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## DO INFLATION AND ECONOMIC GROWTH SUBSTANTIALLY AFFECT YOUTH UNEMPLOYMENT? EVIDENCE FROM 20 EMERGING ECONOMIES

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### Abstract

The main objective of this paper is to discuss how inflation and economic growth affects youth unemployment in emerging economies. Within this study, the effect of inflation and economic growth on youth unemployment was tested for 20 emerging economies (Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Russia Federation, South Africa, Thailand, Turkey) with the data covering the period of 1991–2016. The relationship between the variables was tested via second generation panel cointegration and panel causality tests. According to the findings of Durbin-Hausman panel cointegration test by Westerlund (2008), there is a cointegration relationship between variables. In addition, Dumitrescu-Hurlin (2012) panel causality test results have indicated that there exists statistically significant bidirectional causality between inflation and youth unemployment and also between economic growth and youth unemployment. Based on these results, it is possible to say that inflation and economic growth substantially affect youth unemployment and the direction of the effect is negative on youth unemployment. That means positive developments in inflation and economic growth lead to a decline in youth unemployment rates for selected emerging economies.

**Keywords:** Youth unemployment, Inflation, Economic growth, Emerging economies.

**JEL Classification:** J13, O47, E31, O57

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## ENFLASYON VE EKONOMİK BÜYÜME GERÇEKTEN GENÇ İŞSİZLİĞİ ETKİLER Mİ? GELİŞMEKTE OLAN 20 EKONOMİDEN KANITLAR

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### Öz

Bu çalışmanın temel amacı gelişmekte olan ekonomilerde enflasyon ve ekonomik büyümenin genç işsizliği nasıl etkilediğini tartışmaktır. Bu bağlamda çalışmada enflasyon ve ekonomik büyümenin genç işsizlik üzerindeki etkisi 1991-2016 dönemi dikkate alınarak 20 gelişmekte olan ülke (Brezilya, Çek Cumhuriyeti, Çin, Filipinler, Endonezya, Güney Afrika, Hindistan, Kolombiya, Macaristan, Malezya, Meksika, Mısır, Pakistan, Peru, Polonya, Rusya, Şili, Tayland, Türkiye ve Yunanistan) için test edilmiştir. Değişkenler arasındaki ilişki ikinci nesil panel eşbütünleşme ve panel nedensellik testleriyle araştırılmıştır. Westerlund (2008) tarafından geliştirilen Durbin-Hausman panel eşbütünleşme test sonuçlarına göre, değişkenler arasında bir eşbütünleşme ilişkisi tespit edilmiştir. Bununla birlikte, Durbin-Hausman (2012) panel nedensellik test sonuçları, hem enflasyon ile genç işsizlik arasında, hem de ekonomik büyüme ile genç işsizlik arasında istatistik olarak anlamlı olan iki yönlü nedensellik ilişkisi bulunduğunu göstermektedir. Bu sonuçlara dayanarak enflasyonun ve ekonomik büyümenin genç işsizliği gerçek anlamda etkilediği ve bu etkinin negatif yönde olduğu söylenebilmektedir. Bunun anlamı ise çalışma kapsamındaki gelişmekte olan ülkelerde enflasyonda ve ekonomik büyümede meydana gelecek pozitif gelişmelerin genç işsizliği azaltmada etkili olduğudur.

