enough, and, accordingly, reports on the implementation of monetary targets communicated to the public with relatively short time lags up to several weeks (Slipchenko, 2010).

As you can see, the advantages of this regime include a high level of coordination of monetary and overall macroeconomic policy, the ability to rapid reaction by the Central Bank and the stability of expectations associated with full awareness.

The disadvantages include the impossibility of control over the money supply in case of high share of cash, insolvency in case of significant fluctuations in the demand for money, the ambiguity of the relationships between changes in the money supply and its actual performance in time intervals (Prushkovskaya, 2010).

Not less than 50 economies of the world continue to rigidly fix the courses of their currency units relative to third currencies. These include, for example, Hong Kong, Malta, Latvia, Lithuania, Estonia, etc. Selection of *the regime of the exchange rate targeting* is an effective tool to control inflation. The effectiveness of this regime directly depends on such factors as the degree of openness of the economy measured by share of imports in consumption, the volume of foreign exchange reserves and so on (Papaika, 2010).

The disadvantages of this regime are the dependence of monetary policy on external economic factors, the possibility of an inflow of short-term speculative capital and the risk of destabilization of the financial system in the global currency crises.

As shows the analysis of the experience of individual countries, the policy of the exchange rate targeting may have different consequences. Thus, the positive results were achieved in Bulgaria, Latvia, Tunisia, Argentina. A classic example of a country that had a bad experience is Brazil, where the application of the regime of the exchange rate targeting led to hyperinflation.

In 1990 the Reserve Bank of New Zealand was the first to use *inflation targeting regime*. Currently, such policy is carried out in at least 26 countries, including economically developed countries (Australia, Sweden, Canada, UK), developing countries (Brazil, Chile, Mexico), and countries with emerging market economies (Poland, Czech Republic, Slovenia, Hungary). The last introduced the inflation targeting regime during the transition period, with the result that has reached the low level of inflation and sustainable economic growth, and also raised public confidence in the monetary authorities.

The concept of "inflation targeting" is defined as the monetary strategy that involves public announcement of the inflation temps by Central Bank that must be achieved within a certain period, and provides increased transparency and accountability of the monetary regulation bodies.

An important condition for the transition to the inflation targeting regime is a presence of Central Bank's clear vision of how monetary policy affects the real economy. This makes it possible to determine which instruments are appropriate to use in a given situation, time lag of the measures of the Central Bank impact on macroeconomic indicators and how they will be effective. In the developing countries the influence of monetary policy on the economy is characterized by greater uncertainty due to permanent institutional and structural changes.

The technology of conducting monetary policy under inflation targeting is based on two main principles. *The first* is a forecast of how the inflation process will develop for the assumption that monetary policy will not change. *The second* is a prediction as to what will be the future inflation and other macroeconomic indicators in the case of current changes in monetary policy.

So, if the inflation forecast exceeds the inflation target, the Central Bank needs to raise interest rates, and vice versa, if the inflation forecast is below the inflation target, the Central Bank should reduce the interest rate.

It should be noted that the effects of monetary policy occur with a time lag, so the medium-term forecast of macroeconomic development, in particular inflation, has a sufficient importance. Since the applying of inflation targeting regime the deviation of the predicted values of inflation from the target acts as an intermediate goal, so the quality of the forecast becomes the key element of the effectiveness of monetary policy (Gritsenko, 2008). Thus, the effective system of analysis and forecasting is one of the most important preconditions for a successful transition of Central banks from the exchange rate targeting regime to the inflation targeting regime.

Central banks applying inflation targeting, target out also inflation expectations, which serve as a connecting thread between operating targets and the ultimate goal of monetary policy. Not only the officially proclaimed inflation target is affected on the expectations of economic agents, but also its forecasts, which are specified by the Central Bank in periodic public reports.

The process of forecasting by the monetary authorities is a "black box" for the public and associated with the use of a number of complex macroeconomic regimes. If economic agents trust the Central Bank, even unexpected external and internal shocks, which were not considered by the Central Bank in the forecasting process, may be impaired by the influence of optimistic inflation expectations. That is, the expectations of economic agents are influenced both by the actual change of the direction of monetary policy, and just announcements about upcoming intentions of the Central Bank.

Inflation targeting is implemented through *active* and *passive approaches*. Passive approach includes the following monetary policy tools: a narrow corridor of the interest rates in the interbank market, the conduct of irregular transactions in the open market, the use of reserve requirements to regulate liquidity. Active approach, in turn, provides for a wide interest rate corridor, the lack of regular transactions in the open market and minimal use of reserve requirements.

International experience of inflation targeting regime confirms its effectiveness, since none of the countries that have adopted this strategy, abandoned it. In these countries, today the macroeconomic situation is characterized by steady economic growth, less vulnerability to external shocks, low and stable inflation.

Application practice shows the existence of *subtypes* of this regime, as different countries use inflation targeting that was developed according to their system characteristics. Such subtypes include: a) f*ull-fledged inflation targeting* – full transparency lighting inflation target, strict adherence to the selected target without corrective measures from the Central banks. First used in New Zealand, later on it spread among developing countries, particularly in Brazil, Colombia, Hungary, Mexico and Poland; b) *disguised inflation targeting* – allows changes in the level of inflation. In this subtype of the regime there is a certain opacity. Used by the European Central Bank and by the Federal reserve system of the United States; c) *experimental inflation targeting* – means the broad inflation tasks proclamation in conditions of low public confidence in the Central Bank.

The advantages of inflation targeting are: the ease of evaluating the effectiveness of monetary policy, a flexible exchange rate policy and creation of conditions for balanced development of all sectors of the economy, slowed because of the negative impact of inflation.

According to domestic economist V. Gordienko, the significant benefits in the monetary policy regime of inflation targeting include: 1) formation of inflation expectations at a low level; 2) in most cases allows to reduce inflation in the short term; 3) helps to strengthen the actual Central Bank independence and credibility; 4) allows to overcome internal and external shocks; 5) resolves contradictions associated with the objectives of monetary policy; 6) reduces the likelihood of crises; 7) creates positive conditions for the development of the economy as a whole (Gordienko, 2012).

The disadvantages of this regime you need to include are the impact of factors that are not controlled by the Central Bank (e.g., the status of the financial sector) on the inflation dynamics, as well as limiting opportunities for stimulating economic growth and reducing unemployment with monetary policy instruments.

Based on the experience of other countries, the main direction of improvement of the monetary policy of Ukraine is determined as a phased transition from the regime of targeting the exchange rate (which was defined as a financial priority of the monetary policy of Ukraine in 1997 (Bazylevych, Bazylevych, and Balastryk, 2007)) to the regime of inflation targeting.

During *the first stage*, you need to reduce utilization of foreign exchange interventions that will make the exchange rate more flexible and to increase the influence of interest rate policy, which should become the main tool of the NBU. It is also important to implement a number of measures aimed at development of the stock market of Ukraine.

The purpose of *the second stage* is the transition to full inflation targeting by further liberalization of operations with capital movement. The main results of the second stage should be the transparency and efficiency of the impact of interest rate policy and a flexible exchange rate.

The criteria for the formation of the most favorable environment for the transition to the inflation targeting in the country are: the Central Bank independence, transparency and informational openness of the NBU, Central Bank credibility, a qualitative inflation forecast, high level of training of analysts and a robust statistical base, a developed financial market, free pricing, low level of dollarization of the economy, coordination of instruments of monetary and fiscal policy (Kalinovskyi, 2017).

So, the possible positive aspects of the implementation of inflation targeting in Ukraine include: 1) increasing trust of the population, primarily in the National Bank of

Ukraine and the Government, which is one of the factors in the formation of inflation expectations; 2) ensuring stable economic development of Ukraine in the long term; 3) increasing of foreign investment (which will affect the development of financial-credit sector and the economy as a whole); 4) lower prices for imported goods; 5) increasing of transparency and efficiency of functioning of the government securities market; 6) creation of mechanisms to counter external shocks and manage cash flow in all sectors of economy; 7) reducing the likelihood of crises.

However, according to Vishnevska, the implementation of the inflation targeting regime in Ukraine in the absence of basic preconditions was a necessary step, but, as practice shows, untimely, and the proof is the inability of the NBU in 2014 to ensure price stability in conditions of macroeconomic instability (Vishnevska, 2015).

The inflation targeting regime was implemented in unfavorable for Ukraine's economy conditions, in particular with inflation almost at 24.9 % in 2014, the devaluation of hryvnia by almost 310 % (from 8.3 UAH/USD in 2013 to around 34,0 UAH/USD in February 2015) and the fall of GDP by 15.2 % in 2014. The influence of the external environment will further increase the dependence of inflation targeting on the budget needs (Kornev, 2015).

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Chronic state budget deficit is a significant threat to the economy, because it delays the financial resources of the state for the servicing and repayment of public debt. On the other hand, it requires a fixed financing of a certain amount of government spending to maintain the priority sectors of the economy and the target level of employment, even if it leads to the budget deficit deepening. The search for optimal strategies for balancing the budget under these conditions is the basis for further research.

A promising direction for further research in the area of improving the functioning of the transmission mechanism in Ukraine is the rationale for the development of secondary securities market, which will lead to not only revive the monetary and financial markets, but also to the more significant influence of the Central Bank on the real sector of economy, as well as in-depth analysis of the inflation targeting regime, directly connected with the transmission mechanism of monetary policy, that may lead to more effective impact of the Central Bank on the economy of Ukraine.

The impact of budgetary processes on the economic situation in the country is a fundamental milestone in the definition and conduct of macroeconomic stabilization policy. The classic lines of reducing the budget deficit is to increase revenue and decrease expenditure, internal and external borrowing. However, you should consider the positive and negative aspects of each of them and to produce in each of these tools effective measures to stimulate the reduction of the budget deficit.

The implementation of monetary policy occurs via the transmission mechanism. Under this concept understand the relationships associated with the transmission of changes in the use of monetary policy instruments on macroeconomic variables through a complex chain of intermediate variables. The latter are also known as channels. Each of them conveys the monetary impulse from the specific tools of the Central Bank to the real sector of economy. The effectiveness of these channels is determined by the result of influence on the final targets, in particular on gross output.

Analyzing the considered channels of the transmission mechanism of monetary regulation, we can conclude that for Ukraine due to the lack of a developed stock market is characterized a limited number of channels: monetary, channel of interest rates, channel of assets prices, credit channel and channel of economic agents' expectations. In addition to these, there are also liquidity channel, channel of changes in equity, Tobin's q and others.

Today in Ukraine the transmission mechanism of monetary policy is not effective enough, as evidenced by a weak relationship between monetary measures of Central Bank and the dynamics of financial market and real sector development. The cause is because until recently in monetary policy of Ukraine were used monetary aggregates and exchange rate targeting regimes. In conditions of post-crisis recovery, the implementation of the basic principles of the transmission mechanism of monetary policy occurred against the background of macroeconomic instability and monetary strain associated with the imperfection of the institutional framework, methods and tools of monetary policy implementing, as well as of the main approaches in operations of Central Bank.

One of the main preconditions for the effective functioning of the economy is ensuring of a stable and low inflation. The achievement of the inflation target is possible primarily due to the choice of the optimal Central Bank monetary policy. Given the socio-economic realities of Ukraine, the most expedient is the implementation of the inflation targeting regime.

Recommendations

The fundamental measures to improve the balancing of the Ukraine state budget include the following: improvement of legal support of the budget process, the use of advanced technologies, budget planning and management, improving transfer policy and improving the effectiveness of transfer payments, finding the reserves to increase the revenue of the state budget, the rejection of the deficit financing concept, counteraction to the "dirty" money laundering, the introduction of strict regime of budgetary funds economy and the like.

Inflation targeting should be viewed as a monetary system device, which is characterized by a public proclamation of official quantitative inflation target in the medium term and a clear understanding and confidence that low and stable inflation is the primary goal of monetary policy in the long run. In addition, an important condition for the implementation of this monetary regime is understanding that it will stimulate positive changes concerning the implementation of monetary policy, strengthening the effectiveness of the use of its main tools to increase the independence of the Central Bank in terms of accountability and transparency and will contribute to the development of the system analysis and forecasting of the inflation target in the country.

There are the following ways to improve monetary control in conditions of implementation of the inflation targeting regime: enhancing the role of interest rates in managing inflation through adherence to the basic rules of interest policy; strengthening the capacity of the NBU to develop its own forecasts of macroeconomic indicators, which will be the basis for making monetary decisions and will enhance the independence of the regulator; improving the efficiency of the process of making monetary decisions and improving communication policy with the aim of restoring confidence in the regulator actions; a better coordination of monetary and fiscal policy to achieve the inflation target and keeping it at low levels for a long time.

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The effect of competence and organization culture to employee performance with motivation as the mediation variable in the Directorate General of Fiscal balance-Ministry of Finance, Indonesia

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Abstract
High employee performance can be achieved if all elements within the organization can be well integrated. Increased employee competence, application of organizational culture and employee motivation are part of the elements or variables that affect an employee performance. This research aims to determine and analyze the influence of competence and organizational culture on employee performance through motivation as a variable mediation. The population in this research is all Civil Servant of Directorat General of Fiscal Balance (DGFB) which amounted to 426 people. Sampling method is Simple Ramdom Sampling (SRS) with the number of respondents as much as 80 employees calculated based on Slovin Formula. Data collection techniques in this study are literature study and questionnaire. Data were analyzed by path analysis model by using SPSS. The first results of this researh showed that the competence and organizational culture simultaneously had a positive and significant effect on motivation. Furthermore, based on the results of partial tests, competence have a positive but not significant effect on motivation, while the influence of organizational culture on motivation is positive and significant.The second result shows that the competence, organizational culture, and motivation have positive and significant effect on employee performance. Furthermore, based on the results of partial tests, competence and organizational culture show the same results that have a positive and significant effect on employee performance, while motivation effects on employee performance although still positive but not significant.

