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FAMILY AND ECONOMIC GROWTH IN POLAND

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Abstract

In the article we test the hypothesis that the weakening of family ties, as measured by the reduction in the number of marriages, a cascade of divorces and the decrease in the fertility rate, has brought about an economic slowdown in Poland. We also suppose that the economic growth and increased standard of living influence the increasing number of marriages, the fertility rate, and results in a decreasing number of divorces.

We verify these hypotheses using an econometric model of economic growth with the family social capital. The model consists of seven stochastic equations and exhibits the feedback between GDP, labour productivity and some variables representing social capital, in particular the marriage disintegration ratio. We try to verify the hypothesis of the existence of an optimal divorce rate for economic growth.

Keywords: family social capital, marriages, fertility rate, divorces, economic growth, economic crisis.

JEL classification: Z13, J12, J13, O47, Q56.

Introduction

In this article¹ we discuss three variables representing family social capital: marriage, fertility and divorce and their feedback with economic growth and level.

The decreasing number of marriages, increasing number of divorces, and the low fertility rate are key demographic and social problems in Poland. The effect of the low fertility rate on the population's demographic situation (i.e. its aging) and the deterioration of social structures will not be examined in this article, despite the fact that within the next decades the demographic structure may destabilize Poland's social and economic development.

We verify five hypotheses in a shorter, however still rather long-term perspective. The first three concern marriages, fertility rates, and economic growth:

1. The decline in the number of marriages has led to the decline in women's fertility rates.
2. The decline in fertility rates has slowed down the growth of GDP per capita (and the dynamics of labour productivity).
3. The decline in labour productivity and, as a consequence, the decline in GDP per capita, has led to a decline in the number of marriages. The contrary hypothesis is often formulated that the increased level of economic life free individuals from dependence on each other, facilitating single life or living for oneself², which in turn reduces the number of marriages entered into³.

The next two hypotheses concern divorces and economic ties:

4. An increase in the number of divorces beyond a defined threshold slows down economic growth, and that threshold can be empirically established.
5. Economic growth (measured by increase in GDP *per capita*) reduces the number of divorces⁴. The contrary hypothesis is formulated also in this case.

These hypotheses will be verified on the basis of a small econometric model. The model describes the relationship between marriages, fertility rates, divorces and economic growth, aimed at determining the patterns which, in our opinion, slow economic growth. We will investigate whether the change in the pattern of the family, consisting of fewer marriages and more frequent cohabitation relationships with a smaller number of children, has slowed down the economy.

In this article⁵ we present the hypothesis that the weakening of family ties and intra-family communication and cooperation, i.e. life for oneself, measured by the declining number of marriages, declining fertility rate, and the increased number of divorces, has caused slowing of economic growth in Poland.

Hypothesis 1 is universally recognized. It appears that hypotheses 3, 4 are relatively original.

Together with the verification of the hypotheses we analyse their long-term delayed effects (lags). On one hand, we justify this phenomenon by the fact that family decisions, and social demographics in general, are strongly anchored in tradition and culture. On the other hand, even if the decisions to enter into marriage are no longer made ‘until death do us part’, they nevertheless are of a long-term nature⁶. In addition, decisions concerning parenting and divorce are taken ‘forever’, i.e. they remain in effect for the rest of one’s life⁷. In other words, they are decisions which have the most permanent long-term effects, that require planning for many years into the future, and are therefore associated with any assessment of one’s entire life. This provides a framework for the analysis of many lags.

In this article we examine the mutual interactions between the disintegration of the family and the level and growth of economy. We verify this hypothesis by using an econometric model of growth with variables representing family social capital.

In section 4 we attempt to summarize the lively discussions concerning the connections between family social capital and economic growth which took place at a series of conferences in 2009–2013.

