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## Divorce and Gold Coins: A Case Study of Iran

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# Divorce and Gold Coins: A Case Study of Iran

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# Divorce and Gold Coins: A Case Study of Iran

## Abstract

The increasing divorce rate has become a major social concern for policy makers in the Islamic government of Iran. The price of gold coin is an important factor in cost-benefit analysis for individuals in their marriage and divorce decisions in Iran. Dowries (*Mehrieh*) are usually in the form of gold coin and a wife has a legal right to them upon both parties signing the marriage contract. Increasing the price of gold coin may intensify the internal stress and struggles within families, leading to a higher probability of divorce. We investigate the long-run relationship between real price of gold coin and divorce rate for the case of Iran over the period 1980-2014. Controlling for other factors, our regression results show that there is a positive and significant long-run relationship between real price of gold coin (as well as unanticipated changes in real price of gold coin) and marital instability.

JEL-Codes: D100, O100, E300, E600.

Keywords: divorce, gold price, cointegrating regression, Iran.

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## 1. Introduction

Several studies have investigated the effect of changes in macroeconomic conditions on divorce rate (or marital stability, partnership dissolution) in developed and developing countries (e.g. Amato and Beattie, 2011; Farzanegan and Gholipour, 2016; Fischer and Liefbroer, 2006; Hellerstein and Morrill, 2011; Klein, 2017; Schaller, 2013)<sup>1</sup>. However, to our knowledge, no empirical study has analyzed the effect of gold prices on divorce rate. We investigate this relationship in Iran where a strong growth in divorce rate has become one of the major socio-demographic concerns in recent years (Farzanegan and Gholipour, 2016).<sup>2</sup>

We hypothesize that increases in gold prices have caused significant rises in divorce rate in Iran over the past three decades, *ceteris paribus*. How could gold price changes influence divorce in Iran? To answer this question, we first need to understand the concept of *Mehrieh* (marriage portion payable to the wife). *Mehrieh* is a dowry agreement wherein the wife receives some assets such as cash, property or gold coins<sup>3</sup>. It can be claimed at any time during a marriage or while getting divorced. It acts as an insurance policy for women in the case of divorce in a conservative Islamic society. By agreeing on the amount of *Mehrieh*, the future husband commits himself to pay it to his future wife upon signing the marriage contract or at any time that she demands it. The value of *Mehrieh* in most cases is linked a certain number of gold coins which may be the number of the wife's birth year or any other mutually agreed criteria.<sup>4</sup> Increasing

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<sup>1</sup> For a survey of the literature, see Farzanegan and Gholipour (2016).

<sup>2</sup> According to Iran's National Organization for Civil Registration, in 2013, on average 16 divorce cases were registered every hour.

<sup>3</sup> In Iran, a dowry or "Mehrieh" is often payable in gold coin-like tokens known as "Bahar Azadi" (Farsi for "spring of freedom"). See <http://www.dw.com/en/in-iran-grooms-to-escape-jail-over-dowry-debts/a-18658344> (Accessed 2/10/2017). In recent years, the average number of gold coins for *Mehrieh* is about 450 coins. See <http://www.khabaronline.ir/detail/38556/society/family> (Accessed 2/10/2017)

<sup>4</sup> See the BBC report (23 Feb. 2012) on this issue at: <http://www.bbc.com/news/av/world-middle-east-17147842/the-cost-of-a-divorce-in-iran-your-weight-in-gold> (Accessed 2/10/2017)

monetary values of gold coins can increase motivation for some married women, on average, to demand their *Mehrieh* sooner rather than later. In such cases, relationship stress is more likely. A complementary argument is that increases in gold coin prices can lower the expected cost of divorce (or increase the expected benefits from divorce) for women. In turn, this lowered cost (or higher benefits) makes it less likely that women will remain in fragile marriages.<sup>5</sup>

The potential positive relationship between the value of *Mehrieh* (particularly, the price of gold coin) and divorce has been also highlighted by several Iranian authorities and observers in major Iranian news agencies and newspapers (e.g. Tabnak, 2014; Donya-e-Eqtesad, 2012). They argue that some women enter into a marriage aiming to get divorced in the near future in order to receive the *Mehrieh* (ISNA, 2015; ISNA, 2013)<sup>6</sup>. For example, the head of Social Commission of Iran's Parliament notes that there are a number of marriages in which brides have intended to get dowry after only a few years due to high levels of dowry values (which are often measured by gold coins)<sup>7</sup>.

