The Effects of Covid-19 Health Crisis and 2008 Global Financial Crisis on Labor Markets: A Comparative Analysis by Income Groups of Countries

Covid-19 Sağlık Krizi ile 2008 Küresel Finansal Krizin İşgücü Piyasalarına Etkisi: Ülkelerin Gelir Gruplarına Göre Karşılaştırmalı Bir Analiz

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Esat Daşdemir[1]

Abstract

This study comparatively examined the Covid-19 Health Crisis and the 2008 Global Financial Crisis effects on the labour markets of high-income countries (HICs) and middle- and low-income countries (M-LICs). As a result of the econometric analysis, it was understood that the two crises had different economic consequences. In addition, it was determined that the two crises had different effects on country groups. The main reasons for the different effects of the Covid-19 Health Crisis to country groups are; a- Labour mobility reduction due to Covid-19 public health interventions, b- There are fewer sectors that can adapt to remote work in M-LICs production structure, c- SME intensive production structure of M-LICs. The study is a leading source in the literature that reveals the impact of the Covid-19 Health Crisis and the 2008 Global Financial Crisis on the labour markets of HICs and M-LICs.

Keywords: Covid-19, Employment Rate, Income Distribution, Remote Work, Labour Market

Öz

Bu çalışma, Covid-19 Sağlık Krizi ve 2008 Küresel Finansal Krizinin yüksek gelirli ülkelerin (YGÜ) ve orta ve düşük gelirli ülkelerin (O-DGÜ) işgücü piyasaları üzerindeki etkilerini karşılaştırmalı olarak incelemiştir. Yapılan ekonometrik analiz sonucunda iki krizin farklı ekonomik sonuçlar yarattığı anlaşılmıştır. Covid-19 Sağlık Krizinin ülke gruplarına farklı etkilerinin başlıca nedenleri; a- Covid-19 halk sağlığı müdahaleleri nedeniyle işgücü hareketliliğinin azalması, b- O-DGÜ'lerin üretim yapısında uzaktan çalışmaya uyum sağlayabilecek sektörlerin daha az olması, c- O-DGÜ'lerin KOBİ yoğun üretim yapısı. Covid-19 Sağlık Krizi ve 2008 Küresel Finansal Krizinin YGÜ'lerin ve O-DGÜ'lerin işgücü piyasaları üzerindeki etkisini ortaya koyan çalışma, literatüre önemli bir katkı sunmaktadır.

Anahtar Kelimeler: Covid-19, İstihdam Oranı, Gelir Dağılımı, Uzaktan Çalışma, İşgücü Piyasası

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INTRODUCTION

Each crisis has different effects, but the impact of the Covid-19 Health Crisis is quite different from other crises due to the way it emerges. The fact that it is different from other crises has also differentiated the policies applied for this crisis. The policies implemented for the solution of the Covid-19 Health Crisis especially affected the workforce negatively. While the measures taken reduced the mobility of labour, financial capital was hardly affected by the measures taken. Moreover, expansionary monetary policies, increased transfer expenditures and other fiscal policies implemented in this process significantly increased the returns of financial instruments. Therefore, the measures taken have forced labour to bear higher costs compared to capital. As a natural consequence of this situation, labour-intensive production sectors and labour-intensive countries that are not suitable for remote work have suffered more damage than other countries.

The study compares the effects of Covid-19 Health Crises and effects of the 2008 Global Financial Crisis on production factors and sectors on the scale of countries. The literature review and the hypothesis of the study are examined in the second part. In the third part, the method, model and estimates used to prove the hypothesis are given. The econometric findings are summarized in the fourth chapter. In the last section, results and suggestions are given.

This study contributes to the literature by revealing the difference in the impact of the Covid-19 Health Crisis and the 2008 Global Financial Crisis on the labour markets of countries according to the level of development. Determining the differences between the two crises will be an important resource for policy makers in the determination of solution policies. In this way, this study will shed light on the policies that should be implemented according to the development levels of the countries.

1. The Reduction Of The Labour Mobility In The Covid-19 Health Crisis

Unemployment, which is an important macroeconomic problem especially for developing countries, has gradually increased with the Covid-19 Outbreak. Restrictions applied within the scope of combating the epidemic caused production factors to remain idle. And due to the restrictions imposed on human mobility inflicted relatively more damage on the working class than other the economic factors. Moreover, the effects of the measures taken for the Covid-19 Outbreak on sectors and countries also are not equal. It can be easily said that not every economic unit gets the same result from Covid-19 public health interventions.

As in every economic crisis, the Covid-19 Health Crisis also had negative effects on employment. Moreover, the biggest crisis affecting the labour markets after the Second World War is this crisis (Handwerker et al., 2020, p. 3). In order to analyse the impact of the Covid-19 epidemic on the workforce, it is necessary to explain the factors affecting employment and unemployment first. The reasons for long-term unemployment can be listed as fiscal policies (Lama & Medina, 2019), technology (Mortensen & Pissarides, 1999), taxes (Bovenberg & Van Der Ploeg, 1998) wage level, foreign trade and foreign trade policies, and wage level and policies. Studies explaining unemployment in the literature also deal with different topics. Clark and Summers (1982) and Freeman (1982) summarized the causes of unemployment with a supply and demand side approach in

their study to explain youth unemployment. The aim of this study is to compare the impact of 2008 Global Financial Crisis and the Covid-19 Health Crisis on M-LICs with HICs. Therefore, when explaining the reasons for unemployment, it would be more accurate to determine the reasons according to the development level of the countries rather than supply and demand side approaches. Naudé (2009) comparing the reaction of less developed countries on the 2008 Global Financial Crisis with developed countries; argued that less developed countries experience less unemployment problems. The reason for this is that the 2008 Global Financial Crisis affected the finance sector and capital-intensive production areas(Özdemir & Kayhan, 2019, p. 445). However, the effects of the Covid-19 Outbreak and Health Crisis have been seen more in the labour markets. Therefore, the economic effects of the Covid-19 Health Crisis are very different from other crises.