**Anahtar Kelimeler:** Genç işsizlik, Enflasyon, Ekonomik büyüme, Gelişmekte olan ekonomiler.

**JEL Sınıflandırması:** J13, O47, E31, O57

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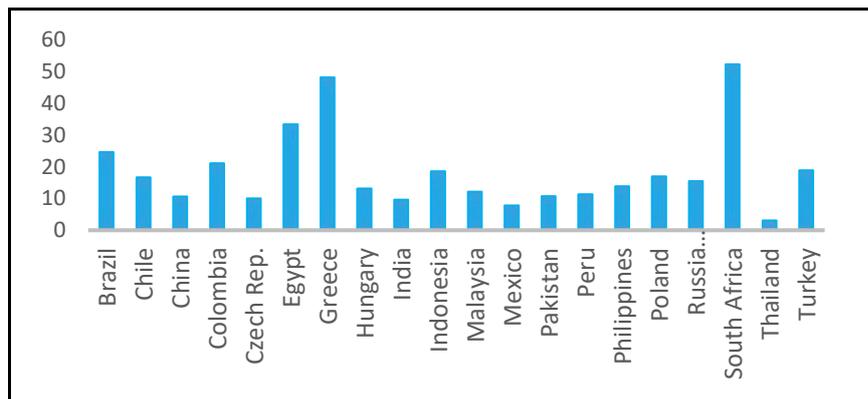
## 1. Introduction

Young people who constitute over 18 per cent of the world's population as well as more than 15 per cent of the world's labour force is quite an important factor for societies. Youth's (according to United Nations' definition aged between 15-24 years old) integration into the labour market, education level and skills development are also crucial for sustainable and equitable socio-economic environment worldwide (ILO, 2016: 1). When looking at the youth unemployed situation worldwide, it is clear to see that young people experience many difficulties in labour market following their education. Especially after the global financial crisis in 2008, unemployed youth have been forced to find a job and this case has led to many other economic problems in many developed as well as emerging economies.

The global financial crisis caused a massive decline in jobs, often concentrated in only a small number of sectors. As a result, ever more young unemployed have been forced to consider jobs in sectors or occupations in which they had not worked previously, or had not envisaged before entering the labour market (ILO, 2013: 23). At the same time, global financial crisis has reinforced the message that more must be done to provide youth with the appropriate skills and help them to get a better start in the labour market. Sharp increases in youth unemployment and underemployment have built upon long-standing structural obstacles that prevent a significant number of youth in both OECD and Key Partner countries from developing the skills they need and being able to use those skills effectively through a successful transition from school to the labour market (OECD, 2013: 1).

As observed in recent ILO and OECD reports, youth unemployment is spreading and causing social problems throughout the world. Hence, one of the ILO documents, "Global Employment Trends for Youth 2013" has a startling title "A Generation at Risk". Even this title highlights the severity of the problem in the worldwide (Ar, 2014: 3). Correspondingly, looking at the ILO and OECD reports about youth unemployment may be useful to understand the extent of the youth unemployment problem. Figure 1 shows the youth unemployment rates of some selected emerging economies for the year, 2016.

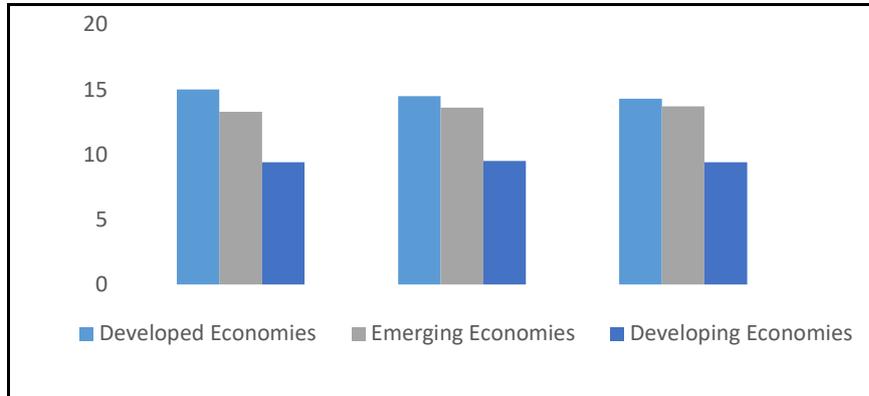
Figure 1: Youth Unemployment Rates in Emerging Economies (%)



Source: Author received from World Bank (2017).

