Analysis Of Economic Structure In Poverty Eradication In The Province Of East Nusa Tenggara Indonesia

Fransiskus X. L. Aba a,*, Osman Mohd. Yussof b, Saidatulakmal Binti Mohd c

a,b,c School of Social Sciences, Universiti Sains Malaysia, 11800, Penang, Malaysia

Abstract

Province East Nusa Tenggara or Nusa Tenggara Timur (NTT) Indonesia is a region in Indonesia and is one of the provinces in effect as a poor region by size of Gross Domestic Product (GDP). Therefore, measuring the economic structure value added growth rate of the economy, in addition to providing guidance on the development of economic activity in a particular period. In fact, the goal of macro-economic development NTT Indonesia to increase people's income and economic equality through the production, productivity, revitalizing the economic institutions, and increase employment opportunities is not reached during the last two decades.

© 2015 The Authors. Published by Elsevier Ltd.

Peer-review under responsibility of the Organizing Committee of the 2nd GCBSS-2015.

Keywords: GDP Growth, Economic Sector, Economic Structure, Poverty Eradication, Value Added;

1. Introduction

Here are the results of an empirical analysis of the data released by the Central Bureau of Statistics during the period 1987 to 2012. Based on the data obtained that NTT Indonesia economic structure during the last two decades

* Corresponding author: Tel: +6281381854208
E-mail: fransaba@yahoo.com
can be regarded as quality, condition is caused NTT Indonesia's economic growth in the period not driven by productivity capabilities. Thus, according to the heading structure of economic growth on eradication poverty did NTT Indonesia, this research should be conducted to see; How does the economic structure and growth sectors of economy based on the contribution of each sector to the GDP NTT Indonesia? The objective of this study to analyze the economic structure and economic growth in NTT Indonesia, based on the contribution of each sector to the GDP NTT Indonesia.

Reviews from Myrdal (1968) and researchers such as Andres, Biller, Dappe (2013), in the least developed countries are poor, market forces are likely to create regional disparities and expanding existing inequalities. Thus, growth in itself is a process of economic development imbalance. According Gore (1984 Ms: 5,) and the findings of Bahar, Hausmann, Hidalgo (2014) or researchers such as Barro (1990), Greiner, (2011), Boxal, (2012), Elson (2013), Obeng-Odoom, (2013) at the level of inequality can be categorized into three, namely: (1). Gaps in development between regions; (2). Metropolis the size of the country; (3). Rural and urban inequality.

2. Analysis of Contributions and Structure of Economic Growth

Further analysis based on Appendix A, where NTT Indonesia's economic growth in the period 1987-2012 the various or changeable. The economic situation, NTT Indonesia showed good growth with an increase of 4.18 percent (1988) to 6.98 percent (1990), and decreased to 5.05 percent for (1991), and increased again to 8.66 percent (1996). NTT Indonesia's economic performance declined in 1997, in which the growth rate was only 5.62 percent or less than the rate of growth in the previous year. The Central Bureau of Statistics State NTT Indonesia in 1999, noting that the decline in economic performance occurs because of the drought during 1997.

In 1998, NTT Indonesia's economic performance has declined. This can be seen by economic growth which declined by -2.73 percent, lower than in 1997 (5.62 percent) and 1996 (8.66 percent). Compared with the growth of the national economy experienced a contraction -13.13 percent in 1998 (Table 1) turned out to NTT Indonesia's economic growth is better. In 1999, NTT Indonesia economic conditions rebounded with a growth of 2.74 percent. In this study NTT Indonesia's GDP growth continued to increase from 1999 to reach 177.87 percent in 2002. This is due to the economic dynamism of NTT Indonesia. It turns out that the agricultural sector dominates economic development NTT Indonesia.

2.1 Economic Sector and Population Growth NTT Indonesia

Further analysis found that over the period 2003-2012, GDP NTT Indonesia uncertain, with the lower 2.62 percent in 2005. At Appendix A the development of NTT Indonesia implemented by government during the period 1988-2012 can be considered as successful to improve the welfare of the population. During this period, economic growth was higher than population growth NTT Indonesia, except in 1998, economic growth contracted -2.73 percent.

Based on the processed data using economic models, it was found that the overall rate of economic growth and structural transformation of macro-economic variables that can be used to assess progress and ability of a region to develop its economy. Analysis of growth and structural transformation of economy is always a variable in the economic development of a region and can then be used to develop strategies and policies for regional development and investment development.

