Albanian Trade and Wage Inequality: Skilled versus Unskilled Workers' Case

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Abstract: This paper examines the impact of foreign trade on wage inequalities between skilled and unskilled workers in Albania. Although the relationship between trade and wage inequality has been widely studied in developing countries, still researches on this matter are scarce for the case of Albania. To investigate this matter further an Ordinary Least Square (OLS) regression is run. The data used are annual observations from 1985 to 2014 retrieved from INSTAT and Statistical Yearbook of Albania 1991, including the wage ratio between skilled and unskilled workers according to professional categories. Empirical analyses suggest that trade has contributed to increasing wage inequality in Albania, in contradiction to what the traditional view of Heckscher- Ohlin theorem claims. The results also indicate that trade accounts only partially in wage inequalities. Other factors like technological bias, demographic variables and net exports may be accountable in increasing inequalities on skill premium. The rising wage inequality should be a case of concern for the country's policymakers to come up with appropriate solutions against poverty and inequality, and an important area of study for future researches to better determine the factors behind the wage gap.

Keywords: Skill premium; Trade; Heckscher- Ohlin; OLS regression

JEL Classification: E24

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1. Introduction

Globalization in our modern world has been accompanied with impacts within and between different societies. In the field of international trade, there have been a large number of studies regarding the distribution of wages and wage inequality among countries.

The primary purpose of this study is to present the results of a new empirical analysis between trade and wage inequality for the case of Albania from 1985 to 2014. In this respect, the paper can be an added-value in better understanding the channels through which the wage income is affected. Secondly, it indirectly draws attention to one of the most problematic issues of Albania, poverty levels. The empirical investigation between trade and wage gap can be one of the key findings for explaining existing poverty levels and present mitigation in the country. Furthermore it can serve as a starting point for other empirical researches on the matter.

According to Fairris (2003), both developed and developing countries have experienced rising levels of wage inequality. Surprisingly enough, even trade has shown same rising patterns all over the world. According to World Bank, between 1965 and 1990 the share of output exported rose from 17 to 25 percent for middle income countries. The increase in exports and even in imports has maintained an

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upward trend in the recent years. Of course the fact that both trade and wage inequalities have increased together does not prove that one causes the other. Many different factors have changed as well, such as technology; demographic regulations and so on.

For countries in transition such as Albania, considerable economic and political changes have occurred and thus made impossible to establish some stable levels of wage inequality. This study focuses on the effects international trade has brought to Albanian wage levels from 1985 to 2014. The reason for examining the Albanian case is primarily to understand the apparent trend of transition economies toward greater wage inequality. Secondly, this case can contribute in the studies regarding poverty as a popular social issue in the country. As a post-communist country the case of Albania offers a natural experiment where the effects of trade on wage inequality can be empirically identified.

After the Second World War, with the installment of the communist regime in the country, a deterioration of relations with the Western world followed. The main trade partners of Albania became the Soviet Union and after that China, which supplied Albania with foodstuffs, textiles and machineries used in heavy industry. All private enterprises were shut down and nationalized, all investments, prices and wages were determined by the authorities. Wages varied according to the sector people were employed-state sector, cooperatives sector, and production and nonproduction sector- but were the same within the sector. The economic conditions of the country worsen by the time China cut off the political and economic relations with the Albanian communist party. Albania entered into stagnation, although the party denied any possible retrogression of the economy. During the communist regime there was a lack of macroeconomic data, and even when some of them were made available did not accurately describe the real economic situation of Albania. The deficit in real macro data makes it difficult even today, to accurately assess the gravity of the economic situation over that period.

With the collapse of the communist regime, Albania entered democracy and market economy. The focus was on encouraging private investments and liberalizing trade. Although the political and economic situation was arduous in the midst of '97 as a result of the pyramidal schemes collapse, the government managed to tackle the situation. By the end of 2000, the magnitude of trade liberalization was very big. Joining the World Trade Organization and signing different trade agreements with various countries spurred tariff reduction. Furthermore the country constituted an excellent location for foreign direct investments, especially because of the low labor cost and the favorable taxing system.

The economic development, partly as a result of trade openness, was accompanied by poverty incline and a new larger wage gap between workers. Shifts from an agricultural economy to an industrial one contributed to an increase of unemployment levels. During the recent years Albania has continued to face a non-negligible wage inequality. Different factors can be accountable for wage inequality in Albania. According to Veneziani (2010), education level and gender are two inequality-increasing components in Albanian labor market. However, the relation between trade and wage inequality in Albania has still not been examined and there are no previous works or conclusions on this matter.