As exhibited in Figure 1; South Africa, Greece and Egypt, in sequence, had the highest youth unemployment rates. On the other hand, Thailand, Mexico and India ran the lowest youth unemployment rate in 2016. When we look at the average of these twenty emerging economies, it is seen that the average youth unemployment rate is around %18. As can be understood from the figure, youth unemployment is a serious problem for almost all emerging economies. Figure 2 was constituted to monitor the situation of youth unemployment in other country groups.

Figure 2: Youth Unemployment Rates in Country Groups (%)



Source: Author received from ILO (2016).

Figure 2 summarizes the rates of youth unemployment in different country groups. As it is seen, developing economies has the lowest youth unemployment rate. It is approximately 9.5% in the last three periods. Whereas, in the same time span, developed economies has the highest youth unemployment rate and it is around 15%. That is to say, youth unemployment is not only a problem for emerging economies, it is also a painful problem for both developed and developing economies. Nevertheless, this study covers the empirical analysis of youth unemployment problem in selected emerging economies.

Within this context, the aim of the study is to analyse the effect of inflation and economic growth on youth unemployment. In the theoretical literature, the relationship between unemployment and inflation was discussed by Philips (1958) and Friedman (1977) while the relationship between unemployment and economic growth was expressed by Okun's law. If we consider that youth unemployment is as a kind of unemployment, these theoretical approaches' arguments on unemployment may be also considered as applicable for youth unemployment. When we look at the empirical literature, some studies which examined the effects of inflation and economic growth on unemployment may also be named. This study differs from most of the previous studies along several dimensions. First of all, the relationship between variables was studied by using an extensive panel dataset for 20 emerging economies for the period of 1991-2016. Second, Durbin-Hausman panel cointegration test which consider cross-sectional dependence and homogeneity was utilized for the empirical analysis. Within this context, the study is organized as follows: Section 2 contains the literature review followed by the Section 3, providing model specification, panel data tests and empirical findings through econometric analysis,. Lastly, Section 4 discusses the concluding remarks.

## 2. Literature Review

From the empirical point of view, there are many studies focusing on the causes of unemployment. Therefore, it is possible to say that relevant literature is quite well-established on this topic. Nonetheless, it is rare to come across detailed empirical studies on youth unemployment. Many of the studies in recent times generally provide policy recommendations on unemployment or youth unemployment in the literature. Some of them can be listed as follows: Embareka (2011), Umaru and Zubariu (2012), Yu (2013), Umaru (2014), Cloete (2015), Assaad and Krafft (2016), Ibrahim and Mahyuddin (2017). In a nutshell, it can be argued that empirical literature on youth unemployment is not sufficient.

In this regard, this study aims to contribute to the empirical literature by studying the impact of inflation and economic growth on youth unemployment. Prior to the analysis of youth unemployment in emerging economies, empirical literature on the relationship between youth

unemployment, inflation and economic growth were reviewed in this section of the study. Literature review of this study is not extensive pertaining to the scarcity of studies on this topic.

El-hamidi and Wahba (2005) examined the effects of structural adjustment on youth unemployment in Egypt. In this context, the authors of the paper investigate the extent to which reforms in the early 1990s have led to higher unemployment among the youth in Egypt. The paper also suggests that the youth unemployment has increased during the 1990s and empirical evidence of the study indicates that youth unemployment is the result of not only queuing for public sector jobs, but also of the limited role played by the private sector in job creation and labour absorption.

Qayyum (2007) studied the causes of youth unemployment in Pakistan and stated that youth unemployment in Pakistan was prevalent because of the fact that there was improper counselling of future dimensions and there were not any institutions which could guide the young people which field to adopt congruent to the requirements of the country.

In the study of Hammarstedt (2009) logistic regression method was utilized and the author argued that gender, age, living area, political status, major and educational level factors contribute to the employment of youth people in China for the period of 1997-2004.

Another young unemployment studies belongs to Ahmad and Azim (2010). In the study, the authors investigated youth population and the labour market of Pakistan. The results of the study show that age, sex, marital status, migration, training, location, education level and characteristics of household have significant impact on the odds of employment among youth in Pakistan.

