AGRICULTURAL DEVELOPMENT LED INDUSTRIALIZATION IN ETHIOPIA: STRUCTURAL BREAK ANALYSIS

Ahmed Kasim Dube[1] , **Wasiu Olayinka Fawole[3]** , **Ramu Govindasamy[2]** , **Burhan Ozkan[1]***

[1]Department of Agricultural Economics, Faculty of Agriculture, Akdeniz University, Antalya, Turkey
[2]Department of Agricultural, Food and Resource Economics, School of Environmental and Biological Sciences, Rutgers-The State University of New Jersey, New Brunswick, NJ 07102, USA
[3]Department of Agricultural Economics, Faculty of Agriculture, National Open University of Nigeria, Nigeria

*Corresponding author email: bozkan@akdeniz.edu.tr

Abstract

The Ethiopian economy is heavily dependent on agriculture. Unlike other emerging African countries, Ethiopian economic growth is driven mostly by public investments in infrastructure and agricultural productivity improvement. However, the performance of agriculture was not satisfactory as poverty remained. Lack of appropriate policies and strategies was considered as the ultimate reason for the sector's past stagnation. Consequently, to solve this problem and promote agricultural and economic growth, government a national development strategy called Agricultural Development Led Industrialization (ADLI). While, ADLI argues for a mutually re-enforcing transformation of agriculture and industry, the primary goal of ADLI was to alleviate absolute poverty. The strategy was also complemented by different plans so as to empower industrial sector in addition to agriculture. Therefore, ADLI policy's effectiveness was tested with Structural Break Analysis. The results showed that there was structural break in economic growth in 2004, indicating a higher and steady growth afterwards. The descriptive results also showed that agricultural sector remained the dominant contributor to the GDP growth of the country with only recently that the service sector is outperforming agricultural sector. The contribution of the industrial sector remained low, even though recently it started performing well.

1. BACKGROUNDS TO ADLI

Ethiopia is an agrarian society in which the bulk of the population lives in the rural areas earning a livelihood from land. Agriculture has long dominated the economy and it has a considerable share in the GDP of the country. For the long period of the time, more than half of the GDP comes from agriculture. For instance in 1981, 1985, 1990, 1995 and 1999, the GDP share of agriculture was accounted to about 58%, 55%, 52%, 55% and 48% respectively. This indicated that, the agriculture sector continued dominating the economy of the country for the long period of the time. Furthermore, the Ethiopia economy's high dependency on agriculture as the main source of employment and export earnings was manifested by the fact that 80% of the total labour force employment and 71% of total export earnings (MoFED, 2013) comes from agriculture. This implies that growth of all other sectors and the whole national economy is determined by this particular sector. Consequently, the country's aspiration for achieving overall economic growth largely depends on the performance of the agriculture sector.

However, agricultural sector in Ethiopia is dominated by small-scale farmers who practice rain-fed mixed farming by employing traditional technology, adopting a low input and low output production system. The land tilled by the Ethiopian small-scale farmer accounts for 95 percent of the total area under agricultural use and these farmers are responsible for more than 90 percent of the total agricultural output (Gebre-selassie and Bekele, 1999). In this regards, for the economic development of low income countries a high rate of agricultural growth has

far reaching positive implication in terms of increasing employment and accelerating poverty reduction. In addition, to achieve rapid agricultural growth with wide economic effect, it is necessary to help farmers to adopt large enough new technologies which in turn would enable them to produce significant marketed surplus. Furthermore, high agricultural growth is important to avoid creation of mega cities with large slum of population (Mellor and Dorosh, 2009). In line with these, the government of Ethiopia came to emphasize that economic development and structural transformation should be initiated through robust agricultural growth, and that peasant farmers and pastoralists who were hit more by poverty (Table 1) should be the main agents of agricultural transformation and economic growth. According to WB data indicators (2019) and national data statistics (MoFED, 2013), Poverty headcount ratio at national poverty lines was 45.5 % in the year 1995. This was almost close to the half of the population of the country and there was no significant decline in the level of poverty in the country even in the year 1999 where Poverty headcount ratio at national poverty was 44.2%. In the country, the incidence of poverty was very high in rural areas where agriculture is the main source of livelihoods. It was 47.5 and 45.4% in the years 1995 and 1999 respectively (Table 1). Even though, there was decline in the following year's poverty continued to be the important features of the country.