1. The Role of Family and Family Social Capital

For most adults, family and work constitute the two major environments of their activities and involvement. A recurrent theme in the sociological and psychological literature of the late twentieth century (e.g. Cutrona, Eckenrode and Gore, and Gutek et al.) is the idea of transferring both the emotional burdens people experience as well as their mental and psychological resources from one environment to another, which can have both positive and negative consequences. Two opposing concepts appear in the literature:

- the negative concept of WFC – Work Family Conflict; as well as
- the twin positive concepts of positive spillover (Kirchmeyer 1992), and enrichment (Rothbard 2001, Greenhaus, Powell 2006)⁸.

If Freud was right in claiming that “a fundamental condition for health is the ability to love and to work,” then any measures aimed at improving the reconciliation of work and family (WFB – Work Family Balance) would seem highly important and necessary⁹.

Until the beginning of the Industrial Revolution in the mid-eighteenth century, the family home was the most common place to work. This obviously created positive relationships between

family activities and work. Household work was usually closely identified with the ‘business’ of professional work. During the Industrial Revolution there was an increased occurrence of people carrying on their professional work outside the household. Work in the ‘business world’ carried with it greater pecuniary benefits than work in the home. This strengthened the feeling that there was a conflict relationship between work and family. This led some to the doubtful conclusion that paid ‘outside work’ was of greater importance than unpaid work on behalf of the family at home.

Some associate living for oneself with freedom, modernity, and striving for a fulfilling and attractive **self-realization**. Others assess this phenomenon negatively, as contrary to the social and familial nature of man, leading to loneliness.

“...man as an individual is not only a member of some sort of community, but a social being, which means relational in nature. A person becomes an individual in the fullest sense of the word when he becomes engaged and participates in the lives of others (and for others), and endowing himself by others, becomes someone for others”¹⁰. A human being becomes a person in family surroundings and in the working community.

Action aimed at oneself – self-fulfilment – is akin to a hedonistic attitude. One may ask whether the search for self-fulfilment in place of engagement with and commitment to others is not a significant reason for the relatively low quality of life of hedonists in comparison to the followers of eudemonism, a system of ethics that evaluates the morality of actions in terms of their capacity to produce happiness¹¹.

Since the mid-nineties, econometric studies of economic growth have attributed increasing importance to social capital. An important component of this capital is family social capital, i.e. the capital of family ties. We have witnessed sporadic attempts to introduce such capital into the econometric models of growth¹².

Adam Smith, referring to the Stoic idea of proper conduct and concepts of Aristotle, wrote that: “Among those primary objects which nature had recommended to us as eligible, was the prosperity of our family, of our friends, our country”¹³.

The most durable connections which unite people are family ties, i.e. ties between spouses, parents and children, grandparents and grandchildren, and between siblings and kin. The sustainability and importance of family relationships are rooted in tradition, culture, religion and the institution of marriage¹⁴. The durability and strength of the ties between parents with children is additionally dependent on the natural and instinctive bonds which accompany motherhood and fatherhood¹⁵. Children’s feelings are drawn even to those parents whom they

did not have a chance to meet, and are negatively aroused toward those who, according to 'objective' social assessments, poorly fulfil their parental obligations.

We love and are loved most often and most permanently within the family, and the quality of our lives and feelings of happiness and security are dependent on our family ties¹⁶. It seems that relationships with people outside the family circle are weaker and are not able to replace family ties due to, *inter alia*, the lack of an 'irrevocable' kinship, lack of an institutional character, and the weaker cultural and religious foundations for their sustainability.

From among a large number of areas and aspects of life, for many years Poles have confirmed that they achieve the greatest satisfaction from their children, marriage and relationships with their loved ones in the family¹⁷. In turn, failures or shortcomings in this respect are among the most destructive factors, disrupting their quality of life.