Historical observations in Iran also show a positive association between the real values of gold coin and the divorce rate (see Figure 1). However, this bivariate relationship could be caused by other factors than the price of gold coin (as a proxy for monetary value of *Mehrieh*). Therefore, in our study, we turn to multivariate estimation approaches and investigate whether the influence of price of gold coin remains a strong predictor when alternative explanatory factors for divorce

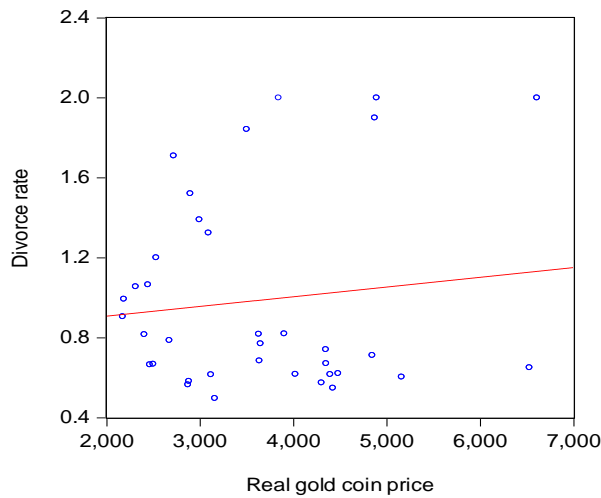
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<sup>5</sup> Hassani-Nezhad and Sjögren (2014) examined implementation of Khul in Middle East and its effects on divorce rates. Under Islamic law, Khul gives a woman the right to unilaterally petition for divorce in return for paying back her *Mehrieh*. Before adoption of Khul, unilateral divorce was available only for men and woman petitioning for divorce needed the agreement of the husband.

<sup>6</sup> See also <http://www.dailymail.co.uk/wires/afp/article-2985070/Iran-charges-woman-alleged-10-marriage-trick.html> (Accessed 15/09/2017) and <https://www.tasnimnews.com/fa/news/1396/07/10/1533957> (Accessed 2/10/2017)

<sup>7</sup> See <http://rc.majlis.ir/fa/news/show/862049> [in Farsi, Accessed 2/10/2017] and <https://www.thenational.ae/world/iran-pre-nups-land-thousands-of-men-in-jail-1.81305> (Accessed 2/10/2017)

rate are included. To address the research gap, we use annual time-series data from 1980 to 2014. Our findings provide evidence that there is a significant and positive long-run relationship between the real price of gold coin and the divorce rate in Iran. The concluded evidence of this paper provides a starting point for future analyses of the relationship between the gold market and divorce rate in Arab countries where a considerable amount of gold and jewelry are set as *Mehrieh* in these countries.



**Figure 1.** Relationship between real price of gold coin (in 1000 Rials) and divorce rate (per 1,000 total population) in Iran over 1980-2014

*Sources:* Data for price of gold coin were obtained from Economic Time Series of Central Bank of Iran (see <http://tsd.cbi.ir/DisplayEn/Content.aspx>) and Data for divorce rate were collected from Iran's National Organization for Civil Registration (see <http://www.sabteahval.ir/en/default-789.aspx>)

The rest of this paper is structured as follows: Section 2 provides a theoretical explanation for the relationship between gold price and divorce. Section 3 describes the variables and data set. Section 4 discusses the estimation methods and presents the empirical results. Section 5 concludes the paper.

## 2. Theoretical Background

The rationale behind the positive relationship between price of gold coin and divorce is mainly related to the literature on the concept of moral hazard, as well as the relationship stress and relative cost of divorce perspectives. The moral hazard problem arises when information is distributed unequally (asymmetric information), meaning that some individuals in the market know more than the others. Although the moral hazard term was originally associated with insurance fraud (Stiglitz et al., 2015), it has been widely used by economists to describe misbehavior encouraged by the existence of compensation for losses.

