

Housing Costs and Divorce Rate in the MENA Countries

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Abstract

The purpose of this study is to examine the relationship between housing costs and divorce rate using data from a set of the Middle East and North Africa (MENA) countries over the period of 1990-2014. Applying panel fixed-effects and the fully modified ordinary least square (FMOLS) estimation methods, our results suggest that a 10% increase in the housing costs increases divorce rate about 1.5% in the sample countries. The findings also indicate that social globalization has a positive and significant relationship with divorce rate in the MENA countries.

Keywords Housing Costs, Divorce Rate, MENA Countries

JEL Classification L85, J12, N35

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1. Introduction

Although Islam and tradition discourage divorce in the Middle East and North Africa (MENA) countries (Muslim Women's League, 1999), family dissolutions has been increasing significantly in most of these countries over the last decade (see Table 1). The purpose of this study is to understand the economic and social determinants of divorce rate in the MENA countries, by focusing on housing costs as a main variable of interest. We particularly concentrate on housing costs because housing prices and rents have soared in most of these countries in recent years. One may argue that higher housing costs (which can increase financial stress among couples) may lead to higher divorce rate in these countries, according to relational stress proposition (Amato & Beattie, 2011). On the other hand, high housing costs may lead to lower divorce rate because troubled spouses may be reluctant to incur the costs of moving to a new residence, purchasing new furniture and dividing marital property (Harknett & Schneider 2012).

Table 1. Divorce rate (per '000 population)

| | 2004 | 2014 |
|----------------------|-------------|-------------|
| Egypt | 0.90 | 1.90 |
| Iran | 1.10 | 1.90 |
| Jordan | 1.90 | 2.50 |
| Kuwait | 2.30 | 1.70 |
| Lebanon | 1.10 | 1.40 |
| Qatar | 1.00 | 0.60 |
| Saudi Arabia | 0.90 | 1.10 |
| Tunisia | 1.00 | 1.20 |
| Turkey | 1.4 | 1.7 |
| United Arab Emirates | 0.80 | 0.50 |

Source: Euromonitor International (2014)

2. Theoretical Background and Previous Studies

Generally, the economic literature on divorce provides two opposite predictions about the association between economic conditions and divorce risks: (1) relational stress or psychosocial stress perspective and (2) relative cost or the cost of divorce perspective (Fischer & Liefbroer, 2006; Amato & Beattie, 2011).

The relational stress proposition argues that unfavourable macroeconomic conditions (e.g. high unemployment, high housing costs) increases the risk that a family suffers from financial stress and puts a couple relationship under pressure. The financial stress and economic uncertainty has several negative psychological impacts such as stress, setbacks, and disappointments, which are usually associated with a higher risk of marital instability. In other words, economic hardship increases spouses' psychological distress, decreases spouses' expressions of warmth, emotional support, and satisfaction, and exacerbates discord between spouses, which may be ended with divorce (Fischer & Liefbroer, 2006; Amato & Beattie, 2011; Jensen & Smith, 1990; Conger et al., 1990).

According to relative cost argument, unfavourable macroeconomic conditions may lead to lower divorce rate. It is because troubled spouses may be reluctant to incur the costs of divorce such as lawyers' fee, court costs and the costs of moving to a new residence for at least one and often both spouses, purchasing new furniture and

dividing marital property (Fischer & Liefbroer 2006; Amato & Beattie 2011). That is, divorce is unaffordable or at least perceived to be too costly during a time of widespread economic hardship (Harknett & Schneider, 2012).

In recent years, the relationship between house costs and divorce (or marital stability, partnership dissolution) has received research attention in the contemporary divorce literature due to the boom and burst of housing markets in developed economies (Rainer & Smith, 2010; Farnham et al., 2011; Harknett & Schneider, 2012; Milosch, 2014). For example, using individual household data over the period of 1991-2004, Rainer and Smith (2010) find that negative house price changes significantly increase the risk of partnership dissolution, whereas positive house price changes do not have a significant impact in the UK economy. Correspondingly, using individual-level data by metropolitan area from 1991 to 2010, Farnham et al. (2011) show that it is only negative house price changes that matter for divorce risk in the U.S. Taken together, both studies confirm that rising house prices do not significantly protect partnerships whereas falling house prices can destabilize them. Contrary to findings of Rainer and Smith (2010) and Farnham et al. (2011), Milosch (2014) shows that positive house price changes decreases the divorce risk; however there is no significant effect of negative house price changes in the U.S. Finally, Harknett and Schneider (2012) find that greater housing market distress (measured by higher mortgage delinquency rates) in a state of the U.S. is significantly associated with greater marital stability. Using data from 30 Iranian provinces from 2002 to 2010 and by applying panel fixed-effects and dynamic GMM panel models, Farzanegan and Gholipour (2015) show that the increasing housing costs have positive association with marital instability.