2.2 Comparison of Structure GDP Growth NTT Indonesia and GNP Indonesia

In general, it can be concluded that the NTT Indonesia economic growth is not too bad compared to Gross National Product (GNP) of Indonesia. This is illustrated in Table 1, which presents a comparison of NTT Indonesia's economic growth in Indonesia during the years 1988-2012. If you look at 1988, NTT Indonesia's economic growth is 4.18 percent, while at the national level registered 6.84 percent growth.
Furthermore, the analysis of data shows that in 1989, NTT Indonesia economic growth increased to 5.17 percent while at the national level, its value dropped to 2.14 percent. This occurs because of changes increase the gross value added in every sector of the economy NTT Indonesia, greater than national level in the same year. The world economic crisis of 1997-1998 affected the growth sectors of the economy. NTT Indonesia, the economic crisis led to an economic contraction of -2.73 percent, far better than growth sector in the national economy, which also experienced a contraction of -13.13 percent.

Reviews of Fischer and Sturbeck (2006), and researchers such as Bourguignon, Bussolo (2013) argued that the higher income of a country, the smaller the contribution of the primary sector. The decline in contribution of agricultural sector is due to increase in revenue, which will increase the purchasing power of non-agricultural products. This occurs due to: (1). The demand for non-agricultural products is decreasing; (2). The development of technological progress in the production of non-agricultural sector.

Recognized that advances in technology led to excess supply and most of the workers resorted to the agricultural sector. This resulted in the allocation of resources to non-agricultural sector is becoming increasingly important. It is quite interesting in the economic development of NTT Indonesia is the process of structural transformation which varies on the primary sector, especially agriculture, although the contribution to GDP is lower in 2012. This suggests economy NTT Indonesia in the last 10 years from 2003 to 2012 in accordance with the concept of economic development that seeks to enhance the role of industrial sector and reduce the role of agriculture sector.

Based on the study and Syirquin Chenery (1975) or the study of Gruss (2014), that the contribution of primary
sector and secondary sector over the 10 years from 2003 to 2012, it appears that the economic development NTT Indonesia is inconsistent with the law Chenery and Syrquin or from Gruss study. When we examine the development of the primary and secondary sectors simultaneously, it turns out that conceptually NTT Indonesia's economy is not yet steady. Compared with the growth and contribution of the agricultural sector and national industry, the development and contribution of these two sectors in NTT Indonesia is relatively slower.

The study also found that the contribution of other sectors that need to be addressed in NTT Indonesia is the mining and quarrying sector and manufacturing sector. Over the past 10 years both the contribution to GDP of NTT Indonesia is decreasing. Whether the state at national level. And it was this that caused the mining and quarrying sector or the manufacturing sector at the national level or even NTT Indonesia should not be able to play in economic development of Indonesia.

2.3. Model Equations

Model studies and equality of economic growth in poverty eradication in NTT Indonesia, covering all economic sectors included the GDP, structure of economic growth was based on the relative contribution of each sector to total GDP NTT Indonesia. While economic growth in GDP for 25 years (1987-2012) is calculated based on exponential trend equation (Holt, 1957; Winter, 1960; Brown, 1963; Nerlove, 1979; Kitagawa, 1996, Koopmanet, 2000). Form equation is as follows:

\[ Y_t = a^e b^{t-1} \text{ atau } Y_t = ae^{bx} \]  \hspace{1cm} (1)

\( e = 2,71828 \)
\( t \) = variable time
\( x \) = variable time - in the middle of the period under review
\( b \) = the rate of change of the variables \( Y_t \) year

\( a \) and \( b \) are the values of coefficient is sought from time series data with data pair \((X, Y)\). Points \( a \) and \( b \) were obtained by using the properties of logarithms to help explain the preparation of an exponential trend equation. To see the GDP in future the eradication of poverty in NTT Indonesia with an important sector in the GDP estimate for the next five or ten years ahead is to use multiple regression analysis with the following equation:

\[ Y_t = a + biXi + b2X2+ b3X3 \]  \hspace{1cm} (2)

\( Xi \) = the projections of sector \( i \) in year \( t \)
\( a \) = constant coefficient year in \( t \)
\( b \) = The regression coefficient of variable \( X \)
\( X1 = GNP \)
\( X2 = \) dummy variable \( 0 = \) before the crisis, and \( 1 \) for a period of economic crisis
\( X3 = labor \)

This illustrates that in order to boost economic development in Province NTT Indonesia in eradication of poverty, the economic and non-economic, such as: management development is quite weak shall be increased effectiveness. Kuznets (1966) and several studies conducted by Eichengreen, Donghyung, Kwanho (2012), noting a trend characterized by changes in the structure of GDP decline the contribution of the agricultural sector from 50 percent to 20 percent. By contrast, the contribution of the industrial sector increased from 20 percent to 50 percent. However, neither Kuznets, Eichengreen, Donghyung and Kwanho also noted that employment opportunities generated not necessarily increase with changes in sectoral contribution to the national product.
3. Discussion

This shows the reciprocation of NTT Indonesia economy anchored by four groups of the sector. The four sector groups that have a strong correlation or linkage and positive. The attachment between this sector can be bound to the forward linkage or backward linkage.

