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The Relation Between Divorce and Woman Labor Force, Savings And Male Unemployment: Evidence From Turkey

Boşanma İle Kadın İşgücü, Tasarruf ve Erkek İşsizliği İlişkisi: Türkiye Bulguları

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ÖZ

Bu çalışma, 1990-2020 yıllık verileri kullanılarak erkek işsizlik oranı, kadınların istihdama katılım oranı ve tasarrufun boşanma oranlarına etkisi arasındaki ilişkiyi incelemektedir. Serilere birim kök testleri uygulanmış, sınır testi yapılmış ve uzun dönemli ARDL eşbütünlüme testi yardımıyla katsayılar hesaplanmıştır. Araştırmanın sonuçlarına göre, kadınların işgücüne katılımındaki %1'lik bir artış boşanmayı %0,07 oranında azaltırken, tasarruftaki %1'lik bir artış boşanmayı %0,1 oranında azaltmaktadır. Erkek işsizliğindeki %1'lik artış ise boşanmaları %0,017 artırmaktadır. İstihdam piyasası ve işsizlik ekonomik bir paradigma olarak değerlendirilse de sosyal maliyetleri açısından değerlendirildiğinde psikolojik, sosyolojik ve kültürel olarak da önemli bir yer tutmaktadır. Bu yönüyle işsizlik, tasarruf ve kadının istihdam piyasasındaki varlığı hanenin refahını her açıdan belirleyen önemli unsurlardır.

ABSTRACT

This study examines the relationship between male unemployment rate, female participation in employment and the effects of saving on divorce rates by using annual data from 1990 to 2020. Unit root tests were applied to the series, the bound test was performed, and long-term coefficients were calculated before analyzing the relationships to be revealed with the help of the ARDL cointegration test. According to the results of the study, while a 1% increase in female labor force participation reduces divorce by 0.07%, a 1% increase in savings reduces divorce by 0.1%. The 1% increase in male unemployment increases divorces by 0.017. Although the employment market and unemployment are evaluated as an economic paradigm, they also occupy an important place psychologically, sociologically, and culturally when evaluated in terms of their social costs. In this aspect, unemployment, savings, and the existence of women in the employment market are the important factors that holistically determine the wealth the household.

1. Introduction

Unemployment is partial or complete exhaustion of an individual's economic resources. Individuals, families, households, and societies are directly affected by unemployment. Even though this unemployment period takes place in the short term or the long term, in any case, it causes life standards of people negatively and destructively

(Sandalcılar, 2012). Another result of unemployment is social costs. Individuals who lost their job lost also their family income, social dignity, self-esteem, social environment and have serious financial difficulty. Connecting with increasing unemployment rate, crime, suicide, alcoholism, family violence, and social unrest rate increase in a society (Ağayev, 2010).

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One of the consequences of unemployment in society is an increase in the divorce rate. However, there is not only one explanation for why people divorce? While the reasons of divorce can be explained by demographic, social, and psychological causes, economical causes also have a strong influence on couple relationships (Jensen and Smith, 1990). People planning to get married, usually prefer another person with better living conditions, but unexpected consequences and new negative circumstances, such as unemployment, can be disappointing and negatively affect the couple's relationship (Cornelius, 2003).

Besides, the unemployment effect on divorce also may be explained by opportunity cost and utility-maximizing rule. The opportunity cost of being married or single is an important factor for couples. People decide in a way of maximum opportunity cost but after in marriage if there are new unexpected situations like unemployment that decrease their opportunity costs, divorce can be the solution for couples. Unemployment of one of both couples affects negatively the opportunity cost that is provided by marriage so the decreasing opportunity cost of marriage brings together relationship problems.