The basis of the family is marriage¹⁸. The source of durability of the family consists mainly of the unbreakable bonds of blood as well as the legal institution of marriage. Strong support for the durability of marriage can be found in tradition and culture and, especially in Poland, in religion¹⁹. The Catholic religion raises the institution of marriage to that of an inviolable sacrament. Pope John Paul II, in his *Letter to families* stressed that a human being "cannot fully find himself or herself except by the disinterested giving of oneself ... giving of oneself is by its very essence permanent and irrevocable"²⁰. Despite this unequivocal declaration on the permanency and irrevocability of marriage, the Catholic Church's canon law does envision the annulment of marriage in certain particular situations²¹. We call attention to this here because, according to hypothesis no. 4, not all divorces are harmful to the economy.

In a context wider than just the family, John Paul II asks: 'Can a person be fully realized without taking into account his nature as a social being 'with' others and 'for' others?'"²² The disintegration of the family, leading in extreme cases to divorce, is a crisis of a social nature to the spouses²³.

L. Kocik declares that the family, "connects an individual person and all phases of his or her life with society, culture, the nation, and social classes. It motivates his or her economic, social, and cultural activities, and shapes the individual nature of a man or woman"²⁴. In a similar vein, Z. Tyszka writes that the microcosm of family is integrated into the overall social, economic, and cultural processes of a given country²⁵.

J. Czapinski and T. Panek add that "persons in a marital state are happier than those who are single²⁶, have a higher income, experience warmth and emotional support ... and live longer than single persons"²⁷.

L. Kocik agreed that “a good family creates the best environment for the initial, deepest socialization, and becomes for the individual an irreplaceable source of security and stability, as well as an inspiration to development and self-realization”²⁸.

The above statements reflect the motif of the family’s relationship to the economic system and the development of the individual, i.e. the development of human capital.

One can give a number of examples whereby persons with a harmonious family life, living in a marital union, are more highly assessed than single individuals. In selecting managers for the most responsible positions in a business their family life is taken into consideration as an important criterion and indicator of their future value at the position to be filled. Similarly, when applying for bank credit, persons in a marital union have a decidedly higher creditworthiness and hence improved chances of obtaining credit²⁹.

More than 200 years ago, Adam Smith stated that the durability and significance of the family was shrinking as a result of the progress of civilization associated with the increasing legal protections provided to even the ‘humblest man’³⁰.

Contemporary efforts to describe the decline in significance of the family are based on a theory of the second demographic transition (since about 1960). This transition was tied to the striving of individuals for self-fulfilment and autonomy, rejection of traditional values in favour of liberal ideals, and improvements in the population’s standard of living as a result of the development of extended services and technological progress. These improvements in living conditions facilitated living a single life and reduced the degree of interdependence among members of families. As a result of the second demographic transition some believed that “a family and child are less important than a couple or individual”. This statement highlights the growing importance of alternative lifestyles to the traditional family³¹.

By **family social capital** we understand the ties between family members which serve them and at the same time are not in conflict with the public interest. These bonds are expressed in the attitudes of respect, trust, love, interest, care, support and concern for family members.

We will assess family capital by measuring the relationship between the total number of marriages in existence to the number of new marriages entered into in a given year (positive family capital), and the relationship between the number of divorces to the number of existing marriages (negative family capital)³². These relationships will be treated as indicators of:

1. The durability or impermanence of the family.
2. Strength of family ties (family capital).
3. The ability to communicate and cooperate with one’s family and social surroundings (including the economic and professional dimension)³³.

4. Uncertainty and risk in people's lives³⁴, because one cannot fully replace family bonds with ties with persons outside the family.

In Poland, at the beginning of the 1960s approximately 230,000 marriages were concluded annually. In 2011 this number fell to 207,000. However, the number of divorces rose by three-and-a-half times, from approximately 18,000 in 1960 to 65,000 in 2011.

Not every divorce reduces a family's social capital. In cases of prolonged, permanent conflict between spouses, when the marriage no longer fulfils its important functions, does not offer care, security, concern, and doesn't satisfy the feelings or meet the emotional needs of the partners, divorce can be the lesser of two evils, than to save a failed marriage at any price.