In many countries causes on youth unemployment were the focus of numerous researches. Venatus and Agnes's (2010) study is one of those researches. The study examined the causes of youth unemployment in Nigeria. According to the study, the causes are construed as follows: increasing population growth, high degree of geographical mobility, lack of employable skills, exclusion of youth in decision-making processes and the perception of policy makers and the youth themselves about employment.

Bernal-Verdugo et al. (2012) examined crises, labour market policy and unemployment for OECD countries by using panel data analysis for the period of 1980-2008. The results of the study show that financial crises have negative impacts on unemployment in the short-run. Accordingly, it is found that these effects are even larger for youth unemployment in the short, medium and long-run.

Çondur and Bölükbaş (2014) investigated the relationship between youth unemployment, GDP and inflation in Turkey for the period between 2000 and 2010 and according to the results of study, a unidirectional causality relationship has been identified among youth unemployment, GDP and inflation.

Vermeulen's (2015) study is one of the significant studies about unemployment. The author investigated the effect on inflation and growth on employment in south Africa. By using Engle-Granger Error-Correction Model, long-run trends and short-run dynamics of the relationship in the South African economy were explored. Therefore, a positive cointegration long-run relationship between employment and high inflation was identified in the study for the period of 1961-2014.

Chinweuba (2015) conducted a study on the relative impact of inflation and unemployment on economic growth in Nigeria with the data covering 1980-2013 period. In the study, Johansen cointegration analysis and Granger causality test were utilized as econometric analysis methods and the results showed that there is a long-run equilibrium relationship between unemployment, inflation and gross domestic growth in Nigeria.

Another paper focusing on youth unemployment was co-authored by Eichhorst and Neder (2014) for Mediterranean countries (France, Greece, Italy, Portugal, Spain). The study indicated that, in all the countries within the analysis, school dropout rates were high, returns to education

was low and the transition from education to work was problematic and difficult. However, the authors pointed out that youth unemployment was mostly structural but also the Great Recession deteriorated the status of young people regarding employment opportunities.

### 3. Empirical Methodology and Findings

In this section of the study, the effect of inflation and economic growth on youth unemployment was empirically analysed and findings were discussed. In this regard, firstly, model specification and data was provided, then cross-sectional dependence and homogeneity tests were applied after that panel unit root, panel cointegration and panel causality tests were included in econometric analysis.

#### 3.1. Model Specification and Data

Youth unemployment (YUN), inflation (INF) and economic growth (GDP) data for the period of 1991-2016 belonging to 20 emerging economies were used in this study. MSCI<sup>1</sup> emerging markets index was used in country selection and the data set of the study was compiled from World Bank database. Table 1 below shows dataset of the study.

Table 1: Dataset of the Study

Variables	Indicator	Description
Youth unemployment	YUN	Unemployment, youth total (% of total labour force ages 15-24)
Inflation	INF	Inflation, consumer prices (annual %)
Economic Growth	GDP	GDP growth (annual %)

Source: Author received from World Bank (2017).

After the selection of the data set, the model used in the study was established. The model is constructed as in the equation (1) below;

$$YUN = \beta_{0it} + \beta_{1it} INF + \beta_{2it} GDP + \varepsilon_{it} \quad (1)$$

In the equation (1), *i* stands for countries (*i*=1,2, ..., 20), *t* denotes time period (*t*=1991, 1992, ..., 2016), YUN, INF and GDP is youth unemployment, inflation and GDP growth of countries respectively,  $\beta_0$  is constant term and  $\varepsilon_{it}$  is the error term. In the study, second generation panel cointegration and panel Granger causality tests have been utilized as the econometric method. Empirical analysis and findings are elaborated in the following section.