This study highlights three basic factors that play a role in the Covid-19 Health Crisis causing more negative effects in M-LICs. These:

a) Small and medium-sized enterprises (SMEs) dominated firm structure of M-LICs,

b) The dominant structure of the sectors that are not suitable for remote work in M-LICs,

c) The labour-intensive structure of M-LICs and restrict the mobility of labour due to Covid-19 public health interventions.

The policies used in against the Covid-19 Health Crisis limits and decreases the mobility of labour. Therefore, significantly changed the supply-demand balance in the labour market. However, while these measures immobilized the workforce, they did not have a negative impact on the mobility of capital. Moreover, financial innovations during the Covid-19 period (Sikiru & Salisu, 2021) created an advantageous area for financial assets. Because of this, the advantageous position of capital among production resources increased.

On the other hand, these measures affect labour-intensive production sectors more. Some manufacturing industry sectors such as tourism, entertainment, transportation, food and beverage and labour-intensive production and low value-added sectors like textile can be counted among these (Ceylan et al., 2020, p. 819). And also, the service sectors, which is not suitable for remote working suffered considerable damage.

The impact of the Covid-19 Health Crisis also varies according to the company scale. Cowling et al. (2020) found that SMEs were significantly affected by Covid-19 and micro-scale SMEs were more affected. Therefore, it would not be wrong to argue that there is an inverse relationship between the scale of businesses and their level of exposure to the Covid-19 Health Crisis. The bankruptcy rate of SMEs, which was 9.43% before Covid-19, was 18.17% during the Covid-19 process (Gourinchas et al., 2020, p. 26). Thus, it is understood that Covid-19 has approximately doubled the bankruptcy level of SMEs.

Also, Dey et al. (2020) analysed the sector and workforce structure suitable for remote work. They found out in their research that traditional sectors cannot adapt to remote work. In additionally, they reached the conclusion that as the level of education increased, individuals adapted more easily to working remotely (Dey et al., 2020, p. 4). Countries with a high level of human capital, technology and knowledge, which

currently hold sustainable competitiveness (Daşdemïr, 2017; Tunalı et al., 2017, p. 121), have significantly increased their superiority during the Covid-19.

The effects of the COVID-19 Health Crisis have created quite different results compared to the economic crises(Fırat & Daşdemir, 2021). Therefore, when these results are poured into the international scale; It is expected that the labour markets of countries with labour-intensive and small-scale companies will be more affected by the Covid-19 Health Crisis.

When compared with the 2008 crisis, the measures taken due to the health crisis reduce labour mobility and create a significant disadvantage for the workforce. Therefore, this study argues that the Covid-19 Health Crisis will increase unemployment more than the 2008 Global Financial Crisis and cause more unemployment in less developed countries.

Due to their nature, it is argued that SMEs are more affected by the Covid-19 Epidemic Crisis than large-scale enterprises. The most important reasons for this situation are that SMEs make more labour-intensive production compared to large-scale enterprises operating in the same sector, and their field of activity is the traditional and labour-intensive production sector. Pedauga et al. (2021) argued that SMEs were heavily affected by the Covid-19 Outbreak and the measures taken against the epidemic. Gourinchas et al. (2021) They described the year 2021 as a "time bomb", stating that the aftermath of the Covid-19 process will be worse for SMEs. SMEs with financing disadvantages increases their debt stock during the epidemic process. Borrowing during the epidemic means that SMEs postpone their problems. Therefore, in countries where SMEs and SMEs have high gross domestic product (GDP) shares, post-epidemic problems will continue for a significant time.

Table 1: Labour Force Statistics by Country Groups

Averages

	EMPLOYMENT		UNEMPLOYMENT	
	HICs	**M-LICs**	**HICs**	**M-LICs**
Overall Average (1991-2020)	57.21	57.68	7.35	8.44
2008 Average	58.47	57.79	5.98	7.83
2009 Average	57.35	57.46	7.71	8.25
2020 Average	57.02	54.97	7.34	8.59
Average Differences				
	EMPLOYMENT		UNEMPLOYMENT	
	HICs	**M-LICs**	**HICs**	**M-LICs**
Difference between 2008 and 2020	1.45	2.82	-1.36	-0.75
Difference between 2009 and 2020	0.33	2.49	0.37	-0.33
General Average Difference to 2020	-0.19	-2.71	-0.02	0.15

Source: World Bank (WB) World Development Indicators (2021)

As seen in Table 1, the average employment rate of HICs between 2008 and 2009, when the 2008 Global Financial Crisis was effective, was higher than the average employment

rate between 1991-2020. One reason for this is the positive trend structure of employment data over time. The trending nature of the employment series is proved statistically in the third part of the study. It is seen that the M-LICs remained at approximately the average employment level in 2007 and 2008. Thus, employment rate cannot show a significant comparison between M-LICs and HICs. In this case, the unemployment data reveals the difference between the response of the HICs and M-LICs labour markets to the 2008 Global Financial Crisis. While the unemployment rate was approximately 5.98% in HICs in 2008, it increased by approximately 1.73% in 2009 to 7.71%. However, the increase in unemployment rate from 2008 to 2009 in M-LICs was only 0.42%. Considering the year 2020, when the Covid-19 Health Crisis was valid, although it had a positive trend, the employment rate was 2.71% below the average employment rate in M-LICs. However, the employment rate difference in HICs is only 0.19% below the average employment rate.

