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ECONOMIC FACTORS CORRELATED WITH MARRIAGE AND DIVORCE RATES IN EUROPEAN UNION COUNTRIES

***Abstract.** The present study addresses the issue of delayed marriages and instability of marriages, measured by the rate of marriages and the divorce rate at the national level, respectively. The aim of the article is to analyse the extent to which they are correlated with factors of economic development: the employment rate, the level of development, the growth rate of people employed in the field of ICT, and the risk of poverty. We took into account data from 20 EU countries for the period 2008-2019, provided by Eurostat. The empirical analysis of the data proves a direct relationship between the divorce, respectively, the marriage rate and the indicators of economic development taken into account, with different values for different countries. The results obtained can support policy makers when setting development directions and social policies for the protection of multiple forms of family outside the social institution of marriage.*

***Keywords:** Divorce Rate, Marriage Rate, Labour Force, Poverty Risk, Employment*

JEL Classification: J11, J12, J16, J21

1. Introduction

The family is a dynamic social institution whose meanings and practices are constantly changing and adapting. In the European Union, the marriage rate

has recently fallen from 8 per 1,000 inhabitants in 1964 to 4.3 in 2019, while the divorce rate has doubled in the same period (Eurostat, 2021). Practices regarding marriage and family in general have changed considerably by increasing the age at which couples marry, decreasing the number of children or choosing not to have children, seeking a work-life balance, and family life. This trend of family change is strongly influenced by the increasing level of education of women and their active participation in the labour market, influencing power relations and social policies (OECD, 2011).

In modern society, the principles of equal opportunities, non-discrimination, unlimited access to information through digitisation and the expansion of the use of the Internet have been implemented in EU countries, which facilitated, especially among young people, the opportunity to be more informed for their professional careers, and which allowed them to assert themselves and be promoted as quickly as possible. These have increasingly led to the postponement of marriages until a successful professional status was achieved, especially among women. On the other hand, the high divorce rate in recent times is due to differences in education and belonging to different ethnic, cultural, religious, ideological or sexual orientation groups, but also of the impact that some shocks from the economy exert, of the accumulated stress and dissatisfaction, of the difficulties that destroy the family climate and often even the behaviour of the people.

The pandemic context has impacted the family dynamics through longer time spent in the family and the exacerbation of tensions where they already existed, financial instability, and the deterioration of well-being because of isolation and social distancing. Some of the studies on the topic of divorce and marriage estimate that one of the effects of the pandemic will be an increase in the divorce rate, already noted in some states (Manning and Payne, 2021). During the pandemic of the last two years (2020-2022), the labour force and employment have undergone major changes in content, form or way of accomplishment, with implications on all components of economic, social, cultural, educational, health life, etc. Under these conditions, the loss of the job and, therefore, of the respective income will bring a state of stress, of worry, of instability of the affected households, of insecurity regarding the financial resources for the maintenance of those affected. All these worries, needs, economic problems can even affect the stability of partnerships, can generate conflicts within families, can lead to divorces, or can determine the number of new marriages in society.

The specialised literature analyses from multiple perspectives the social, economic, and cultural determinants that affect the decrease of the marriage rate and the increase of the divorce rate in the contemporary social context, identifying various causes such as urbanisation, increasing the level of education, or facilitating legislation, and offering family protection even outside the social institution of marriage. However, marriage and divorce rates vary considerably between EU countries, and there is insufficient understanding of these variations. Through this article, we aim to analyse the way in which social and economic

indicators such as employment rate, level of economic development, the risk of poverty, and the growth rate of ICT workers are correlated with marriage and divorce rates in EU member states, using Eurostat data from 2008-2019.

The analysis is relevant in the context of changes in the meanings and practices of the family and the need to adapt public policies to new social realities. In the medium and long term, there is a need for a broader debate at European and national levels on the meaning of marriage and broadening the definition of the family, as well as new models of social protection of the family, outside of marriage.

The study also includes a review of the literature in the field and working hypotheses, data and methodology, results and discussions, and conclusions.