The remainder of the paper is organized as follow. The second sector gives a theoretical implication of the effects trade has had on wage inequality among developing countries, in relation to Heckscher-Ohlin theorem. The third sector gives an insight of the Albanian trade openness, agreements and balance of trade trend over the years. The fourth section introduces labor market evolution from 1985 to 2014. In

sector five the methodology used and data sources are explained. It also empirically examines trade effects on wage inequality by using time series data. Sector six gives the conclusion of the analysis.

2. Theoretical Framework and Literature Overview

The effects of international trade on wage inequality have been much debated in the recent years for both developed and developing countries. The economists, when analyzing the links between wage inequality and trade, make use of the classical Heckscher-Ohlin (HO) theorem. The theory predicts that under the condition of free trade, countries will choose to specialize in the production and export of the goods that use the abundant factor, and will import the goods that use the factors which are relatively scarce within their country's borders.

By assuming two countries, Home and Foreign and two production factors, skilled and unskilled labor force, the theory predicts that the price of exported unskilled-intensive goods will increase, whereas the price of imported skilled-intensive goods will eventually decrease. The Stolper-Samuelson (SS) theory- derived by HO theorem- is than activated. The theory (1941), predicts that the real wage return on the factor used intensively will increase when the country enters in a free trade regime. Conversely, the wage of skilled labor (the scarce factor) will decrease and therefore a reduction in the wage inequality is achieved. On the grounds of SS theorem results, the traditional HO framework is usually used to argue the positive impacts of trade on wage distribution for developing countries. These positive effects lead to the supporting of free trade regimes and governmental policies that reduce tariffs and embrace trade liberalization. Accordingly, this paper uses HO approach to study the effects of trade on Albanian wage distribution between skilled and unskilled labor force.

However, there are researchers who have used alternative HO frameworks that conclude an increase in wage inequality. For instance, if identical technology- one of the central assumptions of HO theorem- is relaxed the demand for skilled labor force will increase in both developed and developing countries. According to Silva (2007), technology transfers from developed to developing countries raises the average skill intensity on production and thus raises the demand for skilled labor. The result will be a wider wage gap between skilled and unskilled workers. Numerous pas studies have investigated the relation between trade and wage distribution and the conclusions are ambiguous. A classification of the results can be grouped in (i) studies which concluded that trade shrinks the wage gap and (ii) studies that concluded larger wage gap because of trade openness.

In the first group, different researches have concluded that trade reduces wage gap in accordance to HO theorem. Jensen and Rosas (2007) found for the case of Mexico that FDI leveled the income within the country. For the case of India, researchers Mishra & Kumar (2005) found that tariff reduction in the sectors with the highest proportion of low skilled workers increased their relative wages to skilled workers. Thus, suggesting that trade openness leads to lower wage gaps. Sachs and Shatz (1996) reported that the positive impact of international trade on the poor in developing countries outweighs any simultaneous increase in inequality.

However not all studies converge to the traditional view of Heckscher-Ohlin. Galiani and Sanguinetti (2003) found for the case of Argentina that trade larges the wage gap between skilled and unskilled labor force. Nonetheless, it was not among the main causes that increased wage inequality during the '90 in the

country. Hanson and Harrison (1999) put forward that the dramatic reduction in trade barriers for unskilled-sectors of industry contributed in the growth of wage inequalities in Mexico. The exposure to the strong competition coming from countries like China which are more low- skilled labor abundant than Mexico, has contributed partly to this effect. Another study suggests that in contrast to the HO model, the rise in skill premium in Mexico occurred because of outsourcing or capital skill complementarities. (Airola, 2008) Beyer, Royas and Vergara (1999) conclude that trade openness has risen the skill premium in Chile. One of the reasons may be the changes in the productive structure of the economy.

Evidence coming from less-developed countries emphasizes a variety of other factors that account for in wage gap. (Silva, 2007) High disease burdens, refugee populations and limited capacity to deal with natural disasters can contribute to widen the gap of the wage, along with international trade. In general, studies that have found that trade impacts wage gap growth, argue that skill-biased technological change and trade with countries pay lower wages can be an explanatory variable behind the shift in relative demand for skilled workers. The trade openness is accompanied with technological innovations being imported by developing countries, which accordingly require skilled labor force. The higher the demand for skilled workers, the greater the return in wage income and the wider the gap between white and blue collar workers will be.