Besides extensive discussion of moral hazard in the field of finance, the literature on household economics has also used this concept for understanding marriage and divorce patterns. The presence of moral hazard in marriage is attributable to the fact that marriage is a type of contract between husband and wife and there is an inherent lack of full information in marriage (Walther, 2017). For example, Friedberg and Stern (2014) found that couples do not have a perfect knowledge of each other, and this asymmetric information would lead to quite high divorce rates in the absence of care within a marriage.

Based on the concept of moral hazard and relying on the above-mentioned works as a background, our study contributes to the empirical literature on the application of moral hazard in explaining marital issues. We show that the presence of Dowries (*Mehrieh*) in the marriage contract in Iran is similar to a situation when a person or entity (with different intentions) buys insurance from an insurance company. In our case, the husband plays the role of an insurance company and the wife plays the role of a buyer of an insurance. By agreeing on the amount of *Mehrieh* (insurance), the future husband commits to pay it to his future wife upon signing the marriage contract or at any time that she demands it. Increasing monetary values of *Mehrieh*



(usually in the form of gold coin) has increased the motivation of some wives, on average, to demand their *Mehrieh* sooner than later. Therefore, one may expect that increases in the price of gold coin can escalate marital tension and erode marital stability in Iran.

In addition to the concept of moral hazard, we can also look at the positive relationship between gold price and divorce from two established channels in related literature: (1) relationship stress or psychosocial stress perspective and (2) relative cost of divorce perspective (Fischer and Liefbroer, 2006; Amato and Beattie, 2011). Increasing gold coin price (adjusted for inflation) as a proxy for real increase in value of *Mehrieh*<sup>8</sup> can amplify mental stress in a fragile marriage. In literature, this channel has been discussed as an explanatory framework for the effect of unfavorable macroeconomic conditions such as high unemployment or inflation on risk of divorce (e.g. Jensen and Smith, 1990; Conger et al., 1990). The second discussed channel is the factors which are shaping the relative cost of divorce. Increasing cost of living (e.g. higher property rents, unemployment rate) may increase the costs of divorce (Harknett and Schneider, 2012; Fischer and Liefbroer, 2006; Amato and Beattie, 2011). In the case of Iran, increasing the gold coin price and value of *Mehrieh* increases the expected benefits and reduces expected costs of divorce for the married women given a fragile union. It does, however, have the opposite effects for the married men. The final development in divorce rate at the national level depends on the balance of gender power within the Iranian society and the extent to which the married women are using their leverage in demanding their *Mehrieh*. According to Hamid Reza Jalaipour, a sociologist at University of Tehran (cited in Dehghanpisheh, 2014), “*There has been a big growth in individualism in Iran, especially among women. Women are more educated and have increased*

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<sup>8</sup> The other main part of *Mehrieh* is real estate properties. See Farzanegan and Gholipour (2016) and Gholipour and Farzanegan (2015).

*financial empowerment...It used to be that a woman would marry and she would just have to get along. Now if she's not happy, she'll separate. It's not taboo".*

### **3. Data and Variables**

We use annual data for the period of 1980-2014<sup>9</sup>. Data for number of divorces in Iran were collected from *Iran's National Organization for Civil Registration*. We calculate the divorce rate (*DIVR*) as the number of divorces per 1,000 population. Data for price of gold coin (*GOLDP*) in 1,000 Rials were obtained from the *Economic Time Series of Central Bank of Iran*. Besides the variable of interest (*GOLDP*), the literature suggests that some socio-economic variables may have important influences on family instability. Thus, following existing macro-level studies on divorce and based on the current arguments made by Iranian observers, women's education (*WEDU*), social globalization score (*SGLOB*), and GDP per capita growth rate (*GDPCG*) were selected as control variables in the model specification.

In regards to control variables, first it may be argued that the rise of women's education has increased the risk of divorce in Iran (e.g. Aghajanian and Moghadas, 1998; Aghajanian and Thompson, 2013; Dehghanpisheh, 2014). However, a current study in Iran has shown that there is a negative and significant long-run relationship between women's education and divorce over the period of 1982-2010 (Farzanegan and Gholipour, 2016). In this paper, we use the female literacy rate as a proxy for *WEDU*. Data for this variable were obtained from the *Euromonitor International* database. Second, social globalization (especially access to Internet and satellite TV) has been identified as another potential driving force of heightened family instability in the Islamic society of Iran. A recent report provided by Iranian parliament notes that exposure to western culture