***Keywords**: Competence, Organizational culture, Motivation, Employee performance.*

INTRODUCTION

Ministry of Finance is a ministry in Indonesia that hold responsibility on finance and state assets. One of the important functions of the finance ministry is to formulate and implement fiscal decentralization policies. Furthermore, the function is implemented by an echelon unit I namely the Directorate General of Fiscal Balance (DGFB).

To ensure the functionality is well implemented, DGFB requires employees who are able to work professionally, responsibly, with integrity and high performance. Recognizing the important role of DGFB employees, the Minister of Finance conveys his support and expectations to all DGFB employees submitted during the Final Meeting of the 2015 Leadership, to continuously improve the professionalism of work through increased competence, innovation, breakthrough steps in the formulation of fiscal decentralization policy and the improvement of formulation allocation of transfer funds to the regions.

The role of human resources in various management literature is said to be very important for the organization. This is in line with the opinion Tangkilisan (2002) which states that humans are the most important element in the organization, because humans always play an active and dominant role in every organization. Humans are planners, actors, and at the same time determining the achievement of organizational goals. Thus the human resources of an organization is required to have the ability in carrying out its duties and functions, has strong motivation to participate in all activities of the organization, able to work effectively and efficiently, and ultimately can provide the best performance to support the achievement of organizational goals.

In any organization, employees who are considered high performers are employees who are able to contribute greatly to the success of the organization in realizing its vision, mission, and objectives. It is therefore an obligation that the organization needs to create a condition that supports all its employees to work well, maintain cohesiveness, and always synergize to show its best performance for the achievement of personal goals and organization.

Performance of employees is basically influenced by several conditions, namely the condition that comes from within the employee (individual factors) and conditions that come from outside the employee (situational factors). Individual factors include health, sex, experience, and psychological characteristics of employees, namely personality, motivation, goal orientation and ability of employees. The external factors include leadership, social relations, organizational culture, education and training. Performance is the achievement of work obtained by an employee in performing his duties in accordance with the responsibilities given to him. Performance is divided into two, namely individual performance and organizational performance. Individual performance is the result of employee work in terms of quality and quantity based on predetermined work standards, while organizational performance is a combination of performance achieved by each individual and group performance where the individual is incorporated.

According to Prawirosentono (2008), performance is the work achieved by a person or group of people within the organization, in accordance with their respective powers and responsibilities in order to achieve the objectives of the organization legally, not violating the law, morals and ethics. While Gibson et al. (1996) in Trinaningsih (2007) argues that employee performance is a measure that can be used to define the comparisons of task performance results, responsibilities given by the organization over a given period and can be used to measure work performance or organizational performance. Meanwhile, the opinion of Hasibuan (2003) that work performance is the work achieved by a person in carrying out the tasks assigned to him based on his skills, experience, seriousness, and timing of completion.

Performance of employees is basically influenced by several conditions, namely the condition that comes from within the employee (individual factors) and conditions that come from outside the employee (situational factors). Individual factors include health, sex, experience and psychological characteristics of employees consisting of personality, motivation, goal orientation and ability of employees. The external factors include leadership, social relations, organizational culture, education and training.

The variables to be analyzed influence on employee performance in this research is competence, organizational culture, and motivation. The first variable to be analyzed is the competency variable. In general, competence is defined as skills and abilities.

Competence comes from the word "competent" which means skillful or skilled. In the context of human resource management, the term competence refers to the attributes or characteristics of a person who makes himself successful in the job. Many people often use the term competence as the ability to perform. It can be understood that the success of an employee in completing the work is strongly influenced by the skills, knowledge, attitude, behavior, and ability.

Competence also involves the individual's authority to perform the task and make decisions according to his or her role in the organization based on his or her expertise, knowledge, and abilities. Rivai (2009) said that the competencies of individual employees must be able to support the implementation of organizational strategy and able to support any changes made by management. In other words, the competence of an individual can support a team-based work system. Thus, to realize the success of programs that have been established by an organization, then every employee is required to have the required competency standards.

According to Roe (2001), competence is the ability to perform a task or role adequately, the ability to integrate knowledge, skills, attitudes and personal values, and the ability to build knowledge and skills based on experiences and lessons learned. While Spencer and Spencer in Palan (2007) argue that competence shows the underlying characteristics of behavior that, describe the motives, personal characteristics, self-concept, values, knowledge or skills that cause the employee to perform excellently in the workplace. Meanwhile Wibowo (2007) argues that competence is an ability to perform a job or task based on skills and knowledge and supported by work attitude according to the guidance of the work.

Competence according to Echols and Shadil (1983) is skill or ability. Meanwhile, according Purwadarminta (1982), competence is as authority or power to determine or decide something. As a public organization, DGPK has the most dominant resource of employees with all competencies both hardskills and softskills. Competence of employees in a public organization is needed so that employees can work professionally in carrying out their duties and responsibilities, so that the demands of society can be met and future challenges can be faced. This is in line with Spencer's opinion in Moeheriono (2012), that the relationship between employee competence and performance is very close and very important, the relevance is strong and accurate.

Based on the above explanation, it can be concluded that the competence is the mastery of a set of knowledge, skills, values and attitudes that direct an employee to think, work and act in accordance with the profession.

The second variable to be analyzed is the organizational culture variable. Culture according to Wibowo (2007) is a systematic human activity, passed from generation to generation through various learning processes in order to create a particular way of living that best suits the environment where he lived. Meanwhile, the word "organization" comes from the Greek "organon" meaning instrument or instrument. When a person sets up an organization, the ultimate goal is not the organization itself but rather that he and everyone involved can achieve other goals more easily and more effectively.

Organizational culture is a system of spreading trust and values that develop within an organization and provide direction for the behavior of its members. Organizational culture can be the main instrument in creating organizational competitive advantage, only when organizational culture can answer or address environmental challenges quickly and appropriately.

According to Wirawan (2007), organizational culture is the norm, values, assumptions, beliefs, philosophy, and organizational habits developed over long periods by the founders, leaders, and members of the organization and then socialized and taught to new members so they can imitate and organize it in organizational activities, and ultimately can influence the mindset, attitudes, and behavior of employees in producing products, serving consumers, and achieve organizational goals. While Victor Tan in Sole (2007) gives the opinion that organizational culture is a norm consisting of a belief, attitude, core values, and behavior patterns that people do in the organization. Meanwhile, Robbins (2001) argues that organizational culture is a shared value system shared by its members and this becomes the organizational differentiator with other organizations.

Organizational culture is also called corporate culture or work culture because it cannot be separated with the performance of human resources. The stronger the corporate culture, the stronger the achievement drive. Culture is a very important factor in improving organizational effectiveness. Organizational culture can be a major competitive competitiveness tool, when organizational culture supports organizational strategy and can answer or address environmental challenges quickly and appropriately.

Organizational culture according to Robins (1999) is a shared value system within an organization that determines the maturity of an employee in acting on behalf of his organization so that the organization's goals can be achieved. Organizational culture for civil servants has been regulated in the Regulation of the Minister of Administrative Reform and Bureaucracy Reform No. 25 of 2002 on Guidelines for Work Culture for State Apparatus.

The regulation states that every ministry / institution and local government is required to build a work culture that supports the implementation of bureaucratic reform in the hope that the work culture can encourage the change of attitude and behavior of officials and employees in their respective environment so that in the end the performance of government organization can be more improving over time. This is in line with Kottler and Hesket's opinion in Andreas Lako (2004) that organizational culture has a positive effect on long-term performance improvement.

The third variable to be analyzed is motivation. Employee motivation in an organization can be viewed as simple but can also be a complex problem if ignored. This is because, basically, humans are easy to be motivated by giving what their desires, needs, and expectations. Motivation can also be used as an incentive for employees to complete the tasks assigned to them.

In the scope of research, motivation variable functioned as a measuring tool to see whether an employee has a good work motivation to complete the task based on job description. If an employee's work motivation decreases it will negatively affect the rhythm of work, on the contrary if an employee has a good working motivation of the performance will be good too. While in the scope of implementation, work motivation serves to determine whether an employee still has a strong impetus to work well or just the opposite after so long the employee worked in the company.

According to Hasibuan (2007), motivation is the provision of a driving force that creates a passion for an employee, so that they will cooperate, work effectively and integrate with all their efforts to achieve satisfaction. While Robbins (2006) argues that motivation as a process that explains the intensity, direction, and persistence of effort to achieve a goal. Motivation can be interpreted as an integral part of industrial relations in the framework of the process of coaching, development, and direction of human resources within a company. Meanwhile, Mc's opinion. Donald in Sudarwan Danim

(2004) about motivation is a change of energy in a person characterized by the emergence of "feeling" and preceded by a response to the existence of a goal.

Motivation is a provision of encouragement or stimulation to a person so that he or she works voluntarily or without being forced (Saydan, 2000). Referring to the theory of Maslow with the theory of hirarchy of needs that motivation is influenced by the impulse of physiological needs, the impetus of the need for work safety, the impulse of social needs, the impulse of the need for appreciation, and the impulse of self-actualization needs. Some of the routine activities carried out by the DGPK in providing motivation to employees are organizing seminars, technical guidance, or motivational training by inviting professional experts in the field of leadership, hypnotherapy, and behavior analysis.

Based on the above explanation, the purpose of this research is to understand more deeply the relationship or influence of competence variable, organizational culture, and motivation to employee performance at Directorate General of Fiscal Balance (DGFB) - Ministry of Finance. The results of this study are expected to be useful for banyka parties. For the student of this research result is expected to be the next research reference, for the government organization is expected the result of this research is also useful as input for the leadership in establishing the strategy about the improvement of employee performance.

RESEARCH METHODS

Research design

Based on the research objectives as previously mentioned, this research is an explanatory research that explains the causality relationship between: (1) competency variable and organizational culture on employee motivation, (2) competency variable, organizational culture, and motivation to employee performance, and (3) variable competence and organizational culture on employee performance through motivation as a mediation variable. This study was conducted through the submission of questionnaires to employees selected randomly as respondents at the Directorate General of Fiscal Balance (DGFB) Ministry of Finance.

Population and sample

The population in this research is all 427 employees of DGFB. Furthermore, by using the Slovin formula, the researchers set the number of samples (respondents) as much as 80 employees, selected by random sampling.

Technique data processing

Data processing is a process that must be done first before the researcher conducts hypothesis-testing research. Data processing is intended to convert the raw data of the questionnaire into meaningful data to solve the research problem. The steps of data processing conducted by researchers are: 1) the first step to test the quality of data through validity test and reliability test. Validity tests are needed to measure whether questions in the questionnaire can measure what we want to measure (Ghozali, 2002). Reliability tests are needed to gauge whether questionnaire questions can be answered by the respondent consistently at all times; 2) Transformation of data to convert the data of questionnaire originally ordinal scale into interval scale, through Successive Interval Method - MSI (Rasyid, 1998).

Classical assumption test

Prior to carrying out the path analysis, the researcher must perform the classical assumption test first to provide assurance that the equation of the regression model obtained has accuracy in estimation, unbiased and consistent. The classical assumption test done in this research is Normality Test, Multicollinearity Test, Linearity Test, Autocorrelation Test, and Heteroscedasticity Test.

Data analysis technique

The analysis model used in this research is path analysis. Path analysis according to Rutherford (1993) is a technique for analyzing the causal relationships that occur in multiple regressions if the independent variables affect the dependent variable not only directly, but also indirectly. In fact, path analysis is similar to regression analysis because both are causality analysis models. The difference is path analysis using variable mediator (intermediary) while regression analysis there is no variable mediator.

The type of variables in the path analysis model consists of 3 (three), namely independent variables, mediation variables, and the dependent variable. In this research, competence and organizational culture become independent variable; motivation becomes mediation variable, and employee performance become dependent variable.

Thus in this research there are 2 (two) structural equations, that are: 1) Structural Equations I consists of two independent variables (competence and organizational culture) that influence the motivation as an independent variable; 2) Structural Equations II consists of Tree independent variables (competence, organizational culture, and motivation) that influence the employee performance as an independent variable and motivation as an intervening variable (mediation).

RESULTS AND DISCUSSION

Data quality test result

a. *Validity test*

All questions in the questionnaire about competence, organizational culture, motivation, and employee performance based on research data are valid. This means that questions or statements in the questionnaire can be said precisely and meticulous in measuring the questionable problem without causing any bias. The correlation coefficient value (r-count) of each item score with total score is entirely above the t-table value (0.1852). The test uses two-tailed assumptions with the number of respondents (n) = 80, and the degree of freedom is 80-2 = 78 (df), the table t value is 0.1825.

b. *Reliability test*

All questions in the questionnaire about competence, organizational culture, motivation, and employee performance are valid, as it can express consistent answers to statements in the questionnaire without causing any bias. This can be seen from the correlation coefficient (r. count) of each item question score with the total score entirely whose value is above the t-table value (0.1852). The test uses two-tailed assumptions with the number of respondents (n) = 80, and the degree of freedom is 80-2 = 78 (df), the table t value is 0.1825.

Table 1. Instrument reliability test results

Variable/Instrumen	Value of alpha cronbach	Interpretation
Competence (X_1)	0,825	Reliable
Organizational Culture (X_2)	0,883	Reliable
Motivation (X_3)	0,725	Reliable
Employee Performance (X_4)	0,918	Reliable

Source: data obtained from SPSS results

Classical assumption test result

a. Normality test

The normality test aims to test whether in a linear regression model, the dependent variable and the independent variable both have a normal distribution or not. Normality test in this research will use One Sample Kolmogorov-Smirnov with 5% significance level.