Based on the above, it can be concluded that during the 25 years from 1987 to 2012 has not been a shift in the economic structure significantly in NTT Indonesia. The primary sector-driven agricultural sector still dominates the economy NTT Indonesia. While the secondary sector, driven by manufacturing sector is not able to move to enlarge its role in the economy of NTT Indonesia. Instead tertiary sector, driven by the services sector and trade, hotels and restaurants tend to enhance its role the economy of NTT Indonesia. Whether based on a study of Eberhardt, (2014) or even the researcher Barnett, etc (2014) the economic growth of a region is determined by competitive advantage held the province. If growth sectors with competitive advantages can be driven as a base for exports, the growth of region will be improved.

4. Conclusion

During the 25 years from 1987 to 2012 NTT Indonesia's economy is dominated by two sectors, namely, the primary sector of agriculture and tertiary sectors of the services sector, trade, and transportation. In the long-term projections, the tertiary sector can compete with the primary sector. In fact, over 25 years, NTT Indonesia macro-economic structure is not very encouraging or quality, the situation is as NTT Indonesia's economic growth is driven by domestic consumption, rather than production capacity. NTT Indonesia's main development focus on agriculture and services is relevant because it is in accordance with the basic advantage of the economic surplus. In addition, to support the development of the agricultural sector, it is recommended that supporting such sectors of the services, trade, hotels, restaurants, transport and communication also allocated more funds from other sectors.

In fact, natural resource owned by NTT Indonesia is adequate to support economic development and transformation of economic structure. However, there are several factors that inhibit or slow down economic development NTT Indonesia in poverty eradication, namely: (1). The quality of human resources is still low; (2). Limited technology facilities; (3). The ability of capital accumulation is low, (4) .Power limited management; and (5). The ability to expand the scale of production is low.

Appendix A. Population Growth and Economic Sector NTT Indonesia Year 1988-2012

Analysis of national income that has previously been submitted is recognized as a measure that useful and appropriate to assess the economy of a region within a specified period. It is used to measure or determine a region's economy, which is either increased or decreased. Count of revenues in NTT Indonesia, indicating the economic boom contributed by economic sector and investments, the table below shows the average income, the increase and decrease of NTT Indonesia's economic sector within 1988-2012.

Development of NTT Indonesian Government implemented during the period 1988-2012 can be considered as successful to improve the welfare of the population. During the period, economic growth was higher than population growth NTT Indonesia, except in 1998.

Regression analysis, it was found that the value-added sector of the economy NTT Indonesia is affected by the variable GDP per capita. This condition is indicated on the count value t variables GDP per capita greater than the table value t (1.72) for each economic sector.

In general, it was found that the variables GDP per capita and population individually affect the value-added trade, hotels and restaurants, as well as the services sector. T count value for each variable is GDP per capita and the population of the two sectors is greater than the value of table t. For the trade, hotels and restaurants, the count t variables GDP per capita is 5.96 and variables total population is 2.90. Semntara that, in the services sector, the count value t variables GDP per capita is 5.05 and variables total population is 2.40.
### Table A1. Population Growth and Economic Sector NTT Indonesia Year 1988-2012