In practice, determining the limits beyond which a marriage becomes irreparable and divorce a practical necessity is infinitely difficult. This difficulty stems from the need to take into account the interests of all the family's members, including children³⁵, and not only during the divorce but also long afterwards. A divorce may affect children until the end of their lives, and even the lives of future generations.

Giddens³⁶ stressed that one of the consequences of a divorce is the loss "confidence in own judgments and capabilities, and may come to feel that planning for the future is valueless". Persons undergoing a divorce "become discouraged about setting long-range or even short-term goals, much less working towards these goals".

Therefore, we hypothesize that the disintegration of the family – measured as the growth in the number of divorces and decline in the number of new marriages in relation to the number of existing marriages – slow down economic growth. Thus, divorces are connected with a slowdown in the economy; not as a cause, but as a proxy for unobserved family social capital (family disintegration).

In the tradition of most societies, marriage is the most public and most solemnly concluded partnership agreement. One element which gives it such critical importance is that is concluded for an indefinite period of time (traditionally: "until death do us part"). In addition the agreement is accorded a civil status – it is recorded by the relevant institutions, and its dissolution usually requires a judicial decision. Divorce, viewed as failure to comply with this particular (marriage) agreement, reduces general confidence in the concept of adherence to contracts (keeping one's word). We posit that this could undermine confidence in the fulfilment of various work-related obligations³⁷.

2. Results of Verification of the Hypotheses

The model of economic growth with family social capital contains seven stochastic equations estimated using the ordinary least squares method³⁸. The model's equations are presented in the Annex. Family social capital is described by the equations of marriage, fertility rates, and divorce. Economic growth (growth of labour productivity – GDP per employer) is dependent on these variables. We formulate five hypotheses.

Fertility rate

H1. The first, simplified hypothesis initially read: The decline in the number of marriages has caused a decline in women's fertility rates. To be more precise, it should read: The decrease in the ratio of concluded marriages (in relation to existing marriages) resulted, with a year's lag, in a decline in the overall fertility rate of women. This hypothesis was confirmed (1970–2011). This model is characterized by a very high fit $R^2 = 0.996$. Other variables in the model³⁹ are: wage inequality (–), the unemployment rate (–), and real wages (+). The obtained results allow for the conclusion that in the second half of the 1980s the decline in fertility was substantially caused by a decrease in the ratio of marriages⁴⁰. However, the main reasons were the increases in wage inequality and unemployment. The growth in wages was not able to neutralize the significant and strong impact of these variables. Hence the catastrophically low fertility rate of women in Poland has its source not in the demographic factors, but in economic conditions. Job insecurity and the growing sense of (relative) poverty were, despite the increase in average real wages, the main reasons for the decrease in fertility rates.

Marriages

H2. The increase in labour productivity and the consequential increase in the level GDP per capita, caused an increase in the ratio of marriages. This hypothesis was confirmed (1971–2011). The increased growth of GDP per capita in the last ten years, as well as the current level of this variable, significantly influenced the ratio of concluded marriages. In addition to these two variables, the wage inequality (GINI) negatively affected (both currently as well as with delays of one and two years) the marriage rate. The wage and income inequality increase the likelihood of differences in wealth between persons seeking to marry, which is not conducive to making a decision to get married. The divorce rate also negatively effects the marriage rate, with a delay of about five or six years. Divorces increase the sense of the instability and

impermanence of marriage, and hence discourage persons from concluding them. This model is also characterized by a high fit: $R^2 = 0.95$.

Economic growth – H3 and H4

H3. The decline in women's fertility rate caused a slowdown in the growth of GDP per employer.

This hypothesis was confirmed with a probability of 94%. The birth of a child constitutes a motivation for parents and the other members of a family to strive to secure the best possible conditions for the development of the child. One of the major components of this endeavour are making efforts to earn more money or achieve higher income. The decline in fertility rates which took place in Poland brought about a weakening of the efforts made in this direction.