Table 2. Normality test based on Kolmogorov-Smirnov Z

Variable/Instrumen	Value of alpha cronbach	Interpretation If >0,05 (Norm. Dist) If<0,05 (Not Norm. Dist)
Competence (X_1)	0,240	Normally distributed
Organizational Culture (X_2)	0,075	Normally distributed
Motivation (X_3)	0,044	Not normally distributed
Employee Performance (X_4)	0,036	Not normally distributed

Source: data obtained from SPSS results

Based on the Kolmogorov-Smirnov One-Sample Test, variable Competency (X1) and organizational culture (X2) indicate Asymp Sig. (2-tailed)) more than 0.05, so it is said to be normally distributed. While the variable motivation (X3) and employee performance (X4) indicates Asymp value. Sig. (2-tailed) less than 0.05, so it is said to be abnormal distribution.

b. Multicollinearity (Collinearity Statistic)

Multicollinearity test aims to test whether in the regression model found a correlation between dependent variables (free). A good regression model should not be correlated among the independent variables (Ghozali, 2008). Multicollinearity test is done by finding the value of VIF (Variance Inflation Factor) or tolerance value.

Table 3. Result of multicollinearity test

Variable/Instrumen	Collinearity Statistics	
	Tolereance	VIF
Competence (X_1)	0.366	2.733
Organizational Culture (X_2)	0.272	3.683
Motivation (X_3)	0.438	2.283

Source: data obtained from SPSS results

Tolerance Values of Competence variable, organizational culture, and motivation greater than 0.10. Meanwhile the VIF value of those variables is smaller than 10.00. Therefore, it can be concluded that there is no multicollinearity.

c. *Linearity test*

Linearity test aims to determine whether two variables have a linear relationship significantly or not. Linearity test in this research is done through F test by looking at significance value and F-count.

Table 4. Results of linearity test by ANOVA Table between independent variables to the dependent variable (performance employees)

Variable/Instrumen	Significancy of Linearity	Interpretation If < 0,05 (Linear) If >0,05 (Not Linear)
Competence (X_1)	0.000	Linear
Organizational Culture (X_2)	0.000	Linear
Motivation (X_3)	0.000	Linear

Source: data obtained from SPSS results

Based on the Results of Linearity Test, variables Competency (X1), organizational culture (X2), and motivation indicate significance of linearity less than 0.05, so it is said to be linear.

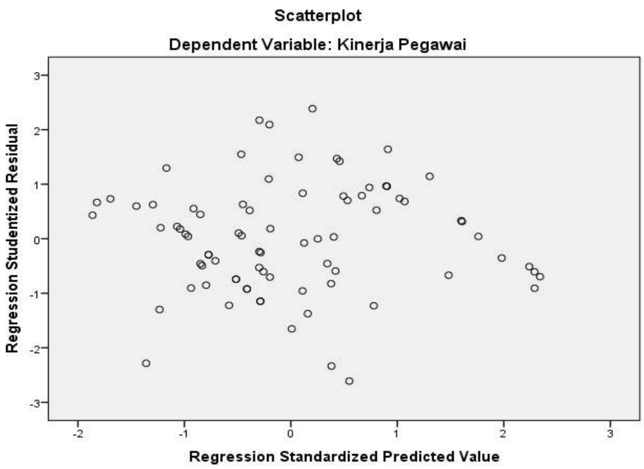
d. *Autocorrelation test*

Autocorrelation test aims to test whether in the linear regression model there is a correlation between the confounding errors in period t with the intruder error in period t-1 (previous). Durbin Watson value approach on test output (model summary) compared with table value at 5% significance detected Autocorrelation test.

Durbin Watson (DW) value in this research is 2,203. Furthermore, the value is compared with Durbin Watson (DW) Table, both the upper value (DU) and the lower value (DL). Based on the Durbin Watson Table at K = 3 and N = 80, the DL value is 1.5600 and the DU value is 1.7153. Thus it can be concluded that the regression that occurs between the independent variable and the dependent variable there is no autocorrelation either positive or negative.

e. *Heteroscedastisity Test*

Heteroscedasticity test is one of the classical assumption assays to be performed on linear regression. In conducting heteroscedasticity test the researchers used SPSS version 20 program to form the Scatterplot chart and Glejser.



Picture 1. Scatterplot

Based on the results of the Scatterplot graph output, it appears that the data points spread and did not form a certain pattern that is clear or also does not accumulate at a particular location. Thus it can be concluded that no symptoms of heteroscedasticity.

Analysis of research results

The path analysis model in this research consists of two structural equations, namely:

(1) X3 = 0,115 X1 + 0,655 X2 + ε1 and

(2) X4 = 0,333 X1 + 0,501X2 +0,102X3 + ε2

The values of path coefficient for each variable in the structural equation I and II are obtained from the value of standardize coefficient β as the table below:

Table 5. Coefficient variable structural equation I

Variable/Instrumen	Standardized Coefficients	Significance
Competence (X_1)	,115	,357
Organizational Culture (X_2)	,655	,000

Source: data obtained from SPSS results

Table 6. Coefficient variable structural equation II

Variable/Instrumen	Standardized Coefficients	Significance
Competence (X_1)	,333	,001
Organizational Culture (X_2)	,501	,000
Motivation (X_3)	,102	,240

Source: data obtained from SPSS results

The detailed analysis of research results are as follows:

1. Base on simultaneous test (Test-F) on equation of structure I shows that Competence and organizational culture has a significant influence on motivation of 56.19% and categorized quite influential, while the remaining 43.81% influenced by other variables. The significance value of model I is 0,000 which means significant because it is less than 0.05 and the F-count value 49.378 is much larger than F-table 3.115.
2. The partial analysis of the direct effect of competence on motivation. Based on The analysis results, that the path coefficient of competence to motivation ($p31$) is 0.115. This means, there is a positive influence of competence variable on employee motivation, but because the significance value 0.357 greater than 0.05, then the influence is said to be insignificant and according to Lind (2002) criterion the effect is called quite weak, so it can be ignored or considered to be absent.
3. The partial analysis of the direct effect of organizational culture on motivation. Based on the analysis results, that the path coefficient of organizational culture on motivation ($p32$) is 0.655. This means, there is a positive influence of competency variable on employee motivation equal to 65.5%. Because the significance value of 0.000 is smaller than 0.05, so the influence is said to be significant and according to Lind criteria (2002) the effect is called strong.
4. Base on simultaneous test (Test-F) on equation of structure II shows that competence, organizational culture, and motivation together have a strong and significant influence to employee performance variable. Its influence is 75.56% and

according to criterion of Lind (2002) categorized as strong relation, while the rest 24.44% influenced by other variable. The significance value of model II is 0,000 which means significant because less than 0.05 and the F-count value of 78.310 is much larger than F-table 2,725.Meanwhile, partial analysis of the results of this research are as follows:

5. The partial analysis of the direct effect of competency variable to employee performance. Based on the analysis result, that the path coefficient of competence variable on employee performance ($p41$) is 0.333. This means that there is a direct influence of competency variable on employee performance, and because the significance value of 0.001 is smaller than 0.05, then the influence is said to be significant. This is also in accordance with the opinion of Wirawan (2009) that the competence has a causal relationship to the performance of employees.
6. The partial analysis of the direct effect of organizational culture on employee performance. Based on the analysis result, that the path coefficient of organizational culture on employee performance ($p42$) is 0.501. This means, There is positive influence of organizational culture on employee performances, and because the significance value is 0.000 smaller than 0.05, hence influence is said significant. The results of this study are in accordance with previous research by Kottler and Hesket in 1992 (in Andreas Lako, 2004: 32) that organizational culture has a positive effect on long-term performance improvement.
7. The partial analysis of the direct effect of motivation variable on employee performance. Based on the analysis result, that the path coefficient of motivation on employee performance ($p43$) is 0.102. This means that there is a direct effect of the motivation variable on employee performance, and because the significance value is 0.240 larger than 0.05, then the influence is said to be insignificant. The result shows that motivation variable although still give positive influence 10,2% to employee performance, but not significant because according to criterion Lind (2002) the influence is classified as very weak so it can be ignored or considered not exist. The results of this study is not in line with previous research by Juliyanawati (2010) which says there is a significant relationship between work motivation on employee performance at PT. Panasonic Gobel Indonesia.
8. The partial analysis of the indirect effect of competency variable on employee performance through motivation as a mediation variable. Based on the analysis result, The Path line coefficient of competence to employee performance through motivation is 0.0117. This means, there is indirectly affect of competence to employees performance through motivation as a variable mediation, but not effective because its direct influence is still greater than its indirect effect.
9. The partial analysis of the indirect effect of organizational culture variable on employee performance through motivation as a mediation variable. Based on the analysis result, The Path coefficient of organizational culture to employee performance through motivation is 0.0668. This means, there is indirectly affect of competence to employees performance through motivation as a variable mediation, but not effective because its direct influence is still greater than its indirect effect.
10. In addition, this study also shows that motivational variables are less effective as mediators (intermediaries) for competency variables and organizational culture to influence employee performance. It is caused by direct effect of competence variable (33.3%) and organizational culture variable (50.1%) to employee performance variable still bigger than indirect effect. The indirect effect of competency variable on employee performance through motivation is 1.17% and organizational culture

variable is 6.68%. This research implies that the effort to improve employee performance is less effective if all the leaders and employees of DGFB assume that employee motivation is the main factor or variable that should be prioritized rather than the competence and culture of the organization.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Based on the results of this study can be obtained several conclusions, the first is the competence and organizational culture variables simultaneously have a positive and significant influence on the motivation variable of 56.19%, while the rest of 43.81% influenced by other variables not included in this study . However, if observed through the partial test results, the competence variable has a positive but not significant influence on the motivation variable, while the influence of organizational culture variable on the motivation variable is positive and significant.

The second conclusion is competence variable, organizational culture, and motivation have positive and significant effect on employee performance equal to 75,56%, while the rest equal to 24,44% influenced by other variable not included in this research. However, if observed through the results of partial tests, competence and organizational culture variables show the same results that have positive and significant impact on employee performance, while employee motivation variable influence on employee performance is not significant.

Recommendations

DGFB should always strive to improve employee performance in terms of quality and quantity. Efforts to develop and improve employee performance is mainly done through the implementation of cultural values of the organization Ministry of Finance with better and perfect, as well as increased competence and motivation of employees. To optimize this effort, DGFB must also use other instruments such as compensation that satisfy the sense of justice and prepare a career path that is good for employees so that in carrying out their duties the employees become more enthusiastic and serious. Researchers believe that the results of this study can serve as a reference research in the field of Human Resources Management, especially in the public sector organization.

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Analysis cluster of palm processing industry in Indonesia

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Abstract
The purposes of this research are: 1) to analyze profile of palm processing cluster from upstream up to downstream in various regions in Indonesia; 2) to analyze strength, weakness, threats, and opportunity in palm processing industry, moreover to identify the role of existing various institutions in palm processing industry cluster in steering palm processing industry development; 3) to formulate the policy of palm processing cluster to encourage agricultural development. Data used in this research is secondary data that obtained from related institutions. Data is analyzed descriptively and quantitatively, utilizing frequency of distribution's table, crosstable, and SWOT analysis. The result of this research concludes that Indonesia has big potential to palm processing industry, particularly in upstream industry. This thing can be seen from wide of area and palm production, which are owned. From the region side, majority wide of the area and palm production in Sumatera, from wide of area's viewpoint is approximately 63.26% in Sumatera region, from production's viewpoint is approximately 68.71%. In the meantime, from the downstream product, palm-processing industry in Indonesia is still limited. Less or more 100 products derived from palm in Indonesia, are only able producing 23 kinds of derived products, meanwhile in Malaysia almost reaching out 70 varieties.

***Keywords**: Palm processing industry, cluster, SWOT analysis*

INTRODUCTION

Until this time palm is still one of plantation crops, which is notable for national economy, especially as income source, availability of job vacancy, and contributing foreign exchange. In some regions in Indonesia, palm constitutes one of main activities that expected as stimulus of economy of those regions. This condition cannot be separated from the ability of Indonesia, from the availability of landside, as well as agro-climatology that will enable constantly evolved of palm (Ministry of Economy, 2011).

To encourage the development of palm from upstream up to the downstream, then the government builds palm processing industry cluster in both Sumatera and Kalimantan. Of the four industries built, three of them are in Sungai Mangkei Sumatera Utara, Dumai, and Kuala Enok Riau.

As a cluster, need to group of enterprises from upstream up to downstream which is related each other so require collaboration or partnership among of the enterprises in a cluster. However, many researches to industry cluster can be concluded there is still weak cooperation or partnership from the existing of various parts in the cluster (Djamhari, 2006 and Nugroho, 2008). Utilizing assumption as stated in Tona et al (2013) concludes that the partnership among of enterprises group in palm processing industry cluster has not effective yet, ranging from upstream up to downstream in Jambi

Province. On the other hand, there are some empirical researches show most of the partnership in plantation field, especially in upstream parties from palm industry processing cluster have not given optimally yield (Erfit, 1992, Silitonga 1995, Basdabella, 2001 Hasbi, 2001 and Erfit, 2012). The partnership results have not still optimally yet, it caused by the partnership all the time is more seen as economic relationship only, and negate the partnership as social relationship (Erfit, 2010).

As described above, this research aimed at to analyze profile of palm processing industry in various Indonesia region and palm processing industry's development policy to encourage agricultural development.

RESEARCH METHOD

Data used in this research is secondary data that obtained from related institutions, viz. Statistic Bureau, National Institution of Planning and Development, Region Institution of Planning and Development, and others. The periods comprise five years 2010-2014. The collected data covers development of palm processing industry cluster ranging from upstream up to the downstream. In additionally, the collected data also has existing associated policy in development of palm processing industry.

Data is analyzed descriptively and quantitatively, utilizing frequency of distribution's table, crosstable, and SWOT analysis. These methods aimed at formulating effective a partnership model, so that the qualitative research methods are considered more appropriate.

RESULT AND DISCUSSION

Profile of Indonesian palm processing industry cluster

According to rule of Industry Minister of Indonesia Number.13/2010 regarding road map the development of palm processing industry cluster, industry cluster of processing palm covers upstream/raw material, primary production industry, downstream industry, and related industry and supporting industry.