#### 3.2. Testing Cross-Sectional Dependence and Homogeneity

If there is a cross-sectional dependence between the series and the analysis is carried out without consideration of this situation, the results of analysis may not be reliable. For this reason, whether there is a cross-sectional dependence in both series and the model should be tested as a first step before the analysis. If this potential relationship is not taken into account, the results obtained will be biased and inconsistent (Breusch and Pagan, 1980; Pesaran, 2004). In this study, cross-sectional dependence was investigated with CDLM1 test developed by Breusch-Pagan (1980), CDLM2 and CD tests developed by Pesaran (2004) and LMadj test developed by Pesaran et al. (2008). These tests demonstrate asymptotic normal distribution and the hypotheses of the tests are as follows (Pesaran et al. 2008);

$$H_0: \text{No cross-sectional dependence}$$

<sup>1</sup> See <https://www.msci.com/>

$H_1$ : Cross-sectional dependence

If this test result probability is less than 0.05,  $H_0$  is rejected at 5% significance level and it is put forth that there is cross-sectional dependence between the panel countries.

It is also important to test the homogeneity of the panel as well as the cross-sectional dependence. The delta ( $\tilde{\Delta}$ ) test was employed to determine whether the model has common or dynamic character for emerging economies. This test was developed by re-scaling Swamy (1970) test statistic by Pesaran and Yamagata (2008). According to Pesaran and Yamagata (2008), The delta ( $\tilde{\Delta}$ ) test statistic should be used for large samples and the adjusted delta ( $\tilde{\Delta}_{adj}$ ) test statistic should be used for small samples. Cross-sectional dependence and homogeneity test were done according to this information and the results are presented in Table 2 below;

Table 2: Cross-Sectional Dependence and Homogeneity Test Results

Cross-Sectional Dependence					
		CD <sub>LM1</sub>	CD <sub>LM2</sub>	CD	LM <sub>adj</sub>
<b>YUN</b>	Statistics	278.8*	4.5*	- 1.6**	18.5*
	Prob.	0.000	0.000	0.047	0.000
<b>INF</b>	Statistics	437.3*	12.6*	2.1*	2.8*
	Prob.	0.000	0.000	0.017	0.002
<b>GDP</b>	Statistics	308.6*	6.0*	-2.7*	3.4*
	Prob.	0.000	0.000	0.003	0.000
<b>Model</b>	Statistics	694.3*	25.8*	6.1*	3.6*
	Prob.	0.000	0.000	0.000	0.000
Homogeneity					
		$\tilde{\Delta}$	$\tilde{\Delta}_{adj}$		
<b>Model</b>	Statistics	-1.2	-1.3		
	Prob.	0.892	0.916		

**Note:** \* and \*\* indicate significance at 1% and 5% level respectively.

According to cross-sectional dependence test results, the  $H_0$  hypothesis which claims that there is no cross-sectional dependence for both series and the model is strongly rejected at the 1% significance level. In this case, we can talk about the presence of cross-sectional dependence between the panel countries. Based on this result, it can be said that a shock seen in the level of young unemployment, inflation and economic growth in emerging economies may affect other countries. If the homogeneity test results on the table are examined, the  $H_0$  hypothesis which considers that the panel is homogenous cannot be rejected. This result implies that the nature of the relationship studied in the model is common for panel countries and it does not change across countries.

### 3.3. Testing Panel Unit Root

As cross-section dependence is detected in both series and model requires that the following unit root test, cointegration test and causality test within the econometric analysis of the study should take into account the cross-section dependence. Therefore, second generation panel unit root tests, panel cointegration and panel causality methods heeding cross-sectional dependence are used in the subsequent stages of the study.