2. Review of scientific literature in the field and working hypotheses

Most studies conducted by researchers in the past have analysed the influence of unemployment on divorce, as a shock element that can intervene in the breakup of a family. Unemployment can lead to poverty, increase anxiety, and dissatisfaction with family life, income, and future, especially if both partners work. Thus, the paper (González-Val and Marcén, 2018), shows that there is a direct negative dependence between unemployment and the divorce rate in Spain for the 50 regions analysed, (Yilmaz, 2022), confirms the result in Turkey, (Su et al., 2018) in China, where the low rate of education negatively influences, considerably and additionally, the divorce rate. Thus, the higher the illiteracy rate, the lower the divorce rate, and the partners continue to stay together. Marriage is also strongly affected by the ethnic minority to which the partners belong (Andrei et al., 2023) and by its regional characteristics, by their lifestyle. Furthermore, using a spatial regression model (SRM), the study shows that China's divorce rate has a regional level and a strong spatial correlation, greatly influencing the stability of families. Unemployment or loss of employment by one of the partners can generate emotional stress that can affect the family or can postpone a marriage of young people.

Few specialists have investigated the impact of the employment rate on the stability or delay of marriage. Thus, (Solaz et al., 2020) analyses the impact of employment or unemployment on the stability of marriage (divorce), not the other way around. Unemployment and employment are considered both macroeconomically and individually, and are analysed in comparison with the assistance system of people, more generous in European countries than in the USA. The study confirms the existence of a dependency between them and the number of divorces for western EU countries (Belgium, Finland, France, Germany, Italy), as unemployment can lead to poverty and increase stress on the financial situation of the household or future family, as well as the future career of those affected. In this case, job loss involves a higher risk of family separation. On the other hand, the inactivity of one of the partners, usually of the wife who chose the status of housewife, increases the stability of the families, because her

financial dependence on her life partner often causes the postponement of a divorce decision and encourages employment. Added to all this is the different action of social systems in different countries, which influences both the decision to separate as well as the decision to marry. Economic hardships lead to a postponement of a divorce decision and even encourage a marriage decision.

The paper (Vignoli et al., 2018) analyses, identifies, and explains for Germany, Hungary, Italy, and Poland the existence of a positive correlation between employment and divorce, which is based on the woman's desire to provide a source of income (by participating in the labour force), so that she is prepared in case of a possible dissolution of the marriage. The postponement of the marriage decision for the partners of the young couples can also take place. Moreover, the differences in the size of these dependencies are given by the different national social systems regarding state aid for childcare, the granting of parental leave, and the level of state aid for single mothers which are clearly higher in Germany and Hungary. Therefore, women in these countries are not very financially dependent on their life partner or the labour market, and they can make the decision to separate if life as a couple is no longer the right one. A number of researchers have looked at the extent to which a country's level of economic development correlates with the rate of divorce or the postponement of marriages, along with other employment/unemployment factors, among young people. In papers (Hellerstein et al., 2013) it is shown that, in regions or countries with higher economic levels (measured by GDP/capita), material, spiritual, cultural needs are generally met, so the existence of a financial stability of families does not generate major conflicts that lead to divorce. In these families, the partners can see their career development, the financial status of the family playing a major role in the stability of the families or in the establishment of a new family.

Other researchers have studied the extent to which there is a correlation between the marriage rate and the divorce rate, as well as their relationship to macroeconomic conditions in the United States (Baghestani and Malcolm, 2014), where the level of education of the spouses has an important additional role in both the marriage decision and the divorce decision.

Moreover, starting from the finding that families in which the husband is facing a job loss are more prone to divorce, the study (Doiron and Mendolia, 2012) examines whether the way in which the job loss occurs is important in the stability of the marriage. Based on data from the British Household Panel Survey (BHPS), the study shows that a dismissal due to the employer's fault (unemployment) correlates with the separation less than that due to the personal traits of the partner, which shows deficiencies in his behaviour and activity at work. To these is added the influence of the social support of the state granted to people in difficulty.

Great attention has been paid, in the literature, to the employment rate of women, which has been increasing in the last 20-30 years, among the total employed

population. This has led, on the one hand, to the division of responsibilities into families, related to housework, childcare, etc. (Minguez and Crespi, 2017).

On the other hand, the analysis performed in studies such as (van Mensvoort et al., 2021) shows unequal pay for women's and men's jobs, even though gender equality, anti-discrimination or equal employment laws have been promoted in various countries around the world and certainly in the EU. Thus, the studies found a relatively lower remuneration in predominantly female occupations than can be explained by the requirements of the job, a greater dissatisfaction of women and immigrants at work, but also a greater desire to assert themselves, to be promoted (Donegani and McKay, 2021). At the same time, the emergence of high-performance, labour-saving technologies and the strong development of services allow women to have easier access to employment, to obtain their own financial resources (Stevenson and Wolfers, 2007).