The development of palm processing industry in Indonesia cannot be separated from development plantation area and palm production constitute raw materials source from palm processing industry. Of palm plantation can produces fruit palm, in the form of TBS (fresh fruit bunches) constitute upstream industry from palm processing industry. TBS can be proceeding into raw palm oil or CPO and PKO constitute part of downstream industry from palm.

In general, processed product from that palm can de differentiated into two groups, such as oleo food and oleo chemical. In oleo food from palm can be produced into oil, margarine, and shortening. In the meantime, to oleo chemical from palm can be produced into soap, cosmetics, washing powder (detergent), and skyer.

The development of palm processing industry cannot be separated from the development of wide of area, production, and palm productivity in Indonesia ranging from 2010-2014, as follows (Table.1)

Table 1. Wide of area, production dan productivity palm plantation in Indonesia 2010 – 2014

Year	Wide of Area (Ha)	Production (Ton)	Productivity (Kg/Ha)
2010	8.385.394	21.958.120	3.595
2011	8.992.824	23.096.541	3.526
2012	9.572.715	26.015.518	3.722
2013	10.465.020	27.782.004	3.536
2014	10.956.231	29.344.479	3.568

Source: Agricultural Statistic (2014)

In 2010 the total area of oil palm plantations in Indonesia was 8,385,394 ha and this area increased to 10,956,231 ha in 2014. The same condition also at the level of palm oil production also increased. Production of oil palm plantations amounted to 21,958,120 tons and in 2014 increased to 29,344,479 tons. This condition has made Indonesia since 2010 as the largest palm oil producer in the world previously held by Malaysia. Thus in upstream part of the state of Indonesia has considerable potential for the palm oil processing industry.

If viewed from the aspect of location or its distribution based on the region in Indonesia, seen most of the area and production of oil palm plantations are in the region of Sumatra. In 2014 about 63.26 percent of oil palm plantation area in Indonesia is in Sumatra region and from production side about 68.71 percent of palm oil plantation production come from Sumatera region. Next followed by the territory of Kalimantan, Sulawesi, Papua and Maluku as well as Bali region (Table 2)

Table 2. Wide of area, palm production in Indonesia regarding region 2014

Province	Wide of Area (Ha)	Production (Ton)
Aceh	420.173	945.617
Sumatera Utara	1.396.273	4.870.202
Sumatera Barat	435.792	924.813
Riau	3.021.559	6.993.241
Kepualauan Riau	43.892	45.001
Jambi	711.919	1.773.735
Sumatera Selatan	1.518.981	2.791.816
Kepulauan Bangka Belitung	416.005	516.597
Bengkulu	319.222	798.818
Lampung	208.068	455.904
SUMATERA REGION	**6.803.547**	**20.115.744**
DKI	-	-
Jawa Barat	13.624	33.020
Banten	19.724	24.300
Jawa Tengah	-	-
D.I. Yogyakarta	-	-
Jawa Timur	-	-
JAVA REGION	**33.348**	**57.320**
Bali	-	-
Nusa Tenggara Barat	-	-
Nusa Tenggara Timur	-	-
NUSA TENGGARA AND BALI	-	-
Kalimantan Barat	936.407	1.965.515
Kalimantan Tengah	1.115.933	3.158.239
Kalimantan Selatan	512.897	1.460.566
Kalimantan Timur	733.397	1.407.337
Kalimantan Utara	153.315	255.703
KALIMANTAN REGION	**3.451.949**	**8.247.361**
Sulawesi Utara	-	-
Gorontalo	4.306	-
Sulawesi Tengah	147.912	254.363
Sulawesi Selatan	50.914	78.893
Sulawesi Barat	106.365	285.523
Sulawesi Tenggara	45.206	70.974
SULAWESI REGION	**354.704**	**689.752**
Maluku	10.297	-
Maluku Utara	-	-
Papua	51.360	94.022
Papua Barat	49.597	73.991
MALUKU AND PAPUA	**111.254**	**168.013**
Indonesia	**10.754.801**	**29.278.189**

Source: Plantation Statistics, 2014 - 2016

Furthermore, based on the palm processing industry, ranging from fresh fruit bunches (FFB) produced by oil palm plantations processed into palm oil (CPO) and palm kernel ((PKO) through palm oil mills (PKS).) Judging from the production of CPO and PKO Indonesia are also increasing from year to year. In 2010, Indonesian CPO production reached 21,958,120 tons and increased to 29,278,189 tons in 2014, while for PKO in 2010 the amount of Indonesian production amounted to 4,391,624 tons and increased to 5,855,638 tons in 2014 (Table 3).

Table 3. Palm oil production (CPO) dan palm kernel (PKO) in Indonesia 2010 – 2014 (in ton)

Year	Palm Oil (CPO)	Palm Kernel (PKO)
2010	21.958.120	4.391.624
2011	23.096.541	4.619.308
2012	26.015.518	5.203.104
2013	27.782.004	5.556.401
2014	29.278.189	5.855.638

Source: Plantation statistics 2014 - 2016

Furthermore, if seen downstream industry from the palm oil processing industry that can be produced by Indonesia is still very limited. For example, over 100 different types of derivative products from Indonesian palm oil processing can only produce 23 types of derivative products / downstream of palm oil such as cooking oil, margarine and some other food products, while Malaysia is able to produce 70 derivative products from palm (Affifudin, 2007). Then if viewed from the diversification of its products then about 90 percent of downstream products of palm oil are food products such as cooking oil and margarine while only 10 percent of which are non-food products such as soap, candles and others.

If studied further Indonesia has a great opportunity for the development of downstream industries of palm oil are not only for food products but also non-food products or oleo chemical industries whose market opportunities are still wide open. What's more, Indonesia still has a huge potential in terms of availability of large land and the availability of labor for palm oil plantation processing which is the basic capital for the development of palm oil processing industry. In fact, however, the CPO importing countries from Indonesia are in fact oleo chemical industries far more developed and developed than Indonesia and even more they have been able to produce more downstream CPO-based products with higher added value and will sell them to various countries including Indonesia with a more expensive price.

This condition is clearly detrimental to Indonesia because most of the value added of palm processing industry is more enjoyed by other countries. Therefore, it is necessary to develop various policies to develop the palm oil processing industry from the upstream industry or raw material source to the downstream industry, so that the huge potential of Indonesia's palm oil can provide the greatest benefit to push economic growth, which in turn will be able to improve people's welfare.

SWOT analysis to indonesian palm processing industry

In order to develop the palm oil processing industry in Indonesia it is necessary to note the strengths, weaknesses, opportunities and threats to the palm processing industry itself. SWOT analysis is used as a basis in the development of palm oil processing industry in Indonesia in the future. Table 4 provides a SWOT analysis of the palm processing industry for Indonesia.

Table 4. SWOT analysis to palm processing industry in Indonesia

Strength	Weakness
• Indonesia is the largest producer of palm in the world and almost 70 percent of the national TBS plantation production comes from Sumatra (Plantation statistics, 2014). • The condition of Indonesian agroclimates is suitable for plantation crop especially palm. • The availability of land for palm crops in Indonesia, especially in the region of Sumatra and Kalimantan. • There is government support for palm development especially for Sumatra region. With the Master plant of Acceleration and Expansion of Indonesian Economic Development (MP3EI) 2011-2025 based on Presidential Decree No. 32 of 2011 which confirms that in Sumatra corridor has been established that one of the products to be developed is palm. • Potential demand for palm is still large for both the domestic market and export. • Potential development of palm processing industry is wide enough. • Has considerable potential both in terms of availability of raw materials and labor available. • As a source of community economy and a source of regional economic growth. • As a source of labor supply	• Infrastructure still limited that can encourage the development of palm processing industry, especially ports, roads and other basic infrastructure. • Most production is still in the form of crude palm oil (CPO). Approximately 70 percent of CPO exports are in the form of crude oil (CPO). • There is still very limited product of downstream palm industry that is generated so that the great potential for palm oil has not yield optimal results. Of the more than 100 species that can be produced on an industrial scale, however, only about 23 types of palm oil products are both commercially viable and commercially available in Indonesia, while Malaysia has already reached 73 downstream products (Ministry of Industry, 2009). • The development of the palm oil industry has generated various social conflicts within the community mainly from land problems. The development of the palm oil industry has created environmental problems. The US government issued a decision through its notation that oil palm crude (CPO) from Indonesia is not considered environmentally friendly so it should not be traded in the US. • Limited incentives for investors to invest in downstream palm industry. • The level of knowledge and skills of business management are still limited so that business management is more traditional. • Cooperation between business characters in existing industrial clusters those are very limited and less effective. • Not many role support institutions that can encourage the development of small businesses in the city of Jambi eg financial institutions and research institutions.
Opportunity	**Threat**
• The market opportunities are still wide open for both crude palm oil and its derivative products. • Potential development of downstream palm industry large enough for both food and non-food. • There is a high public interest in the use of renewable energy, one of which is sourced from palm oil. • Has a large enough market potential.	• High palm oil price fluctuations and other palm oil derivatives products. • Only a negative campaign against palm oil. • There is a negative impact of palm oil development so far in both social conflicts and environmental degradation.

Institutionalization of palm processing industry in Indonesia

The various institutions in the palm processing industry will affect the development of palm processing industry in Indonesia. The following will explain some existing institutions in the palm oil processing industry from the upstream industry to downstream industry.

Farmers group

In general, farmer groups are groups of farmers are formed by farmers based on equality of interests, equality of social environment conditions of economy and resources, commodity equality and intimacy to improve and develop business. One important factor that plays an important role in the development of palm oil processing industry is the existence of farmer groups, especially in the upstream industry. This is because the farmers' groups will be able to strengthen the bargaining position of the farmers rather than the farmers themselves. In addition, with the institutional, strengths and potentials of farmers can be gathered into a common strength and potency that has a stronger strength. Thus, the existence of strong farmer institution is much needed in encouraging the development of palm oil processing industry in the future. However, from some of the results of the existing farmer group research has not yet played a maximum role.

APKASINDO

Association of Indonesian Oil Palm Farmers (Apakasindo) is a professional organization of farmers as a unifying container of oil palm farmers in Indonesia. As an oil palm farming organization in accordance with its AD / RT, Apkasindo's objectives are: a) to unite the community of the coconut farmers into one of the economic forces that can improve the equitable welfare of the oil palm farmers; b) to build the rural economy by cultivating efforts of oil palm farmers who are environmentally friendly and beneficial to all components of the nation; c) improve and empower the human resources of oil palm farmers.

GAPKI .

The Indonesian palm business association (GAPKI) is an organization that brings together palm entrepreneurs. As a GAPKI organization works to discuss various problems faced by palm entrepreneurs and provide input to the problems faced. GAPKI members consist of various elements including state-owned plantation companies, private and foreign-owned. Then the palm farmers who joined a cooperative also became members of this GAPKI.

The policy of palm processing industry in Indonesia

The policies in the development of the palm oil processing industry can be seen in the form of laws, regulations, decisions and programs made especially in relation to the partnership and plantation programs in general. Below are some of the development programs of palm oil processing industry in Indonesia.

Parternship Program

The plantation development policy is generally regulated in Act No. 18 of 2004 on plantations, especially those described in Article 22, which regulate the partnership of business in the field of plantation. In article 22 of Act No. 18 of 2004 mentioned that the plantation company in running a mutually beneficial partnership, mutual respect, mutual responsibility, mutual strengthening and interdependence with the planters, employees and surrounding communities. The partnership pattern of plantation business can be in the form of cooperation of supply of production facilities, production cooperation, processing and marketing, transportation, operational cooperation, share ownership and other supporting services.

In the course of the partnership program has experienced various developments tailored to its needs or in order to encourage other development programs such as in support of the transmigration program. Among others are through partnership program of PIR plantation, PIR Trans and KPPA partnership model. The Trans PIR Partnership was built under Presidential Instruction No. 1 of 1986 explaining that the Trans PIR is a PIR project linked to the transmigration program. As with the PIR partnership model in general in this model the implementation of plantation development by using large plantations as the core of both state-owned and private companies that help and guide the surrounding community plantations as plasma in this case the transmigration through a system of mutually beneficial, intact and sustainable cooperation . While the KPPA partnership model is based on a joint decision between the Minister of Agriculture and the Minister of Cooperatives and Small Business Development No.73 / Kpts / KB.510 / 2/1998 and No. 01 / SKB / M / 11/98. In KPPA partnerships are implemented through the provision of funding facilities provided by the government in the form of credit to primary cooperatives in this case KUD for its members are intended to increase non-oil production, increase farmer income, assist the development of the region and support the development of plantations, increase and empower KUD in the region plasma. In this case, the main thing is that large companies of plantations and plasma are members of the cooperative. The following table 5 can be comprehensively seen in various matters relating to partnership in the palm oil processing industry especially in the upstream section.