The studies conducted in Albania on the relation between wage inequality and trade openness are very scarce. Most of the researches concerned with studying Albanian trade have linked it only with the positive impact it produces for the economic growth. (Yzeiraj, 2013)

Other studies have shown a negative relation between FDI and GDP growth rate for Albania. (Shehu & Turan) Wage inequality has been studied depending only on demographic and job characteristics, professional and industry affiliation. (Veneziani, 2010) However, no study's main objective is to assess the existence of a relation between trade and the deteriorating wage gap in Albania and no evidence is shown that this economic growth outweigh wage inequalities resulting from trade, if there are any.

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3. Albanian Trade and Trade Agreements

After the year 2000 Albanian trade underwent substantial progress. On September 8, 2000, Albania joined the World Trade Organization (WTO). WTO aim is to ensure that trade flows move freely with greater ease and protect traded products from discrimination and void trade wars. WTO currently has 153 member countries and account for 97% of all world trade. Since the WTO agreement was signed, Albania has been working on bringing its policies in line with those widely used in international trade. The advantages of joining WTO for Albania include the increase in credibility to foreign investors that there will be no sudden change in economy or trade policies, and thus increase the foreign direct investments (FDI).

Albanian commitments under World Trade Organization include three main areas; trade in goods (GATT), trade in services (GATS) and intellectual property (TRIPS). The country was obliged to reduce the tariffs and other trade barriers on goods, especially on products coming from agriculture and industry sector. Furthermore, banks, insurance companies, transport companies, telecommunication firms that wanted to extend their activities abroad could benefit from the same rate for a freer and equal trade. On December 19 of 2006, Albania, Bosnia and Herzegovina, Croatia, Macedonia, Moldova, Montenegro,

Serbia and Kosovo signed an agreement to amend and enlarge the Central European Free Trade (CEFTA). CEFTA aims to expand the trade in goods and services and foster investments between member countries. The process of liberalization and facilitation of Albania trade did not stop. On May 1, 2008, Albania signed a free trade agreement with Turkey to increase and enhance the economic cooperation between two countries. The nature of this agreement is asymmetric, meaning that the degree of liberalization is different for different products. Mostly, industrial products are almost completely liberalized from custom duties in contrast with agricultural products. All custom duties for goods originated in Albania with industrial nature and imported in Turkey have been abolished. Whereas custom duties on some of the Turkish originated goods imported in Albania have been abolished or progressively reduced.

In April of 2009, Albania achieved an important goal towards European Union (EU) integration, when it signed the Stabilization Association Agreement (SAA) with EU. The overall requirements of SAA regarding the trade liberalization include the establishment of a free trade and area with countries in EU region, complying with WTO standards and requirements and adopting internal acquits related to free movement of goods, capital and people. (Mancellari, 2004) Moreover, at that same year, Albania signed another free trade agreement (FTA) with the European Free Trade Association (EFTA), composed by Liechtenstein, Norway, Iceland and Switzerland. The FTA provides for both EFTA countries and Albania to abolish all tariffs on industrial products, including marine products, like fish. Being part of WTO and signing different trade agreements facilitated and accelerated the Albanian trade liberalization process. Trade barriers such as tariffs were reduced substantially not only for exported goods and services but also for imported ones. This prompted the incline of exports and imports for the country, even though Albania still remains a net importer. Since the country membership in the World Trade Organization the tariffs have been designed and implemented as to comply with the WTO regulations and standards. Albania's average applied most favored nation (MFN) tariff on imported agriculture products is 8.8% and the highest is 15%. However, these values are different with the countries Albania has signed FTA. In 2008 the value terms of most of the agriculture products were originated from the EU. However, as shown from the table below Russia was the main source of cereals for the year 2008 and Brazil was the first supplier of meat products. By that year, Albania trade freedom index was 2.9% higher compared to the world's index, and the difference has been inclining since then.

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Table 2. Imports of Agricultural products (WTO definition) by main trading partners, 2008

Product	Value of imports, (US$ million)	Main trading partners		
		Principal	Second	Third
Cereals	136.0	Russia (26.7%)	Hungary (15%)	Ukraine (8.9%)
Beverages, spirits and vinegar	83.0	Italy (29.9%)	Greece (22.3%)	Austria (20.9%)
Tobacco and substitutes	81.8	Germany (35.2%)	Greece (28.9%)	Poland (15.9%)
Raw hides and skins (excl. fur), and leather	76.8	Italy (96.4%)	India (1.4%)	Spain (0.6%)
Fats and oils	75.7	Hungary (19.5%)	Ukraine (13.7%)	Bulgaria (13.2%)
Meat and edible offal	68.8	Brazil (38.9%)	United States (16%)	Italy (15.8%)