Continuing the analysis with women managers in Japan, the study (Fuwa, 2021) finds that among the factors related to organisations, the attitude and behaviour of managers strongly affect the work-family relationship of subordinates. Thus, it is shown that women managers are more supportive of family and family-related requests, parental or maternity leave. Other researchers look at the impact of part-time employment on family stability in Spain (Insarauto, 2021), as a solution for sharing chores in the family.

Contemporary society is characterised by a shift from resource- and production-focused economies to information-, knowledge-, and skills-based economies. These are also related to the development and expansion of the use of ICT in all areas, but especially in the field of services and communication, which have seen a significant development in recent years. Under these conditions, a sustainable nation cannot develop without a minimum level of literacy

and knowledge of the population. A number of studies show that adult literacy, spending on higher education, digitalisation (Maryska et al., 2012), modern specialisations, together with research and development expenditures, have a positive impact on employment and, in particular, on women, contribute to the reduction of poverty, increase the quality of life, education, healthcare, etc. (Aksentijevic et al., 2021). When it comes to ICT technologies, researchers are also looking at better communication, information, access to current information and services for all concerned. To these the importance of social networks in the connectivity of family members is added (Hänninen et al., 2021), even if they are separated in space, with strong influences on children's education, through the social and emotional support they bring to withstand times of crisis. The Internet, social networks, the expansion of the use of modern communication technologies, allow easy access to information in all areas, including the rights and obligations of citizens, the facilities provided by law, humanitarian action, etc., therefore, allow informing those interested in issues related to marriage or divorce.

A number of studies on the issue of divorce and/or marriage in modern society rigorously identify factors unrelated to economic conditions, but related to the culture, history, tradition, ethnicity, religion, and customs that determine the decision to divorce, when and how to make it (Wevorce Team, 2017). Similarly, the decision of two young people to marry, why and when to do so, is explained by the same factors, the society and the community in which they live, the desire to have children, to migrate and work in other states (Samper and Kreyenfeld, 2021) with their specifics. A couple's divorce decision or postponement may also be determined by the existing legal system on, for example, "Social Security", which provides benefits to divorced persons if their marriage has lasted at least 10 years.

We believe that this multitude of interacting factors, strongly affecting the delay of the marriage decision or the decision to divorce in a marriage, needs to be further studied in order to identify the economic factors that can impact the stability of marriages in modern society.

In our research, we consider the assessment of the following working hypotheses.

- I1. The divorce rate correlates with the employment rate (X1)
- I2. The divorce rate correlates with the level of economic development, measured by GDP/capita (X2)
- I3. The divorce rate correlates with the growth rate of people employed in the field of ICT (X3)
- I4. The divorce rate correlates with the risk of poverty (X4)
- I5. The marriage rate correlates with the employment rate (X1)
- I6. The marriage rate correlates with the level of economic development, measured by GDP/capita (X2)
- I7. The marriage rate correlates with the growth rate of people employed in the field of ICT (X3)
- I8. The marriage rate correlates with the risk of poverty (X4)

3. Data and methodology used

3.1. Data and variables used

The research is being conducted for EU countries, which are characterised by a different level of economic development, the expansion of digitalisation, the standard of living and legislation on the protection of vulnerable or at-risk-of-poverty people. We used quantitative analysis tools and linear regression models to process, interpret and select - for further processing the data provided by Eurostat (Eurostat, 2021) on 12 years (2008-2019) for EU countries. The list of used variables and their description are given in Table 1.

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Table 1. List of variables used

| Variable | Name | Definition |
|------------------------------|---|---|
| Dependent variables | | |
| Y1 | Gross Divorce Rate | The ratio between the number of divorces during the year and the average population in that year. The value is given to 1000 people. |
| Y2 | Gross marriage rate | The ratio between the number of marriages during the year and the average population in that year. The value is given to 1000 people. |
| Independent variables | | |
| X1 | Employment Rate | Ratio between the number of employed persons aged between 20 and 64 and the total population in the same age group. |
| X2 | GDP/capita | The ratio of total GDP to population |
| X3 | The growth rate of the number of employees in the ICT field | The growth rate of the number of employees in the ICT field |
| X4 | The risk of poverty | The share of people at risk of poverty in the total population |

The data used is complete, with values for all 12 years. From their analysis, it was found that:

- The divorce rate (Y1) increased during the analysed period in 9 countries (Croatia, Cyprus, Greece, Italy, Latvia, Luxembourg, Malta, Slovenia, Sweden), in the rest of the countries remaining constant or slightly decreasing (Figure 1);
- The marriage rate (Y2) has fallen dramatically and steadily in 23 EU countries, with a slight increase in Austria, Bulgaria, Cyprus, Hungary, and Latvia. We considered, in the graphical representation, only the countries in which the decrease of the rate was greater than or equal to 0.7 (Figure 2);
- The Employment Rate (X1) increased steadily during 2008-2009, except for Greece, where there was a sharp decline until 2013 (from 66.3% to 52.9) after which it began to experience a slight increase;
- GDP/capita (X2) has grown steadily for all countries except Greece;
- The growth rate of ICT employees (X3) was relatively constant or increasing in all EU countries;
- The risk of poverty (X4) has fallen in most countries, except for the Czech Republic, Estonia, Germany, Ireland, Lithuania, Luxembourg, and the Netherlands – where there has been a slight increase.

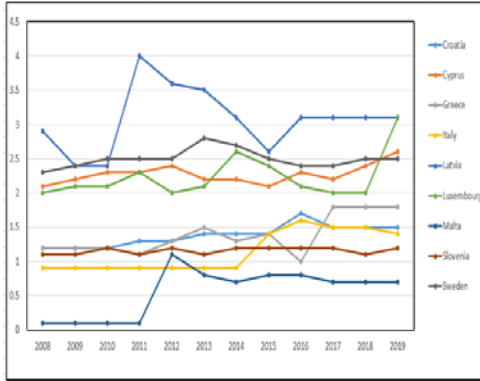


Figure 1. Graph of the increasing divorce rate in the period 2008-2019
Source: Eurostat data (2021)

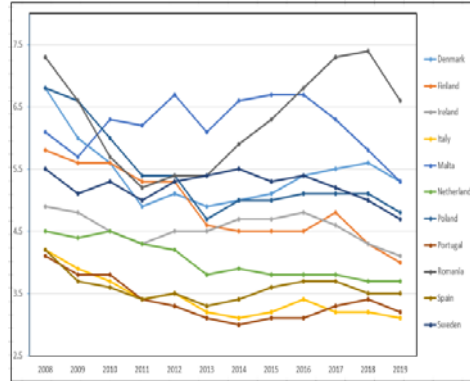


Figure 2. Graph of the decreasing rate of marriages in the period 2008-2019
Source: Eurostat data (2021)

3.2. Research methodology

For the empirical investigation of the relationship between the Gross Divorce Rate (Y1) and the Gross Marriage Rate (Y2) as dependent variables and the independent variables: Employment rate (X1), GDP/capita (X2), Growth rate of ICT employees (X3), Poverty risk (X4), we used the regression model with panel data. This model has the advantage of reducing the problem of multicollinearity and has more degrees of freedom. The data sample initially comprises 28 EU countries. Table 1 shows the variables used in the regression models, their type, and definition.

To test the impact of economic factors on the dependent variables (Y1 and Y2), we used two multiple linear regression models, one for each of the two dependent variables, with the 4 independent variables (X1: X4).

Panel data regression has double index variables (Baltagi, 2008) i and t , where:

- i – indicates the country: $i = 1, 2, \dots, 28$;
- t – indicates time (years): $t = 2008, 2009, \dots, 2019$;

Therefore,

$$Y_{it} = c + \beta * X_{it} + \varepsilon_{it} \tag{1}$$

where:

- c – is a constant
- β – is the coefficient of the independent variable X
- X_{it} – independent variable (country i in year t)
- ε_{it} – is the error
- Y_{it} – is the dependent variable (country i in year t)

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The **M1** model regarding the **divorce rate** made by us, taking into account the independent variables considered, has the following format:

$$Y1_{it} = \alpha + \beta_1 * X1_{it} + \beta_2 * X2_{it} + \beta_3 * X3_{it} + \beta_4 * X4_{it} + \varepsilon_{it} \quad (2)$$

The **M2** model regarding the **marriage rate** has the following format:

$$Y2_{it} = \alpha + \lambda_1 * X1_{it} + \lambda_2 * X2_{it} + \lambda_3 * X3_{it} + \lambda_4 * X4_{it} + \varepsilon_{it} \quad (3)$$

where:

X1, X2, X3, X4 are the independent variables, and Y1 and Y2 are the dependent variables, described in Table 1.

