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Editör: Doç.Dr. Şahin Karabulut

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LABOR MARKET IMPACTS ECONOMIC CRISES IN TÜRKİYE¹

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Serife GENC ILERI³

1. INTRODUCTION

The Turkish economy has gone through series of economic crises since the 1980s even after the continuous market-oriented reforms put in place by the government. These include the 1980-1981 crisis, the 1983 banking crisis, the 1988 stock market and foreign currency crisis, the 1994 financial market crisis, the crisis of 2001 and the global financial crisis of 2008-09, 2018 exchange rate crisis.

The main aim of this work is to investigate the labor market impacts of the 1994, 2001 and 2008 crises. To achieve this, we seek answers to the following questions:

- Did the three crises affect unemployment in Türkiye during these periods?
- Was there a difference between the degree to which female and male workers were affected from the crisis?

¹ This chapter is derived from Amaama Abdulmalik's MA in Economics thesis defended in 2021 at Ibn Haldun University.

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- Which of these crises had more impact on unemployment and why?
- Does economic crisis have any impact on unemployment?

The relationship between unemployment and GDP in the literature is known as the Okun's law proposed by Arthur Okun (1962). This law shows the existence of a negative relationship between these two variables and it has been confirmed in the Euro zones and some developed and developing countries including Türkiye (Altunöz, 2019; Brincikova & Darmono, 2015; Salman & Shukur, 2014 and Dogan, 2012). However the Okun's law does not hold for both genders in the long run as its effect withers and gets shadowed by other factors as found in Türkiye (Aktar and Ozturk (2009)). Bonaventura et al. (2018) associated this difference in the rate of impact to gender to the fact that the females are employed in more sensitive and more flexible jobs than their male counterpart. Empirical analysis results in this chapter shows that the crisis of 2001 had the most intense impact on the labor market of Türkiye especially the female unemployment: over 48 percent of females were unemployed during the crisis while only 37 percent of male were unemployed. The 2008-09 crisis also increased both male and female unemployment by 22 percent and 21 percent respectively. However, the crisis of 1994 did not have any impact on the labor market as the expansionary policy implemented by the government in the last quarter of 1994 cancelled out the increase in unemployment experienced in the beginning of the year. Furthermore, the combined impacts of the three crises were higher for the female unemployment (19%) than the male unemployment (11%). These findings support the theory and earlier works.

2. LITERATURE REVIEW

This study aims to examine the link between macro aggregates and unemployment and how unemployment for different groups of workers was affected during the three crises periods in Türkiye. In that regard, it is part of the literature that investigates unemployment at the macro level and its cyclical behavior.

The magnitude of the effect of economic crisis on employment depends to some extent on the degree of labor market flexibility, labor market policies and the period we are looking at. Bernal-Verdugo et al. (2012) investigate the impact of financial crisis on 97 countries within a period of 28 years. Their findings suggest that, in the short term the negative effect of crisis on employment is more profound but it fades away in the medium term in countries with flexible labor institutions unlike those with stiff labor market institutions. Again, policies implemented in the labor market during crisis have positive impact on employment in the medium term. The institutions in a country are important as they drive how severe the impact of economic and financial crisis will be on unemployment. Jianu (2019) show that, exclusive institutions are more vulnerable to shock to the economy and do not resilient easily as inclusive institutions in the European Union.

Qerimi and Sergi (2017a) investigate the nature and how the 2008 economic crisis affected employment in the South Eastern Europe. They find an unequal effect on particular groups in the region which are women and children, the minorities as well as migrants and this has worsen the unemployment condition in the region with an increase in social gap within groups. Grekousis (2018) study how the 2008 global crisis affected the unemployment in the European Union by using 2008-2013 data. Their results show countries like

Portugal, Italy, Greece and Spain experienced higher unemployment rates while Germany, Austria, and the surrounding regions experienced more resilient outcome with lower unemployment rate.

Economic crises result in mobility of labor which may mitigate the negative effects of the crisis on labor markets. Labor decides to move conditional on accessibility and availability of better standard of living elsewhere which worsen the impact of the crisis on the labor market. In Wiesböck et al.(2016) they find that the mobility of labor from Czech Republic, Hungary and Slovakia to Austria increased after the 2008-2009 crisis with the majority seen among the most vulnerable group of workers; young, female workers and the lowly educated workers and this is due to the gradual opening of the Austrian labor market. This minimized the negative impact of the crisis on unemployment in their home country. Contrary to this view, Mohino and Ureña (2020) propose that governments should work on controlling the level of income disparities among workers so as to reduce the movement of labor following an economic crisis.