Table 5. The form of correlation and regulation in partnership based on the pattern of plantation's partnership

No	Partnership Patterns	Partnership Relations			Forms of Rules
		Capital	Marketing	Coaching	
1.	PIR Trans	There are (given in the form of credit packages in the form of business land as transmigrants /plasma gardens of 2 ha, development of gardens, seedlings, fertilizers and pesticides which is a debt to smallholders)	There (in the form of a core company is obliged to buy the production produced by the plasma farmer)	There is (in the form where the core company provides technical assistance in the form of extension to farmers related to technical cultivation and maintenance of the garden)	Formal in the form of a written contract in the form of a letter of cooperation agreement (SPK)
2.	KPPA	There are (given in the form of credit packages in the form of development of gardens (land pre-pared by smallhold-ers), seedlings, fertili-zers and pesticides which are payable to smallholders)	There (in the form of a partner company is obliged to buy the produce produced by the plasma farmer)	There is (in the form where the core company provides technical assistance in the form of extension to farmers related to technical cultivation and maintenance of the garden)	Formal in the form of a written contract in the form of a letter of cooperation agreement (SPK))
3.	PIR Plantation Revitalization	There are (given in the form of credit packages in the form of development of gardens (land pre-pared by smallhold-ers, seedlings, fertili-zers and pesticides that are payable to smallholders)	There (in the form of a partner company is obliged to buy the produce produced by the plasma farmer)	There is (in the form where the core company provides technical assistance in the form of extension to farmers related to technical cultivation and maintenance of the garden)	Formal in the form of a written contract in the form of a letter of cooperation agreement (SPK)

Source: Erfit, (2012)

Plantation revitalitation program

Plantation Revitalization Program This revitalization program was built based on Minister of Agriculture Regulation No. 33/2006 and Minister of Finance Regulation No. 117/2006. The plantation revitalization program is an effort to accelerate people plantation development through expansion, rejuvenation and rehabilitation of plantation crops supported by investment banking credit and interest subsidy by the government with involving companies in the field of plantation business as development partners in the development of gardens, processing and marketing results. The selection of commodities to be developed is based on sources of community income, market prospects and employment and environmental factors. The objectives of this plantation revitalization program are to: a) increase employment opportunities and increase people's income through plantation development; b) enhance competitiveness through increased productivity and development of downstream plantation-based industries; c) increase national economic empowerment by involving communities and local entrepreneurs and d) support regional development. In order to achieve the objectives of the plantation revitalization program, one of them is through a partnership program called the partnership pattern of Plantation Revitalization PIR. PIR Plantation Revitalization is a pattern of cooperation between farmers participating in the plantation revitalization program with business partners who manage the garden in one management system for at least one planting cycle. In this case, the partner company develops the plasma farmers 'garden where the land comes from the community land or the farmers' property. Therefore, the community as landowners gives their land to the company to be plantation land. The development of plasma plantations is done by utilizing the credit facilities provided by the banks for the participants of the revitalization program usually through the KUD so that the program participants are members of the KUD. In addition to building farmers 'gardens, the partner companies are also obliged to provide technical assistance through farmers' gardening. Meanwhile, the farmer is obliged to sell his farm produce to the partner company

MP3EI program

MP3EI Program is the Master Plan for the Acceleration and Expansion of Indonesian Economic Development. With the MP3EI Indonesia is expected to accelerate the existing development of adding value to the sectors of the economy, infrastructure and energy development and human resources and science and technology development. Especially for superior products in the field of plantation, then in order to increase the role of commodities in MP3EI program established 3 investment economic corridors namely economic corridor Sumatra (oil palm and rubber), Kalimantan economic corridor (oil palm and rubber) and economic corridor Sulawesi (cocoa). Some special plantation development programs for palm oil processing industry include: a. Improved process through rejuvenation, rehabilitation and intensification using sufficient agro input and using certified superior seeds**;** b. Provision of technology packages with monoculture, diversification and integration of livestock; c. Support efficient and effective transportation through repairs, gardens roads, access roads, roads to factories, harbor roads; d.Improved increase in domestic through the development of agro-based commodity-based plantations; e.Expansion of batik, traditional market, supermarket etc.; f. The demand for sustainable development of a heap.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Indonesia has a considerable potential for palm processing industry especially in the upstream industry, this can be seen from the width of the area and production of palm plantations owned. Viewed from the side of the region most of the areas and oil palm production are located in Sumatra, where the area of oil palm is about 63.26 percent in Sumatra and 68.71 percent of Indonesia's palm oil production is in Sumatra region. Downstream products from the palm oil processing industry in Indonesia are still limited, from 100 new Indonesian palm oil derivatives products capable of producing 23 types of derivative products, while Malaysia can produce about 70 derived products. Indonesia has the opportunity and strength in the development of palm oil processing industry, but it also has obstacles and challenges. Some institutions that can encourage the development of palm oil processing industry in Indonesia include farmers groups, GAPKI and APKASINDO. Policies on oil palm processing industry development include partnership program, plantation revitalization and MP3EI program

Recommendations

Suggestion in the development of the palm oil processing industry still needs to be improved especially in the downstream industry. This can be done by providing incentives to the downstream palm oil processing industry to encourage investors to invest in the palm oil industry especially downstream.

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The effect of distribution supply fertilizer on rice production improvement in Gorontalo City

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Abstract

The purposes of this research are to: 1) analyze the distribution of subsidized fertilizer in Gorontalo City, 2) analyze the distribution of subsidized fertilizers partially (right price, right amount, and time) to increase rice production in Gorontalo City. The study conducted in Gorontalo City with a sample number of 95 farmers. The research method used is survey method. Data analysis used is multiple linear regression analysis. The results showed that there are two distributors fertilizer in Gorontalo City is PT. Indonesian Trade Company (PT PPI) and Indonesian Trade Cooperative (KPI), and 5 authorized retailers which are distributing subsidized fertilizer is *Kios Tani Lestari, Anugerah Tani Kios, Saprodi Tani Kios, Cahaya Tani Kios and Bunga Tani Kios*. PT. PPI is responsible for distributing NPK, SP36 and ZA fertilizers while KPI is responsible for the distribution of Urea fertilizer. Distribution of subsidized fertilizer on rice farming simultaneously have a positive and real effect on increasing rice production, while partially that have positive and real influence that is Right price, Right amount and time to increase rice production.

Keywords: *Distribution, Subsidized fertilizer, Production, Rice farming*

INTRODUCTION

One of the government effort is to improve the productivity and quality of food commodities is through the application of cultivation technology appropriately with the use of production facilities. Therefore, to support these efforts, the government plays a role in the agricultural development program. To illustrate the role of government, the government can develop policies that can facilitate the entry of investment into the region (such as investment in the agricultural sector), creating a concise bureaucracy and even directly involved in economic activities through infrastructure and infrastructure development in various sectors. One example of government policy in 2008 related to agricultural sector investment is the subsidy given to farming production facilities, especially fertilizer (Khairunisya, 2009).

Fertilizer has always been on the front line in an effort to increase world food production and possibly more than any other type of input, widely responsible for the success it has achieved. Fertilizer is also one of the important production factors for farmers. The existence of fertilizer properly in terms of quantity, type, quality, price, place and time will determine the quality and quantity of agricultural products produced. Fertilizer as a chemical or organic material acts as a provider of nutrients for plant purposes directly or indirectly. Subsidized fertilizer is one of the means of production which is available to be subsidized by the government for farmers, including farmers whose needs per sub-sector and Highest Retail Price (HET) is regulated by Minister of Agriculture Regulation no. 69 / Permentan / SR.310 / 12/2016.

Gorontalo Province is one of rice / rice producing areas. Therefore, fertilizer is one of the most decisive production facilities for increasing agricultural production, especially rice. Based on Gorontalo Province Agricultural Data Base in 2016 the area of wetland in Gorontalo Province is 33,223.9 ha and each year produce 307,041 tons of rice. If the conversion to rice is 186,223 tons. The city of Gorontalo is the only city in Gorontalo province that owns paddy fields. Although every year the rice fields in Gorontalo City are degraded due to land conversion but still contributes to rice production in Gorontalo Province (Dispan Gorontalo Province, 2017).

Subsidized fertilizer is not kind of goods that are not sold freely by the Government and their use is always monitored. Subsidized fertilizer demand in Gorontalo Province 2017 based on Regulation of the Minister of Agriculture No. 69 / Permentan / SR.310 / 12/2016 on Requirement and Highest Retail Price of Subsidized Fertilizer for Agriculture sector followed by Head of Gorontalo Provincial Agricultural Service Decree number 821 / SK / 902 / PTPH-PSP / XII / 2016 concerning Allocation of Subsidized Fertilizer Requirement in Regency / Municipality Region of Gorontalo Province are: Urea: 24.750ton, SP36998 ton, ZA 273 ton, NPK 24,013ton and Organic 353 ton (Agriculture Government Gorontalo Province, 2017).

The allocation of subsidized fertilizer for Gorontalo City for the last three years start from 2014-2016 based on the Decree of Head of Department of Marine, Fishery and Agriculture of Gorontalo City, namely 2014 subsidized allocation for Urea fertilizer 550 tons, SP36 fertilizer 80 tons, ZA fertilizer 40 ton, NPK fertilizer equal to 669 ton, and organic fertilizer equal to 124 ton. In 2015 the allocation of subsidized fertilizer for Urea fertilizer is 449,88 ton, SP36 fertilizer equal to 110 ton, ZA fertilizer equal to 40 ton, NPK fertilizer equal to 556,09 ton, organic fertilizer equal to 149,91 ton. And in 2016 the allocation of subsidized fertilizer for Urea fertilizer is 62 tons, SP36 fertilizer is 47 tons, ZA fertilizer is 4 tons, NPK fertilizer is 668 tons, and organic fertilizer is 18 tons (DKPP of Gorontalo city, 2017).

The condition of rice production in sub district located in Gorontalo city in 2015 is 10,886 tons with the land area of 476.9 ha, West Kota District as much as 505 tons with a land area of 34 ha, East Kota District with 1,862 tons with wide area land area of 108.6 ha, Kota Tengah sub-district of 1,858.79 tons with a land area of 73.6 ha, South City District of 30 tons with a land area of 1.69 ha, in Hulontalangi and Dumbo Raya subdistricts there is no rice production because this sub-district does not have paddy field for cultivation, Dungingi District rice production reaches 484 ton with area of land equal to 41,5 ha, and Sipatana District 4,294,08 ton with wide of land equal to 122,6 ha. Production of wetland rice in 2016 for North Kota District reached 7,765.56 tons with a land area of 471.8 ha, West Kota District of 588.2 tons with a land area of 25.5 ha, East Kota District of 1,765.8 tons with total area of 105.9 ha, Kota Tengah sub-district reached 960.52 tons with a land area of 72.9 ha, South Kota District of 19.2 tons with a land area of 1.53 ha, Dungingi sub-district of 543.84 tons total area of 27.5 ha, and the production of Sipatana Sub-district reached 1,864.68 tons with a land area of 119.8 ha (DKPP of Gorontalo City, 2017).

From the background above, the objectives of this research are 1) to analyze the distribution of subsidized fertilizer in Gorontalo city, 2) to analyze the distribution of subsidized fertilizer (Right price, Right quantity, and time) to increase rice production in Gorontalo City.

Distribution is the efforts made by producers and marketing agencies to ensure the availability of products for the target market in the time required. Furthermore the distribution is a set of intermediaries that are closely linked with one another in the activities of channeling products to consumers (buyers) (Suharno, 2008).

Distribution is a group of organizations that make a process of distribution activities of goods or services ready for use or in consumption by consumers (buyers). Furthermore, distribution is a set of institutions that are interconnected with each other to conduct activities of distribution of goods or services so that they are available for use by consumers (buyers) (Alma, 2007).

Winardi (2005) stated that distribution channel is an intermediate group that is closely related to each other and which distributes the products to the buyer. Distribution channels are essentially intermediaries that bridge between producers and consumers. These intermediaries can be categorized into two groups: intermediary traders and intermediary agents. The difference lies in the ownership aspect and the process of negotiation in the transfer of the distributed products: 1) Intermediary trader. The merchant middleman is responsible for the ownership of all goods that are marketed or, in other words, the trader has the right to own the goods. There are two groups that belong to the intermediary traders, namely: large goods traders and retailers; 2) Intermediary agent. These middleman agents have no property rights over all the goods they handle. They can be classified into two groups, namely: 1) Supporting Agent, that is buying and selling agents, transport agent and storage Agent; 2) Complementary agents, that is agents assisting in the financial field, agencies that assist in the field of decisions, agents who can provide information and special Agent

Subsidies are government payments to domestic producers. Cash, low interest loans, tax deductions, and government participation in domestic firms. The main benefit gained for domestic producers is that their international competitive value is increasing. Subsidies may be aimed at: (1) production subsidies, in which the government closes some of its production costs to encourage increased output of certain products, (2) export subsidies, given to export products deemed to be helpful to the country's trade balance; is given to pay part of the company's wage expenses in order to be absorbed more jobs and reduce unemployment, and (4) income subsidies, provided through the government's transfer payment system to raise the minimum standard of living for certain groups such as old-age and other benefits (Rini, 2006).

Production theory is used to see the relationship between input (production factor) and output (production). Production theory is expected to explain the occurrence of a production process and can predict what will happen. The end result of a production process is the product or output. Products or production in agriculture or other fields may vary which, among other things, are due to the difference in quality. This is understandable because the good quality is produced by good production process which is well executed and vice versa, the quality of the production becomes less good if the farming is not done well (Soekartawi, 2006).

Research from Nigeria case study found that fertilizer use in Nigeria is not as low as conventional belief suggests and locations in close proximity to key political figures tend to have better access to fertilizer. Yield response to (and profitability of) applied nitrogen for rice in Nigeria varies significantly across different agro ecological conditions and over time. When the full cost of fertilizer acquisition is taken into consideration, the profitability of nitrogen application falls significantly, remaining profitable for a relatively small subset of rice farmers. While observed mean nitrogen application rates for rice tend to lie below the economically optimal levels for farmers with high marginal physical product of applied nitrogen, we find mean observed use rates higher than expected profit maximizing rates for farmers with poor yield response to applied nitrogen. Reducing transportation and other costs associated with fertilizer acquisition is likely to significantly increase the profitability and use of nitrogen among Nigerian rice farmers (Saweda, 2014).

Another research that subsidies have been known to encourage fertilizer use among farmers. This paper examined the factors influencing rice farmer participate on in the government's fertilizer subsidy program. Data was collected through the aid of a well - structured questionnaire from 263 rice farmers. Descriptive and Logistic regression analysis were used to analyze the data. Statistical mean differences were found in age, household size, years of farming experience, farm size, output and total annual income between participants and non-participants. In addition, participation was significantly and positively influenced by marital status, household headship, membership of farmer association/groups, motorcycle ownership, mobile phone ownership, access to credit and total farm size. The paper concludes that efforts should be geared towards encouraging membership of farmer groups, availability and timely distribution of subsidized fertilizer and the establishment of more redemption centers (Hameed, 2017).