Preparations of cereals, flour, starch or milk	59.8	Turkey (38.7%)	Italy (23.9%)	Bulgaria (15.3%)
Edible fruit and nuts	57.0	Italy (35.8%)	Greece (27.5%)	Ecuador (25.6%)
Sugars and confectionary	44.6	Brazil (80.5%)	Turkey (6.5%)	Greece (2.9%)
Live animals	41.7	Bulgaria (54.9%)	Hungary (11.9%)	Greece (11.8%)

From the year 2011 until 2014, the exports have experienced an upward trend. The annual average of exports increased 8.9% according to INSTAT. Contrary, imports decreased during the period between 2012 and 2013. However generally they have maintained a positive growth of an average 2.9%. The trade deficit has improved these last four years, decreasing with a rate of 0.5%. The map of Albanian exports has been diversified comparing to the years before 2011. Nonetheless, Italy (EU) remains the first trade partner, occupying 50.9% of 2015 total exports. The other main export partners include Kosovo (part of CEFTA), Spain and Malta. The exports with the EU countries and CEFTA countries have increased with a rate of 3% and 15.4% respectively. The exported products that dominated these five years are textile products and footwear. For 2015 the most exported goods comprise mineral products (26.5%), textiles (18.3%), footwear (18.2%) and base metals (14.1%).

On the other hand, the products dominating Albanian imports from 2011 to 2015 were "machinery, mechanical and electrical equipment", "mineral products", and "textile products." The base tariffs for these imports vary from 0.06 for electrical equipment to 0.10 for machineries, textiles and minerals. Since Albania is part of EFTA, CEFTA, Turkey Free Trade Agreement and SAA the tariffs applied for all the above-mentioned imported goods are 0.00. The largest weight on Albanian imports is carried by Italy with 30.0%. The second partner is China with 8.6%, and the third is Turkey with 8.0% of total imports. In 2015 imports from EU countries decline by 5.4%, while imports from CEFTA countries increased by 3.2% according to INSTAT.

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4. Albanian Labor Market

The Albanian labor market has undergone substantial changes from the communist regime until now. During the years 1960 to 1990 the agriculture sector accounted for half of the total employment. However a great attention was given particularly to the industrial sector during the communist era. The labor force was classified within two different groups, the employees who were considered as the skilled labor and the workers, mainly hired in the agriculture sector and considered as the unskilled labor force.

After the communist regime fall, Albania entered a transition period followed by high unemployment levels. Most of the factories became idle, from textile to the ones operating in the heavy industry (chromium-ore). According to the statistics the unemployment rate in 1991 hit the record of 30%. However, unofficial estimates in that year show a 50% rate of unemployment in Albania. Nowadays, the labor market has shown visible progress. The unemployment rate has fallen up to 17.5 %. Nonetheless, there exist drastic differentials in the employment levels between the north, central and southern region of Albania.

4.1. Labor Market during the Communist Regime

The communist regime was accompanied with the destruction and the abolishment of all types of private businesses and properties. Since everything was transferred and considered as "state-owned", the workers were hired in the public sector. The agriculture sector accounted for 55.6% of total labor force in 1960. The industry sector, construction and transportation followed. The percentages changed from 1960 to 1980 where the number of workers increased substantially in the industrial sector from 15.1% in 1960 to 21.8% to 1980. In 1980 the state sector employed 655 employees only in the government bureaucracy. This number increased up to 908 employees in 1990. Whereas trade-catering and transport sectors were liable only for a small part of labor force; 19 and 22 workers respectively for the year 1980.

Statistics on the women labor force show that they accounted for more than the half of labor in the agriculture sector from 1980 to 1990. Also, they had a significant weight on the education sphere during the communist regime, accounting for 52% of total employment. The yearly average wage for an employee working in the government bureaucracy, transportation, education or health service was 6410.0 ALL in 1980 and 6579.0 ALL in 1989. The education represented the sector with the highest wages within the period 1985 to 1990, where the monthly average wage was 602.0 ALL in 2985.

On the other hand, the yearly average wage of a worker who was considered as the unskilled labor force compared to the first group, was 6041.0 ALL in 1980 and increased to 6252.0 ALL in 1985. The agriculture sector's monthly wages were approximately 370.0 ALL in 1985, the lowest compared to all the other sectors of the economy.

Education played an important part as a determinant of wage level. The work force was divided into categories that represented the skill level of employees, from simple workers to engineers and doctors. There were seven main categories with the respective wage levels from an average of 420 ALL to 700 ALL per month. However, since all the employees in the same category were paid the same wage, regardless their efficiency and work commitment, several problems were generated. First workers' productivity would fall and second the free rider problem was common.