Tambunan (2010) studied the impact of the East-Asian crisis of 1997-98 and the global financial crisis of 2008-09 on the key macroeconomic variables in the Indonesian economy. They found a decline in the impact of the second crisis as compared to the first crisis. The impact was lesser on Indonesia compared to other peer countries in the region because they have a large informal sector which absorbed the labor displaced by the crisis. Also, Kroeger and Meier (2011) study the 2008-2009 crisis on the labor market of Tajikistan and find that, the self-employed are affected more than the wage and salary workers. The probability of entering unemployment, inactivity and unpaid work increased in the period of crisis with females, young and very old individuals being at more risk than the male.

In regard to Türkiye not a lot of empirical work has been carried out concerning the impact of economic crisis on the labor market. Kahyalar et al. (2020) study the overall crises from the period of 1980 to 2011 on the informal sector of Turkey. They find a negative impact of each crisis on the labor market of the country. Verlagsgesellschaft et al. (2010) investigate which of the 2001 internal crisis and the 2008 external crisis mostly affected the youth unemployment. Their findings suggest an overall significant increase in unemployment within the periods of study with female youth affected most. This impact on female youth is worse in the 2008-2009 crisis than the rest of the crisis. On the other hand, the crisis of 2001 had a prolonged negative impact at a higher rate on employment than that of 2008 due to the stability of the economy and higher growth rate after the 2001 crisis.

3. DATA AND METHODOLOGY

We use annual data covering 1990-2019 periods. This period is considered to check the impact of before, during and after the crisis on unemployment. The data on Gross Domestic Product (GDP), external debt, and exports were retrieved from World Bank Development Indicators (WDI). Unemployment and labor force participation rate are obtained from the International Labor Organization (ILO).

The econometric method used for the estimation of the models is Vector Autoregression X (VARX) as it is a model used in the presence of both endogenous and exogenous variables which was proposed by Pesaran et al (2000). The dependent variables of interest are total, female and male unemployment in Turkey. The independent variables comprise of both exogenous and endogenous parts. The endogenous components which also serve as control variables are Gross

Domestic Product (GDP), labor force participation rate (LFPR), external debt (DEBT) and exports (EXP). These variables have effects on unemployment, and they are different under each of the crisis. We will generate three dummies for the economic crises which correspond to 1 in the year there is crisis and 0 when there is no crisis representing the exogenous component.

Model (1) has total employment as dependent variable. Model (2) also has male employment while Model (3) has female employment as dependent variables. All the models have external debt, exports, labor force participation rate and Gross Domestic Product as independent and control variables. Also, dummy variables representing each crisis as well as the dummy for the breaks are added to the independent variables.

Determination of lag structure of a VARX model before estimating is key. In order to establish the suitable lags structure, Schwarz Bayesian Information Criterion (SBC) is used in this work. Results of the SBC suggest that a two period lag is appropriate for each model.

3.1. Results of VARX Analysis

The mathematical representations of the three models are presented below. Π is the coefficient of the long run variables and it shows the speed at which the variables adjust back to equilibrium after a shock. Also, Γ_{iY} is the short run coefficient while Ψ_y is the coefficient for the exogenous variables. The crisis of 1994 started in 1993 that of 2001 also started from last quarter of 2000 and that of 2008 ended in 2009. Due to this, the dummy 1994 consists of 1 in 1993 and 1994, dummy 2001 contains 2000 and 2001 then 2008 contains 2008 and 2009 with 0 in the rest of the years. Furthermore, the structural break dummy 2001 has 1 in 2001 and 0 in the rest of the years. These dummies are exogenous, so they are added to the short run results of the VARX model

$$\begin{aligned} \Delta T.UMP_t &= a_0 + a_{1y}t - \Pi GDP_{t-1} + \Pi EXP_{t-1} + \\ &\Pi DEBT_{t-1} + \Pi LFPR_{t-1} \sum_{i=1}^2 \Gamma_{iy} \Delta GDP_{t-1} \sum_{i=1}^2 \Gamma_{iy} \Delta EXP_{t-1} + \\ &\sum_{i=1}^2 \Gamma_{iy} \Delta DEBT_{t-1} + \sum_{i=1}^2 \Gamma_{iy} \Delta LFPR_{t-1} + \Psi_y 1994_t + \\ &\Psi_y 2001_t + \Psi_y 2008_t + \Psi_y BREAK 2001_t + \\ &\Psi_y BREAK 20014_t + \epsilon_t \end{aligned} \quad (7)$$

$$\begin{aligned} \Delta M.UMP_t &= a_0 + a_{1y}t - \Pi GDP_{t-1} + \Pi EXP_{t-1} + \\ &\Pi DEBT_{t-1} + \Pi LFPR_{t-1} \sum_{i=1}^2 \Gamma_{iy} \Delta GDP_{t-1} \sum_{i=1}^2 \Gamma_{iy} \Delta EXP_{t-1} + \\ &\sum_{i=1}^2 \Gamma_{iy} \Delta DEBT_{t-1} + \sum_{i=1}^2 \Gamma_{iy} \Delta LFPR_{t-1} + \Psi_y 1994_t + \\ &\Psi_y 2001_t + \Psi_y 2008_t + \Psi_y BREAK 2001_t + \\ &\Psi_y BREAK 20014_t + \epsilon_t \end{aligned} \quad (8)$$