Table 1. Poverty rate in Ethiopia

Head count index	1995	1999	2004	2010	2015
National	45.5	44.2	38.7	29.6	23.5
Rural	47.5	45.4	39.3	30.4	
Urban	33.2	36.9	35.1		

Source: World Bank Data indicators (2019)

The alleviation of poverty via fast economic growth is the main goal of Ethiopian government. In this regards, lack of appropriate policies and strategies was considered by the government as the ultimate reason for the sector's past stagnation. Consequently, to solve this problem, the national development strategy called Agricultural Development Led Industrialization (ADLI) was devised. ADLI was built on the development theories of the 1960s in which (smallholder) agriculture needs to be developed first to facilitate demand for industrial commodities and inputs for industrialization (Moller, 2016). This strategy has been justified because agriculture is the largest sector in terms of output and, particularly, employment and exports; the bulk of the poor live in the agriculture-centered rural areas; considerable gaps exist between rural and urban across key dimensions of human well-being including health, education and income; and there exists substantial potential to raise agricultural productivity (Lulit et al., 2010).

In this strategy, agriculture was taken as the engine of national economic growth. Through ADLI, to achieve rapid growth in agricultural production, raise income for rural households, attain national food self-sufficiency, and produce surpluses which could be marketed to the urban or industrial sectors, smallholder farms, especially crop producers were initially targeted by the ADLI strategy. The government's emphasize of building the capacities of the small-scale farmer as fundamental goal in the implementation process will make use of country's huge labour force, abundant agricultural lands, diversified agro-climatic zones and sufficient water resources in the rural areas (Lulit et al., 2010). More specifically, the government introduced measures like providing the smallholder farmers with technology and better farming practices, improved seeds, fertilizers, irrigation, rural roads, and marketing services to increase agricultural production (GRIPS, 2009). A rise in agricultural output in turn was expected to stimulate industrial production by providing food and industrial materials, thus establishing a link between the rural and urban sectors. In other words, the objective of ADLI is to strengthen the linkages between agriculture and industry by increasing the productivity of small scale farmers and investing in those industries with most production linkages to rural areas. Because, the strategy assumes that inter-sectoral linkages will reinforce the growth impetus derived from increasing productivity in both sectors with the agricultural sector obtaining machinery, chemicals and consumption goods from industry in exchange of food and raw material (Moller, 2016). In this regard, the growth in agriculture was expected to cause overall economic growth through structural transformation by stimulating demand and supply. On the demand side, expansion in agricultural activities would increase demand for industrial products (both agricultural inputs and consumer goods) produced by domestic industries. On the supply side, the agriculture sector can supply food to domestic market, raw materials to industries and export products (Lulit et al., 2010).

According to the Moller (2016), as increasing agricultural productivity and linkage development requires substantial public investment and direct support policies, ADLI implementation was rather an interventionist. In addition, ADLI strategy remained as the overarching strategic framework guiding Ethiopia's development since 1993. It was also complemented by different program like Sustainable Development and Poverty Reduction Program (SDPRP) (2000-05), a Plan for Accelerated and Sustained Development to End Poverty (PASDEP) (2005-10), Growth and Transformation Program I (GTP I) (2010-15) and Growth and Transformation Program II (GTP II) (2015-20). However, the economy was growing with double digit only since 2004. For this economic growth, there is a claim that the growth is the result of a sound development policy (the ADLI). Consequently, the objective of this paper was to test empirically whether ADLI strategy had brought any significant structural break in the performance of the economy in Ethiopia.

2. AGRICULTURAL DEVELOPMENT LED INDUSTRIALIZATION'S (ADLI) PROGRAMS

2.1. Participatory Demonstration and Training Extension System (PADETES)

This was an extensive extension program which had been launched in 1994/95. In this system, packages of fertilizer, improved seed and credit, as well as information on input use and better agricultural practices were delivered to vast majority of smallholders in the rural areas by government. In this regards, improvement of productivity through extending the use of modern technology had attracted the attention of government. However, even though government had extended different packages particularly fertilizer credit package, the average agricultural output failed to bypass high population growth (Diao, 2010).