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4.2. Post- Communist Labor Market

The fall of communist regime and the establishment of democracy were accompanied with several problems which had also an impact on the country's labor market. Destroying existing firms, such as those operating in the industry sector (chrome-ore), brought a large number of unemployed people. Mainly structural unemployment prevailed because of a mismatch between the workers' skills and the demanded skills in the labor market. Meanwhile the service sector had started to develop and new job opportunities were available. At the same time trade and the construction sector underwent major expansion. Nonetheless, the majority of people employed were males, whereas the female labor force participation rate was low during this period.

One of the reasons might be that working in the trade or construction sector was considered a "men's job". The unemployment level still remains an area of concern for policymakers, since it has not reached the desired level. On 2012, the unemployment rate showed an increasing trend from around 13% to 17.7% in 2015. The youth unemployment especially is considered as the main issue. The statistics show that from 2012 to 2015 the number of unemployed people aged 15 to 29 years old has escalated quickly from 74,631 in the first quarter of 2012 to 100,415 in the last quarter of 2015.

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A disproportion between the skills required in the labor market and the skills supplied from the labor force may be one of the causes for unemployment. The Albanian labor market is exhausted with professional from the economic and law sector, while there is a lowering demand for this profession. An intensification of the career offices in high schools may at some extent solve the problem of mismatch between demand and supply.

From 1995 to 2010 the majority of employed population worked in the private sector, whereas the number of the employees in the public sector decreased from 276 in 1995 to 166 in 2010. The main private sector that accounts for the largest number of employed people is the agriculture private sector. However, after the year 2000 it has maintained a constant number of employees.

At the same time the non-agriculture private sector is gaining importance. From 1995 to 200, according to the Bank of Albania, the number of people employed in this sector has continuously increased. The trade sector appears to be the one with the largest number of workers, followed immediately by the manufacturing industry. This latter is one of the main producers of Albanian exported goods.

The wage level as well varies according to the economic sector and the professions within and between the public and private sphere. The average wage has increased substantially from 17,218 ALL in 2000 to 43,625 ALL in 2010. The employees working in professions such as legislators, managers, engineers earned about 73,450 ALL in 2010 and 82,417 ALL in 2014, according to INSTAT. The least paid professions were simple workers employed in the agriculture sector and manufacturing industry. Their average wage was 33,799 in 2010 and 37,050 in 2014.

According to INSTAT publication on the labor market 2015, the gross average monthly wage for employees in the sector of financial and insurance activities, information and communication, mining, electricity and gas was above the average level of 54,205 ALL. While still, employees in the manufacturing sector's earnings are below the average level. The top five most paid occupations for 2015 were administrative and commercial managers, information and communication technology professionals, business and administration professions and chief executors, senior officials and legislators. The gross average monthly wage is lower for low-skilled professions such as farmers, fishers, hunters, food processors assistants, wood working and other craft related trade workers.

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5. Methodology and Empirical Results

In order to study the effects of trade liberalization on wage inequality, the paper is expanded on earlier studies and uses the classical Heckscher-Ohlin theorem for constructing the model. Under this assumption it is predicted that free trade should decline wage inequality within a country. Thus the null hypothesis under study is that Albanian wage inequalities between skilled and unskilled workers decrease with trade openness.

5.1. Data Sources and Construction of Variables

The dependent variable used in the analyses- wage ratio- is calculated as the ratio between the annual wages of skilled to unskilled workers. The wages 'data are taken from the Statistical Yearbook of Albania 1991 for the period 1985 to 1991 and the remainder is taken from the Institute of Statistics of

Albania (INSTAT). Skilled workers are here related to the category of managers, professionals and technicians.

Unskilled workers are considered as the labor force under the category of simple clerks- constituted by assistants and salesperson- and workers. From 1985 to 1990 the Statistical Yearbook of Albania classifies the labor under two categories, "employee" (punonjës) and "worker" (punëtorë) respectively.

These terms used under the communist regime comprise people working as engineers, professors, managers and doctors in the first group, and in the latter are categorized the labor working in the cooperatives sector and simple clerks.