H4. Upon reaching a certain threshold level, the increase in the divorce ratio causes a slowdown in economic growth, and it is possible to empirically determine this threshold level.

The relationship between divorce ratio and economic growth has the parabola form. The hypothesis was confirmed. In the analyzed period (1967–2011), the number of divorces per 1000 marriages was ranged from close to three to eight. The threshold was estimated at the level of 2.9 divorces per 1000 marriages. Thus, throughout the entire period divorces slowed economic growth⁴¹. These estimations included only the effect of family disintegration (approximated by the rate of divorces) on working age adults. Unfortunately the intergenerational impact on children, with an unstable family life, is not measured. This impact will occur in the future, during their working life. Due to the large amount of time which passes from the time of parents' divorce to their child(ren)'s entering adulthood and beginning their work and careers, it seems, practically speaking, impossible to empirically capture this impact.

Divorces

H5. Economic growth (growth of GDP *per capita*) reduces the rate of divorce.

This hypothesis was confirmed in a significantly modified form (during the period 1971–2011).

Accelerated economic growth reduces the divorce rate. The impact of the level of GDP *per capita* is confirmed with an even greater significance (–), and wage inequality has a very clear impact (+). Increase in wage inequality causes an increase in the rate of divorce, with lags of 2 to 4 years as well as 8 to 12 years. Based on the model, one can draw a conclusion that this

is the main reason for the increase in the divorce rate. Autoregression is also significant, which can be interpreted as weakness of traditional family customs and growing permissiveness. Each divorce creates an alibi for the next one. This model is characterized by a high fit: $R^2 = 0.94$.

A good economic situation increases the marriage rate and limits the divorce rate. Both of these phenomena increase economic growth. In addition, an increase in the marriage rate increases the fertility rate of marriages, and it also accelerates economic growth. And this closes the feedback. So here we have a kind of spiral based economic-family feedback, feedback between economic growth and marriages, fertility rate, and divorces.

3. Opponents' Arguments and Our Responses

A number of reservations have been voiced with respect to the hypotheses concerning the impact of marriages, fertility and divorces on economic growth.

1. "The relationship between marriages, divorces, and economic growth is of a symptomatic nature – it is one of appearances, and not cause-and-effect". We believe that the resolution of this dispute must be made by reaching agreement on the causal character of this relationship before building the model. Then the significant estimate parameters of variables marriage and divorce will, to some extent, make the researched hypothesis more likely. They cannot, however, overcome the suspicion that this relationship is based on appearances. In an earlier article⁴², as in the present one, the essential course of argument was as follows:

- family life is very important for the majority of people,
- marriage is a particularly durable (to many people an irrevocable) obligation, and divorce is usually based on the principle that one (or both) of the parties breached the partnership agreement. For many family members, the consequences of this breach (divorce) are of a catastrophic dimension. As affirmed by Wallerstein and Blakeslee⁴³, time does not fully heal the effects of this event,
- the large number of decisions to marry and the small number of decisions to divorce testify to the social propensity and acceptance of the idea of entering into cooperative partnerships, not only as families but also in the workplace (P. Starosta),
- this propensity to cooperate (similarly to trust in other people) stimulates economic growth.

2. "The influence of marriages and divorces on economic growth is one of appearances". Although one may apply causality tests, the possibility of resolving the problem is limited. Since previous events may only be causes, and not results, of subsequent events, our results

may indicate that the disintegration of the family, as represented by the divorce, may be the cause of an exponential increase in the (negative) rate of economic slowdown. The Granger causality test allows us to state, with a high probability (0.98), that the disintegration of the family (represented by the rate of divorce) is a cause of slower dynamics of economic growth⁴⁴.