The above studies are commonly based on the economic models proposed by Becker et al. (1977) and Weiss and Willis (1997) who argued that the risk of marital dissolution is mainly determined by unexpected changes in anticipated utilities from marriage. In other words, couples separate when the utility that is expected from divorcing and possibly remarrying or being single exceeds the utility that is expected from remaining married (Rainer & Smith 2010; Schaller 2013).

Although there have been some studies on the effect of house costs on divorce (or marital stability, partnership dissolution) in developed countries (Rainer & Smith 2010; Farnham et al. 2011; Harknett & Schneider 2012; Milosch 2014), to our knowledge, very few empirical studies have analysed this link in the MENA region (with the exception of Farzanegan & Gholipour, 2015). In contrast to developed countries, which have been experiencing a stable or decreasing growth in divorce rate, the MENA countries are experiencing an uprising trend. Therefore, our result would provide some new evidences from Islamic societies where divorce is growing fast.

3. Data and Methodology

3.1 Data

We use annual data for the period from 1990 to 2014 for ten MENA countries, which is dictated by data availability. The sample countries are Bahrain, Egypt, Iran, Jordan, Kuwait, Qatar, Saudi Arabia, Tunisia, Turkey and United Arab Emirates. The data for divorce rate (1000 per population) in each country were obtained from Euromonitor International database. As a measure of housing costs we use Index of Actual Rentals

for Housing Prices (1995=100), which are collected from Euromonitor International database as well.

In addition to the housing costs as the main independent variable, unemployment rate, social globalization and women's education were selected as control variables in the model specification. We expect that the control variables are positively associated with the divorce rate. To measure unemployment rate we use unemployment as % of total labor force, obtained from the World Bank. As a proxy for women education, we use female adult literacy rate. It is defined as "Percentage of females age 15 and above who can, with understanding, read and write a short, simple statement on their everyday life"¹. The data for this variable come from Euromonitor International database and the World Bank. We use the KOF Social Globalization Index which measures the social dimension of globalization by means of three categories: cross-border personal contacts (e.g. tourist flows and the size of foreign population), cross-border information flows (e.g. access to the internet, TV and foreign press products) and cultural affinity to the global mainstream (e.g. book imports and exports). The KOF measures social globalization on a scale from 1 to 100, with higher values indicating higher social globalization in a country². Descriptive statistics of variables are presented in Table 2.

Table 2. Descriptive statistics of raw data

| | divorce rate | housing rental index | unemployment rate | social globalization | female adult literacy rate |
|-----------|--------------|----------------------|-------------------|----------------------|----------------------------|
| Mean | 1.204 | 875.366 | 13.853 | 55.459 | 76.258 |
| Max | 2.600 | 20197.00 | 76.400 | 82.570 | 97.400 |
| Min | 0.500 | 3.900 | 0.200 | 16.710 | 34.700 |
| Std. Dev. | 0.488 | 2973.002 | 18.336 | 17.895 | 14.073 |

3.2 Model and Estimation Methods

Based on the above discussion, the empirical model we use is as follows:

$$\log \text{DIVR}_{it} = \alpha + \beta_1 \cdot \log \text{HR}_{it} + \beta_2 \cdot \log \text{UNEMP}_{it} + \beta_3 \cdot \log \text{SGLOB}_{it} + \beta_4 \cdot \log \text{WEDU}_{it} + v_i + \Omega_t + u_{it} \quad (1)$$

Equation (1) allows for country fixed-effects (v), year fixed-effects (Ω), error term (u), and where $i = 1, \dots, N$ denotes the country, $t = 1, \dots, T$ denotes the time period and \log is logarithm. DIVR is the divorce rate, HR is housing rental index, UNEMP is unemployment rate, SGLOB is social globalization and WEDU is female adult literacy rate.

First, Equation (1) is estimated by panel country and period fixed effects. Country fixed effects control for factors such as religiosity, norms, tradition, attitudes and conventions toward divorce in different countries. Period fixed effects are included to capture the common time shocks for all countries.

¹ See <http://data.worldbank.org/indicator/SE.ADT.LITR.FE.ZS>

² See <http://globalization.kof.ethz.ch/>

Then, we use the fully modified ordinary least square (FMOLS) method in the regression analysis which uses a semi-parametric correction for endogeneity and residual autocorrelation. As for the FMOLS estimation, a preliminary analysis on unit root and cointegration is carried out. We perform LLC panel unit root test to determine the order of integration of the series (Levin, Lin & Chu, 2002). The test suggests that all series appear to contain unit root in their levels (except social globalization) but are stationary in their first-differences, indicating that they are integrated at order one (I(1)) (see Appendix A). Given that all variables are I(1) series, we proceed to test the presence of a long run equilibrium relationship among the variables using the Pedroni (1999, 2004) panel cointegration test. The results show that there exists cointegration relationship between dependent variable (divorce rate) and its determinants (see Appendix B). Once we establish that a long-run cointegration relationship exists, equation (1) is estimated using the FMOLS method.