2.2. Sustainable Development and Poverty Reduction Program (SDPRP) (2002/03-2004/05)

Sustainable Development and Poverty Reduction Program was an integrated rural and agriculture development strategy launched in 2002 on account of the limited success of PADETES. It was the first full Poverty Reduction Strategy Paper (PRSP) developed and implemented by the Ethiopian government through (i) strengthening agricultural extension services; (ii) training extension agents in Technical and Vocational Education and Training (TVET) and training farmers in Farmers Training Centers; (iii) water harvesting and irrigation; (iv) improved marketing opportunities; (v) restructuring peasant cooperatives; and (vi) supporting micro-finance institutions (MoFED, 2002). In addition, following the drought of 2002/03, government initiated a safety net program aimed at protecting and building the asset of food insecure households. Furthermore, resettlement, and soil and water conservation (especially water harvesting) were widely practiced. However, heavy dependency of agricultural sector on the amount and timing of rainfall makes the output to continuously fluctuate. In addition, agricultural sector's productivity did not show significant improvement (Diao, 2010).

2.3. A Plan for Accelerated and Sustained Development to End Poverty 2005/06–2009/10

The previous agricultural development strategy including SDPRP exclusively targeted the smallholder agriculture in the rural areas. Due to their failure to improve agricultural productivity, the Ethiopian government framed another five year plan (2005/06-2009/10) called Plan for Accelerated and Sustained Development to End Poverty (PASDEP) (MoFED, 2005). PASDEP 2005/06–2009/10 made important adjustments to SDPRP 2002/03–2004/05 by broadening the policy scope from smallholder agriculture to other sectors, especially the industry sector and the urban sector. Understanding the central role of agriculture in growth, the plan focused more on commercialization and intensification of agriculture to better integrate farmers with markets – both locally and globally. The developments of large-scale commercial agriculture were also emphasized for inter sectoral linkages. To achieve these objectives the following instruments were used in the PASDEP: (i) constructing farm-to market roads; (ii) development of agricultural credit markets; (iii) specialized extension services for differentiated agricultural zones and types of commercial agriculture; (iv) the development of national business plans and tailored packages for specialized export crops (such as spices, cut flowers, fruits and vegetables); (v) area irrigation through multi-purpose dams; (vi) measures to improve land tenure security, and to make land available where feasible for large-scale commercial farming; and (vii) reforms to improve the availability of fertilizer and seeds (MoFED, 2005).

2.4. Growth and Transformation Program GTP I

To foster broad-based development in a sustainable manner the Growth and Transformation Plan (GTP I) (2010/11- 2014/15) was implemented following the Plan for Accelerated and Sustained Development to End Poverty (PASDEP). Significantly increasing the share of industry in the economy along with the rise in agricultural production was the aim of the plan. During the GTP I implementation period (2010/11-2014/15), there were positive achievements in the economic growth of the country such as the double digit growth rate of the real GDP, decline in the incidence of poverty from 38.7 per cent head count poverty index in 2005 to 29.6 per cent in 2010/11. The target of the plan was to reduce it to 22.2 per cent by 2015 (MoFED, 2010/11-2014/15). Despite the significant improvements in domestic savings mobilization over the last four years, the gap between the investment requirements and the level of domestic savings has widened. The share of gross domestic investment in GDP increased from 24.7 per cent in 2009/10 to 39.3 per cent by the end of 2014/15. This is considered to be one of the key macroeconomic challenges for the government to address in the coming years.

2.5. Growth and Transformation Plan, (GTP II), 2015/16-2019/20

Over the last decades, Ethiopia, as country, has reduced the poverty level by half. There were also improvement in basic social services like education, health care and other basic social services. However, other goals such as improvement of the quality of services across social sectors, dealing with governance structure, ensuring sustainable growth and reducing inequality related to income and gender remained challenging. In addition, humanitarian challenges arising from climatic change continued affecting the economic growth of the country. Consequently, The Federal Government of Ethiopia in its plan to direct the country toward becoming middle income and climate resilient country devised the second growth and transformation plan (GTP II). It was built on the success of GTP I. The plan will extend up to 2020. In this plan, emphasize will be a high-value crops and livestock, and market orientation.