| Year | Total Population (Thousands of IDR) | Economic Sector Growth % | Total Population (People) | Growth % |
|------|-------------------------------------|---------------------------|---------------------------|----------|
| 1987 | 607,805,477                         | -                         | 3,072,490                 | -        |
| 1988 | 633,211,439                         | 4.18                      | 3,127,820                 | 1.80     |
| 1989 | 665,938,598                         | 5.17                      | 3,168,814                 | 1.31     |
| 1990 | 712,396,937                         | 6.98                      | 3,268,644                 | 3.15     |
| 1991 | 748,402,654                         | 5.05                      | 3,299,994                 | 0.96     |
| 1992 | 789,284,531                         | 5.46                      | 3,322,782                 | 0.69     |
| 1993 | 2,096,816,888                       | 165.66                    | 3,357,099                 | 1.03     |
| 1994 | 2,276,173,957                       | 8.55                      | 3,402,503                 | 1.35     |
| 1995 | 2,471,587,771                       | 5.05                      | 3,439,450                 | 1.09     |
| 1996 | 2,685,534,120                       | 5.46                      | 3,541,343                 | 2.96     |
| 1997 | 2,836,328,016                       | 5.62                      | 3,577,053                 | 1.01     |
| 1998 | 2,758,905,735                       | -2.73                     | 3,627,889                 | 1.42     |
| 1999 | 2,834,503,857                       | 2.74                      | 3,706,536                 | 2.17     |
| 2000 | 2,942,371,813                       | 3.81                      | 3,808,477                 | 2.75     |
| 2001 | 3,103,058,595                       | 5.46                      | 3,888,735                 | 2.11     |
| 2002 | 8,622,491,000                       | 177.87                    | 3,981,508                 | 2.39     |
| 2003 | 9,016,717,000                       | 4.57                      | 4,088,058                 | 2.68     |
| 2004 | 9,519,959,000                       | 5.58                      | 4,188,774                 | 2.46     |
| 2005 | 9,769,547,617                       | 2.62                      | 4,260,294                 | 1.71     |
| 2006 | 10,266,159,394                      | 5.08                      | 4,355,121                 | 2.23     |
| 2007 | 10,902,404,441                      | 6.20                      | 4,448,873                 | 2.15     |
| 2008 | 11,426,425,242                      | 4.81                      | 4,534,319                 | 1.92     |
| 2009 | 11,920,601,873                      | 4.32                      | 4,619,655                 | 1.88     |
| 2010 | 12,531,629,664                      | 5.13                      | 4,683,827                 | 1.39     |
| 2011 | 13,253,510,196                      | 5.76                      | 4,776,485                 | 1.98     |
| 2012 | 13,971,621,688                      | 5.42                      | 4,899,260                 | 2.57     |

### Table A2. Growth of gross value added/ GDP NTT Indonesia Constant Prices of 1993 and 2000 Years 1988 - 2012

| Number | Years | Sector 1 | Sector 2 | Sector 3 | Sector 4 | Sector 5 | Sector 6 | Sector 7 | Sector 8 | Sector 9 | GDP |
|--------|-------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----|
| 1      | 1987  | -        | -        | -        | -        | -        | -        | -        | -        | -        |     |
| 2      | 1988  | 2.91     | 6.27     | 0.95     | 16.23    | 13.48    | 3.56     | 11.45    | 3.70     | 3.53     | 4.18|
| 3      | 1989  | 4.69     | 132.19   | 3.18     | 5.48     | 9.26     | 6.29     | 8.63     | -19.24   | 4.14     | 5.17|
| 4      | 1990  | 4.85     | -48.11   | 7.30     | 2.13     | 6.70     | 8.41     | 22.19    | 46.14    | 3.51     | 6.98|
| 5      | 1991  | 4.24     | 7.92     | 7.90     | 22.24    | 7.19     | 9.62     | 0.82     | 7.68     | 4.58     | 5.05|
| 6      | 1992  | 3.57     | 12.54    | 3.68     | 16.91    | 11.94    | 5.87     | 11.96    | 7.78     | 4.77     | 5.46|
| 7      | 1993  | 122.60   | 570.35   | 235.09   | 138.39   | 458.74   | 157.96   | 146.44   | 240.60   | 202.22   | 165.66|
| 8      | 1994  | 6.20     | 9.70     | 12.81    | 4.58     | 9.02     | 2.81     | 15.59    | 10.04    | 12.71    | 8.55|
| Year | Sector                          | Contribution | GDP Per Capita | Population |
|------|--------------------------------|--------------|---------------|------------|
| 1995 | Agriculture                     | -273.56      | 5.89          | 1.65       |
| 1996 | Mining and Quarrying            | -84.58       | 4.38          | -0.24      |
| 1997 | Manufacturing                   | -102.08      | 4.35          | 0.22       |
| 1998 | Electricity, Gas and Water Supply| -70.51       | 2.97          | 0.86       |
| 1999 | Building                        | -91.75       | 4.57          | -0.26      |

Note:

Sector 1: Agriculture  
Sector 2: Mining and Quarrying  
Sector 3: Manufacturing  
Sector 4: Electricity, Gas and Water Supply  
Sector 5: Building  
Sector 6: Trade, Hotel and Restaurant  
Sector 7: Transport and Communications  
Sector 8: Finance, Leasing and Services Company  
Sector 9: Services

Table A.3. Regression Analysis of the Effect of GDP Per Capita and Population on the Economic Value Added Sector NTT Indonesia Year 1988-2012
| Service                        | Cost 1 | Cost 2 | Cost 3 | Cost 4 |
|-------------------------------|--------|--------|--------|--------|
| Trade, Hotel and Restaurant  | 5.96   | 2.90   | 375.14 | 0.9715 |
| Transport and Communications  | 3.84   | 1.68   | 146.17 | 0.9300 |
| Finance, Leasing and Services Company | 3.39   | 1.47   | 113.49 | 0.9116 |
| Services                      | 5.05   | 2.40   | 265.67 | 0.9602 |

Reference

Andres, L., D. Biller, and M. H. Dappe. (2013). *Reducing Poverty by Closing South Asia’s Infrastructure Gap*. Washington, DC: World Bank.