2. Methodology

The theory advocated in the study has been tested with annual frequency data of 187 countries for the period 1991-2020. Information on the data used is given in Table 2.

Table 2: Information on Data

Variable	Description	Source
EM	Employment Rate (%)	WB Database
$KMLICs$	Dummy Variable for M-LICs between 1991-2020	Author's Calculation
$K2009MLICs$	Dummy Variable for M-LICs in 2009	Author's Calculation
$K2009HICs$	Dummy Variable for HICs in 2009	Author's Calculation
$K2020MLICs$	Dummy Variable for M-LICs in 2020	Author's Calculation
$K2020HICs$	Dummy Variable for HICs in 2020	Author's Calculation

Dummy variables used in the model were created as in Figure 1.
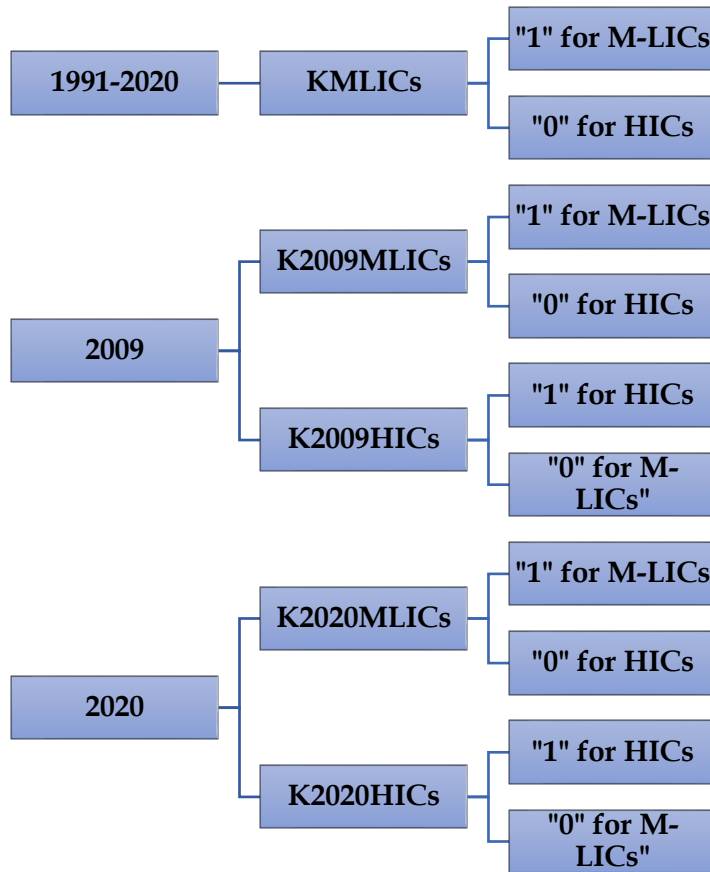
Figure 1: Information on Dummy Variables

The "KMLICs" shown in Figure 1 is the dummy variable, which was created for M-LICs in 1991-2020. "K2009MLICs" is the dummy variable that indicates the difference in M-LICs in 2009. "K2009HICs" is the dummy variable that indicates the difference in HICs in 2009. "K2020MLICs" is the dummy variable that indicates the difference in M-LICs in 2020. "K2020HICs" is the dummy variable that indicates the difference in HICs in 2020. The results of the Pesaran (2004) CD Test conducted to measure the cross-sectional dependency in the EM variable, in other words, the correlation between units is given in Table 3. Stata 16 Package Program was used in all tests and predictions.

Table 3: Pesaran CD Test Results for EM Variable

Test Statistics	P Value	Correlation Coefficient
41.07	0.0000	0.057
H_0: *There is no correlation between units*		
H_α: *There is a correlation between units*		

According to the Pesaran CD Test results, the H_0 ypothesis was rejected at the 1% significance level. The EM variable contains a correlation between units. For this reason, second generation unit root tests were used to test the stationarity of the EM variable. Unit root tests suggested by Im, Pesaran and Shin (2003), Phillips and Perron (1988) and

Choi (2001) performed. These tests are given in Table 4, Table 5 and Table 6, respectively. The variable ΔEM indicates the first order derivative of EM.