3. GDP GROWTH AND SHARE OF AGRİCULTURE IN ETHIOPIA

Data obtained from WB data indicators and Ethiopian government's national statistics (MoFED, 2013) about GDP growth and the share of agriculture and other important sectors were summarized in Table 2. The economy of the country was dominated by the rain-fed agricultural sector (Figure 2). This heavy dependency of the country's economy on nature makes the country to have very low economic growth during the time of drought. The recurrent drought that hit the country resulted in less satisfactory economic growth in the country. In the years 1985, 1992, 1998 and 2003 on account of problems related to drought and war (with Eritrea) low real GDP growth rate was achieved in the country. During all these periods until recently, the lion share contributor to economic growth of the country was agriculture. More than half of the real GDP growth rate share was occupied by this sector. Consequently, both the performance of the industrial sector and the growth of whole economy continued to be less satisfactory.

However, recently, the economy of the country is growing steadily. Starting the year 2004, the country witnessed years of double digit in GDP growth rate. Real GDP has grown by 11.8%, 10.8% in the years 2005 and 2006-2008 respectively. Even though there is less fluctuation, the economic growth continued achieving double digit GDP growth rate in the subsequent years. For instance, in the three consecutive years of 2013, 2014 and 2015, the GDP growth rate was 10.6%, 10.3 and 10.4% respectively (Figure 1). During these years, even though sometimes service took the lion share in GDP share, agriculture continued contributing significantly. Throughout the entire period, agricultural sector continued contributing more than 40% to GDP of the country. Specifically, in the period considered, the average contribution of the sectors to GDP growth rate was 49.9% by agriculture, 36.03% by services sector and 11.5% by the industrial sector (Table 2). This shows that the Ethiopian economy continued to be agrarian by its nature even though the goal of the implementation of ADLI right from the beginning was for the structural transformation of the country's economy from economy lead by agriculture to economy lead by industry. This is even shown in the current development policy of the country (GTP II) which considers agriculture as the engine of economic growth of the country.
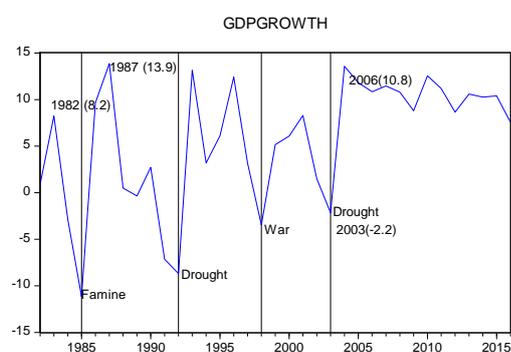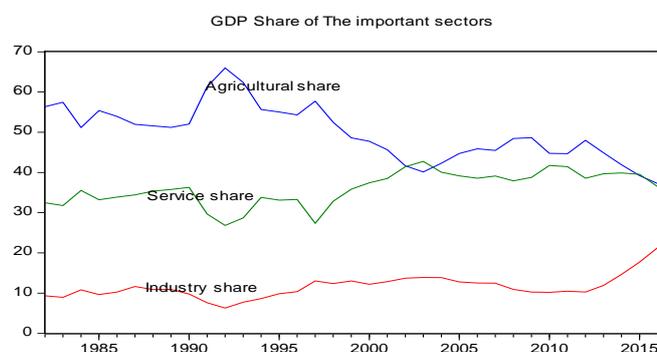

Figure 1. GDP growth rate (WB data base, 2019)

Figure 2. Share of GDP by important sectors of the economy (WB data base, 2019)

Table 2. Descriptive statistics of GDP shares of important sectors of the economy

Descriptive statistics	AGRISHARE	INDUSTSHARE	SERVSHARE
Mean	49.88189	11.52396	36.03569
Median	48.63701	10.91953	36.30579
Maximum	65.97296	21.30844	42.75016
Minimum	37.23042	6.298477	26.82844
Std. Dev.	6.826755	2.804959	4.118745
Observations (years)	35	35	35

Source: WB data base, 2019

3.1. Structural Break Analysis Methods

The structural break analysis is composed of two steps. The first is testing the stationarity of time series data. If the result of unit root test is revealed significant, testing the existence of the structural break analysis is not necessary. Because, the data series would be stationary whereby there is no change in either the level or the trend of the series. In contrast, if the unit root test statistics is revealed insignificant, there is a need to test whether the structural break is caused by any external change like policy or not. In this case, to conclude that there exist the structural breaks, the unit root test result revealed insignificant by ADF test must be revealed significant in the structural break test models. Otherwise, if the result of the structural break test model is seen insignificant for non-stationary data, the break in the series was no caused by the stated external intervention variables like ADLI in this case.