$$\begin{aligned} \Delta F.UMP_t &= a_0 + a_{1y}t - \Pi GDP_{t-1} + \Pi EXP_{t-1} + \\ &\Pi DEBT_{t-1} + \Pi LFPR_{t-1} \sum_{i=1}^2 \Gamma_{iy} \Delta GDP_{t-1} \sum_{i=1}^2 \Gamma_{iy} \Delta EXP_{t-1} + \\ &\sum_{i=1}^2 \Gamma_{iy} \Delta DEBT_{t-1} + \sum_{i=1}^2 \Gamma_{iy} \Delta LFPR_{t-1} + \Psi_y 1994_t + \\ &\Psi_y 2001_t + \Psi_y 2008_t + \Psi_y BREAK 2001_t + \\ &\Psi_y BREAK 20014_t + \epsilon_t \end{aligned} \quad (9)$$

The results in Table 3.1.1 show that the crisis of 1994 was insignificant but generated a decline in total unemployment by 10%, male unemployment by 14 % and female unemployment by 5%. On April 1994 the government launched a stabilization program which was backed by IMF to help solve the damages caused by the crisis. Even though the success of this program was short-lived, it increased exports and reduced imports in Türkiye which in turn increased the macroeconomic indicators including employment (Collection, 2002). This is the reason why the financial crisis of 1994 did not have any impact on total unemployment as well as male and female unemployment as the impact cancelled each other.

The 2001 financial crisis caused an increase of 57% in total unemployment, 58% in male unemployment and 48 % in female unemployment. The economy of Türkiye did not recover

fully from the damage of the 1994 crisis before experiencing the crisis of 2001. This condition coupled with the movement of labor from agriculture sector to the manufacturing sector as well as the halt of support from the international monetary fund further deteriorated the economy prior to the 2001 crisis. The 2001 financial crisis in turn worsened the already deteriorated state of unemployment in Turkey. This impact is more profound in the male unemployment than the female unemployment and it is in line with findings of Verlagsgesellschaft et al. (2010) and contrary to the work of Cömert (2018).

Table 3.1.1 Results of the VARX analysis for Model 1

Dependent variable: LOG TOTAL UNEMPLOYMENT					
Variable	Lags	Coeff.	Std. Error	t-stat.	P-value
GDP	GDP_{t-1}	-0.61	0.94	-0.65	0.52
	GDP_{t-2}	-3.00***	0.86	3.50	0.00
EXP	EXP_{t-1}	1.32***	0.34	3.85	0.00
	EXP_{t-2}	-0.38	0.35	-1.08	0.28
LFPR	$LFPR_{t-1}$	0.01	0.02	0.34	0.73
	$LFPR_{t-2}$	0.06**	0.03	2.23	0.03
DEBT	$DEBT_{t-1}$	-0.46*	0.25	-1.84	0.07
	$DEBT_{t-2}$	0.18	0.15	1.22	0.23
2001 break		0.02	0.11	0.16	0.87
1994 dummy		-0.10	0.11	-0.95	0.35
2001 dummy		0.57***	0.17	3.41	0.00
2008 dummy		0.30***	0.08	3.73	0.00

Howbeit, the global crisis of 2008 had lesser impact on unemployment as compared to the financial crisis of 2001. Number of unemployed females rose by 46% because of this crisis. 2008 crisis increased male unemployment by 21%. Also, total unemployment increased by 30 % which is 27 percentage points lower compared to the impact of 2001 crisis. This is associated with condition of the Turkish economy prior to each of these crises. Unemployment started increasing from 2000 and peaked in 2001 and stayed at that level until 2003. However, unemployment saw a sharp increase in 2008 following a

continuous fall from 2005. The negative impact of unemployment started to decline by early 2009. There was an increase in the labor force participation rate of females after the crisis of 2001 due to the loss of jobs of a lot of males following the crisis and move of female home production to market production. According to Turkstat Labor Force Statistics (2012), within the periods of 2004 and 2012, there was an increase in the movement of female labor from both the informal sector and the agricultural sector to the formal sector, but 54% females are still in the informal sector. However, due to inequality in gender, this movement has not earned better working conditions for females as their male counterpart. Females work in lower paying, or a part time works and experience lower amount of income regardless of the fact that both the labor law and constitution prohibits wage gap in an institution. This is influenced by the level of education as those with higher degree are employed in higher positions and are affected lesser when there is a shock to the economy than those in the vocational high schools (İnan & Aşık, 2015). That is the reason why the female labor was hit most by the 2008 crisis due to the nature of female jobs.