This study has explained the central importance of understanding the factors affecting to fertilizer demand in the paddy sector in Sri Lanka for exploring the possibility to total removal of fertilizer subsidy and substitutability of chemical fertilizer from organic fertilizer. The study used the secondary panel data gathered by the Department of Agriculture and Department of Census and Statistics for the period of 1990-2011 to estimate the input demand function for paddy cultivation sector. The most obvious finding to emerge from this study is that the factors such as price of fertilizer, price of seed paddy, price of labour, quantity of paddy output, cost of materials, cost of pest management, provision of the fertilizer subsidy, and commercial paddy cultivation have a significant impact on the demand for fertilizer. The study further found that the demand for fertilizer is relatively inelastic to the price of fertilizer, price of seed paddy, and the price of labour however; the price of seed paddy has a greater impact in sustaining paddy production in Sri Lanka than the fertilizer subsidy (Rodrigo, 2015).

This paper analysis the change in fertilizer subsidy policy in Sri Lanka with a view to understand its impact on national rice production, demand/supply of inputs, farm profit and government budget. In addition, cost effectiveness of the fertilizer subsidy is evaluated in terms of transfer inefficiency. Demand supply equilibrium model along with input markets is employed to obtain the results. The results indicate, complete fertilizer subsidy reduction would reduce rice production by around 4%, while a 36% decline in the fertilizer demand for paddy cultivation. Although, the subsidy cut reduces the enormous government burden, farmers are unfavorably affected by 40% reduction of farm profit. Moreover, fertilizer subsidy would cause government to spend Srilangka Rupees (SLRs.) 1.38-1.91 to increase farm profit by one rupee. Meanwhile, a 3% decline of paddy production and a 14.5% increase in the rice price is expected with the proposed cash transfer policy (Wijetunga, Saito, 2017).

The research above discussed that the main factor that have a positive influence on fertilizer subsidy by the government or any sectors is cost production of rice farming, including price and the amount use fertilizer by each farmers.

RESEARCH METHOD

This research conducted in Gorontalo City, Gorontalo Province. The research time from September to October 2017. The location of this study was chosen because generally the farmers in the location mostly get the subsidized fertilizer according to the data in RDKK in Gorontalo City.

Research was designed as a survey study. The data used in research that is primary data and secondary data. Primary data was obtained from interviews and fizzy excision by farmers of rice field farmer respondents in Gorontalo City. And secondary data is obtained from official reports from relevant agencies in this case such as Gorontalo Central Bureau of Statistics (BPS), and other agencies that can assist in providing data.

The population in this study selected by several sub-districts, such as South City Sub District, Middle City Sub District, West City Sub District, and Sipatana Subdistrict in Gorontalo City which determined by purposive sampling technique or intentionally because the five sub-districts had conducted preliminary survey so it was feasible defined as the research area. The total population in the five districts is 1,766 people.

The farmer respondents in this research done by completely random sampling with total population is 1,766 farmers. The way to get a representative sample is by random sampling process. In this process, each member of the population has the same opportunity or opportunity to be elected as a sample member (Spiegel and Stephens, 2004). In relation to the sample size, Slovin proposed a formula for determining the size of the sample, thus the samples taken as many as 95 respondents from 1,766 people as rice farmers in Gorontalo City.

Data analysis method used in this research is descriptive analysis method that is explained in detail about distribution of subsidized fertilizer in Gorontalo City. Furthermore, to know the effect of distribution of subsidized fertilizer to increase rice production used multiple linear regressions, with the following formula:

$$\mathbf{Y = a + b_1X_1 + b_2X_2 + b_3X_3}$$

Where:

Y = The increase of rice production

X_1 = Right price

X_2 = Right amount

X_3 = Right time

a = Constanta

b = Regression coefficient

Variable definition

1. Right price is the price of subsidized fertilizer purchased by farmers in accordance with the Highest Retail Price (HET).
2. The exact amount is the amount of subsidized fertilizer the farmer / farmer group receives based on the amount listed in the Group's Definitive Needs Plan (RDKK).
3. Right time is the farmer/farmer group at the time of fertilization on time and not beyond the period of fertilization.
4. Right type is farmer / farmer group buying fertilizer in accordance with the type of fertilizer that has been recommended by the government.
5. Right place is the farmer / farmer group buying the official retailer dikios fertilizer that has been determined by the distributor.

6. Precise quality is the farmers / farmer groups using the guaranteed fertilizer according to the quality listed in the packaging / sack.
7. Production is an activity to increase the value added of an object or create a new object so that it is more useful in meeting the needs, in units (Rp) / harvest in Gorontalo City.
8. Land area is the area of land owned or planted with rice paddy in Gorontalo City.
9. Labor is a person who performs work activities, so that the achievement of the business undertaken. Calculated in men equivalent working days (HKSP).
10. Capital is the costs incurred by rice farmers in Gorontalo City during the production process, in units (Rp)/harvest.

RESULT AND DISCUSSION

Distribution of subsidized fertilizer flow in Gorontalo City

The Ministry of Trade and the Ministry of Agriculture of the Republic of Indonesia have regulated the distribution system of subsidized fertilizer in Indonesia. Arrangement of distribution system of subsidized fertilizer in the hope that farmers get fertilizer based on the principle of six precisely i.e. the right price, right quantity, right time, right place, right type and quality.

In Gorontalo Province there are two producers of subsidized fertilizer namely PT Pupuk Kaltim as Urea fertilizer producer and PT Petrokimia Gresik as fertilizer producer of NPK Phonska, SP36, ZA and Petroganik. In distributing subsidized fertilizer, fertilizer producers appoint distributor companies as subsidized fertilizer distributors to authorized retailers. Distribution of subsidized fertilizer in Gorontalo city through several stages starting from line I up to line IV before finally reaching to farmers, where Line I is fertilizer warehouse in company, Line II that fertilizer warehouse is in port, Line III fertilizer warehouse is in Province or Regency and Line IV is in the authorized reseller warehouse. Line I to Line III is the responsibility of the manufacturer and Line IV is the responsibility of the retailer. In Gorontalo city there are 2 (two) fertilizer distributors namely PT. Indonesian Trade Company (PT PPI) and Indonesian Trade Cooperative (KPI), and 5 (five) authorized retailers which are distributing subsidized fertilizer namely Kios Tani Lestari, Anugerah Tani Kiosk, Saprodi Tani Kiosk, Kiosk Cahaya Tani and Kios Bunga Tani. PT. PPI is responsible for distributing NPK, SP36 and ZA fertilizers while KPI is responsible for the distribution of Urea fertilizer

Classical assumption test

Normality data test

The residual normality test purpose to test whether in the regression model, the dependent variable and the independent variable both have a normal distribution or not, a good regression model has normal or near-normal residual distributions. The Normal Probability Plot method comparing the cumulative distribution of the actual data with the cumulative distribution of the normal distribution, the Normal Probability Results Plot is presented in Figure 1 below can also identify the normality test:

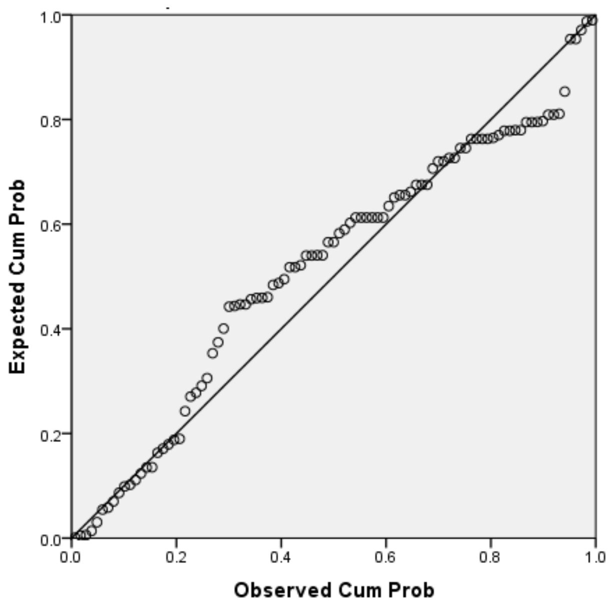

Figure1. Plot distribution in normality data test

Based on figure above showed that the data (point) spreads around the diagonal line and follows the direction of the diagonal line. By following the basic decision-making above, it is concluded that the data in this regression model meets the assumption of data normality.

Multicollinearity test

Multicollinearity test is purpose to determine the existence of a definite linear relationship between some or all of the independent variables describing the regression model. A good regression model should not be correlated between independent variables.

To know the presence of multicollinearity can also be seen on Tolerance and VIF (Variance Inflation Factor) value, that is: if tolerance value> 0.10 and VIF <10, hence can be interpreted that there is no multicollinearity in the research. If tolerance values <0.10 and VIF> 10, then it can be interpreted that there is interference multicollinearity in this research. The result of multicollinearity test can be seen in table below:

Table 1. Multicollinearity result

Variable	Collinearity Statistics	
	Tolerance	VIF
X1	.326	3.067
X2	.474	2.111
X3	.319	3.135

Table 1 showed that there is no multicollinearity regression model because VIF independent variable < 10, that is variable of program policy equal to 0,326, the right tolerancevariable value of the amount of 0.474, and the time variable of 0.319, VIF independent variable <10, is the right variable price of 3.067, the right variable amount of 2.111, and time 3.135, soin this research no multicollinearity in regression.

Statistical test result

R^2 test is used to know the influence of independent variable to dependent variable in this research the influence of right price, right amount, and right time to increase rice production in Gorontalo City is known from the coefficient of determination (R^2) as follow:

Table 2. Coefficient of determination test result (R^2)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.929[a]	.863	.859	1.68330

a. Predictors: (Constant), X3, X2, X1
b. Dependent Variable: Y

Based on the table above, the value of determination $R^2$is 0,859 means that the data indicate that the influence of right price, right amount, and right time to increase rice production in Gorontalo city equal to 85.9 percent, while the rest is 14.1 percent influenced by other factors that excluded in this research.

(F test) together simultaneously between independent variables in this case areright price(X_1), right amount(X_2), right time(X_3) and rice production (Y), Result of analysis together by result analysis with SPSS program version 20 obtained the following results:

Tabel 3. Simultaneous test (*F-test*)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1629.651	3	543.217	191.713	.000[b]
	Residual	257.848	91	2.833		
	Total	1887.499	94			

Based on the result of analysis in Table 4 obtained the value of F-count of 191,713 F-count between right price (X_1), right amount (X_2), right time (X_3) and rice production (Y) in Gorontalo City.

After it is known that there is simultaneously influence then tested partially from independent variable (right price, right amount, and right time) to dependent variable of rice production at Gorontalo City. Sarwono (2007), said that positive or negative results only show the direction rather than indicating the number.

Table 4. Analysis regression model

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	-3.318	1.741		-1.906	.060
	X1	.198	.060	.224	3.301	.001
	X2	.236	.096	.138	2.457	.016
	X3	.464	.050	.634	9.248	.000

Based on the previous research, where factors such as price of fertilizer, price of seed paddy, price of labor, quantity of paddy output, cost of materials, cost of pest management, provision of fertilizer subsidy, and commercial paddy cultivation have a significant on the demand fertilizer. The price elasticity relatively inelastic to the price of fertilizer and this is acceptable that given lack of close to substitutes to chemical fertilizer. The price of paddy seed has a greater significant effect to paddy production in Srilanka because the increasing of seed price will attempt farmers to overuse fertilizer and it will cause limit farmers to sustain their production. Based on the subsidy fertilizer has the impact to the fertilizer market, where if there is no continuity of fertilizer subsidy it will make farmers to use the fertilizer that produce from market (Rodrigo, 2015).

Based on the reviews from other research we can separate to the discussion above closely to the fertilizer price and the amount of fertilizer use in Gorontalo city to increase the rice production below:

The effect of right price to increased rice production

Based on a positive analysis of production elasticity indicates that the exact price is in a rational area. Based on the value of t-test obtained the exact input price of 3.301 which the value of the exact significance of the price (0.001) is smaller than the probability value of 0.05. Therefore, it can be concluded that the exact price has a significant effect on increasing rice production in Gorontalo City.

Coefficient X_1 (Right Price) = 0.198. The regression coefficient of variable at the right price indicates that every change in the exact variable price is 1 unit, then the production of paddy in Gorontalo City will experience change of 0.198 unit with the condition of right variable amount and on time constant (*cateris paribus*),

In this research, the price of subsidized fertilizer is in accordance with the highest retail price (HET) stated in the Regulation of Minister of Agriculture No. 69 / Permentan / SR, 310/12/2012, HET for fertilizer is still needed by the farmers of respondents, to make it easier for farmers in purchase of fertilizer for rice production process. The exact price in this research has a significant effect on the increase of paddy rice production, it means that when fertilizer price is lower than farmers are more easily reach fertilizer price.

The effect of right amount to increased rice production

Based on a positive analysis of production elasticity indicates that the right Amount is in a rational area. Based on the value of t-test is obtained the right input amount of 2.457 that significance value of right amount (0.016) smaller than the probability value of 0.05a So it can be concluded that the exact number of significant effect on increasing rice production in Gorontalo City.

Coefficient X_2 (Right Amount) = 0.236. The right regression coefficient of variable indicates that each change in exact variable amount of 1 unit, then the production of rice in Gorontalo City will experience a change of 0.236 unity with the provisions of the exact variable price and time in a constant (*cateris paribus*),

Based on the results of research the use of the number of subsidized fertilizer by farmers of respondents in the city of Gorontalo is in accordance with recommended doses, but in this study, subsidized fertilizer limited one of phonska fertilizer. In addition, farmers' respondents do not switch to non-subsidized fertilizer, so farmers only use urea fertilizer, without switch to non-subsidized fertilizer caused by limited farmer capital and the price of non-subsidized fertilizer is more expensive. For every ton of rice produced, it takes about 14.4 kg N, 2.6 kg P and 14.5 kg K / ha, which can be obtained by plant of soil, irrigation water, crop residues or from fertilizers (organic or inorganic) added. The higher the results obtained the higher the amount of nutrients needed and vice versa. Therefore, the exact number in this study significantly affects the increase in production.