Badan Pusat Statistik. (1987 - 1999). *NTT Dalam Angka / East Nusa Tenggara in Figures*.

Badan Pusat Statistik. (2000 - 2013). *NTT Dalam Angka / East Nusa Tenggara in Figures*.

Bahar, D. R. Hausmann, and C.A. Hidalgo. (2014). “Neighbors and the Evolution of the Comparative Advantage of Na-tions: Evidence of International Knowledge Diffusion.” *Journal of International Economics* 92 (1): 111–23.

Barnett, A., B. Broadbent, A. Chiu, J. Franklin, and H. Miller. (2014). “Impaired Capital Reallocation and Productivity.” *National Institute Economic Review* 228 (1): 35–41.

Barro, R.J. (1990): Government Spending in a Simple Model of Endogenous Growth. *Journal of Political Economy*, 98, S103–S125.

Brown R.G. (1963) *Smoothing, Forecasting and Prediction*. Englewood Cliais: Prentice Hall.

Bourguignon, F., and M. Bussolo. (2013). “Income Distribution in Computable General Equilibrium Modeling.” In *Handbook of Computable General Equilibrium Modeling*, ed. P.B. Dixon and D.W. Jorgenson, 1383–1437. North Holland: Elsevier B.V.

Boxall, Peter, Adamowicz, W.L., Olar, M., West, G.E., Cantin, G.,(2012). Analysis of the economic benefits associated with the recovery of threatened marine mammal species in the Canadian St. Lawrence Estuary. *Mar. Policy* 36 (1), 189–197.

Chenery, H. and Syrquin. (1975). *Patterns of Development 1950-1970*. Word Bank. Oxford University Press.

Eberhardt, M., (2014). *Nonlinearities in the Relationship between Debt and Growth: Evidence from Co-Summability Testing*. University of Nottingham.

Elson, Anthony. (2013). *Globalization and Development: Why East Asia Surged Ahead and Latin America Fell Behind*. New York: Palgrave MacMillan.

Fischer, M.M. and Sturbeck, C., (2006). Pan-European regional income growth and club convergence: insights from a spatial econometric perspective, *Annals of Regional Science, 40*, pp.693-721.

Gore, C., (1984) *Regions in Questions: Space, Development Theory and Regional Policy*, London: Methuen and Co. Ltd.

Greiner, A., (2011). Economic growth, public debt and welfare: comparing three budgetary rules. *German Economic Review* 12, 205–222

Gruss, B. (2014). “After the Boom: Commodity Prices and Economic Growth in Latin America and the Caribbean.” Working Paper 14/154, International Monetary Fund, Washington, DC.

Holt, C.C. (1957) *Forecasting Seasonals and Trends by ExponentiallyWeighted Moving Averages*. ONR Research Memorandum 52, Carnegie Institute of Technology, Pittsburgh, Pennsylvania.

Kitagawa, G., and W. Gersch (1996) *Smoothness Priors Analysis of Time Series*, Berlin: Springer-Verlag.

Koopmanet, S.J., A.C. Harvey, J.A. Doornik and N. Shephard (2000) *STAMP 6.0 Structural Time Series Analyser, Modeller and Predictor*, London: Timberlake Consultants Ltd.

Kuznets, S., (1966) *Modern Economic Growth: Rate Structure and Spread*. New Haven, Connecticut: Yale University Press.

Myrdal, G., (1968) *Asian Drama: An Inquiry into the Poverty of Nations*. New York: Pantheon.

Nerlove, M. and S. Wage (1964). *On the Optimality of Adaptive Forecasting*, Management Science 10, 207-29.

Nerlove, M., D.M. Grether and J.L. Carvalho (1979) *Analysis of Economic Time Series*. New York: Academic Press.

Obeng-Odoom, F., (2013). *Governance for Pro-poor Urban Development: Lessons from Ghana*. Routledge, London (First, p. 258).

Winters, P.R. (1960) *Forecasting Sales by Exponentially Weighted Moving Averages*, Management Science 6, 324-42.