$\beta_1, \beta_2, \beta_3$ and β_4 are the parameters associated with the independent variables X1, X2, X3 and X4 in the M1 model.

$\lambda_1, \lambda_2, \lambda_3$ and λ_4 are the parameters associated with the independent variables X1, X2, X3 and X4 in the M2 model.

In models that use panel data, the error ε_{it} is as follows:

$$\varepsilon_{it} = \alpha_i + u_{it} \quad (4)$$

where:

α_i – represents the error component for the country i

u_{it} – is the random component of the error

In the econometric analysis of the panel data series, the model with fixed effects (FEM) or the one with random effects (REM) can be used. The choice of the appropriate model in this case was made using the Hausman test. According to this test, a higher probability model recommends the random effects model, and a lower probability recommends the fixed effects model. The estimation method used is that of panel data models with random effects. In this case, the error is random and uncorrelated with the independent variables (Greene, 2008).

To go further with the analysis, we selected 20 countries: Austria, Belgium, Croatia, Cyprus, Czechia, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Lithuania, Malta, Netherlands, Portugal, Slovakia, Spain, Sweden, and United Kingdom. The results obtained are not contradictory, but they are different due to specific conditions related to economic development, but also to culture, ethnicity, geographic area, customs, religion, different countries and different periods (economic crisis, level of development, social policies to support those in need, etc.). (Wevorce Team, 2017; Samper and Kreyenfeld, 2021). Although at first sight it would seem that the stability of families or the delay of marriages would not depend on the employment rate of the population, our study and analysis show that where the employment rate of women is close to that of men, a marriage can be broken if the two partners no longer understand each other, because the financial situation and the possibilities of material subsistence no longer determine this decision. However, looking

more closely at the primary data, we found that a high employment rate of women, close to that of men, correlates with the life of communities, impacting both marriages and divorces. Thus, in these countries, it is found that:

- marriages are lower because they can be postponed for career development, professional achievement, social status;
- divorces correlate with the fact that employed, financially independent women, with high maintenance possibilities, can more easily decide to break up a marriage than when they are financially dependent on their life partner's income. In other cases, marriage is practically an insurance against economic disadvantages, rising prices, of the hardships of life, for a work-family balance and family well-being (Minguez and Crespi, 2017).

A statistical description of the data for these 20 EU countries is presented in Table 2. The average value of the employment rate for the analysed countries is 70.84, with a relatively close distribution, while X2 (GDP/capita) has an average of 28215 Euro/capita, with significantly different values between countries, from the minimum value of 8500 to the maximum of 72260, indicating a very different level of development between the analysed countries. The average level for X4 (risk of poverty) is 15.55 and fluctuates between the minimum value of 8.6 and the maximum value of 23.1, which shows a major difference between the countries analysed.

Table 2. Statistical description of the variables used for the selected countries

| | Y1 | Y2 | X1 | X2 | X3 | X4 |
|--------------|----------|----------|----------|----------|----------|----------|
| Mean | 2.029167 | 4.850833 | 70.83875 | 28215.11 | 3.59559 | 15.54875 |
| Median | 2.1 | 4.7 | 71.9 | 27425 | 3.5 | 15.3 |
| Maximum | 3.5 | 8.9 | 82.4 | 72260 | 7.2 | 23.1 |
| Minimum | 0.1 | 3 | 52.9 | 8500 | 1.2 | 8.6 |
| Std. Dev. | 0.66015 | 1.096933 | 6.329353 | 13013.12 | 1.345509 | 3.344451 |
| Skewness | -0.63793 | 0.948089 | -0.54869 | 0.380102 | 0.363765 | 0.270856 |
| Kurtosis | 3.683667 | 3.767457 | 2.662679 | 2.494614 | 2.678331 | 2.469343 |
| Jarque-Bera | 20.95216 | 41.84481 | 13.18029 | 8.33327 | 6.327699 | 5.750488 |
| Probability | 0.000028 | 0 | 0.001374 | 0.015504 | 0.042263 | 0.056402 |
| Sum | 487 | 1164.2 | 17001.3 | 6771627 | 862.9416 | 3731.7 |
| Sum Sq. Dev. | 104.1558 | 287.5798 | 9574.51 | 4.05E+10 | 432.6842 | 2673.3 |
| Observations | 240 | 240 | 240 | 240 | 240 | 240 |

Source: Processing by authors in EViews 12, using Eurostat data (2021)

Note: For the definition of variables see Table 1.