Table 4: Im, Pesaran and Shin (IPS) Panel Unit Root Test

H_0: *All panels contain unit roots*		H_α: *Some panels are stationary*	
	Lag	Test Statistic	P Değeri
EM Include Time Trend	0	12.4066	1.0000
	1	2.6520	0.9960
No Trend	0	8.3386	1.0000
	1	0.1919	0.5761
ΔEM Include Time Trend	0	-18.5720	0.0000
	1	-11.4923	0.0000
No Trend	0	-24.6609	0.0000
	1	-17.9550	0.0000

Table 5: Fisher Phillips and Perron (Fisher PP) Panel Unit Root Test

H_0: *All panels contain unit roots*		H_α: *At least one panel stationary*			
	Lag	P	Z	L*	Pm
EM Include Time Trend	0	1.00	1.00	1.00	1.00
	1	1.00	1.00	1.00	1.00
No Trend	0	0.9999	1.00	1.00	0.9997
	1	0.9999	1.00	1.00	0.9997
ΔEM Include Time Trend	0	0.00	0.00	0.00	0.00
	1	0.00	0.00	0.00	0.00
No Trend	0	0.00	0.00	0.00	0.00
	1	0.00	0.00	0.00	0.00

Table 6: Fisher Augmented Dickey Fuller (Fisher ADF) Panel Unit Root Test

H_0: *All panels contain unit roots*		H_α: *At least one panel stationary*				
		Lag	P	Z	L*	Pm
EM	Include Time Trend	0	1.0000	1.0000	1.0000	1.0000
		1	0.0770	0.6170	0.6744	0.0735
	No Trend	0	0.9999	1.00	1.00	0.9997
		1	0.0366	0.2148	0.2465	0.0326
ΔEM	Include Time Trend	0	0.0000	0.0000	0.0000	0.0000
		1	0.0000	0.0000	0.0000	0.0000
	No Trend	0	0.0000	0.0000	0.0000	0.0000
		1	0.0000	0.0000	0.0000	0.0000

According to the three panel unit root test, the EM variable is not stationary and contain unit roots at the 5% significance level at the level value. The results of the tests did not differ depending on whether the model is trending or not or the level of lag. On the other hand, it is seen that the EM variable becomes stationary when the first-order derivative is taken. At the 1% significance level, the ΔEM variable is stationary according to all tests. For this reason, the first difference of EM variable is used in the model. The results of the tests performed in order to measure the unit and time effects in the model are given in Table 7.

Table 7: Test of Unit-Time Effects and Method Selection

Test		P Value	Result
Unit Effect	F Test	0.0008	Unit Effects Exist
	LR Test	0.033	
Time Effect	F Test	1.0000	Unit Effects Doesn't Exist
	LR Test	1.0000	
Hausman (1978)		1.0000	The random effect (RE) methods are valid and effective.

The null hypothesis of the F and LR Tests is that there are no unit or time effects. P value for F and LR calculated for unit effects are less than 0.01. There are unit effects in the model. The test result for time effects shows that there are no time effects. Hausman test results show that random effects (REs) are valid and effective. For this reason, REs methods will be used to interpret estimates. Besides because of the model includes dummy variables as explanatory variables, some fixed effects methods already cannot be used.

The model to be predicted aims to test the Covid-19 Health Crisis causing less employment rate in less developed countries (M-LICs) and to compare this with the 2008 Global Financial Crisis. In this context, Model 1 and Model 2 represent the model in which the unit effects to be predicted are valid.

$$\Delta EM_{it} = \beta_{0i} + \beta_{1i}KGOU_{it} + \beta_{2i}K2009GOU_{it} + \beta_{3i}K2009GU_{it} + \beta_{4i}K2020GOU_{it} \tag{1}$$
$$+ \beta_{5i}K2020GU_{it} + \mu_{it}$$

$$\Delta EM_{it} = \beta_{0} + \beta_{1}KGOU_{it} + \beta_{2}K2009GOU_{it} + \beta_{3}K2009GU_{it} + \beta_{4}K2020GOU_{it} \tag{2}$$
$$+ \beta_{5}K2020GU_{it} + M_{i} + \mu_{it}$$

Model 1 and Model 2 are different representations of the same model. In the Model 1, unit effects are spread over the coefficients. In Model 2, unit effects represent M_i expression. β_0 used in the model is the constant coefficient, "β" symbols are the coefficient of the respective variable, and μ_{it} is the error term.

The deviations from the assumptions in the model are given in Table 8.

Table 8: Test for Deviation from Assumption

Assumption	Test	P Value	Result
Varying Variance	Levene (1960)	0.0000	Varying variance exist.
	Brown and Forsythe (1974)	0.0000	
Autocorrelation	Durbin - Watson (1971)	(1.3320)	Autocorrelation exist.
	Baltagi-Wu LBI (1999)	(1.5220)	
Intraclass Correlation	Pesaran (2004)	0.0000	Intraclass correlation exist.
	Frees (2004)	(5.841)	

As can be understood from Table 8, the model to be estimated includes varying variance, autocorrelation and correlation between units. Due to the deviations from this assumption, it can be interpreted that the model estimated by the Driscoll-Kraay method is more accurate for interpretation. Other estimation methods are also shared for comparison. The lags used were determined according to the AIC criterion. The estimation results made with various methods are given respectively in Table 9, Table 10, Table 11, Table 12, Table 13, Table 14, Table 15, Table 16 and Table 17.