Table 3.1.2 Results of the VARX analysis for Model 2

Dependent variable: LOG MALE UNEMPLOYMENT					
GDP	GDP_{t-1}	-1.04	1.40	-0.74	0.46
	GDP_{t-2}	-2.45*	1.24	-1.98	0.05
EXP	EXP_{t-1}	1.59	0.36	1.64	0.10
	EXP_{t-2}	0.46	0.44	-1.03	0.31
LFPR	$LFPR_{t-1}$	-0.00	0.03	-0.05	0.96
	$LFPR_{t-2}$	-0.02	0.02	0.84	0.43
DEBT	$DEBT_{t-1}$	0.30	0.38	-0.79	0.43
	$DEBT_{t-2}$	0.19	0.20	0.95	0.34
2001 break		-0.15*	0.08	-1.87	0.07
1994 dummy		-0.14	0.17	-0.82	0.42
2001 dummy		0.58**	0.20	2.91	0.01
2008 dummy		0.21**	0.09	2.23	0.03

Table 3.1.3 Results of VARX analysis for Model 3

Dependent variable: LOG FEMALE UNEMPLOYMENT					
GDP	GDP_{t-1}	0.49	1.02	0.48	0.63
	GDP_{t-2}	-3.32***	0.85	3.92	0.00
EXP	EXP_{t-1}	0.37	0.40	0.93	0.36
	EXP_{t-2}	-0.37	0.36	-1.02	0.31
LFPR	$LFPR_{t-1}$	0.00**	0.03	0.19	0.85
	$LFPR_{t-2}$	0.02	0.03	0.73	0.47
DEBT	$DEBT_{t-1}$	0.62**	0.27	-2.31	0.02
	$DEBT_{t-2}$	0.31	0.21	1.51	0.14
2001 break		0.32	0.21	1.51	0.14
1994 dummy		-0.06	0.11	-0.56	0.58
2001 dummy		0.43*	0.21	2.04	0.05
2008 dummy		0.46***	0.12	3.95	0.00

NOTE: *, **, *** represents rejection of the null hypothesis at 10%, 5% and 1% respectively.

4. CONCLUSION

The main aim of the research is to check how the crises of 1994, 2001 and 2008-09 impacted the labor market of Türkiye in context of unemployment with regards to gender. We made use of the Vector Autoregressive X (VARX) method for the regressions in order to achieve our aim. The results show a negative relation between GDP and unemployment in the short run. The negative impact is more on the female unemployment than the male unemployment as found in some countries discussed in this work. Furthermore, export and labor force participation rate impact negatively on unemployment in the long run but not the short run as found in the literature. The decline in unemployment as labor force participation increases was however not experienced in the female unemployment in the crisis of 2008-09. This is due to the employment of the female labor in most flexible jobs in the labor market. Contrary to this, external debt has a positive impact on unemployment in

both the long and short runs. The structural break of 2001 decreased male unemployment by 15% in that year but had no impact on the female unemployment due to the increase in labor force participation the females.

Most importantly, the result shows that the economic crisis of 1994 did not have any impact on unemployment as the stabilization program implemented by the government in the last part of 1994 increased export which in turn increased the employment in that period. This helped counter the increase in unemployment experienced in the beginning of the crisis, thereby neutralizing the impact.

However, the crises of 2001 and 2008-09 had a positive impact on unemployment in each of the periods. Total unemployment increased more in the 2001 crisis than that of the 2008 crisis. This is due to the reduction in employment as well as the deteriorated state of the economy in 2001. Also, post 2001 crisis saw an improvement in the all sector of the Turkish economy from the IMF barked policies implemented by the government.

Furthermore, the economic crises of 2001 introduced a new face in the labor market as the participation of females increased with a shift from agriculture, home production as well as informal sector to formal sector experienced. Regardless of this, disparity between the male and female in terms of position occupied due to education and other factors placed the female in the flexible part of the formal sector. This can be seen from the results as the financial crisis of 2001 increased the unemployment on males more than females while female severed most in the global crisis of 2008-09. The initial stage of unemployment as well as the policies at each period determines the intensity of the crisis. Again, the economic crisis combined affects the unemployment in Türkiye positively with female

labor experiencing more of the impact as compared to their male counterpart.

Moreover, the state of unemployment and employment as well as the policy implemented after a crisis is very important in determining the severity of a crisis in unemployment. Therefore, it is important for policy makers to implement policies that target the growth of the economy such as exports to help maintain any shock to the economy by creating jobs. Education should also be such that it empowers and provides the right experience employers are seeking especially in the female to enable them to be able to occupy higher positions and create jobs.

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