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<sup>9</sup> We did not extend the time series back further than 1980 due to some missing observations on gold coin and divorce rate variables.

through access to satellite TV has promoted divorce in the society (Islamic Parliament Research Center, 2013). Likewise, Naeimi (2011) and Golchin et al. (2012) showed that access to satellite TV is one of the major determinants of family dissolution in Iran. We used the KOF index social globalization – as a proxy for *SGLOB* – which was collected from the *KOF Swiss Economic Institute* (Dreher, 2006). It measures the social dimension of globalization with regard to three categories: cross-border personal contacts, cross-border information flows and cultural affinity to the global mainstream. The index ranges between 0 and 100, with higher values indicating higher social globalization in a country. Finally, we use GDP per capita growth (*GDPCG*) as a measure for the business cycle effects. Decreasing economic growth and increasing unemployment will increase the psychological burden within families (for a review of the different effects of business cycles on divorce, see Amato and Beattie 2011). Data for *GDPCG* were collected from the *World Development Indicators of the World Bank*. Table 1 provides descriptive statistics of variables. In order to separate the effects of rising gold prices from that of rising costs of living on divorce rate, we have deflated the nominal price of gold coin by using annual Consumer Price Index (CPI) of Iran.

**Table 1.** Descriptive statistics before taking logarithm

	<i>DIVR</i>	<i>GOLDP</i>	<i>WEDU</i>	<i>SGLOB</i>	<i>GDPCG</i>
Mean	0.99	3,631.97	0.61	26.30	0.00
Maximum	2.00	6,605.52	0.81	34.75	0.18
Minimum	0.50	2,171.09	0.28	19.33	-0.24
Std. Dev.	0.49	1,136.67	0.17	4.91	0.08

Note: *DIVR* is the number of divorces per 1,000 populations; *GOLDP* is real price of gold coin (in 1000 Rials); *WEDU* is female literacy rate; *SGLOB* is KOF index of social globalization and *GDPCG* is GDP per capita growth. We used annual data for the period of 1980-2014.

## 4. Empirical Model and Results

### 4.1 Empirical model

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

$$\log(DIVR)_t = \beta_0 + \beta_1 \cdot \log(GOLDP)_t + \beta_2 \cdot WEDU_t + \beta_3 \cdot SGLOB_t + \beta_4 \cdot GDPCG_t + e_t \quad (1)$$

where *DIVR* is the number of divorces per 1,000 population; *GOLDP* is real price of gold coin (in 1000 Rials); *WEDU* is female literacy rate; *SGLOB* is KOF index of social globalization and *GDPCG* is GDP per capita growth.  $\beta_s$  are the estimated coefficients, subscript  $t$  represents time and  $e$  is an error term. We use the logarithm of divorce rate and real value of gold coin for easier interpretation of the coefficient  $\beta_1$  as elasticity.

We also estimate the model (1) by including unanticipated shocks to real price of gold coin instead of level of real price of gold coin. The reason is that individuals might have rational expectations about gold price, and therefore the impact of dowry values (as a function of price of gold coin) on divorce rate might be identified only through unanticipated shocks to gold coin price. We generated unexpected changes in gold coin price by regressing  $\log(\text{real gold coin price})$  on its one-year lag. The residual is re-scaled between 0 and 1 and then we use  $\log(\text{re-scaled residual scores} + 1)$  as proxy for unanticipated level of gold coin prices.

### 4.2 Estimation methods

To estimate the long-run relationship between the divorce rate and explanatory variables, we apply two cointegrating regressions: Fully Modified Least Squares (FMOLS, developed by Phillips and Hansen, 1990; Phillips, 1995) and Dynamic Least Squares (DOLS, developed by Saikkonen, 1992, Stock and Watson, 1993). Additionally, we use Generalized Method of Moments (GMM,

developed by Arellano and Bond, 1991) to estimate the effect of right hand side variables on divorce rate.