In this study, the CADF (Cross-Sectionally Augmented Dickey Fuller) test, which takes into account cross-sectional dependence and is known as the second generation panel unit root test, was used to determine the stationarity of the series. In this test developed by Pesaran (2007), the unit root test can be executed for each country in the panel. Hence, the stationarity of the series can be established for the whole panel and also as separate for each country. The test statistic values are compared with Pesaran (2007) CADF critical values and if the CADF statistical values are

larger than the CADF critical values within the absolute value, the null hypothesis is rejected and it is considered that the series are stationary. In addition to this test, average of the unit root test statistics for each country is calculated and CIPS (Cross-Sectionally Augmented IPS) which is the unit root test statistic for the panel is obtained. Table 3 shows the CADF unit root test statistics for each country, CIPS unit root test statistics for the whole panel and critical values calculated by Pesaran (2007);

Table 3: Cross-Sectional Dependence and Homogeneity Test Results

Countries	CADF		
	YUN Statistics	INF Statistics	GDP Statistics
Brazil	-1.94	-2.31	-1.84
Chile	-1.64	-1.33	-2.40
China	-0.08	-4.89*	-1.45
Colombia	-1.87	-2.01	-2.29
Czech Republic	-1.72	-3.16***	-2.40
Egypt	-0.89	-3.28***	-1.71
Greece	-1.70	-5.47***	-1.33
Hungary	-1.51	-1.61	-2.78
India	-1.72	-4.31*	-2.57
Indonesia	-3.06***	-2.10	-2.42
Malaysia	-2.59	-5.23*	-2.88
Mexico	-2.22	-12.7*	-3.44**
Pakistan	-2.02	-3.56**	-0.55
Peru	-1.60	-1.03	-1.50
Philippines	-1.27	-2.63	-2.23
Poland	-2.01	-3.70**	-3.76**
Russia Federation	-2.98***	-68.06*	-2.38
South Africa	-3.74**	-2.79	-2.22
Thailand	-2.08	-5.66*	-2.67
Turkey	-2.83	-2.42	-1.80
	PANEL (CIPS)		
	YUN Statistics	INF Statistics	GDP Statistics
	-1.97	-6.20*	-2.23***

**Pesaran (2007) Critical Values:**

CADF: -4.11(%1) -3.34(%5) -2.96(%10)

CIPS : -2.38 (%1) -2.20(%5) -2.11(%10)

**Note:** \*, \*\*, \*\*\* indicates significance at the 1%, 5% and 10% level respectively. Unit root model is intercept. Maximum lag length is 4 and calculated with Schwarz info criterion.

When the results in Table 3 are examined, it is seen that the dependent variable (YUN) is not stationary but independent variables (INF and GDP) are stationary. Furthermore, CADF test statistic results show that stationarity of the series changes across the countries.

### 3.4. Testing Panel Cointegration

The unit root test is followed by the cointegration analysis. In this study, Durbin-Hausman panel cointegration test developed by Westerlund (2008) was selected as second generation panel cointegration method. The most important feature of the test is that it not only estimates cointegration—on the condition that the dependent variable is unit rooted—by permitting the independent variables to be unit rooted or stationary but also takes into account the cross-

sectional dependence. There are two basic statistics in this cointegration test: Durbin-Hausman group and Durbin-Hausman panel statistics (Westerlund, 2008; 203);

$$DH_g = \sum_{i=1}^n \hat{S}_i (\hat{\phi}_i - \hat{\phi}_i)^2 \sum_{t=2}^T \hat{e}_{it-1}^2 \quad (2)$$

$$DH_p = \hat{S}_n (\hat{\phi}_i - \hat{\phi}_i)^2 \sum_{i=1}^n \sum_{t=2}^T \hat{e}_{it-1}^2 \quad (3)$$