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Following the processing, a correlation was obtained, presented in Table 3. There is a low level of correlation between the 4 variables X1, X2, X3, and X4.

Table 3. Correlation matrix

| | X1 | X2 | X3 | X4 | |
|-----------|-------------|-------------|-------------|-------|-------------|
| X1 | 1 | | | | |
| X2 | 0.589447 | 1 | | | Correlation |
| | (11.25707) | ----- | | | t-Statistic |
| | 7.56E-24*** | ----- | | | Probability |
| X3 | 0.541349 | 0.621518 | 1 | | Correlation |
| | (9.93286) | (12.23936) | ----- | | t-Statistic |
| | 1.13E-19*** | 4.84E-27*** | ----- | | Probability |
| X4 | -0.43377 | -0.31103 | -0.46205 | 1 | Correlation |
| | (-7.42698) | (-5.04881) | (-8.03753) | ----- | t-Statistic |
| | 1.98E-12*** | 8.84E-07*** | 4.28E-14*** | ----- | Probability |

Source: Processing by authors in EViews 12, using Eurostat data (2021) Values in parentheses represent t-statistic; Note: * p<0,05; **p<0,01; ***p<0,001

Note: The variables were defined in Table 1.

Applying the *Panel Least Squares* regression method, the results of estimating the parameters of the **M1** regression model were obtained, which are shown in Table 4. It is found that the probabilities associated with the parameters β_1 , β_2 , β_3 and β_4 are close to 0 (the p-value is less than 0,1) for all variables, which means that the independent variables are relevant and the M1 model is *valid*.

Table 4. The results of the M1 regression model on the divorce rate

| Dependent Variable: Y1 | | Method: Panel EGLS (Period random effects) | | |
|--|-------------|--|-------------|----------|
| Sample (adjusted): 2008-2019 | | Periods included: 12 Cross-sections included: 20 | | |
| Total panel (balanced) observations: 240 | | | | |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | -1.22879 | 0.348354 | -3.52742 | 0.004736 |
| X1 | 0.059258 | 0.006691 | 8.856707 | 2.45E-06 |
| X2 | -1.49E-05 | 2.20E-06 | -6.79246 | 2.98E-05 |
| X3 | -0.078 | 0.011886 | -6.56254 | 4.07E-05 |
| X4 | -0.01533 | 0.006031 | -2.54216 | 0.027375 |

| | | | | |
|---|----------|---|----------|-----|
| Dependent Variable: Y1 | | Method: Panel EGLS (Period random effects) | | |
| Sample (adjusted): 2008-2019 | | Periods included: 12 Cross-sections included: 20 | | |
| Total panel (balanced) observations: 240 | | | | |
| Effects Specification | | | S.D. | Rho |
| Period random | | | 0 | 0 |
| Idiosyncratic random | | | 0.583627 | 1 |
| R-squared | 0.216607 | Mean dependent var | 2.029167 | |
| Adjusted R-squared | 0.203272 | S.D. dependent var | 0.66015 | |
| S.E. of regression | 0.589248 | Sum squared resid | 81.59499 | |
| F-statistic | 16.24425 | Durbin-Watson stat | 0.095569 | |
| Prob(F-statistic) | 0 | Root MSE | 0.583077 | |

Source: Processing by authors in EViews 12 (the variables were defined in Table 1)

Substituting into the regression equation the coefficients with the values estimated in the M1 model, we obtain the following:

$$Y1 = -1.22879 + 0.059258 * X1 - 1.49 * 10^{-5} * X2 - 0.078 * X3 - 0.01533 * X4 \quad (5)$$

We note that the probability associated with the test statistics F: Prob(F-statistic) is equal to 0, which means that the **model M1 is valid**. Analysing the coefficients obtained in the M1 model, we find that they have low values, but they show that there is a dependence between the factors taken into account and the divorce rate (Y1). **This confirms the 11-14 hypotheses formulated.**

We did the same for the marriage rate regression model **M2**. It is found that the probabilities associated with the parameters $\lambda_1, \lambda_2, \lambda_3$ and λ_4 are close to 0, (p-value is less than 0,1) for all variables, which means that the independent variables are relevant, and Prob(F-statistic) = 0, shows that **model M2 is valid**. The results are presented in Table 5.