Table 9: Non-constant Pooled Least Squares (PLS)

	$KMLICs$	$K2009MLICs$	$K2009HICs$	$K2020MLICs$	$K2020HICs$	R Squar
Coef.	-0.034	-0.294	-1.118	-2.651	-2.056	0.208
t-statistic	-2.14	-3.46	9.19	-31.14	-16.91	(284.4)
P Value	0.033	0.001	0.0000	0.0000	0.0000	0.0000

Tablo 10: Non-constant Robusted PLS

	KMLICs	*K2009MLICs*	*K2009HICs*	*K2020MLICs*	*K2020HICs*	R Squar
Coef.	-0.034	-0.294	-1.118	-2.651	-2.056	0.208
t-statistic	-2.46	-3.99	-4.92	-13.92	-8.84	(65.8)
P Value	0.014	0.000	0.000	0.000	0.000	0.000

Tablo 11: Generalized Least Squares (GLS)

	Cons.	*KMLICs*	*K2009MLICs*	*K2009HICs*	*K2020MLICs*	*K2020HICs*	R Squar
Coef.	0.118	-0.153	-0.294	-1.236	-2.651	-2.175	-
z-statistic	5.06	-5.38	-3.47	-10.00	-31.23	-17.60	(1403.4)
P Value	0.000	0.000	0.001	0.000	0.000	0.000	0.000

Tablo 12: RE GLS

	Cons.	*KMLICs*	*K2009MLICs*	*K2009HICs*	*K2020MLICs*	*K2020HICs*	R Squar
Coef.	0.118	-0.153	-0.294	-1.236	-2.651	-2.175	0.206
z-statistic	4.63	-4.92	-3.48	-10.04	-31.32	-17.66	(1407.8)
P Value	0.000	0.000	0.001	0.000	0.000	0.000	0.000

Tablo 13: RE Robusted GLS

	Cons.	*KMLICs*	*K2009MLICs*	*K2009HICs*	*K2020MLICs*	*K2020HICs*	R Squar
Coef.	0.118	-0.153	-0.294	-1.236	-2.651	-2.175	0.206
z-statistic	4.70	-4.79	-4.07	-5.30	-13.37	-9.09	(337.2)
P Value	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Tablo 14: RE GEE Population-Averaged

	Cons.	*KMLICs*	*K2009MLICs*	*K2009HICs*	*K2020MLICs*	*K2020HICs*	R Squar
Coef.	0.118	-0.153	-0.294	-1.236	-2.651	-2.175	-
z-statistic	4.65	-4.95	-3.48	-10.04	-31.34	-17.67	(1409.1)
P Value	0.000	0.000	0.001	0.000	0.000	0.000	0.000

Tablo 15: RE Robusted GEE Population-Averaged

	Cons.	*KMLICs*	*K2009MLICs*	*K2009HICs*	*K2020MLICs*	*K2020HICs*	R Squar
Coef.	0.118	-0.153	-0.294	-1.236	-2.651	-2.175	-
z-statistic	4.70	-4.80	-4.07	-5.30	-13.38	-9.09	(1409.1)
P Value	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Tablo 16: Maximum Likelihood Estimation (MLE)

	Cons.	*KMLICs*	*K2009MLICs*	*K2009HICs*	*K2020MLICs*	*K2020HICs*	R Squar
Coef.	0.118	-0.153	-0.294	-1.236	-2.651	-2.175	-
z-statistic	4.65	-4.95	-3.48	-10.04	-31.34	-17.67	(1251.1)
P Value	0.000	0.000	0.001	0.000	0.000	0.000	0.000

Tablo 17: Driscoll-Kraay (1998) RE GLS Regresyon

	Cons.	*KMLICs*	*K2009MLICs*	*K2009HICs*	*K2020MLICs*	*K2020HICs*	R Squar
Coef.	0.118	-0.153	-0.294	-1.236	-2.651	-2.176	0.206
t-statistic	1.48	-2.49	-8.38	-17.03	-75.45	-29.96	(6969.5)
P Value	0.149	0.019	0.000	0.000	0.000	0.000	0.000

Tablo 18: Driscoll-Kraay (1998) Non-constant PLS Regresyon

	KMLICs	*K2009MLICs*	*K2009HICs*	*K2020MLICs*	*K2020HICs*	R Squar
Coef.	-0.034	-0.294	-1.118	-2.651	-2.056	0.208
t-statistic	-0.98	-8.38	$-37 * 10^{15}$	-75.45	-75.45	(5692.4)
P Value	0.337	0.000	0.000	0.000	0.000	0.000

3. Findings

The predicted models with different methods gave similar results with each other. In Table 9, Table 10 and Table 18, the models were estimated without constant and gave similar results with the other models. It is seen that all estimation methods give similar results. Because of existence of deviations from assumptions the model to be interpreted is the Driscoll-Kraay model. According to the Driscol-Kraay estimation results estimated by the random effects method in Table 17, the coefficient of all other variables except the constant coefficient is significant. The coefficient of the *KMLICs* variable is significant at the 5% significance level, and the coefficients of the other variables at the 1% significance level. R Squared value found at about 21%. Therefore, the model completely explains

about 21% of the change in employment. This R-Squared level is quite explanatory as only the effects of crises and country groups are analysed in the model. R square and the model was significant at the 1% significance level. According to the results, the employment rate in M-LICs between 1991 and 2020 is about 0.15% less. In 2009, when the effects of the Global Financial Crisis were observed, the employment rate was 0.29% less in M-LICs and 1.19% less in HICs compared to other years. In 2020, when the effects of the Covid-19 Health Crisis are observed, the employment rate is approximately 2.65% less in M-LICs and 2.06% less in HICs compared to other years. These results show that labor markets in low-income countries are more affected by the Covid-19 Health Crisis. However, the Global Financial Crisis affected the labor markets of high-income countries more. For this reason, it is necessary to support labor suppliers who are victims of the structuring of the labor markets of low-income countries and the ongoing Covid-19 Health Crisis.