In the panel statistic, denoted as DHp, is constructed by summing the n individual terms before multiplying them together, the group mean statistic, denoted as DHg, is constructed by first multiplying the various terms and then summing. The importance of this distinction lies in the formulation of the alternative hypothesis. For the panel test, the null and alternative hypotheses are formulated as follows (Westerlund, 2008:203);

$$H_0: \phi_i = 1 \text{ (for all } i = 1, \dots, n)$$

$$H_1^p: \phi_i = \phi_i \text{ and } \phi_i < 1 \text{ (for all } i)$$

Thus, if this assumption holds, a rejection of the null hypothesis should be taken as an evidence in favour of cointegration for all n units. By contrast, for the group mean test, H\_0 is tested versus the alternative that (Westerlund, 2008:203);

$$H_1^g: \phi_i < 1 \text{ (for at least some } i)$$

Thus, in this case, a rejection of the null hypothesis cannot be taken to suggest that all n units are cointegrated. Instead, a rejection should be interpreted as providing evidence in favour of rejecting the null hypothesis for at least some of the cross-sectional units (Westerlund, 2008:203). The results of the Durbin-Hausman panel cointegration test for this study are given in Table 4.

Table 4: Durbin-Hausman Panel Cointegration Test Results

	Group Statistics (DHg)	Panel Statistics (DHp)	Results
Model	2.187 (0.014)	5.407 (0.000)	Cointegrated

Table 4 shows that the H0 is rejected according to Durbin-Hausman test statistic. Therefore, the H1 assuming that there is a cointegration relationship is applicable. This result, which expresses a long-run relationship between variables, supports the relationship between young unemployment, inflation and economic growth in emerging economies. However, it is also crucial to estimate cointegration coefficients in order to determine the direction of the relationship between variables.

The methods such as the panel dynamic ordinary least squares method can only be used to estimate long-run parameters. But estimates of short-term parameters also contain crucial pieces of information as well as long-term parameters. In this context, PMGE (Pooled Mean Group Estimation), MGE (Mean Group Estimation) and DFE (Dynamic Fixed Effect) create error correction models and predict both short-term and long-term parameters together. The MG estimation method proposed by Pesaran and Smith (1995) allows the unit-based evaluation of long-term parameters. On the other hand, the PMG estimation method proposed by Pesaran, Shin and Smith (1999) holds long-term parameters constant and allows the evaluation of short-term parameters and error variance according to units (Tatoğlu, 2012:243). This study utilizes PMGE and MGE methods to estimate cointegration coefficients but according to Hausman test, MGE results are more efficient than PMGE results therefore MGE results are considered. The results are provided in Table 5;

Table 5: Mean Group Estimation Results

Variable	Dependent Variable: YUN	
	Long-run Equation	
INF	-0.245 (0.157)	[-1.748]
GDP	-2.845 (1.340)	[-2.122]
	Short-run Equation	
Constant	-5.918 (2.026)	[-2.921]
EC	-0.808 (0.240)	[-3.368]
dYUN-1	0.279 (0.275)	[1.014]
dYUN-2	0.011 (0.098)	[0.108]
dINF	0.038 (0.033)	[1.177]
dINF-1	0.020 (0.022)	[0.917]
dINF-2	0.018 (0.027)	[0.681]
dGDP	0.314 (0.386)	[0.815]
dGDP-1	-0.730 (0.996)	[-0.734]
dGDP-2	-0.861 (0.886)	[-0.972]
Number of observations:	520	
Selected model:	ARDL (2,2)	
Time period:	1991-2016	

As evident on Table 5, it is seen that the coefficient of inflation and economic growth on youth unemployment in the long-run is negative. Based on this result, it can be proposed that developments in inflation and economic growth lead to a decrease in youth unemployment in emerging economies. This statistically significant finding also meet up to the theoretical expectation. If the error correction term in short-term estimation is examined, it is observed that the coefficient is statistically significant and negative; therefore, it is possible to think that the error correction mechanism runs.

### 3.5. Testing Panel Causality

After the estimation of cointegration relationship between variables in the long-term and the short-term, panel Granger causality test is also utilized in this study. Dumitrescu-Hurlin (2012) panel Granger causality test is chosen as panel causality test. Dumitrescu and Hurlin (2012: 1450) acknowledged that in many economic matters it is highly probable that if a causal relationship exists for a country or an individual, it also exists for some other countries or individuals. In this case, the causality can be more efficiently tested in a panel context with  $nt$  observations. However, this test has some features that stand out compared with other panel causality tests. The test provides more effective results than other panel causality tests since it estimates cointegration relationship in both cross-sectional dependence and cross-sectional independence. At the same time, the test can be used if time dimension ( $t$ ) is bigger or smaller than cross-section dimension (Dumitrescu and Hurlin, 2012). The results of Dumitrescu-Hurlin (2012) panel Granger causality test is given in Table 6.