The effect of right time to increased rice production

Based on a positive analysis of elasticity of production indicates that time is in a rational area. Based on the value of t-test, the timely significance of the value of 0.248 is obtained. The value of the time significance (0,000) is smaller than the probability value of 0.05. Therefore, it can be concluded that time significant effect on increasing rice production in Gorontalo City.

Coefficient X_3 (Right Time) = 0.464. The time variable regression coefficient indicates that every change in the timely variable is 1 unit, then the rice production in Gorontalo City will experience a change of 0.464 unity with the provision of the exact variable price and the exact amount in a constant (*cateris paribus*).

This is caused by the use of effective and efficient fertilizer, so the quality of soil as rice planting medium will provide the substances needed by plants to produce optimal rice production. At the research location of farmers respondents using fertilizer has been effective and efficient, because most farmers do fertilization as much as 2 times and some farmers do fertilization as much as 3 times. In addition to the application of proper fertilization, retailers order subsidized fertilizer according to the needs of farmers and fertilizer ordering done according to the growing season,

Based on the research in the field, the effect of subsidized fertilizer distribution on the increase of production has a positive and real effect seen from the right price, the right number and right time simultaneously. While the partial distribution of subsidized fertilizers based on the exact price and on time has a positive and real effect on the increase of rice production (HET) for urea fertilizer of Rp 1,800 per kilogram and phonska fertilizer of Rp 2,300 per kilogram, easy to be reached by respondent farmers, then from the timeliness in distribution of subsidized fertilizer and application time fertilizer on rice crop has been efficient. While seen from the right number of distribution of subsidized fertilizer has a positive and not real effect, this is due to the scarcity of phonska fertilizer. This is in line with the opinion Primantoro (2005: 24), which states that phonska fertilizer as one facts or production that has a large contribution to farming, The size of the production of farming, among others, is influenced by phonska fertilizer used.

CONCLUSION AND RECCOMENDATION

Conclusions

In Gorontalo City there are two fertilizer distributors namely PT. Indonesian Trade Company (PT PPI) and Indonesian Trade Cooperative (KPI), and 5 authorized retailers which are distributing subsidized fertilizer namely *Kios Tani Lestari, Anugerah Tani Kios, Saprodi Tani Kios, Cahaya Tani Kios and Bunga Tani Kios*. PT. PPI is responsible for distributing NPK, SP36 and ZA fertilizers while KPI is responsible for the distribution of Urea fertilizer.

Distribution of subsidized fertilizer on rice farming simultaneously have a positive and real effect on increasing rice production. While the distribution of subsidized fertilizer on rice farming partially that has a positive and tangible effect that is precise price, exact amount, and timely to increase rice production.

Recommendation

The subsidized fertilizer program needs to be continued and need to be accompanied by other programs in order to improve the empowerment and welfare of farmers. There is a need for additional authorized retailers stalls in each Sub District to make farmers easier to cultivate and reduce transportation costs.

There needs to be further research on the effect of the distribution of subsidized fertilizer to increase rice production in Gorontalo City, which is not found by the authors.

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The influence of labor and land use management on rice farming production in Pohuwato District

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Abstract
The purposes of this research are: 1) to analyze the labor and land use area in Pohuwato District; 2) to analyze the effect of labor and land area usage on increased rice production in Pohuwato; 3) to analyze the factors of soil processing technology that have influence on rice production in Pohuwato District. The research method is survey method. The data analysis is descriptive analysis and multiple linear regression analysis. The results showed that the labor use in family and land are has a significant effect on rice production in Pohuwato District of Gorontalo. The other side that the technologies increase has no significant effect on rice production in Pohuwato District of Gorontalo. The results that showed insignificant effect because the technology has a good impact in increased production but not factual, so in the future it the need to evaluate in the technology adoption and the role of agricultural extension must be more optimal.

Keywords: *Labor, Land area, Technology, Rice production*

INTRODUCTION

Agricultural development is need to fulfill the main human needs as food consumption in order to support the various results of industrial processed food to complement the main human needs. Furthermore this is the answer also to the increasing population growth especially in developing countries has a great desire to apply various technologies and innovations in agriculture sub-sector wetlands including in Indonesia.

Gorontalo Province has a large land potential that can be develop into new fields with the potential of natural resources sufficient to serve source of irrigation. Irrigation determines the successes of rice farming activities that ignored in the calculation of production factors. From the 5 districts in Gorontalo, Pohuwato is the one of the district that widely potential of land that can be develop into the most widespread new rice field with the support of water resources is very adequate. In general, the amount of rice field in Pohuwato reach by 3,751 ha and currently increased to 6,491 ha in addition based on the rice field program from 2011 to 2016. Rice farming in Pohuwato supported continuously by the government since 2011 until now, in 2011 150 ha of rice field was introduced, and in 2013 increased to 300 ha, in 2014, 290 ha and by 2016 reach 2,000 ha, the new area of rice field in Pohuwato until 2016 reached 2,740 ha (Agriculture Government Office, 2017).

The new rice field-developing program in Pohuwato has been successful in supporting increased rice production. This found from the increase of rice production that come from the addition of planted area which is sourced from the printing of rice field, where in 2011 the amount of rice production reached 38,241 tons, continuously increased to 44,720.63 tons in 2012 (16.94%), 45,461 tons in 2013 (1.63%), 45,658.44 tons in 2014 (0.43%) and 45,850.03 tons in 2015 (0.42%) (Agriculture Government Office, 2017

Based on data of average rice production in Pohuwato over the last five year, the highest production increase in 2015 compared to several years earlier. One of that, cause of the high increase in production is the exploitation of paddy fields that were carried out in 2012. While the new rice field developing activity conducted in 2016 has not contributed to the increase of rice production in Pohuwato regency, because the rice field has not been utilized optimally because it is still pending completion development of irrigation that is currently implementation (Agriculture Government Office, 2017).

The purposes of this research are to analyze the labor and land use area in Pohuwato District, to analyze the effect of labor and land area usage on increased rice production in Pohuwato, and to analyze the factors of soil processing technology that have influence on rice production in Pohuwato District. Based on this purpose can be explained that labor use in Indonesia divided by two kind. There are labor in family and hired labor. It has a difference count and discussion on this research. The land use also implication to the labor and rice production.

Daniel (2001) described that farming known two kinds of costs, such as cash cost or fees paid and the cost of no cash or fees that are not paid. The fees paid are the costs incurred to pay the wages of hired labor, the cost of purchasing inputs such as seeds, fertilizers, medicines, and *bawon* harvest. Sometimes it also includes fees for water and irrigation. Cost is a problem for farmers, especially in the procurement of inputs or production facilities. Because of the lack of available costs, farmers often experience losses in their farms. In terms of technical and knowledge, most of our farmers have understood the technological functions they have acquired from several sources, including newspapers, radio, television, counseling, workshops, informal education, leaflets, and or the results of a coffee shop conversation. They have realized the importance of technology, they already need technology, and they are willing to apply the technology, but the constraint is capital.

Soekartawi (2006) described that production is any activity to create add value or add an object to fulfill human needs in their satisfaction. Production not only limited to manufacture, but also to distribution. To adequate perform production activities a producer requires the production factors are managed as effectively and as efficiently as possible so as to provide the best benefits. Theory of Production to see the relation between input (production factor) and output.

Labor is a person who has capability of work performance, within or outside of employment, to produce products of goods or services to meet personal, family, and public needs. Labor is anyone who is capable either of doing work to produce goods or services to meet their own needs or for the community. Manpower is any man or woman who is 15 years old or older who is in and or is going to do work, both inside and outside the working relationship to produce goods or services to meet the needs of society (Mafor, 2015)

Suryana (2001) explained technology is the way in which various natural resources, labor capital and skills are combined to realize the objectives of production. The definition of technology contains a broader dimension and encompasses research, development, production system planning, material supply, information systems, fostering and development of work skills, production equipment and government policies to provide good industrial infrastructure and climates (Suryana, 2000).

Technology is closely related to the equipment and the ways used in the production process of an industry. Technology can be classified by 3 types are: a) Modern technology or advanced technology; b) Medium technology or precise technology; c) Traditional or low technology

The findings reveal that within the study area: (1) labor intensity is higher and capital intensity is lower than in the major grain-producing and economically developed areas of eastern and central China; (2) the most widely planted crops are those with the lowest labor intensity (oats) and capital intensity (benne); (3) there are marked differences in agricultural land use intensity among households; a major factor affecting land use decision-making is the reduced need for labor intensity for those households with high opportunity costs, such as those with income earned from non-farming activities which alleviates financial constraints and allows for increased capital intensity. As a result, (4) these households invest more in labor-saving inputs, households with a larger number of workers will allocate adequate time to manage their land and thus they will not necessarily invest more in labor-saving inputs. Those households with more land to manage tend to adopt an extensive cultivation strategy. Total income has a positive impact on capital intensity and a negative impact on labor intensity. Households that derive a higher proportion of their total income through farming are more reliant upon agriculture, which necessitates significant labor and yield-increasing inputs. Finally, the authors contend that policy makers should clearly recognize the impacts of non-farming employment on agricultural land use intensity. In order to ensure long-term food security and sustainable agricultural development in China, income streams from both farming and non-farming employment should be balanced (Zhang, 2014).

In this study, an empirical analysis was conducted on the behavior of Japanese rice producers from the standpoint of efficiency in production by using panel data from the Rice Production Cost Statistics by the Ministry of Agriculture, Forestry and Fisheries. The stochastic frontier production function, which comprises four production factors (land, labor, capital stock, and materials), was estimated and the inefficiency indices of production were calculated. Based on this information, the efficient and inefficient rice producers were identified, and the factor demand behavior and characteristics of the arable land utilization for rice production were compared. It was found that inefficient rice producers do not make any adjustments in employment in the short or long run, even if there is a change in the wages. In addition, it was observed that efficient rice producers who hold a large amount of the farms partitioned into small plots reduced the arable land utilization for rice production and increased productivity. However, it was noted that the certified farmers, who should be aiming at an expansion of the scale of operation and efficiency of agricultural operations, tend to reduce arable land utilization for rice cultivation and switch to other crops; moreover, the more efficient the certified farmers are, the larger are the effects of such activities (Kazuo,2017).

How does the amount of land that youth expect to inherit affect their migration and employment decisions? We explore this question in the context of rural Ethiopia using a 2014 cross-sectional dataset indicating whether youth household members from a previous 2010 survey had migrated by 2014, and in which sector they worked in 2014. We estimate a household fixed effects model and exploit exogenous variation in the timing of land redistributions to overcome endogenous household decisions about how much land to bequeath to descendants. We find that larger expected land inheritances significantly lower the likelihood of long-distance permanent migration and of permanent migration to urban areas. Inheriting more land also leads to a significantly higher likelihood of employment in agriculture and a lower likelihood of employment in the non-agricultural sector. Conversely, the decision to attend school is unaffected. These results appear to be most heavily driven by males and by the older half of our youth sample. We also find suggestive evidence that several mediating factors matter. Land inheritance is a much stronger predictor of rural-to-urban permanent migration and non-agricultural-sector employment in areas with less vibrant land markets, in relatively remote areas (those far from major urban centers), and in areas with lower soil quality. Overall, these results affirm the importance of push factors in dictating occupation and migration decisions in Ethiopia (Kosec, 2017).

Base of the three previous researches, found the similarity where the labor use in household will minimize the cost of farming and the efficient of land use will make the efficient rice production.

RESEARCH METHOD

This research conducted in Pohuwato District, Gorontalo Province. The research time start from September to October 2017. The location of this study was chosen because in general the farmers of the location mostly farming paddy fields in Pohuwato regency.

Research was designed as a survey study. The data used in research that is primary data and secondary data. Primary data were obtained from interviews and fusion dried by farmers of rice field farmers respondents in Pohuwato District. Secondary data is obtained from official reports from relevant agencies in this case such as Gorontalo Central Bureau of Statistics (BPS), and other agencies that can assist in providing data.

After that the population in this study selected several sub-districts is Popayato Sub District, Taluditi Sub District, Randangan Sub District, Buntulia Sub District and Duhiadaa Sub District in Pohuwat, determined by purposive sampling technique or intentionally because the five sub-districts had conducted initial survey so it was feasible to be designated as research area . The total population in the five districts is 2,208 peoples.

This research done by random sampling with total population reached 2.208 rice farmers. One way to get a representative sample is by a process called random sampling. In this process, each member of the population has the same opportunity or opportunity to be elected as samples (Spiegel and Stephens, 2004). The large sample taken by Slovin proposed a formula for determining the size of the sample, thus samples taken as many as 93 respondents from 2,208 people who farm rice paddies.

The data analysis method used in this research is descriptive analysis. The explain is about land use and labor in Pohuwat. This method will provide an explanation or description of various matters relating to the study of data on research, the formula used as follows:

$$P = \frac{f}{n} \times 100\%$$

Where:
P = Percentage
f = Respondent answer frequently
n = Respondent total

As phenomena, the data tool measured used is Likert Scale, in Sugiyono (2014). Likert scale is used to measure attitudes, opinions and perceptions of a person or a group of social phenomena, In Likert scale the variable to be measured is translated into indicator variables, then the indicator is used as a starting point to arrange the items of instruments that can be questions or statements,

In this study the authors use 5 levels (1,2,3,4,5) by using scores on each index. The percentage score obtained by each indicator shows the system of tertiary irrigation aid implementation to the increase of paddy rice production in Pohuwato by Subagio classification (in MoNE, 2008) as in the following table:

Table 1. Classification score percentage of land use and labor on rice farming

Number	Percentage of Score (%)	Classification
1	85 - 100	Very Good
2	76 - 84	Good
3	56 - 75	Fair
4	40 - 55	Poorly
5	0 - 39	Bad

Furthermore, for the identification of problem 2, it was analyzed by using multiple linear regression analysis to know the influence of labor usage and land area of paddy rice production. With the following formula:

$$\mathbf{Y = a + b_1 X_1 + b_2X_2 + b_3X_3 + D}$$

Where:

Y = Rice production
A = Constant value
b = Regression coefficient
X_1 = Labor use in family
X_2 = Hired labor
X_3 = Land area
D = Dummy technology (D_{JI}= 1, Modern; D_{JI}= 0, Traditional).