CONCLUSION

Covid-19 Health Crisis differs greatly from the 2008 Global Financial Crisis in terms of its effects on economic income distribution. The measures taken to prevent the epidemic have narrowed the mobility of labour; this has put significant pressures on labour-intensive countries. In addition, the production structure of M-LICs that is SME-intensive and not suitable for remote work has gradually increased the negative effects of Covid-19 in M-LICs. This study examined these effects on labour markets.

The fact that the Covid-19 Health Crisis, which is the basic hypothesis of this study, caused more employment loss in M-LICs compared to the 2008 Global Financial crisis was tested by panel data modelling among 187 countries between 1991-2020. According to the obtained results, while the employment gap between M-LICs and HICs is closing in the 2008 Global Financial Crisis. However, with the Covid-19 Health Crisis, which was affective in 2020, this employment gap is increasing. Thus, it has been statistically proven that a crisis on the capital side more effects capital-intensive countries labour market, while the crisis on the labour factor more affects labour-intensive countries labour market.

The deterioration in the income distribution between countries, production factors and sectors may cause crises in the long term. Therefore, this study proposes that HICs, which are less affected by the Covid-19 Health Crisis, transfer resources to M-LICs with economic aid and support.

Annex 1: Countries Using Data in Analysis

NUM.	COUNTRY NAME	COUNTRY CODE	COUNTRY GROUP
1	Australia	AUS	High-Income Countries (HICs)
2	Austria	AUT	High-Income Countries (HICs)
3	Bahamas, The	BHS	High-Income Countries (HICs)
4	Bahrain	BHR	High-Income Countries (HICs)
5	Barbados	BRB	High-Income Countries (HICs)
6	Belgium	BEL	High-Income Countries (HICs)

7	Brunei Darussalam	BRN	High-Income Countries (HICs)
8	Canada	CAN	High-Income Countries (HICs)
9	Channel Islands	CHI	High-Income Countries (HICs)
10	Chile	CHL	High-Income Countries (HICs)
11	Croatia	HRV	High-Income Countries (HICs)
12	Cyprus	CYP	High-Income Countries (HICs)
13	Czech Republic	CZE	High-Income Countries (HICs)
14	Denmark	DNK	High-Income Countries (HICs)
15	Estonia	EST	High-Income Countries (HICs)
16	Finland	FIN	High-Income Countries (HICs)
17	France	FRA	High-Income Countries (HICs)
18	French Polynesia	PYF	High-Income Countries (HICs)
19	Germany	DEU	High-Income Countries (HICs)
20	Greece	GRC	High-Income Countries (HICs)
21	Guam	GUM	High-Income Countries (HICs)
22	Hong Kong SAR, China	HKG	High-Income Countries (HICs)
23	Hungary	HUN	High-Income Countries (HICs)
24	Iceland	ISL	High-Income Countries (HICs)
25	Ireland	IRL	High-Income Countries (HICs)
26	Israel	ISR	High-Income Countries (HICs)
27	Italy	ITA	High-Income Countries (HICs)
28	Japan	JPN	High-Income Countries (HICs)
29	Korea, Rep.	KOR	High-Income Countries (HICs)
30	Kuwait	KWT	High-Income Countries (HICs)
31	Latvia	LVA	High-Income Countries (HICs)
32	Lithuania	LTU	High-Income Countries (HICs)
33	Luxembourg	LUX	High-Income Countries (HICs)
34	Macao SAR, China	MAC	High-Income Countries (HICs)
35	Malta	MLT	High-Income Countries (HICs)
36	Mauritius	MUS	High-Income Countries (HICs)
37	Netherlands	NLD	High-Income Countries (HICs)
38	New Caledonia	NCL	High-Income Countries (HICs)
39	New Zealand	NZL	High-Income Countries (HICs)
40	Norway	NOR	High-Income Countries (HICs)
41	Oman	OMN	High-Income Countries (HICs)
42	Panama	PAN	High-Income Countries (HICs)
43	Poland	POL	High-Income Countries (HICs)

44	Portugal	PRT	High-Income Countries (HICs)
45	Puerto Rico	PRI	High-Income Countries (HICs)
46	Qatar	QAT	High-Income Countries (HICs)
47	Romania	ROU	High-Income Countries (HICs)
48	Saudi Arabia	SAU	High-Income Countries (HICs)
49	Singapore	SGP	High-Income Countries (HICs)
50	Slovak Republic	SVK	High-Income Countries (HICs)
51	Slovenia	SVN	High-Income Countries (HICs)
52	Spain	ESP	High-Income Countries (HICs)
53	Sweden	SWE	High-Income Countries (HICs)
54	Switzerland	CHE	High-Income Countries (HICs)
55	Trinidad and Tobago	TTO	High-Income Countries (HICs)
56	United Arab Emirates	ARE	High-Income Countries (HICs)
57	United Kingdom	GBR	High-Income Countries (HICs)
58	United States	USA	High-Income Countries (HICs)
59	Uruguay	URY	High-Income Countries (HICs)
60	Virgin Islands (U.S.)	VIR	High-Income Countries (HICs)
61	Afghanistan	AFG	Middle- and Low-Income Countries (M-LICs)
62	Albania	ALB	Middle- and Low-Income Countries (M-LICs)
63	Algeria	DZA	Middle- and Low-Income Countries (M-LICs)
64	Angola	AGO	Middle- and Low-Income Countries (M-LICs)
65	Argentina	ARG	Middle- and Low-Income Countries (M-LICs)
66	Armenia	ARM	Middle- and Low-Income Countries (M-LICs)
67	Azerbaijan	AZE	Middle- and Low-Income Countries (M-LICs)
68	Bangladesh	BGD	Middle- and Low-Income Countries (M-LICs)
69	Belarus	BLR	Middle- and Low-Income Countries (M-LICs)
70	Belize	BLZ	Middle- and Low-Income Countries (M-LICs)
71	Benin	BEN	Middle- and Low-Income Countries (M-LICs)
72	Bhutan	BTN	Middle- and Low-Income Countries (M-LICs)