The divorce rate might be influenced by the couple's economic conditions. For example, researches suggest that unemployment factor is one of the strongest contributor to marital problems. Although this argument seems like a strong possibility, most studies on this topic have used individual-level data (South, 1985). So these studies are open to multiple interpretations. The economic status of people is an important factor for their well-being in terms of psychically and also psychologically. Economic hardship cause stress and stress level affect negatively their resources and also capacity to cope (Lazarus and Folkman, 1984). Stress also influences marital relationships. In Komarovsky's study (1940) husbands' unemployment during the Great Depression, both couples initially were positive about a new job facility but in time, couples became nervous and tension between unemployed men and their wives increased. In the long-term unemployment and economic hardship create stress and argument between spouses.

During the farm crisis of the 1980s hardship in economic standards increase couple's stress and hostility among husbands and depression among wives. Besides, researchers indicate that negative economic conditions in families decrease spouses' expressions of their emotional support and satisfaction (Conger and Elder, 1994; Conger et al., 1990; Conger and Conger, 2002). A study in Nebraska found that economically stressed farmers thought about divorce. This study supports that the depressive effect of economic recession causes divorce (Johnson and Booth, 1990). Another study in a national survey of married couples indicates that family income has a strong influence on perceived economic hardship and it turns to low couple happiness, less couple interaction, and more couple problems. And all of these problems cause more thinking

about divorce between married couples (Hoffman and Duncan, 1995).

Some researchers support that unemployed husbands cause more marital dissolution in marriage. Studies consistently support that especially husband's low earnings create more risk for marital dissolution (Ono, 1998). Unemployment among husbands was associated with an important factor for divorce, similar results have been reported also in several European countries. In Denmark, unemployed husbands but not wives were associated with divorce but in Finland and Norway, either husbands or wives were positively associated with divorce (Jalovaara, 2003, Hansen, 2005). Taken together, these studies provide strong support for the unemployment rate is strongly associated with couple problems so a change in unemployment may affect the number of divorces.

However, stress level associated with job loss takes time to influence negatively a spouse's relationship. The divorce period also takes a long time and couples wait months or years before their divorces are finalized. During this period unemployed couple may find a job and their relationship problems may resolve so actually influence of unemployment on marital problems may have a higher rate (Bramlett and Mosher, 2001).

Consistent with these researchers, family income was substantially lower between mothers than fathers following divorce. The life standard of couples decreases after divorce because of taxes, divorce payment, government transfers, child support, and alimony (Braver, 1999). So, divorce during periods of unemployment and economic insecurity may seem a bad solution for husbands and wives.

Researchers indicated that there is a strong relationship between psychological stress and divorce after unemployment (Jalovaara, 2003). However, there is a second perspective that when one of the couples is jobless, thinking about divorce may be postponed. Because divorces are costly period and couples have to change their living conditions and also accumulation. If an unemployed spouse depends on an employed spouse for insurance, divorce is also a difficult period. Spouses spend more money on court costs, lawyer's fees, moving to a new home for at least one or often both couples, besides buying new furniture is also costly spending (Hansen, 2005). So unemployment rises stress levels between couples but thinking about divorce is also challenging to decide when financial sources are insufficient because of unemployment (Amato, P. R., & Beattie, B., 2011). For example in Turkey, there is a negative correlation between divorce and unemployment so the divorce rate decrease while the unemployment rate is increasing. According to the result of researches in both the west and east part of Turkey, the time of high unemployment exist, researchers indicated less divorce rate in Turkey. One of the strong reasons for this negative correlation is divorce cost in Turkey.

Not only during unemployment also concerning about future

joblessness increase stress level and arguments between couples and leading divorce (Smock et al., 1999). Besides, researchers support that women's standard of living conditions declines following divorce. Similarly, household income was substantially lower among mothers than fathers after divorce (Peterson, 1996). Despite less well documented, the life standard of most men also decreases after divorce.

According To McManus and DiPrete, economic interdependence between husbands, and wives has raised in recent decades because of women's increased labor force participation, indeed this rising in women's labor causes a decline in men's earnings (specifically men without college degrees). Depending on these observations, researchers found that men are more likely to lose financial ground following divorce.