3. “Modern companies base their development on the total availability of employees, i.e. on the supposition that, *inter alia*, young employees, practically speaking, cannot assume family obligations, have children, etc.” – M. Czyzewski⁴⁵. This is an hypothesis concerning the negative impact of employee availability (and the economic growth that goes with it) on the number of marriages⁴⁶. However, in light of the research results the impact of economic growth on marriages is positive.

4. There are arguments in favour of the hypothesis that there is a *work family conflict*, which can also be called the “substitution hypothesis”: the better the employee, the worse he/she fulfils his/her family roles. We advocate for and to confirm the hypothesis of an inverse influence of positive reinforcement roles (equations 1, 5 and 6). It may be called a hypothesis of complementarity⁴⁷: **the greater the success an employee achieves in the workplace, the better he or she fulfils his or her family roles**. In fact, the substitution effect and complementary overlap. The results suggest that *the dominate situation is complementary, i.e. a dynamic economy offers complementary support of family, and vice versa*.

5. “Following a divorce, women often take up a job and work very efficiently, which contributes to GDP growth”. One reason is economic compulsion and/or the desire to preserve their “pre-divorce” standard of living. The burden of professional work and family/household responsibilities in such a situation tends to be excessive, debilitating⁴⁸. One may assume that in the short term the effect on economic growth would be positive (this would be an outcome of the substitution effect), while over the longer term the consequences are likely to be negative (the complementary effect).

The positive effect in this case is a statistical illusion. For example, let us assume that prior to the divorce a woman was not working professionally, but caring for a child of preschool age. Following a divorce, the woman takes up professional work (contributing to a growth in GDP), and the child is sent to a kindergarten (also contributing to GDP growth). If the child had better care at home rather than in kindergarten, the second increase in GDP is a statistical illusion, because the statistics do not include household work in GDP. However, if the chores are transferred to a service institution, then they are included in GDP.

6. "Following a divorce, an additional apartment is needed for one of the former spouses, sometimes also a second car. Thus demand grows, especially for durable goods". This is true, but only in the case where there is an increase in the aggregated income of the former spouses.

It is worth mentioning that in Poland it was noted that the divorce rate had a positive impact on investments into physical capital, and through them, accelerating economic growth. At the same time the direct negative impact of the divorce rate on GDP growth per capita is ten times larger, and therefore the overall effect is negative⁴⁹.

7. Many of the proffered arguments refer to the divorcing spouses and effects which concern them directly. It seems however that more significance is attached to the **indirect effects**, by which we mean the increased sense of marital insecurity felt by the family, friends, and acquaintances of the divorcing couples. This increased uncertainty, fears about the sustainability of their own marriages, and the fright of making one's own decision to marry negatively affects the integration of all families and brings about a decrease in the quality of life. This in turn reduces productivity and hampers economic growth.

8. Because any cooperative relationship is reversible, the above-mentioned adverse indirect effects are felt by entire employee teams in the workplaces where divorcing spouses work, whether they direct others or others direct them.

9. A large number of divorces are characterized by instability and worsening interpersonal relations in all families, not just those that have been directly affected by the divorce (in the same way as high mortality rates indicate a poor state of health of an entire population). We believe that the high number of divorces and the low number of marriages is a symptom of deteriorating relationships in all families and workplaces.

10. J. Growiec (e-mail of 5.07.2009) noted that family social capital is measured in sociology by the frequency of contacts within the family, but does not single out the spousal contacts, which are difficult to measure. Family capital thus defined would be included in **bonding** social capital (i.e. separating the family from the outside, which slows economic growth)⁵⁰.

We propose instead to measure the durability and quality of family relationships using marriage frequency and the frequency of divorce. Marriage is the beginning of a new, extended traditional family. Divorce is not the end of the family, but is a manifestation of a very serious crisis. For this reason we propose that divorce be included as one of the measures of family social capital. We believe that the growth of family social capital, measured by the rate of new marriages to the population, is characterized by the willingness to build lasting relationships and cooperation among people (future spouses). Spouses often do not know each other previously,

may come from different social groups, nationalities, etc. Conversely, divorce is the dissolution of ties and the end of cooperation between people who potentially could be the closest (culturally, emotionally, institutionally, traditionally, religiously), i.e. spouses. The measurement adopted by us may be characterized as bridging family social capital, which encourages economic growth.