In this regards, different models were developed to test these break in the time series data. These include models to test a onetime break and models used for testing multiple breaks. In this paper, both the models were applied to test the structural break analysis of economic growth in Ethiopia with the specific emphasize of ADLI policy implemented in the country since 1993. Specifically Zivot-Andrews (1992) (onetime break models) and

196

Bai-Perron (2003) (multiple period break models) were adopted so as test the occurrence of the structural break analysis in the economic growth of the country.

4. RESULTS OF THE MODELS

In this paper, Augmented Dickey-Fuller test statistic was used to test the stationarity of the time series data of this study. The test was done for both the level data and trend data. The level data's ADF test statistic was revealed -1.999 (Table 3). This statistics value was less than all the critical values of the series at all level of the probability levels. Similarly, the test statistics result of level and trend data was also revealed non-stationary at 5% probability level (Table 4). This shows that the time series data of real GDP under consideration was not stationary both in the level and trend at least at 10% probability level. The non-stationarity of this data series necessitates testing for the significance of the structural break. In this regards, the Zivot-Andrews (1992) and Bai-Perron (2003) were applied to our data. The Zivot-Andrews test statistic value of 4.696237 as shown in Table 5 was revealed greater than the critical values of -4.58. This indicates that the structural break expressed in this case as the intervention of government through ADLI was found significant. In addition, the Zivot-Andrews test model also showed that 2004 is the year in which the structural break was happened (Table 5 and Figure 3). Thus, even though ADLI was in practice since 1993, the statistically significant structural break had happened only in the 2004. This period was the time period during which the country started recovering from drought that hit the country by implementing the continents huge safety net program as part of ADLI program.

Table 3. Augmented Dickey-Fuller test statistic for level data

Null Hypothesis: GDPGROWTH has a unit root
Exogenous: Constant
Lag Length: 2 (Automatic - based on AIC, maxlag=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.998617	0.2859
Test critical values:	1% level	-3.653730	
	5% level	-2.957110	
	10% level	-2.617434	

MacKinnon (1996) one-sided p-values.

Table 4. Augmented Dickey-Fuller test statistic for level and trend data

Null Hypothesis: GDPGROWTH has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 4 (Automatic - based on AIC, maxlag=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.444149	0.0644
Test critical values:	1% level	-4.296729	
	5% level	-3.568379	
	10% level	-3.218382	

MacKinnon (1996) one-sided p-values.

Table 5. Zivot-Andrews Unit Root Test

Null Hypothesis: GDPGROWTH has a unit root with a structural
                          break in the intercept
Chosen lag length: 3 (maximum lags: 4)
Chosen break point: 2004

	t-Statistic	Prob. *
Zivot-Andrews test statistic	-4.696237	0.039283
1% critical value:	-5.34	
5% critical value:	-4.93	
10% critical value:	-4.58	

* Probability values are calculated from a standard t-distribution
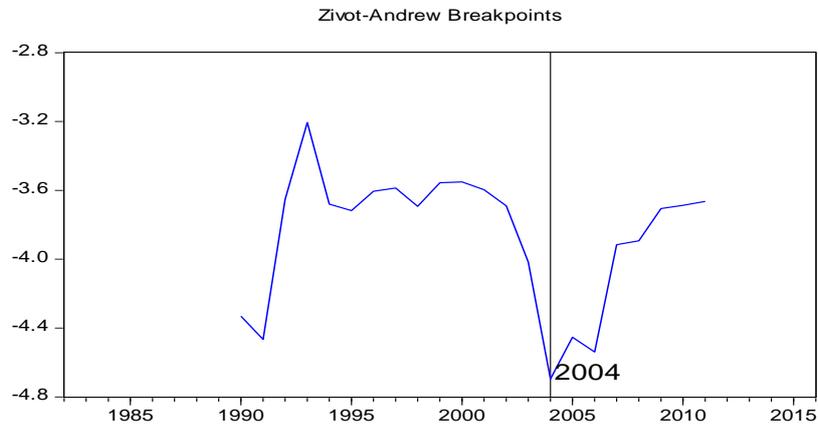*and do not take into account the breakpoint selection process*

197

Figure 3. Zivot-Andrew breakpoints test results.