The FMOLS and DOLS estimators are among the most efficient methods that are used to estimate and test long-run relationships between variables. The main reason for utilizing the FMOLS and the DOLS is to account for the potential existence of the endogeneity problem in the model. For example, the macro datasets that we use in this study typically lack controls for household demographic and economic characteristics, and may suffer from omitted variables – one of the causes of endogeneity. In the presence of endogeneity, the standard ordinary least squares (OLS) produces biased and inconsistent estimates. In addition, when we run the standard OLS to estimate the relationship between divorce rate and explanatory variables, we find that the residuals are serially correlated. Serial correlation violates the assumption of the OLS regression that disturbances are not correlated with other residuals. Therefore, in this study the FMOLS and the DOLS methods are employed because they can correct for endogeneity in the regressors that arise due to cointegrating relationships and serial correlation in regressions. That is, these methods provide unbiased estimates of the coefficients (Phillips, 1995; Stock and Watson, 1993). As for the FMOLS and the DOLS estimations, a preliminary analysis on unit root and cointegration is carried out. We perform Augmented Dickey-Fuller (ADF) unit root test to determine the order of integration of the series (Dickey and Fuller, 1981). The null hypothesis of the ADF test is that the series contains a unit root (or they are non-stationary). The results of the unit root test are presented in Table 2. They suggest that the series contain unit root in their levels (except *GDPCG*) but are stationary in their first-differences, indicating that they are integrated at order one;  $I(1)$ . Given that all variables are  $I(1)$  series, we proceed to test the presence of a long-run equilibrium relationship between the variables using Johansen's Trace and Max-Eigen statistics (Johansen, 1995). The null

hypothesis of these tests is that there is no cointegration between variables. The Trace and Max-Eigen statistics indicate that a cointegration relationship exists between *DIVR* and its determinants<sup>10</sup>.

**Table 2.** Augmented Dickey-Fuller (ADF) unit root test results

	Level (t-Statistic)	First difference (t-Statistic)
<i>DIVR</i>	-0.410	-4.183**
<i>GOLDP</i>	-0.985	-6.255***
<i>WEDU</i>	0.017	-4.405***
<i>SGLOB</i>	-3.096	-5.800***
<i>GDPCG</i>	-4.067**	-5.046***

Notes: *DIVR* is the number of divorces per 1,000 populations; *GOLDP* is real price of gold coin (in 1000 Rials); *WEDU* is female literacy rate; *SGLOB* is KOF index of social globalization and *GDPCG* is GDP per capita growth. The asterisks \*\* and \*\*\* denote significance at the 5%, and 1% levels, respectively. Lag length is based on SIC. *p*-values are based on MacKinnon (1996) one-sided *p*-values. Trend and intercept are included in test equation.

Alongside the FMOLS and the DOLS estimations, we also apply the instrumental variables estimation method, GMM. The idea behind the instrumental variables estimators is to use instruments to eliminate the correlation between explanatory variables and the residuals (Wooldridge, 2009). To serve as a good instrument in the GMM estimation, the instrument should be correlated with the explanatory variables in the equation, and uncorrelated with the residual. Real gold coin price is assumed to be endogenous and is instrumented by its one year lag.

#### 4.3 Results of regressions

Table 3 presents the regression results when we use *GOLDP* as an explanatory variable. The long-run effect of the real price of gold coin on divorce rate in the post-revolution period is positive (increasing), highly statistically significant and robust across three estimation methods. A 1% increase in the real price of gold coin is associated with a long-run increase of 0.42% in divorce rate, controlling for other predictors of divorce rate in the FMOLS estimation. The effect increases

<sup>10</sup> Results are available upon request.

slightly to 0.51% in the DOLS estimation, while it is 0.26% in GMM approach. This result supports our hypothesis that we put forward. Our statistical analyses also support the claim (by Iranian media and observers) that rising *GOLDP* has been one of the main determinants of high divorce rate in post-revolutionary Iran (e.g. Tabnak, 2014; Donya-e-Eqtesad, 2012). Our finding also confirms that family instability in Iran can be explained, to some extent, by the concept of moral hazard and cost of divorce perspective.