11. The main conclusion of our discussion is the following: the interdependence of family and the economy means that sustainable growth **needs** the protection of the family environment. Co-workers **should support** each other in fulfilling family roles. Employers seeking to integrate employees **should not** do so at the expense of their families. All these obligations – both positive and negative – are justified by the interdependence of families and the economy.

It is sometimes argued and alleged that this conclusion is of an evaluative, axiological nature, and that it is not a scientific statement. Please note, however, that we use the term *should* in the context of the economic consequences for economic growth⁵¹. This is, of course, only one of the many negative dimensions of the impact an unstable family life has for each of us⁵². Acceptance of the proposed approach and the results obtained provide arguments in favour of the traditional family model⁵³. According to J. Dzionek-Kozłowska⁵⁴ “it is impossible to formulate independent proposed solutions to current problems if they are detached from the underlying values involved”⁵⁵. J. Godłów-Legiędź (in an email to the author dated 12.07.10) adds: “economic development is deeply conditioned in the sphere of value systems, and the changes occurring can undermine the foundations of this development. The financial crisis clearly demonstrates this. The main issue seems to be a sense of individual responsibility and understanding of human freedom as widely understood”.

According to Popper’s rule, theories are scientific if they can be falsified and nothing beyond that, which means that one can make a prognosis that something will or will not happen. Usually such predictions do not allow for value statement⁵⁶. In our case, however, the hypothesis that family stability accelerates economic growth is verified on the basis of an econometric model, which is also a legitimate way of verifying predictions.

Conclusions

We have analyzed the mutual interactions between the family and the economy. The family has been characterized by the rates of marriage, fertility and divorce. The economy was characterized by the level and rate of economic growth. A healthy economy and a good economic growth rate are conducive to the family: they have a positive effect on marriage and fertility rates, and they limit the number of divorces. Conversely, an increase in the rates of

marriage and fertility, reduce divorces and promote economic growth. Hence there is a spiral: the better the state of the family, the higher the family social capital, and the greater the rate of economic growth. The higher the level of the economy and the rate of and economic growth, the higher the level of family social capital, which in turn means more marriages, more children, and fewer divorces. These interrelationships are characterized by numerous, and often long, lags, reaching even 12 years.

This rather idyllic picture is disrupted by the appearance of a destructive factor. This is wage inequality which reduces the number of marriages and the fertility rate and encourages divorces. Hence, inequality, through the intermediary of the family rates, restricts economic growth. In addition, the unemployment rate negatively affects the fertility rate, also bringing about a disparity in the access to work. The slowdown in economic growth has a destructive influence on family social capital and conversely.

We have conducted our analysis on the assumption that there is a cause-and-effect link between the structure of the family and the economy, which we attempted to justify in Section 4. Our research results show the likelihood of such a connection, although we are not able to completely disprove the suspicion that the link might be one of appearances only.

The measure of economic growth used in our analysis is the often criticised rate of GDP growth. We agree that this measure is too narrow and share the postulate that other dimensions should be taken into account, such as the average life expectancy, quality of life, environmental pollution, crime etc. Alternatives to the use of GDP growth will continue to exist and be the object of dispute, because the weight given to each component of well-being used to build a synthetic measure is chosen arbitrarily.

As we have tried to imply in our article, it seems that making the imperfect measure (GDP growth) dependent on other factors of well-being would be a better approach. We believe that economic growth can only be dynamic under the condition of order and harmony; including family durability (limiting the number of divorces by about two-thirds), the optimal inequality of income, and a low crime rate.