In the data series, also the existence of multiple breaks was tested by using Bai and Perron (2003) multiple break analysis. The test results were shown in Table 6 in which the F-statistic of UDMax statistic (23.31731) was greater than critical values of 8.58. This indicates that, there is at least one time structural break. To know the number of the break and the time of the break, Bai-Perron tests of L+1 vs. L sequentially determined breaks and information criteria methods were applied to the data series. The result showed that, there was one time break which happened in the year 2004 (Table 7 and 8). This result is consistent with the result of the Zivot-Andrew (1992) model. Consequently, we can conclude from the two models that, there is structural break in the year 2004 and this structural break was significant. Consistent with these results, results in different statistics also showed that the economy growth of the country has shown some steady progress with double digit after the year 2004 (Moller, 2016). Furthermore, sequential Bai-Perron model was also used to identify the regimes as the policy was implemented for a long period of time. The model result classified the series into two regimes whereby 2004 was the beginning and end of the first and the second regime respectively (Figure 4 and 5).

Table 6. Bai and Perron (2003) Multiple break analysis

Breakpoint Specification
Description of the breakpoint specification used in estimation

Summary

Estimated number of breaks: 1
Method: Bai-Perron tests of 1 to M globally determined breaks
Maximum number of breaks: 5
Break: 2004

Breaks	F-statistic	Scaled F-statistic	Weighted F-statistic	Critical Value
1 *	23.31731	23.31731	23.31731	8.58
2 *	10.08571	10.08571	11.98551	7.22
3 *	7.965627	7.965627	11.46729	5.96
4 *	7.636431	7.636431	13.13038	4.99
5 *	7.995792	7.995792	17.54575	3.91

UDMax statistic*		23.31731	UDMax critical value**	8.88
WDMax statistic*		23.31731	WDMax critical value**	9.91

* Significant at the 0.05 level.
** Bai-Perron (Econometric Journal, 2003) critical values.

Estimated break dates:
1: **2004**
2: 1993, 2004
3: 1988, 1993, 2004
4: 1988, 1993, 1998, 2004
5: 1988, 1993, 1998, 2004, 2012

Table 7. Bai-Perron tests of L+1 vs. L sequentially determined Breaks

Breakpoint Specification

Summary

Estimated number of breaks: 1
Method: Bai-Perron tests of L+1 vs. L sequentially determined
    Breaks
Maximum number of breaks: 5
Break: 2004

Sequential F-statistic determined breaks:			1

Break Test	F-statistic	Scaled F-statistic	Critical Value**
0 vs. 1 *	23.31731	23.31731	8.58
1 vs. 2	8.075556	8.075556	10.13

* Significant at the 0.05 level.
** Bai-Perron (Econometric Journal, 2003) critical values.

Break dates:

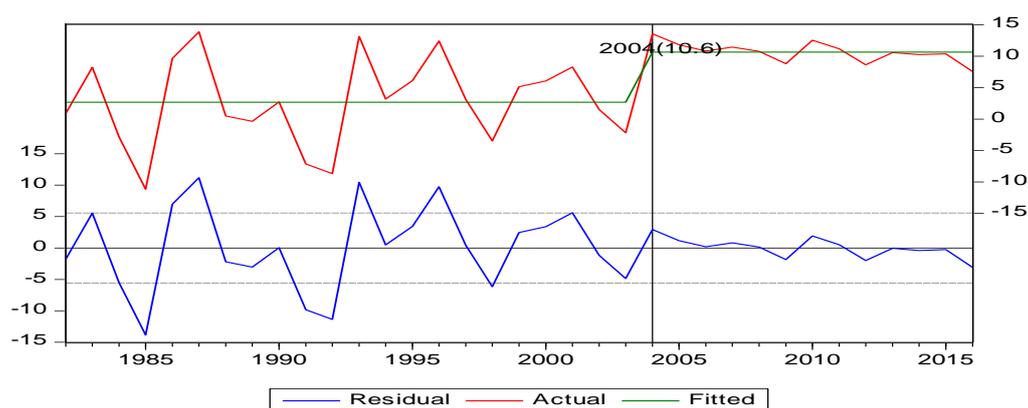|	Sequential	Repartition
1	**2004**	2004

Figure 4. Ethiopia's real GDP growth series' Breaks and regimes obtained by using sequential Bai-Perron model

Table 8. Bai-Perron tests Information criteria determined Breaks

Breakpoint Specification

Summary

Estimated number of breaks: 1
Method: Compare information criteria for 0 to M globally determined breaks
Maximum number of breaks: 5
Break: 2004

Schwarz criterion selected breaks:	1
LWZ criterion selected breaks:	1

Breaks	# of Coefs.	Sum of Sq. Resids.	Log-L	Schwarz* Criterion	LWZ* Criterion
0	1	1546.481	-115.9597	3.889970	3.939967
1	**3**	1028.851	-108.8277	3.685594	3.838233
2	5	925.3701	-106.9726	3.782753	4.041947
3	7	836.7162	-105.2102	3.885207	4.255412
4	9	767.6563	-103.7027	4.002226	4.488557
5	11	756.7011	-103.4512	4.191015	4.799406

* Minimum information criterion values displayed with shading
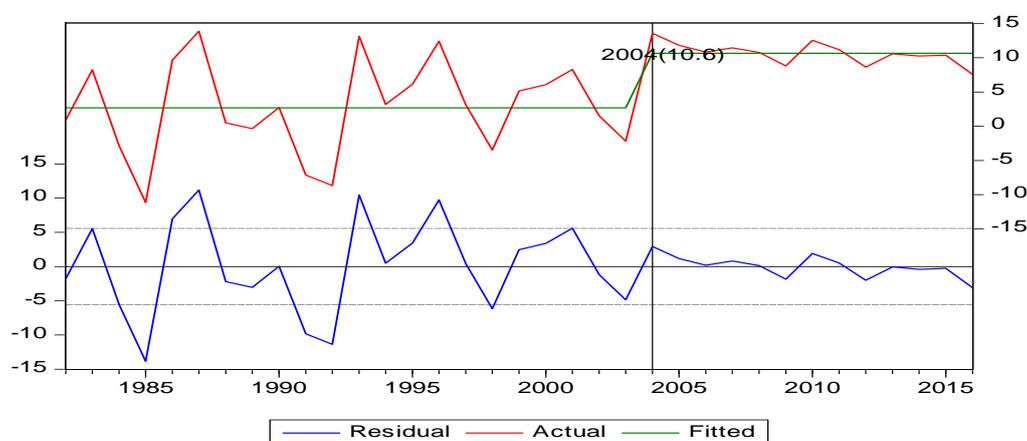
Estimated break dates:
1: **2004**
2: 1993, 2004
3: 1988, 1993, 2004
4: 1988, 1993, 1998, 2004
5: 1988, 1993, 1998, 2004, 2012

Figure 5. Ethiopia's real GDP growth series' Breaks and regimes obtained by using Information criteria model

CONCLUSION

In Ethiopia, growth of all other sectors and the whole national economy is determined by agricultural sector. Until recently, the lion share contributor to economic growth of the country was agriculture. More than half of the real GDP growth rate share was occupied by this sector. However, in the country, the incidence of poverty was very high in rural areas where agriculture is the main source of livelihoods. Consequently, to solve this problem, the national development strategy called Agricultural Development Led Industrialization (ADLI) was devised. ADLI as strategy has been justified because agriculture is the largest sector in terms of output, employment and exports; the bulk of the poor live in the agriculture-centered rural areas; considerable gaps exist between rural and urban across key dimensions of human well-being including health, education and income; and there exists substantial potential to raise agricultural productivity. Through ADLI, to achieve rapid growth in agricultural production, raise income for rural households, attain national food self-sufficiency, smallholder farms, especially crop producers were initially targeted by the ADLI strategy. The government's emphasize of building the capacities of the small-scale farmer as fundamental goal in the growth process will make use of country's huge resources in the rural areas. Measures like providing the smallholder farmers with technology and