**Table 3.** Estimation results with real price of gold coin (1980-2014)

Dependent variable: log(Divorce rate)			
	FMOLS	DOLS	GMM
log(Gold coin price)	0.424*** (3.97)	0.513*** (6.05)	0.260** (2.51)
Female literacy	-0.010** (-2.67)	-0.021*** (-4.30)	-0.01*** (-3.07)
Social globalization	0.128*** (9.94)	0.145*** (8.21)	0.117*** (11.83)
GDP per capita growth	1.01** (2.24)	1.645* (1.96)	0.407 (1.54)
Adjusted R-squared	0.83	0.94	0.85
Cragg-Donald F stat			41.2
Prob. (J-statistic)			0.86

Notes: Dependent variable is the number of divorces per 1,000 populations (in log); *Gold coin price* is real price of gold coin (in 1000 Rials and in log). Constant is included (not reported). Fully Modified Least Squares (FMOLS) specifications: Cointegrating equation deterministics: C; Additional regressor deterministics: @TREND @TREND^2; Long-run covariance estimate (Prewhitening with lags = 2 from AIC max lags = 3, Bartlett kernel, Newey-West fixed bandwidth = 4.0000). Dynamic Least Squares (DOLS) specifications: Cointegrating equation deterministics: C; Fixed leads and lags specification (lead=1, lag=1); White heteroskedasticity-consistent standard errors & covariance is used. Generalized Method of Moments (GMM): log (Gold coin price) is assumed to be endogenous and is instrumented by its one year lag. Standard errors and covariance computed using White weighting matrix. Prob(J-statistic) tests the null hypothesis that log(Gold coin price) is exogenous. The asterisks \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively. Robust *t statistics* based on White heteroskedasticity-consistent standard errors are presented in parentheses.

In addition, we find that an increase in the social globalization index (*SGLOB*) is associated with an increase in divorce rate across different estimation methods (see Table 3). This result is in line with Naeimi (2011) and Golchin et al. (2012). Consistent with Farzanegan and Gholipour (2016), our results show that women's education (*WEDU*) has a negative and significant

relationship with divorce rate in the long-run. This finding is also in accord with the conclusions of a recent study by Schwartz and Han (2014) who showed that, in the US, the high risk of divorce in couples with more highly educated wives has decreased since the 1990s. Finally, the long-run effect of economic modernization as measured by increases in real income per capita on divorce rate is also positive and significant in the FMOLS and DOLS estimations. In GMM model, the p-value of J-statistics shows that we cannot reject the null hypothesis of exogeneity of log of gold coin price. More than 80% of variation of divorce rate in Iran since 1980 is explained by our model specification as shown by adjusted R-squared statistics.

Table 4 shows the results of long-run effect of unexpected changes in gold coin prices on divorce rate in Iran. The nominal gold prices have been rising steadily since the late 1990s in Iran. Therefore, it may be likely that individuals expect dowry (*Mehrieh*) values to also increase, assuming that the amount of gold usually agreed upon at marriage does not change. The predicted or expected price of gold coin due to the available historical information may not have a shock effect, which is an important consideration in understanding family tension. Thus, the growing rate of divorce is better explained by the cyclical variation of gold coin prices. To capture the unexpected change in gold coin prices, which is not predicted by past information of gold coin prices, we use the residual of regression of log (real gold coin price) on its own lag. The calculated residual shows the part of variation in gold coin prices which cannot be explained by its own recent development. We rescale the residual variable from 0 to 1 and take the logarithm of the rescaled residual plus one. Following this strategy to capture the unexpected variation in gold coin prices, we find qualitatively similar long-run effects on divorce rate in Iran. The unexpected change in gold coin price has a positive (increasing) effect on divorce rate, which is statistically significant in both FMOLS and DOLS methods. In GMM method, it keep its positive sign but is statistically



insignificant. However, as we show by probability of J-statistic, we cannot reject the null hypothesis implying that log of unexpected change in gold coin price is exogenous. An unexpected 1% increase in real gold coin prices increases the divorce rate in the long-run by 0.52%, using the FMOLS approach. In DOLS, the effect is higher (1.13%) and statistical significance increases from 90% confidence interval in FMOLS to 99% confidence interval as well. As shown in Table 4, a significant portion of changes in divorce rate is explained by our specification as is shown by the adjusted R-squared indicator. The long-run effect of other control variables, such as women's education and social globalization, remain robust whereas GDP per capita growth does not show a significant pattern.