Figure 1 shows that the relative wage of skilled workers during the communist era vary little from the wage of unskilled workers. With the country entering democracy, the wage ratio escalated quickly from 1.00 to 2.4 in 1996. Between 1997 and 2007 it has been fluctuating around 2.2. The ratio, however, exhibits an upward trend recording an increase to 2.5 points after the 2008 financial crisis.
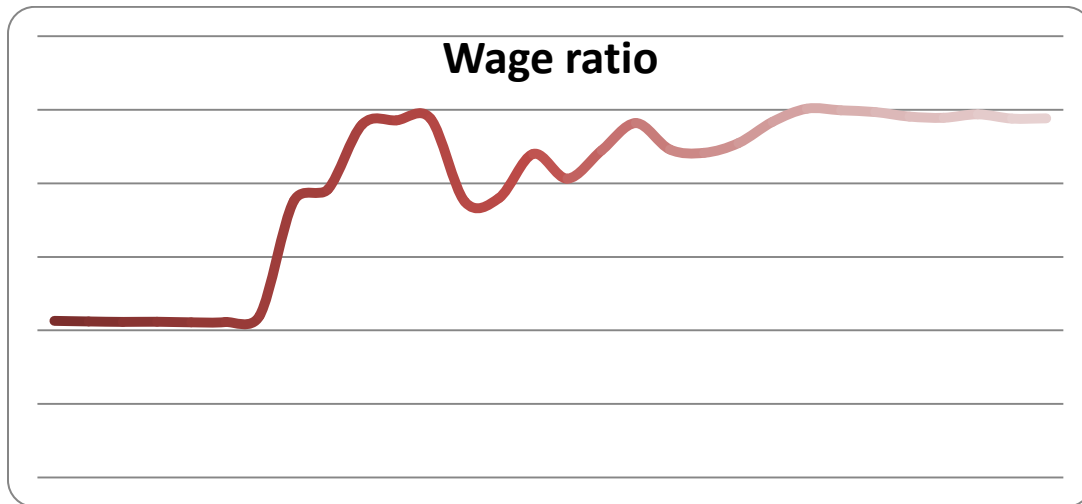

Figure 2. Wage Ratio

Previous literature has linked wage inequality with several explanatory variables. Studies on both developing and developed countries conclude that economic growth (Majumdar & Partridge, 2009), unemployment (Rice & Lozada, 1983), gender, education and political stability as possible explanations to inequality. The direction of these influences and the degree of influence may be dependable on the characteristics of the economic system and the overall level of development of the country. (Kaasa, 2005) However evidence for the case of Albania pointed mainly economic growth and unemployment (Veneziani, 2010) as determinants of wage inequality. Both of these variables exhibited positive relation with the dependant variable, wage inequality.

Most of the researches, that treated the topic of trade openness' effect on wage inequality, constructed their empirical models by using variables such as tariffs and import licenses. (Hanson & Harrison, 1999) Ghazali (2009) on estimating the trade openness effect in Tunisia uses three different proxies being cognizant of the difficulties to envisage a perfectly satisfactory openness measure. For instance, the

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research employs the ratio of imports and exports relative to sector value added for each sector of the economy, and the custom duties on imports that better allow catching the trade protection policies in Tunisia over the period 1975-2002. The appliance of the variable tariff is also present for the case of India when trying to explain trade liberalization impacts on wage inequality. (Mishra & Kumar, 2005) The explanation behind the utilization of these variables is linked with the fact that tariffs and import licenses represent the trade protection policies of a certain country.

Thus, in order to carefully analyze the channels through which wage inequality is affected, the study takes in consideration three explanatory variables: trade freedom index to assess the trade effect, economic growth or conversely the GDP growth rate and unemployment rate of the country from 1985 to 2014. The time frame chosen can serve to better understand the trade openness effect after the communist regime.

Table 3. Explanatory Variables

Name of variable	Definition
Trade Freedom Index	The Trade freedom index is based on two indicators: the trade-weighted average tariff rate and non-tariff barriers (including quantity, price, regulatory, customs and investment restrictions, and direct government intervention).
Economic Growth	The rate of change of real GDP
Unemployment Rate	Refers to the share of the labor force that is without work but available for and seeking employment.

Data on trade freedom index have been retrieved from the Heritage Foundation on Index of Economic Freedom. The index is measured in a scale from 0 to 100 where the highest value indicates a respective high trade freedom regime. Albania has reached an index of 1.1 higher than that of the European Union for the year 2014. Data on economic growth and unemployment rate of Albania have been taken from the Global Economy website, that provide economic data using multiple official sources comprising World Bank, World Economic Forum, UNESCO etc. All data are annual observations for the country.