RESULT AND DISCUSSION

The use of labor and land area

Based on labor and land area scored includes labor in the family, hired labor and land area. The result of labor and land area of farmers with the highest value of each aspect applied in the farmers can be known results of recapitulation of farmers. The results can be seen in the following table:

Table 2. Labor use and land area recapitulation in Pohuwato District, 2017

Indicator	Score	Percentage (%)	Category
Labor use in family	4.995	71.61	Very Good
Hired labor	5.691	81.59	Good
Land area	5.864	84.07	Good
Total	**15.994**	**79.09**	**Good**

Through the total recapitulation scored above, showed that the use of labor and land area has been seen from each aspect such as labor in the family, hired labor and land area that has been successfully applied by the farmer group in order to increase productivity of rice field. Through total score percentage of respondents answers can be seen that the participation of farmers in the use of labor and land area has been done by the farmers. Furthermore, it can be seen that the aspect of labor activities in the family by the farmers in the category is quite good. It means that the farmers are able to provide decisions in conducting the activities of the use of labor in the family because they realize that the participation rate of farmers is one of the most important aspects and the first to do in the farming. Based on the percentage of total score respondents answers seen that the activities of hired labor by farmers included in either category. This means that farmers or respondents have a very good awareness of the activities of hired labor of farmers to productivity of rice paddy fields such as in the processing of land, planting simultaneously and plant maintenance activities such as eradication of pests and diseases of plants until harvest.

Based on the percentage of total score respondents answers seen that the size of the land area included in either category. Furthermore, based on the total score of respondents answers to the activities of the area of land own, the area of land rent and the amount of rent is in the category of good, which means that in doing the third indicator farmers have been good in terms of doing so from processing to harvesting. So overall, this farmer has been very good in the use of labor and land area in Pohuwato.

Classical assumption test

Normality test

The residual normality test purpose to test whether in the regression model, the dependent variable and the independent variable have a normal distribution or not. A good regression model is to have a normal or near normal residual distribution. The Normality Test can also be identified by the Normal Probability Plot method that compares the cumulative distribution of the actual data with the cumulative distribution of the normal distribution. Normal probability results the plot is presented in Figure 1 below:

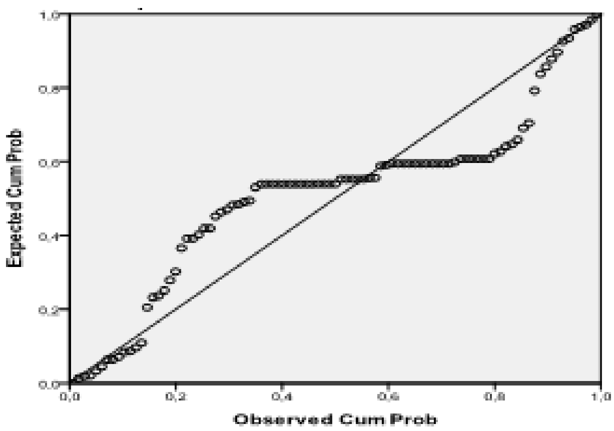

Figure 1. Result of normality probability plot

Based on figure 1 showed that the data (point) spreads around the diagonal line and follows the direction of the diagonal line. By following the basic decision-making above, it is concluded that the data in this regression model meets the assumption of data normality. It can be seen that there are some data distribution points that are slightly off the mark, so the need to continue with Kolmogorov Smirnov test.

Kolmogorov Smirnov is a normality test performed on residual regression testing (Sudjana, 2002). In order to know whether or not the normal distribution of variables in this study was conducted by non-parametric statistical test Kolmogorov-Smirnov (K-S Test). If the Kolmogorov-Smirnov significance value is greater than the alpha value (0.05), then the data follows a normal distribution. One Sample test results Kolmogorov Smirnov can be seen in table 3 below:

Table 3. One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		93
Normal Parameters[a,b]	Mean	,0000000
	Std. Deviation	5,17191708
Most Extreme Differences	Absolute	,163
	Positive	,162
	Negative	-,163
Kolmogorov-Smirnov Z		1,575
Asymp. Sig. (2-tailed)		,014

a. Test distribution is Normal.

b. Calculated from data.

Based on the above table can be seen that the test of data normality (Kolomogorov Smirnov) found that the value Kolomogorov Smirnov (KS) of residual regression that is equal to 1.575. The value is smaller than the value of Z table (1.96). Therefore, it can proof that the data in this study has a normal distributed value.

Multicollinearity test

Multicollinearity test is purpose to determine the existence of a definite linear relationship between some or all of the independent variables describing the regression model. A good regression model should not be correlated between independent variables.

To know the presence of multicollinearity can also be seen on Tolerance and VIF (Variance Inflation Factor) value, that is: if tolerance value> 0.10 and VIF <10, hence can be interpreted that there is no multicollinearity in the research. If tolerance values <0.10 and VIF> 10, then it can be interpreted that there is interference multicollinearity in this research.

Table 4. Multicollinearity result

Variable	VIF	Result
Labor use in family	2.591	Non Multicollinearity
Hired labor	1.810	Non Multicollinearity
Land area	2.654	Non Multicollinearity
Dummy	1.024	Non Multicollinearity

Based on Table 4, showed that there is no multicollinearity regression model because VIF independent variable <10, that is variable of labor in family equal to 2,591, hired labor variable equal to 1,810, variable of land area equal to 2,654 and technology equal to 1,024, so in this research no multicollinearity in regression.

Heteroscedasticity test

Figure 2 is the result of data that process (Scatterplot) of heteroscedasticity test below:

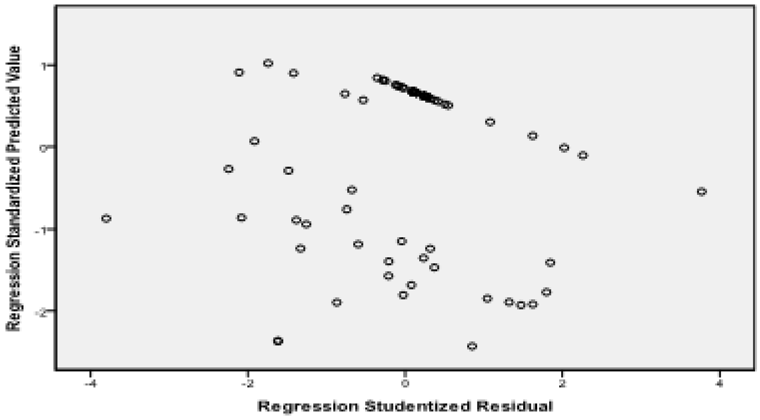

Figure 2. Heteroscedasticity test result

Based on the picture above showed that (1) the points spread randomly and (2) spread both above and below the zero on the Y axis. Therefore it can be concluded that there is no heteroscedasticity in the regression model data.

Regression analysis

R^2 Test is used to know the influence of dependent and independent variable in this research from the total of influence of labor in family, hired labor, land area and technology to rice production in Pohuwato, Gorontalo Province known from result of coefficient of determination (R^2) below:

Table 5. Coefficient of determination test result (R^2)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.937[a]	.878	.872	5.35095

a. Predictors: (Constant), D, X3, X2, X1
b. Dependent Variable: Y

Based on the Table 5, the value of determination coefficient adjusted R of 0.872. Means that 87.2% of the rice production in Pohuwato, Gorontalo Province can be explained by the labor in the family, hired labor, land area, and technology adoption in Pohuwato District, Gorontalo Province. While 12.8% is explained by other factors outside the model. Other factors outside the production function model that are also suspected to have an impact on rice production are the fertility of the land and the influence of climate and weather and the intensity of pests and diseases.

Simultaneous (F test) between independent variables in this research between the labor in the family (X1), hired labor (X2), land area (X3), technology (D) and paddy rice production (Y). Results of the analysis together obtained the results below:

Table 6. Simultaneous test (F test)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18084.596	4	4521.149	157.902	.000[b]
	Residual	2519.677	88	28.633		
	Total	20604.272	92			

Based on the result of analysis in Table 6 obtained value of F Test is 157.902 with probability value 0.000, because the probability value is smaller than 0.05 then the value of Fhitung obtained is significant. So it can be said that there is a positive and significant influence between labor in the family (X1), hired labor (X2), land area (X3) and technology (D) together to paddy rice production (Y).

T- Test or regression coefficient partially used to determine whether the partially independent variables significantly affect or not to the dependent variable. In this research partial test is used to know how far labor in family (X1), hired labor (X2), land area (X3) and technology (D) partially influence to paddy production (Y), as for the results of partial analysis can be seen in the table below:

Table 7. Regression analysis model

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	**Std. Error**	Beta	**T**	**Sig.**
1	(Constant)	-10.235	3.394		-3.016	.003
	X1	.156	.121	.078	1.292	.200
	X2	.367	.071	.258	5.149	.000
	X3	1.048	.092	.689	11.348	.000
	D	.174	1.224	.005	.142	.887

Based on the result from the previous study we can compare that, there is a significant influence between the labor from household and hired labor. Where if the farmers use the household labor, the can reach the labor saving for the cost of farming input. The household labor could have an allocate adequate time to manage their land and they can have more cultivation strategy (Zhang, 2014). It could develop the efficient farming production. From this previous research, there are the discussions about this research result below:

The effect of labor in the family on rice production

Based on a positive analysis of elasticity of production indicates that labor in the rice farming family is in a rational area. Based on the value of t-test is obtained input production of labor in the family of 1.292 which value of the significance of labor in family (0.200) higher than probability value 0.05. So it can be concluded that labor in the family has no significant effect on rice production in Pohuwato, Gorontalo Province.

The influence of hired labor on rice production

Based on the analysis showed a positive elasticity of production indicates that the hired labor rice farming is in the rational area. Then based on t-test value obtained input production hired labor of 5.149 which value significance of hired labor (0.000) smaller than probability value 0,05 So it can be concluded that hired labor have a significant effect on rice production in Pohuwato, Gorontalo Province.

Regression coefficient X1 0,156 ($\beta1$ = 0,156). The regression coefficient variable of labor in family showed that every change of labor in the family is 1 unit of rice production in Pohuwato, Gorontalo Province will change of 0.156 units with the condition of variable hired labor, land area and technology (dummy) in a constant state (*cateris paribus*).

The influence of land area on rice production

Based on the analysis showed a positive elasticity of production indicates that the area of rice cultivation area is in a rational area. However, based on t-test value obtained input production land area of 11,348 which significance value land area

(0.000) smaller than probability value 0,05. So it can be concluded that the Land Area has significant effect on rice production in Pohuwato, Gorontalo Province.

Regression coefficient of X3 1,048 (β3 = 1,048). The regression coefficient of the land area showed that every change in the variable of land area by 1 unit, then the rice production in Pohuwato, Gorontalo Province will change by 1,048 units with the variable of labor in family, hired labor and technology (dummy) in constant condition (*cateris paribus*)

The effect of technology on rice production

Based on the analysis showed a positive production elasticity indicates that rice cultivation technology is in a rational area because the use of technology can increase rice production. Then based on the value of t-test obtained input technology production of 0.142 which value of technology significance (0.887) higher than probability value 0.05. So it can be concluded that the technology has no significant effect on rice production in Pohuwato, Gorontalo Province.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The use of labor and land area from the result of the percentage of total score of respondents' answers on labor indicators in the family of 66% included in the category is good enough, on the indicator of hired labor by 81% included in both categories, and on the indicator of land area of 83% included in either category. So that the use of labor and land area in the research location is good use.

The labor and land area use on rice farming simultaneously have a positive and real effect on rice production. While the partial that have a positive and real effect on wetland paddy production is the hired labor, and the land area.

Recommendations

There is need to be a training and mentoring program available in Pohuwato District in order to improve the labor to develop farmers welfare. We recommend that more farmers use modern technology to further increase rice production in Pohuwato District.

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- OAJI-Open Academic Journal Index
- Moraref
- Princeton University Library
- Universiteit Leiden
- University of Oxford
- Harvard Library
- The University of Sheffield
- University of Saskatchewan-University Library
- Capilano University Library
- State Library New South Wales
- Vrije Universiteir Brussel (VUB)
- UNSW Australia Library
- Merchyhurst University
- University of Illinois at Chicago (UIC) Library
- Universitat Kasse
- State Library of Victoria
- Simon Fraser University Library Electronic Journals
- BJMU
- Library & Learning Center
- Aberystwyth University
- City University of London
- University of Edinburgh
- University of Glasgow
- University of Hull
- Imperial College London
- University of Manchester
- Open University
- University of York
- London's Global University
- Trinity College
- University of Alberta
- University Library
- BASE (Bielefeld Academic Search Engine
- CiteFactor
- open Access Library (OALIB)
- Scholarsteer
- JournalTocs
- Worldcat
- CORE
- Research Bible
- Academickeys
- Citeulike
- JOURLIB
- Global Impact Factor
- Jifactor
- General Impact Factor
- e-Journal Portal BKS PTN Wilayah Barat
- Cosmos Impact Factor
- OneSearch
- International Innovative Journal Impact Factor (IIJIF)
- Journal Factor
- Directory of Research Journal Index
- Eurasian Scientific Journal Index (ESJI)
- National Library of Australia

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