4. Estimation Results

The results of estimations are presented in Table 3. The results of both estimation methods show that a significant and positive association exists between housing rental index and divorce rate in the MENA countries (see columns 1 and 2 of Table 3). This finding is in line with Farzanegan and Gholipour (2015) who found that increases in housing costs erode marital stability in Iran. The positive impact of housing costs on divorce in the sample MENA countries can be explained by the psychosocial stress perspective hypothesis. Interestingly, the coefficient of housing rental index in both estimations shows that a 10% increase in the housing costs increases divorce rate about 1.5% in the sample MENA countries. However, these results are not consistent with Harknett and Schneider (2012) who found that greater housing market distress is significantly associated with higher divorce rate in the U.S.

Table 3. Regression estimates

| | Dependent Variable: log(divorce rate) | |
|----------------------------------|---------------------------------------|-----------------------|
| | (1) | (2) |
| | Panel fixed-effect | Panel FMOLS |
| log (housing rental index) | 0.16783*** (7.2133) | 0.1419*** (4.4410) |
| log (unemployment rate) | 0.0007 (0.0114) | 0.0867 (1.0336) |
| log (social globalization) | 0.8638*** (4.0140) | 0.7020** (2.5020) |
| log (female adult literacy rate) | 0.4896 (1.3041) | 0.2845 (0.8978) |
| Cross-section fixed | Yes | |
| Period fixed | Yes | |
| R-squared | 0.75 | 0.74 |

Note: The asterisks *, **, and *** denote significance at the 10, 5, and 1 % levels, respectively. t- statistics are presented in parentheses.

Regarding the control variables, both estimation methods suggest that increases in social globalization is positively associated with higher divorce rate in the MENA countries (see columns 1 and 2 of Table 3). In other words, access to cross-border personal contacts, cross-border information flows and cultural affinity to the global mainstream increase divorce rate in the MENA societies. Finally, both estimators indicate that unemployment rate and women education variables are not significantly related with divorce rate.

5. Conclusion

Several studies have analysed the link between housing costs and divorce in developed countries. However, this relationship has not been tested for the MENA countries. Using data from ten MENA countries over the period of 1990-2014 and applying panel fixed effects and the FMOLS estimation methods, the results show that there is a positive and significant long-run relationship between housing costs and divorce rate in the MENA countries.

Since housing costs have an important effect on the marital stability, therefore it is important for policymakers to pay special attention to housing market movements for understanding of the increasing trend of family dissolution in the MENA countries.

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Appendix A. LLC Panel unit root tests

| Level | Statistic | First difference | Statistic |
|----------------------------------|-----------|---|-----------|
| log(divorce rate) | -0.521 | Δ log(divorce rate) | -4.767*** |
| log (housing rental index) | 0.898 | Δ log (housing rental index) | - 1.770** |
| log (unemployment rate) | -1.015 | Δ log (unemployment rate) | -6.062*** |
| log (social globalization) | -6.937*** | Δ log (social globalization) | -5.410*** |
| log (female adult literacy rate) | 1.5718 | Δ log (female adult literacy rate) | -3.792*** |

Note: The asterisks *, **, and *** denote significance at the 10, 5, and 1 % levels, respectively.

Appendix B. Pedroni panel cointegration test results

| Alternative hypothesis: common AR coefs. (within-dimension) | | | | |
|--|-----------|--------|-----------------------|--------|
| | Statistic | Prob. | Weighted Statistic | Prob. |
| Panel v-Statistic | -1.0886 | 0.8618 | -2.5540 | 0.9947 |
| Panel rho- Statistic | 1.9963 | 0.9771 | 1.4989 | 0.9330 |
| Panel PP-Statistic | -3.4655 | 0.0003 | -7.3395 | 0.0000 |
| Panel ADF- Statistic | -3.0392 | 0.0012 | -4.5975 | 0.0000 |
| Alternative hypothesis: individual AR coefs. (between-dimension) | | | | |
| | Statistic | Prob. | | |
| Group rho- Statistic | 2.4595 | 0.9930 | | |
| Group PP- Statistic | -9.0499 | 0.0000 | | |
| Group ADF- Statistic | -2.2475 | 0.0123 | | |