**Table 4.** Estimation results with unanticipated shocks to real price of gold coin (1980-2014)

Dependent variable: log(Divorce rate)			
	FMOLS	DOLS	GMM
log(Gold coin price <i>shock</i> )	0.528* (1.93)	1.131*** (3.64)	0.747 (1.14)
Female literacy	-0.014** (-2.19)	-0.020*** (-3.97)	-0.010** (-2.07)
Social globalization	0.134*** (5.94)	0.131*** (6.66)	0.113*** (6.35)
GDP per capita growth	-0.111 (-0.14)	1.577 (1.55)	0.873 (1.51)
Adjusted R-squared	0.78	0.91	0.77
Cragg-Donald F stat			2.11
Prob(J-statistic)			0.24

Notes: Dependent variable is the number of divorces per 1,000 populations (in log); *Gold coin price shock* is unexpected change in price of gold coin. It is the residual of regressing log(gold coin price) on log(gold coin price one-year lag). The residual is then re-scaled between 0 and 1 and we use then log of residual +1. Constant term is included (not reported). Fully Modified Least Squares (FMOLS) specifications: Cointegrating equation deterministics: C; Additional regressor deterministics: @TREND @TREND^2; Long-run covariance estimate (Prewitening with lags = 1 from AIC maxlags = 3, Bartlett kernel, Newey-West fixed bandwidth = 4.0000). Dynamic Least Squares (DOLS) specifications: Cointegrating equation deterministics: C; Fixed leads and lags specification (lead=1, lag=1); White heteroskedasticity-consistent standard errors & covariance is used. Generalized Method of Moments (GMM): log (Gold coin price shock) is assumed to be endogenous and is instrumented by its one-year lag. Standard errors and covariance computed using White weighting matrix. Prob(J-statistic) tests the null hypothesis that log(Gold coin price shock) is exogenous. The asterisks \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively. Robust *t statistics* are presented in parentheses.

In sum, our findings suggest that, besides the traditional socio-economic determinants of divorce, marital dissolution in Iran can be partly explained in long-run by the fluctuation in monetary values of *Mehrieh* which is driven by expected and unexpected changes in the real price of gold coin.

## 5. Conclusion

Gold coin is the main part of dowries (*Mehrieh*) in Iran. Increasing gold coin prices by decreasing the relative expected costs of separation can encourage a married woman to demand the agreed *Mehrieh* sooner, rather than later, from her partner. Such an environment can affect the structure of families by increasing relationship stress and within families' struggles. There is a significant correlation between gold coin price and divorce rate in Iran and authorities often mention this factor as one of the drivers of the increasing national divorce rate. In this study, we empirically and, in a multivariate framework, examine the long-run relationship between price of gold coin and divorce rate over the period 1980-2014. Our empirical results based on the FMOLS, DOLS and GMM methods show that increases in the real price of gold coin have a positive and significant long-run association with marital dissolution in post-revolutionary Iran, controlling for other key predictors of divorce rate.

Therefore, it can be concluded that increases in gold coin price as a main driver of the value of *Mehrieh* can amplify family tensions in the Islamic society of Iran. A continuous increase in the divorce rate since the early 1990s, (post-Iran/Iraq war period) along with a steady decrease in marriage rate since 2008, have raised concerns among policy makers regarding the future of Iran's demographic structure. The significant reduction in fertility rates (from average of 6 children per women during the 1970s and 1980s, to less than 2 in the 2000s) has been partly caused by the drop

of marriage rates and increase of divorce rates in Iran. As a result of the demographic change, the simulations show a rapid increase in old age dependency ratio (number of elderly people-beyond 64 years of age- as a share of those of working age-15-64 years old) from 6.5% in 1990 to 35% in 2050 (World Bank, 2017). Such an increase in old age dependency ratio in Iran will be higher than the average of this figure for middle-income countries, the Middle East and North Africa region, and globally. Funding the pension system under such a condition is a challenging task for any government in Iran. Therefore, understanding the key factors in developing a family structure is highly relevant for policy makers. We show that the gold coin market in Iran is one of the key drivers of family formation and dissolution. Gold price in Iran is not only determined by international gold markets but also by national political and economic factors. For example, during higher political risks under international economic sanctions, economic agents showed a stronger tendency to convert their assets to gold and real estate (for a review, see Farzanegan, 2013). In addition, reducing banking interest rates in an inflationary economy in recent years, especially during the eight years of *Ahmadinejad's* presidency (2005-2013) as well as fragility of stock market, has pushed economic agents to invest more in gold and real estate assets, which in turn increases prices in these two markets. Future research may examine patterns of family formation and dissolution in other Islamic countries which have also comparative traditions in their marriage contracts.

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