2. Literature

Studies conducted on couples after divorce show that the living standards of both men and women are fallen (Smock et al., 1999; Peterson, 1996). However, due to the increase in the labor force participation rate of women in recent years, their dependence is also decreasing (McManus and DiPrete (2001). Following this, the real return of women in the sector has increased over the years, and their contribution to the household income has followed this in monetary terms. This situation has also brought the sharing of men and women about household chores closer to each other. Following this convergence, after one of the spouses leaves the labor market or becomes unemployed, increased stress and livelihood difficulties can lead couples to divorce (Lazarus and Folkman, 1984; Komarovsky 1940; Conger and Elder, 1994; Conger et al., 1990; Conger and Conger, 2002). Studies, especially focusing on unemployment and divorce, indicate the presence of psychosocial stress (Preston and McDonald, 1979; Ross and Sawhill, 1975; Bumpass et al. 1991; Lewin 2005) found that unemployment among husbands is associated with an increased risk of divorce (Amato and Beattie, 2011).

The studies in which divorce is explained by economic reasons in Turkey and around the world are separated from each other by three main lines. The first of these is the unemployment and the labor force participation rate of women; the second is the unemployment and divorce rate, and the third is the socio-economic change of men and women after divorce. In summary, all these studies will be able to be compiled as the dynamics affected by unemployment and affected by divorce. Within the scope of this study, the effect of macroeconomic parameters on divorce will be investigated (Amato and Beattie, 2011).

A decrease in marriage rates related to OECD countries has been detected since 1970 (OECD, 2014: 93). Considering the increase in the divorce rate with this decrease, it can be said that these structural changes lead to more comprehensive results. The increase in divorce rates and the indicated changes in the family structure have led to the

obligation to meet the need for financial support for women (Alptekin and Luo, 2017). In the world, especially in the 1980s, the participation of women in the labor market has increased rapidly. In later years, the relationship between women's participation in the labor force and the divorce rate has begun to be investigated (Bentszen and Smith, 2002). Similarly, the increase in marriage rates and divorces can be considered as an element that includes women in the labor market after divorce (Burstain, 2007).

The relationship between divorce, women, and economic parameters in Turkey is also one of the most studied issues recently. When the economic dynamics in question were examined, analyses were made using different variations of similar variables such as divorce and unemployment (Hansen, 2005; Tsung Huang 2013), women's labor force participation and growth (Günsoy and Özsoy 2012; Er, 2012; Korkmaz and Alacahan 2013; Kasa and Alptekin, 2015), women's labor force participation rate and divorce rate (Alptekin and Luo, 2017). With respect to this, studies illustrate that respectively unemployment causes divorce, there is a positive relationship between women's participation in growth and women's participation in the labor force appreciate unemployment rate. According to the results of another study, it is observed that while the participation rate of married women in total employment didn't increase, the working time (hours) of working married women increases. However, this increase in hours didn't have a strong effect (Hoehn-Velasco and Penglase, 2021).

Özer and Topal (2017) focused on youth unemployment and its effect on divorce in their study investigating the relationship between the labour market and divorce in Turkey. The authors used the panel data method and found a positive and reciprocal relationship between the variables. In a study investigating the relationship between unemployment and divorce, structural break cointegration tests and causality analysis were applied. The study suggested a two-way positive relationship between the variables (Bayrak, S., 2019).

In this study, the relationship between unemployment and divorce has been tried to be explained from a different point. The main factor that will distinguish this study from other studies is the variable added in parallel with the fact that the economic independence of women increases divorces. In addition to women's participation in the labor force, the tendency of individuals to save money was also used to explain the increase in divorces. Savings rates are also included in the model, based on the idea that women can more easily go down the divorce path due to being wary of possible problems.

3. Data

In the study, women's labor force participation rate, crude divorce rate, and savings rates were used (annual 1990 - 2020). From the mentioned data, the savings rate, unemployment rate for men, and the labor force

participation rate of women were obtained from the world bank, and the divorce rate was obtained from the Turkish Statistical Institute (Statistical Indicators 1923-2011).