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It would have been convenient and more accurate to include in the model the technology index or innovation index that measures the advances in technology and market sophistication, in order to assess the technology effects on wage inequality as some literature suggests. Unfortunately, there is a deficit of data for Albania and it is impossible to correctly estimate a relationship among variables, if any. Figure 2 allows assessing the evolution of wage inequalities relatively to trade openness. The abolishment of trade barriers is accompanied with an increase of wage inequality. Even though both show an upward trend through the years, it is evident that some regions of wage ratio graph do not coincide with those of trade openness index. This may suggest that other factors, rather than trade openness can contribute to wage inequalities among skilled and unskilled workers.
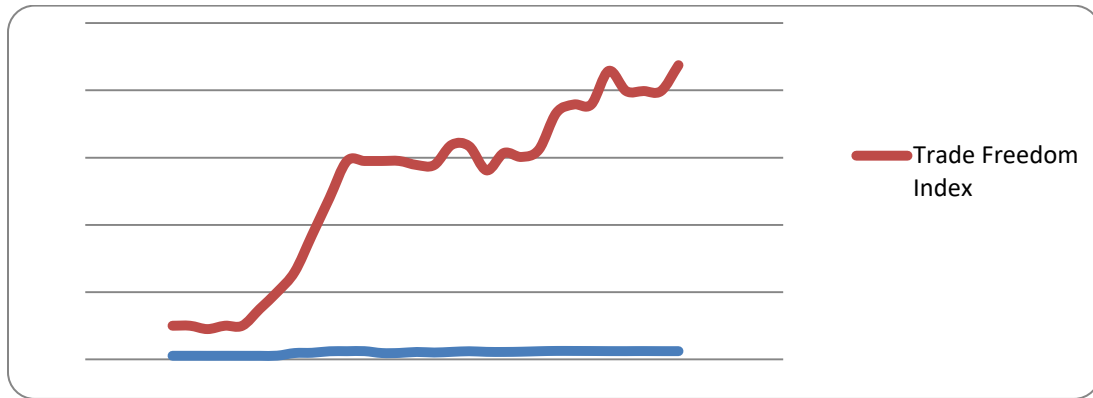
Figure 3. Wage Ration and Trade Freedom Index

5.2. Model Approach and Empirical Results

In this section the paper studies whether trade liberalization has any identifiable effect on wage inequality between skilled and unskilled workers in Albania. To explore the relationship between these variables an ordinary least square (OLS) regression is run. To test the hypothesis that trade openness reduces wage inequality (Heckscher-Ohlin and Stolper- Samuelson), the following regression function is estimated.

Equation 1. Regression Model

$$W_s/W_u = \beta_0 + \beta_1\,Freedom_t + \beta_2\,Growth + \beta_3\,Unemployment$$

Where:

W_s/W_u	represent the ratio of average annual wage of skilled to unskilled workers
β_0	represents the intercept
β_1	represents the slope coefficient that gives the rate of change in the average value of W_s/W_u as Trade Freedom Index changes by one unit holding other variables constant
$Freedom_t$	represents the independent variable Trade Freedom Index
β_2	represents the slope coefficient of Economic Growth
Growth	represents the independent variable Economic Growth measured with GDP growth rate
β_3	represents the slope coefficients of Unemployment rate
Unemployment	represents the independent variable of Unemployment rate of workers in Albanian labor market

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A priori, based on past studies and literature the expected sign for both Economic Growth and Unemployment should be positive, whereas the expected sign for Trade Freedom Index should be negative, exhibiting a negative relation between trade openness and wage inequality. The results show that the estimated coefficients of the variables Growth and Unemployment converge to the expected results. Analogous to the previous conclusions and literature, Albanian economic growth and

unemployment rate affect positively the wage gap. Most authors argue that the economic development of a country is linked to the increasing demand for skilled labor and as a consequence there would be a decreasing trend in the demand for unskilled works, leading to higher unemployment among this group.

Dependent Variable: WAGE_RATIO
Method: Least Squares
Date: 03/23/16   Time: 00:33
Sample: 1985 2014
Included observations: 30

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.768427	0.089876	8.549812	0.0000
ECONOMIC_GROWTH	0.017360	0.004064	4.271219	0.0002
TRADE_FREEDOM_INDEX	0.017037	0.001319	12.91578	0.0000
UNEMPLOYMENT_RATE	0.021523	0.006014	3.579031	0.0014

R-squared	0.928216	Mean dependent var		2.002257
Adjusted R-squared	0.919934	S.D. dependent var		0.558728
S.E. of regression	0.158098	Akaike info criterion		-0.727639
Sum squared resid	0.649868	Schwarz criterion		-0.540813
Log likelihood	14.91459	Hannan-Quinn criter.		-0.667872
F-statistic	112.0663	Durbin-Watson stat		1.556397
Prob(F-statistic)	0.000000			

Figure 4. Regression Results

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Economic growth and unemployment rate increase wage gap by 1.7% and 2.2% respectively for every unit increase in those variables, as shown from the coefficients. Both variables are reliable and significantly different from zero at the one percent significance level as shown by the t-statistics and their p-values. Their respective standard errors are small, thus concluding that the prediction is accurate.