better farming practices, improved seeds, fertilizers, irrigation, rural roads, and marketing services were introduced to increase agricultural production. A rise in agricultural output in turn was expected to stimulate industrial production by providing food and industrial materials, thus establishing a link between the rural and urban sectors. It was also complemented by different program like Sustainable development and poverty reduction program (SDPRP) (2000-05), PASDEP (2005-10), Growth and Transformation Program I (GTP I) (2010-15) and Growth and Transformation Program II (GTP II) (2015-20). The structural break of the implementation of ADLI strategy along with these programs was examined by using structural break models. The result showed that, there was one time break which happened in the year 2004 as shown in both Zivot-Andrew (1992) and Bai and Perron (2003) Multiple break models. Consequently, we can conclude from the two models that there is structural break in the year 2004 and this structural break was significant. Consistent with these results, results in Moller (2016) also showed that the economy growth of the country has shown some steady progress with double digit after the year 2004. Furthermore, sequential Bai-Perron model was also used to identify the regimes as the policy was implemented for a long period of time. The model result classified the series into two regimes whereby 2004 was the end and beginning of the first and the second regimes respectively.

REFERENCES

Bai J, Perron P. 2003. Computation and Analysis of Multiple Structural Change Models. *J. Appl. Econ.* 18: 1–22 (2003).

Diao, X., 2010. Economic Importance of Agriculture for Sustainable Development and Poverty Reduction : The Case Study of Ethiopia, IFPRI.

Gebre-selassie, A., Bekele, T., 1999. A Review of Ethiopian Agriculture : Roles , Policy and Small-scale Farming Systems.

GRIPS, 2009. Democratic Developmentalism and Agricultural Development Led Industrialization: the GRIPS Development Forum (GDF) for the first round of policy dialogue between Ethiopia and Japan in June 2009.

http://www.grips.ac.jp/forum/pdf12/JICA&GDFReport_Ethiopia_phase1/Intellectual_Partnership_for_Africa/7Final_Report_ch5.pdf

Lulit, M., Lemma, S., Behuta, B., 2010. Public Spending, ADLI, and Alternative Scenarios for Ethiopia: A Dynamic CGE Framework Analysis, Addis Ababa, Ethiopia, in: 8th PEP General Meeting Dakar, Senegal-June 2010.

Mellor, J., Dorosh, P., 2009. Agriculture and Exonomic Transformation of Ethiopia, ESSP-IIDiscussion Paper 12, IFPRI, Addis Ababa.

MoFED, , 2013. Annual progress Report of the GTP (Growth and Transformation Plan).

MoFED, 2005. MoFED: Ethiopia: Building on Progress: A Plan for Accelerated and Sustained Development to End Poverty (PASDEP) (2005/06-2009/10), Ministry of Finance and Economic Development (MoFED), Federal Democratic Republic of Ethiopia, Addis Ababa.

MoFED, 2002. MoFED). Ethiopia: Sustainable Development and Poverty Reduction Program, Ministry of Finance and Economic Development (MOFED), Federal Democratic Republic of Ethiopia (FDRE), Addis Ababa, Ethiopia.

MoFED, 2015/16-2019/20: Draft Growth and Transformation Plan, (GTP II), (2015/16-2019/20) (Unpublished draft, 2015).

MoFED, 2010/11-2014/15: Ethiopia, Ministry of Finance and Economic Development Growth and Transformation Plan, 2010/11-2014/15,Volume1: Main Text (Addis Ababa, 2010) Available from http://www.mofed.gov.et/English/Pages/Home.aspx.

UNDP, Human Development Report 2015: Work for Human Development (New York, 2015). Available from http://www.undp.org.

Moller, Lars Christian. 2016. Ethiopia's great run : the growth acceleration and how to pace it (English). Washington, D.C. : World Bank Group. http://documents.worldbank.org/curated/en/693561467988949839/Ethiopia-s-great-run-the-growth-acceleration-and-how-to-pace-it

World bank data File. Available online: https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=ET (accesseed on 2/16/2019)