4. Methodology and Findings

In order to determine the long-term coefficients based on the existence of the cointegration relationship,

$$kbr_t = \beta_0 + \sum_{i=1}^p \gamma_{1i}kbr_{t-i} + \sum_{i=0}^m \gamma_{2i}femlf_{t-i} + \sum_{i=0}^n \gamma_{3i}\mu_{t-i} + \sum_{i=0}^k \gamma_{4i}sv_{t-i} + u_t \quad (1)$$

equation (1) is used. Here, the terms p, m, n, k represent the optimal lag length for each variable.

In this study, which examined the effect of crude divorce rate, the share of total savings in GDP, women's labor force participation rate, and men's unemployment rate on data from 1990 and 2019 in Turkey, the ARDL model was used

to explain a healthier cointegration relationship over a long period. In addition, some of the variables used in the model are stationary at the level of 10%, and the rest are stationary at I(1). In this situation, it is recommended to use the ARDL model in different degrees of stationarity. (Şimşir et.al., 2015).

For a time series to be stationary, its mean and variance must not change over time. In addition, the covariance between two periods should not depend on the period for which it is calculated, but only on the distance between the two periods (Gujarati, 2005). In this study, the stationarity of the variables was analyzed using the (Dickey-Fuller, 1979) and (Phillips-Perron, 1988) tests.

Table1. ADF and PP Unit Root Test

		Participation of women to labor force (femlf)	Male unemployment (mu)	Rate of Total savings in GDP (sv)	Crude divorce rate (kbr)	
ADF Unit Root	Level	-1.09	-1.95	-2.82*	-0.80	
	First Differences	-5.77***	-5.32***	-8.63***	-5.76***	
	% 1	-3.67	-3.63	-3.60	-3.60	
	% 5	-2.96	-2.94	-2.93	-2.93	
	% 10	-2.62	-2.61	-2.60	-2.60	
	Phillips-Perron Unit Root	Level	-1.05	-1.91	-2.70*	-0.69
		First Differences	-5.78***	-6.61***	-8.63***	-5.72***
		% 1	-3.67	-3.63	-3.60	-3.60
		% 5	-2.96	-2.94	-2.93	-2.93
		% 10	-2.62	-2.61	-2.60	-2.60

***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

All the data that are the subject of the study are stationary at the level, so it is also possible to use Johansen and Engle-Granger in the cointegration preference. However, due to the low number of observations, ARDL will give statistically accurate results. In the following sections of the study, the ARDL test will be applied and its robustness will be checked with diagnostic tests.

Table 2. Bound Test Results

k	F statistics	Critical value
3	12.50	[4.3 I(0) – 5.23 I(1)]%1

k' is the number of independent variable. The critical values were determined by Pesaran et al. The Table in (2001:300) is taken from CI(iii).

According to the results of the Bound test (Table-2), the statistical value of F was found to be 12.50. Since this value is higher than the critical value compared to 1%, the H0 hypothesis has been rejected. Because of this, it has been concluded that there is a cointegration relationship. The model expressing the existence of the relationship in question is included in Table-3.

Table 3. ARDL(4,4,4,4) model results.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
KBR(-1)	-0.301711	0.160342	-1.881665	0.1186
KBR(-2)	-0.544271	0.122783	-4.432774	0.0068
KBR(-3)	-0.689452	0.086344	-7.984965	0.0005
KBR(-4)	-0.893487	0.135416	-6.598067	0.0012
FEMLF	-0.196523	0.027020	-7.273209	0.0008
FEMLF(-1)	-0.119398	0.027145	-4.398552	0.0070
FEMLF(-2)	-0.004392	0.007101	-0.618408	0.5634
FEMLF(-3)	0.009485	0.005240	1.810074	0.1301
FEMLF(-4)	0.054870	0.010115	5.424618	0.0029
MU	0.033093	0.010598	3.122676	0.0262
MU(-1)	0.035944	0.015875	2.264207	0.0730
MU(-2)	-0.055502	0.020767	-2.672577	0.0442
MU(-3)	0.011545	0.026195	0.440742	0.6778
MU(-4)	0.034577	0.020788	1.663329	0.1571
SV	-0.056179	0.014199	-3.956430	0.0108
SV(-1)	-0.092500	0.010620	-8.710371	0.0003
SV(-2)	-0.162185	0.024494	-6.621385	0.0012
SV(-3)	-0.028992	0.026532	-1.092723	0.3243
SV(-4)	-0.026810	0.020345	-1.317722	0.2447
C	9.992282	1.784393	5.599823	0.0025
@TREND	0.337450	0.044633	7.560490	0.0006