73	Bolivia	BOL	Middle- and Low-Income Countries (M-LICs)
74	Bosnia and Herzegovina	BIH	Middle- and Low-Income Countries (M-LICs)
75	Botswana	BWA	Middle- and Low-Income Countries (M-LICs)
76	Brazil	BRA	Middle- and Low-Income Countries (M-LICs)
77	Bulgaria	BGR	Middle- and Low-Income Countries (M-LICs)
78	Burkina Faso	BFA	Middle- and Low-Income Countries (M-LICs)
79	Burundi	BDI	Middle- and Low-Income Countries (M-LICs)
80	Cabo Verde	CPV	Middle- and Low-Income Countries (M-LICs)
81	Cambodia	KHM	Middle- and Low-Income Countries (M-LICs)
82	Cameroon	CMR	Middle- and Low-Income Countries (M-LICs)
83	Central African Republic	CAF	Middle- and Low-Income Countries (M-LICs)
84	Chad	TCD	Middle- and Low-Income Countries (M-LICs)
85	China	CHN	Middle- and Low-Income Countries (M-LICs)
86	Colombia	COL	Middle- and Low-Income Countries (M-LICs)
87	Comoros	COM	Middle- and Low-Income Countries (M-LICs)
88	Congo, Dem. Rep.	COD	Middle- and Low-Income Countries (M-LICs)
89	Congo, Rep.	COG	Middle- and Low-Income Countries (M-LICs)
90	Costa Rica	CRI	Middle- and Low-Income Countries (M-LICs)
91	Cote d'Ivoire	CIV	Middle- and Low-Income Countries (M-LICs)
92	Cuba	CUB	Middle- and Low-Income Countries (M-LICs)
93	Djibouti	DJI	Middle- and Low-Income Countries (M-LICs)
94	Dominican Republic	DOM	Middle- and Low-Income Countries (M-LICs)

95	Ecuador	ECU	Middle- and Low-Income Countries (M-LICs)
96	Egypt, Arab Rep.	EGY	Middle- and Low-Income Countries (M-LICs)
97	El Salvador	SLV	Middle- and Low-Income Countries (M-LICs)
98	Equatorial Guinea	GNQ	Middle- and Low-Income Countries (M-LICs)
99	Eritrea	ERI	Middle- and Low-Income Countries (M-LICs)
100	Eswatini	SWZ	Middle- and Low-Income Countries (M-LICs)
101	Ethiopia	ETH	Middle- and Low-Income Countries (M-LICs)
102	Fiji	FJI	Middle- and Low-Income Countries (M-LICs)
103	Gabon	GAB	Middle- and Low-Income Countries (M-LICs)
104	Gambia, The	GMB	Middle- and Low-Income Countries (M-LICs)
105	Georgia	GEO	Middle- and Low-Income Countries (M-LICs)
106	Ghana	GHA	Middle- and Low-Income Countries (M-LICs)
107	Guatemala	GTM	Middle- and Low-Income Countries (M-LICs)
108	Guinea	GIN	Middle- and Low-Income Countries (M-LICs)
109	Guinea-Bissau	GNB	Middle- and Low-Income Countries (M-LICs)
110	Guyana	GUY	Middle- and Low-Income Countries (M-LICs)
111	Haiti	HTI	Middle- and Low-Income Countries (M-LICs)
112	Honduras	HND	Middle- and Low-Income Countries (M-LICs)
113	India	IND	Middle- and Low-Income Countries (M-LICs)
114	Indonesia	IDN	Middle- and Low-Income Countries (M-LICs)
115	Iran, Islamic Rep.	IRN	Middle- and Low-Income Countries (M-LICs)
116	Iraq	IRQ	Middle- and Low-Income Countries (M-LICs)
117	Jamaica	JAM	Middle- and Low-Income Countries (M-LICs)