Table 6: Dumitrescu-Hurlin (2012) Panel Granger Causality Test Results

	Lag=1		Lag =2		Lag =3	
	$Z_{N,T}^{HNC}$	$Z_N^{HNC}$	$Z_{N,T}^{HNC}$	$Z_N^{HNC}$	$Z_{N,T}^{HNC}$	$Z_N^{HNC}$
INF $\rightarrow$ YUN	5.90*	4.70*	8.57*	3.04*	22.42*	5.17*
YUN $\rightarrow$ INF	2.48**	1.82***	4.42*	1.38	15.15*	3.33*
GDP $\rightarrow$ YUN	0.25	-0.05	1.59	0.24	9.43*	1.87***
YUN $\rightarrow$ GDP	2.96*	2.22**	6.00*	2.01**	18.24*	4.11*

Note: \*, \*\*, \*\*\* indicates significance at the 1%, %5 and %10 level respectively.

In the interpretation of Dumitrescu-Hurlin (2012) panel Granger causality test, if  $t$  is bigger than  $n$ , Zbar statistic ( $Z_{(N,T)}^{\text{HNC}}$ ) is considered but if  $t$  is smaller than  $n$ , Zbar tilde statistic ( $Z_{N}^{\text{HNC}}$ ) is considered. In this model, Zbar statistic ( $Z_{(N,T)}^{\text{HNC}}$ ) in Table 6 is considered as  $t$  is bigger than  $n$ . In this context, there is a bidirectional causality relationship between youth unemployment and inflation as well as youth unemployment and economic growth. This finding provides important information that young unemployment should not be considered as independent from inflation and economic growth in emerging economies. As a result, it can be inferred that the measures to be taken for inflation and economic growth may be effective in reducing youth unemployment in emerging economies.

#### 4. Conclusion

Young people's integration into the labour market, their education and skills development are all crucial to the realization of a prosperous, sustainable and equitable socio-economic environment worldwide. Youth – following the United Nations' definition as those aged between 15 and 24 years old – represents an important resource for society and accounts for over 18 percent of the world's population as well as more than 15 percent of the world's labour force. Accordingly, addressing labour market and social challenges faced by youth is imperative, not only for the well-being of our young people but also to ensure sustainable and inclusive growth and improved social cohesion worldwide (ILO, 2016: 1). In this regard, this paper discusses how inflation and economic growth are affecting youth unemployment in emerging economies. Within this study, the effect of inflation and economic growth on youth unemployment was tested for 20 emerging economies (Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Russian Federation, South Africa, Thailand, Turkey) with the data covering 1991-2016 period. To review the present youth unemployment situation throughout the emerging economies, firstly the role of inflation and economic growth on youth unemployment were highlighted and current youth unemployment rates were examined, and then literature review and econometric analysis were included in this paper. The relationship between the variables was tested via panel cointegration and panel causality tests. According to the findings of Durbin-Hausman panel cointegration test, there is a cointegration relationship between variables. In addition to this, Dumitrescu-Hurlin (2012) panel causality test results has indicated that there exists statistically significant bidirectional causality between inflation and youth unemployment and also between economic growth and youth unemployment. Based on these results, it is possible to say that inflation and economic growth substantially affect youth unemployment and the direction of the effect is negative on youth unemployment. That means developments in inflation and economic growth decrease youth unemployment in selected emerging economies. The main conclusion of this paper is that there should be a new youth employment reform in order to avoid potentially dangerous consequences of youth unemployment in many emerging economies.

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