In this study, the effects of the ratio of male unemployment, female labor force participation rate, and the share of total savings in GDP on the rate of crude divorce were

investigated in the form of an econometric model (4,4,4). The dependent variable is the crude divorce rate, while the independent variables are the male unemployment rate, female employment participation rate, and savings.

Table 4. Long-run Estimation

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FEMLF	-0.0746	0.003	-18.80	0.000
MU	0.0173	0.005	2.941	0.032
SV	-0.1069	0.010	-9.813	0.000
@TREND	0.0984	0.003	32.65	0.000

$$EC = KBR - (-0.0746 * FEMLF + 0.0174 * MU - 0.1069 * SV + 0.0984 * @TREND)$$

We have stated above that it was found that there is a long-term cointegration relationship after the ARDL model was established. The coefficients explaining this relationship are included in Table-4 below with the help of the Bound test. The statistics of all the values are in the table and are significant. According to these results, the relationships between dependent and independent variables also acquired a numerical dimension, and both the direction and intensity

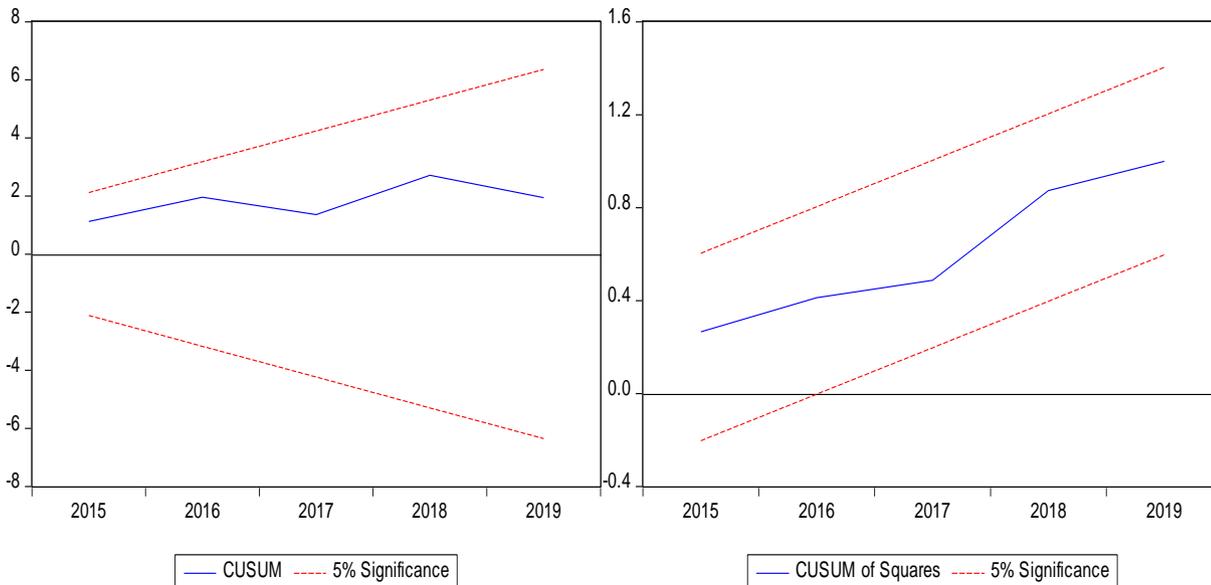
of the relationship were found. Women's participation in the labor force and the increase in total savings cause a decrease in divorces. There is a positive relationship between male unemployment and divorce. Therefore, divorces are increasing as men become unemployed.