118	Jordan	JOR	Middle- and Low-Income Countries (M-LICs)
119	Kazakhstan	KAZ	Middle- and Low-Income Countries (M-LICs)
120	Kenya	KEN	Middle- and Low-Income Countries (M-LICs)
121	Korea, Dem. People's Rep.	PRK	Middle- and Low-Income Countries (M-LICs)
122	Kyrgyz Republic	KGZ	Middle- and Low-Income Countries (M-LICs)
123	Lao PDR	LAO	Middle- and Low-Income Countries (M-LICs)
124	Lebanon	LBN	Middle- and Low-Income Countries (M-LICs)
125	Lesotho	LSO	Middle- and Low-Income Countries (M-LICs)
126	Liberia	LBR	Middle- and Low-Income Countries (M-LICs)
127	Libya	LBY	Middle- and Low-Income Countries (M-LICs)
128	Madagascar	MDG	Middle- and Low-Income Countries (M-LICs)
129	Malawi	MWI	Middle- and Low-Income Countries (M-LICs)
130	Malaysia	MYS	Middle- and Low-Income Countries (M-LICs)
131	Maldives	MDV	Middle- and Low-Income Countries (M-LICs)
132	Mali	MLI	Middle- and Low-Income Countries (M-LICs)
133	Mauritania	MRT	Middle- and Low-Income Countries (M-LICs)
134	Mexico	MEX	Middle- and Low-Income Countries (M-LICs)
135	Moldova	MDA	Middle- and Low-Income Countries (M-LICs)
136	Mongolia	MNG	Middle- and Low-Income Countries (M-LICs)
137	Montenegro	MNE	Middle- and Low-Income Countries (M-LICs)
138	Morocco	MAR	Middle- and Low-Income Countries (M-LICs)
139	Mozambique	MOZ	Middle- and Low-Income Countries (M-LICs)

140	Myanmar	MMR	Middle- and Low-Income Countries (M-LICs)
141	Namibia	NAM	Middle- and Low-Income Countries (M-LICs)
142	Nepal	NPL	Middle- and Low-Income Countries (M-LICs)
143	Nicaragua	NIC	Middle- and Low-Income Countries (M-LICs)
144	Niger	NER	Middle- and Low-Income Countries (M-LICs)
145	Nigeria	NGA	Middle- and Low-Income Countries (M-LICs)
146	North Macedonia	MKD	Middle- and Low-Income Countries (M-LICs)
147	Pakistan	PAK	Middle- and Low-Income Countries (M-LICs)
148	Papua New Guinea	PNG	Middle- and Low-Income Countries (M-LICs)
149	Paraguay	PRY	Middle- and Low-Income Countries (M-LICs)
150	Peru	PER	Middle- and Low-Income Countries (M-LICs)
151	Philippines	PHL	Middle- and Low-Income Countries (M-LICs)
152	Russian Federation	RUS	Middle- and Low-Income Countries (M-LICs)
153	Rwanda	RWA	Middle- and Low-Income Countries (M-LICs)
154	Samoa	WSM	Middle- and Low-Income Countries (M-LICs)
155	Sao Tome and Principe	STP	Middle- and Low-Income Countries (M-LICs)
156	Senegal	SEN	Middle- and Low-Income Countries (M-LICs)
157	Serbia	SRB	Middle- and Low-Income Countries (M-LICs)
158	Sierra Leone	SLE	Middle- and Low-Income Countries (M-LICs)
159	Solomon Islands	SLB	Middle- and Low-Income Countries (M-LICs)
160	Somalia	SOM	Middle- and Low-Income Countries (M-LICs)
161	South Africa	ZAF	Middle- and Low-Income Countries (M-LICs)
162	South Sudan	SSD	Middle- and Low-Income Countries (M-LICs)

163	Sri Lanka	LKA	Middle- and Low-Income Countries (M-LICs)
164	St. Lucia	LCA	Middle- and Low-Income Countries (M-LICs)
165	St. Vincent and the Grenadines	VCT	Middle- and Low-Income Countries (M-LICs)
166	Sudan	SDN	Middle- and Low-Income Countries (M-LICs)
167	Suriname	SUR	Middle- and Low-Income Countries (M-LICs)
168	Syrian Arab Republic	SYR	Middle- and Low-Income Countries (M-LICs)
169	Tajikistan	TJK	Middle- and Low-Income Countries (M-LICs)
170	Tanzania	TZA	Middle- and Low-Income Countries (M-LICs)
171	Thailand	THA	Middle- and Low-Income Countries (M-LICs)
172	Timor-Leste	TLS	Middle- and Low-Income Countries (M-LICs)
173	Togo	TGO	Middle- and Low-Income Countries (M-LICs)
174	Tonga	TON	Middle- and Low-Income Countries (M-LICs)
175	Tunisia	TUN	Middle- and Low-Income Countries (M-LICs)
176	Turkey	TUR	Middle- and Low-Income Countries (M-LICs)
177	Turkmenistan	TKM	Middle- and Low-Income Countries (M-LICs)
178	Uganda	UGA	Middle- and Low-Income Countries (M-LICs)
179	Ukraine	UKR	Middle- and Low-Income Countries (M-LICs)
180	Uzbekistan	UZB	Middle- and Low-Income Countries (M-LICs)
181	Vanuatu	VUT	Middle- and Low-Income Countries (M-LICs)
182	Venezuela, RB	VEN	Middle- and Low-Income Countries (M-LICs)
183	Vietnam	VNM	Middle- and Low-Income Countries (M-LICs)
184	West Bank and Gaza	PSE	Middle- and Low-Income Countries (M-LICs)

185	Yemen, Rep.	YEM	Middle- and Low-Income Countries (M-LICs)
186	Zambia	ZMB	Middle- and Low-Income Countries (M-LICs)
187	Zimbabwe	ZWE	Middle- and Low-Income Countries (M-LICs)

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