However, the main attention of the paper is whether the variable Trade Freedom index would have a negative effect on Albanian wage gap. As shown from the empirical analysis above, the estimated coefficient is not as expected and trade openness does impact positively the wage inequalities with a 1.7% growth for every unit increase in the $Freedom_t$ variable.

The result is significant at the one percent significance level as shown from the t-statistics and its corresponding p-value. Consequently, the paper finds possible that trade openness is responsible of wage inequalities among skilled and unskilled labor force. The positive result in this paper is obviously in contradiction to the traditional HOS theorem, but is similar to the findings of other recent researches on developing countries such as Mexico, Argentina, and Tunisia etc.

The adjusted R-squared is approximately 0.92, meaning that 92% of the variation in the dependant variable wage ratio, is accounted for by the variation in the independent variables. Also the F-statistic value and its p-value conclude that the overall model is significant. Furthermore, by checking on the standard error of the regression, it can be concluded that the model is precise and the predicted values do

not vary much from the observed ones, since the S.E. of regression is 0.158 approximately. The Durbin-Watson statistics shows that for one percent level of significance there is no autocorrelation in the model, since the d value, which is approximately 1.56, is higher than the upper critical value. It is important to notice that the model has taken in consideration only three independent variables respectively economic growth, and trade freedom index and unemployment rate. However, previous literature has linked wage inequalities even with literacy rate of the labor force.

Unfortunately the data available for Albania did not include literacy rate during the communist regime and until 1993 there was no measurement of such rate. Moreover, other researches on this matter have included another relevant factor impacting wage gap, the relative demand shift favoring the skilled workers. The change in this factor can occur due to skill biased technological change and shift in product demand either from domestic or international markets. Thus, the missing variable can catch the effect of technology changes in wage inequality in Albania.

In addition, Albania remains a net importer regardless its progress. The theory predicts that the real wage return on the factor used intensively will increase when this country enters a free trade regime. However, Albania exports less of its "unskilled-worker product", which is the intensively used factor, in comparison to the scarce imported factor, which is the "skilled-worker product".

On the other hand, the dependable variable wage ratio is calculated based on a constraint range of professions that include managers, prosecutors, technicians, clerks and workers. Nonetheless the range of professions in Albania labor market after the communist regime offers a wider variety that the ones which the paper takes in consideration. The wages corresponding to the professions not included in the model can vary considerably from the wages that are actually used to calculate the variable wage ratio, especially those of the private sector of the economy.

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Another problem arises when calculating the wages according to the professions in Albania. Even with all the legal regulations and provisions on the labor market there are still cases where the employers do not fully declare the wage paid to their employees to avoid payments of social securities. The calculations presented here are based on the data retrieved from wages paid through the banking system and thus there is no information on the real value of the wage. Eventually the wage gap can be more or less wide than calculated.

6. Conclusion

Different studies trying to explain wage differentials among skilled and unskilled labor force in developing countries have been elaborated and published. Results vary from country to country, some supporting the traditional view of Heckscher-Ohlin and others contradicting it, by concluding that trade is in fact accountable for wage inequalities.

Albania is an interesting case study, since it offers a natural experiment by being an ex-communist country, for the purposes of trying to assess the impact of trade on inequality. The country trade has evolved after the fall of communist regime. Albania has signed different trade agreements, intending to abolish trade barriers by facilitating and increasing gains from trade. At the same time wages between

skilled workers employed in professions such as managers, engineers etc. are almost two times higher than the earnings of unskilled workers.

Studies conducted on this matter, have concluded that factors such as gender, education, unemployment rate, GDP growth rate have impacted wage inequalities. Little attention has been given to researches that consider trade as a force behind these differentials. Based on the Heckscher-Ohlin and Stolper-Samuelson, Albania trade is expected to decrease the wage inequalities among skilled and unskilled workers. However, from the empirical results, it is obvious that trade does in fact deepen these inequalities. Different factors can be plausible in explaining this result. First, the wage calculated for Albania is within a constrained range that does not include all the professions in the labor market, thus making suspicious the measured wage gap. Second, variables such as the relative demand shift that includes also the technological bias and the literacy rate variable are not included.

The last but not the least, Albania still today remains a net importer, thus even though the country specializes in the "unskilled-workers exported goods", the imports remain considerably higher. Overall, it can be said that it is important to continue the research on how trade impacts wage inequalities, because it can serve to design policies in reducing the poverty level in Albania.

7. Acknowledgement

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8. References

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