Table 5. Diagnostic Test Results

Diagnostic Tests	Prob.
X ² BG	0.63
X ² Norm	0.85
X ² Lm	0.43
X ² Ramsey	0.20

The diagnostic test results of the model provide strong evidence that the prediction was successful. The statistics obtained from autocorrelation, heteroscedasticity, normality, and error correlation model tests are acceptable.

Figures 1. The Plot of CUSUM and CUSUM SQUARES



According to the CUSUM and CUSUMQ test results, the parameters provide the estimated stability condition over a long period.

Table 6. Error Correlation Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CoIntEq(-1)*	-3.428921	0.323167	-10.61035	0.0001

According to Table-5, which tested Error Correlation Model, it was found that the error correlation coefficient is negative and statistically significant. Coefficient of Error Correlation gives how much of the disequilibrium in the

short term will eliminate in the long term and it was found -3.42 (1/3.4 years).

5. Conclusion

Although marriage, historically a significant contract for societies, has lost reputation in the modern world, it is still one of the essential founding stones in many countries. The sustainability of 'healthy' marriages is another aspect that increases the economic and social welfare of individuals and societies. Therefore, investigating the dynamics that lead to divorces or shifting marriage are equally important. This study, which investigates the effects of male unemployment, female labour force participation rate and savings rates on

the divorce rate, uses annual data between 1990 and 2020.

By investigating the relationship of these dynamics with each other, it is aimed to concretize the results on the social side of economics. For this reason, Autoregressive Distributed Lag Model was exercised to find an empirical conclusion. The bound test model was used to give consistent estimates of asymptotically normal long-term coefficients regardless of whether the data are I(0) or I(1). Respectively, all variables were tested (unit root, functional, normality, heteroscedicity, serial correlation) and all are significant. In the light of the results, the relationships of the parameters were determined both in terms of direction and severity. The increase in the labor force participation rate of women and the share of total savings in GDP have the effect of reducing divorces. A positive relationship has been found between male unemployment and divorce. Therefore, it is necessary to express those divorces increase as men become unemployed. While a 1% increase in female labour force participation reduces divorce by 0.07%, a 1% increase in savings reduces divorce by 0.1%. It should be stated that the contribution of women to the household budget and the ability to save contribute positively to the continuity of marriages. Divorces react with a rate of 0.017% to 1% shocks in male unemployment and, there is a positive relationship. This ratio reveals that the reaction of divorces to male unemployment is more ineffective and adverse than the inclusion of women in employment and savings. All values are statistically significant. It is concluded that the model is stable and, there is no modelling error using diagnostic tests.

Before the 2000s, women's participation in labor force was suppressed under the shadow of cultural codes, religious motives, and traditional family structure. In Turkey, the reason why the participation of women in the labor force has a reducing effect on divorces should be interpreted as the fact that their work contributes to the family's real budget and reduces the livelihood stress in relationships. Similarly, the fact that an increase in savings reduces divorces is also associated with the fact that prudent savings make relationships more resistant to possible shocks. On the other hand, the fact that men are unemployed has been identified as a factor that increases divorces. But the absolute effect here is weaker than the absolute effect of women's participation in the labor force. This result indicates that the entry of an individual belonging to one gender into the business life has a stronger effect than the unemployment of the other sex. This development is important because economic policies do not discriminate between men and women while reducing unemployment and bringing all unemployment closer to its natural level and trying to cure. In addition, each woman involved in the labor force will create both economic activities and make relationships resilient. Finally, the employment data is selected specifically by gender and, its different results on divorce should not detract from the fact that the continuation of marriage is under the auspices of both parties. Indeed, while the data seems to have different effects, one of the data

selected by gender is employment and, the other is unemployment. Therefore, the results coincide with the expectations and move linearly with the increase in household income and the prevention of divorce. In line with these results, increasing household income economically, increasing employment (female-men) and reducing unemployment can be implemented to prevent divorces. In addition, supporting savings with increasing measures before and during the marriage will make marriages more sustainable.

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