Table 5. The results of the M2 regression model on the marriage rate

| | | | | |
|---|-------------|---|-------------|----------|
| Dependent Variable: Y2 | | Method: Panel EGLS (Period random effects) | | |
| | | Date: 09/25/21 | | |
| Sample (adjusted): 2008-2019 | | Periods included: 12 Cross-sections included: 20 | | |
| Total panel (balanced) observations: 240 | | | | |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | -0.77039 | 0.296066 | -2.60209 | 0.024602 |
| X1 | 0.086897 | 0.002847 | 30.51722 | 5.54E-12 |
| X2 | -2.91E-05 | 2.37E-06 | -12.2402 | 9.49E-08 |
| X3 | -0.09652 | 0.04859 | -1.98634 | 0.072479 |
| X4 | 0.040663 | 0.013041 | 3.117993 | 0.009785 |
| Effects Specification | | | S.D. | Rho |
| Period random | | | 0 | 0 |

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| | | | |
|---|----------|---|----------|
| Dependent Variable: Y2 | | Method: Panel EGLS (Period random effects) | |
| | | Date: 09/25/21 | |
| Sample (adjusted): 2008-2019 | | Periods included: 12 | |
| | | Cross-sections included: 20 | |
| Total panel (balanced) observations: | | | |
| 240 | | | |
| Idiosyncratic random | | 1.028351 | 1 |
| R-squared | 0.168509 | Mean dependent var | 4.850833 |
| Adjusted R-squared | 0.154356 | S.D. dependent var | 1.096933 |
| S.E. of regression | 1.008728 | Sum squared resid | 239.12 |
| F-statistic | 11.90621 | Durbin-Watson stat | 0.085886 |
| Prob(F-statistic) | 0 | Root MSE | 0.998165 |

Source: Processing by authors in EViews 12 (the variables were defined in Table 1)

Substituting in the regression equation of the M2 model the coefficients with the estimated values, we obtain the following:

$$Y2 = -0.77039 + 0.086897 * X1 - 2.91 * 10^{-5} * X2 - 0.09652 * X3 + 0.040663 * X4 \quad (6)$$

In the case of the model, the null hypothesis is rejected that all coefficients are equal to 0 at an acceptable probability threshold (1%-3%-5%-10%), because the p-value is less than 0.1 for all variables. It is found that in the M2 model, the coefficients have small values, proving the existence of the correlation of the factors taken into account on the dependent variable Y2. ***The results confirm Hypotheses 15-18.*** The Hausman test was performed for all estimated econometric models, and the results confirmed the use of panel data models with random effects.

4. Results and discussion

In model M1, the calculated value $R\text{-sq} = 0.216607$ shows that the variables used explain the variation of the dependent variables by about 22%. This means, in our view, that the remaining variation of about 78% is explained by other economic variables (unemployment, unemployment rate, participation of female labour force in employment, investment), and non-economic variables, taken into account by many specialists (national laws and customs, social protection regulations, culture, religion, level of education, etc.). (Wevorce Team, 2017; Samper and Kreyenfeld, 2021; Vignoli et al., 2018; Aksentijevic et al., 2021).

Analysing the results obtained, it is observed that the divorce rate correlates with the employment rate and vice versa with the other 3 factors (GDP/capita, growth rate of people employed in ICT, and the share of people at risk of poverty in the total population). For each of these indicators, although statistically significant, the value of their coefficient is relatively small. Under these conditions, if the employment rate increases by 1%, then the divorce rate will also increase by about 0.06%. Also, if the value of GDP/capita increases by

1000 Euro, then the divorce rate will decrease by about 0.15%; if the share of people employed in ICT in the total employed staff increases by 1%, the divorce rate will decrease by 0.078%, and a 1% increase in the risk of poverty leads to a 0.015% decrease in the divorce rate.

In model M2, the calculated value $R\text{-sq} = 0.168509$ shows that the variables used explain the variation of the dependent variables by about 17%. This means, in our view, that the remaining variation of about 83% is explained by other economic and non-economic variables, taken into account by many specialists (social protection legislation, culture, customs, religion, level of education, etc.). (Baghestani and Malcolm, 2014).

Analysing the results obtained, it is observed that the marriage rate is directly and positively correlated with the Employment Rate and the Share of people who are at risk of poverty in the total population, but in the opposite direction with the other 2 factors (GDP/capita and the ratio of people employed in ICT in the total employment). This means that if the occupancy rate increases by 1%, then the marriage rate will increase by 0.08%; if the value of GDP/capita increases by 1000 Euro, then the marriage rate will decrease by 0.29%; if the share of people employed in ICT in the total of employed people increases by 1%, then the marriage rate will decrease by 0.096%, and if the risk of poverty will increase by 1%, the marriage rate will also increase by 0.04%.

The results are in line with initial expectations and show the direct influence of the economic factors taken into account on the existence and stability of the family, as measured by the divorce rate and the marriage rate. It is true that at the panel level of 20 EU countries, this correlation seems rather weak. We attribute the rest of the impact to other economic factors that we did not analyse (unemployment, level of education, employment rate of women and their promotion to management positions, investments in the economy, etc.), but also to a multitude of non-economic factors, which have been studied and identified in other research (Stevenson and Wolfers, 2007).

5. Conclusions

Our research aimed to examine the extent to which *a number of economic indicators* (employment rate, GDP/capita, growth rate of people employed in ICT and the risk of population poverty) can influence the lives of couples in modern society; their marriage decision or the stability of a family affected by the divorce decision. The context of the analysis is that of changing perspectives on the family in general and on marriage in particular. Thus, the contemporary social reality of European states is rather characterised by a decrease in the marriage rate and an increase in the divorce rate, a social reality that governments must take into account in developing public policies designed to protect new forms of coexistence.

To test the working hypotheses, we constructed two econometric models, M1 and M2, with data from the 20 countries selected from the 28 EU member

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states. After establishing that both M1 and M2 models are random-effects models (Hausman test), we obtained model parameter estimates.

The results obtained are in line with those obtained by some research that has approached the study of the influence of some factors of economic development on the dissolution of marriages or their postponement.

The estimated coefficients obtained in both models have relatively low values but prove that there is a direct dependence between the four economic factors taken into account and the divorce rate (Y1) and the marriage rate, respectively (Y2). ***This confirms the hypotheses formulated 11-14 and 15-18, respectively.***

It is important, in our opinion, to identify the economic factors that have an impact on the stability of families, in order to present them to policy makers, who can intervene through administrative, fiscal, social policies, for the protection of different forms of family. Thus, the importance of increasing employment and employment over the stability, durability of marriages is empirically attested, given the existence of policies to stimulate and diversify employment at EU level (through the Lisbon Agenda) (González-Val and Marcén, 2017), simultaneously with the promotion of gender equality and employment opportunities, non-discriminatory employment policies, etc. In addition, women's education and employment increase their access to economic resources, leading to a lower level of their economic dependence on their husbands, which leads to the dissolution of an unsatisfactory marriage. Basically, fiscal policies that support employment, eliminate as many of the possible shocks from the economy (such as extended unemployment) and, in general, a thriving, developing economy, could protect the family, children, and dependents.

These results are in line with initial expectations and show the impact that economic measures have on the conclusion and stability of marriages. If there are economic factors that correlate the institution of marriage with divorce rates, it means that governments, policy makers, and the social partners can negotiate and adapt development strategies and social policies to prevent or reduce the impact of the factors presented, through protection and support measures for divorcing families (single-parent families, children) and those who choose other regulated or unregulated forms of cohabitation (civil partnership, cohabitation) (Mínguez and Crespi, 2017). To these can be added a series of prevention and/or protection measures initiated within the organisations regarding equal employment opportunities, flexibility of the work schedule, facilities granted to employees (canteen, kindergartens or children's homes, opportunities for parental care, etc.) that can lead to improved performance and competitiveness of the company.

This research contributes to the literature by empirically exploring the impact of the economic factors studied on the institution of marriage and divorce, strongly affected recently, by delaying the decision of couples to marry and, respectively, by increasing the number of divorces. However, these phenomena strongly influence the life of the communities through the direct and indirect

effects on the social institution of the family. However, the government, local or central government must take measures to protect social and employment, to diversify the labour supply, to make working conditions more flexible, to stimulate services, to ensure gender equality and employment opportunities.

One of the limitations of the study is that the models built do not explain the variations in marriage and divorce rates in all 28 EU Member States. Future studies should take into account the analysis of differences between states and the varied way in which economic factors impact marriages and divorces. In addition, our analysis captures the relationship between independent and dependent variables through quantitative models, but it is necessary to supplement the results obtained with qualitative studies that capture the explanatory model in depth. At the same time, it is relevant to analyse other factors that influence the change of the social institution of marriage that are not found in the economic, respectively, social and cultural spectrum.

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