Most of the countries lead research surveys on quality of life. *The Economist* journal conducted an analysis of 74 countries in an attempt to determine what factors constituted “the quality of life”⁵⁷. Estimated parameters of a quality of life econometric model were used to weight the particular factors.

The weights of the factors determining of the quality of life in 2005 were as follows: the economic growth rate measured by GDP *per capita* (19%), the average life expectancy (19%), the frequency of divorce (11%), and other factors, totalling 100%. Hence this research

confirmed that a significant determinant of the quality of life is the material level of existence (GDP *per capita*), but of equal significance is public health (measured by life expectancy). The frequency of divorce (as a factor having a *negative* influence on the quality of life) is also of statistical significance, despite having a lower weight (11%). This confirms the negative influence of divorces on the quality of life.

We intend to enlarge the set of measures of family social capital to include the relationship between cohabitation partnerships and the number of existing marriages (estimated based on the share of births outside marriage), as well as the average number of people in the household. In our further research we will take into account the demographic structure of a society as well as the average life span.

Appendix

Family and Economic Growth in Poland Model equations

1. Economic growth – GDP per employer growth

$$\begin{aligned} \dot{X} / L = & 4.1 + 0.54 \Delta(I / X)_{-2} - 0.0151 \text{inf} + 9.5 \Delta D \text{zietnosc}_{-1} + \\ & \quad 0.7 \quad 2.6 \quad \quad \quad 4.2 \quad \quad 1.6 \\ & + 0.48 \sum_{i=1}^3 (\text{roz}w / M)_{-i} - 0.028 \left(\sum_{i=1}^3 (\text{roz}w / M)_{-i} \right)^2 + 0.41 \Delta(\text{mal}z / M)_{-4-5} - 9.9 u79_{-82} \\ & \quad 4.1 \quad \quad \quad \quad \quad \quad \quad \quad \quad 2.5 \quad \quad \quad \quad \quad \quad 8.8 \end{aligned}$$

$R^2 = 0.79$; D-W = 1.88; $S_e = 2.0$; J-B = 0.9; ADF (*for residuals*) = -5.8; period 1967–2011.

All variables are stationary (treating rozw/M variables separately).

2. Employment growth

$$\begin{aligned} \dot{L}_t = & 0.88 + 0.155 \dot{X}_{-1} - 0.144 (I / X)_{-1} - 0.031 u99_{-03} - 0.044 u90_{-93} \\ & \quad 26.1 \quad 4.8 \quad \quad \quad 3.0 \quad \quad \quad 7.2 \quad \quad \quad 8.1 \end{aligned}$$

$R^2 = 0.854$; D-W = 1.44; $S_e = 0.0089$; J-B = 3.4; ADF (*residuals*) = -4.4; period 1968–2006.

7. Fertility rate

$$\begin{aligned}
 \text{Dzietnosc} = & 3.1 + 0.0028\text{malz}_{-1} / \text{wk} + 0.0007\text{wr}_{-2} - 0.020\text{BB} \\
 & \quad 34.0 \quad 4.6 \quad \quad 1.9 \quad \quad 6.7 \\
 & -0.017\text{BB}_{-1} + 0.0009\text{BB}_{-1}^2 - 0.028 \sum_{i=1}^2 \text{GINI}_{-i} - 0.18 \text{u89}_{-90} \\
 & \quad 3.3 \quad \quad 5.4 \quad \quad 23.9 \quad \quad 6.3
 \end{aligned}$$

$R^2 = 0.996$; $S_e = 0.030$; $D-W = 1.75$; $J-B = 0.2$; ADF (*residuals*) = -5.6 ; period 1970–2011.

Absolute value of t statistics are below parameters.

According to augmented Dickey-Fuller (ADF) test, residuals of all equations are stationary. These *suggest that cointegration relationship exists among the variables.*

Unemployment rate: $BB = (1 - L/AZ) \times 100$

Economically active persons: $AZ = L + Blicz$

GDP per capita: $Xpc = (X/lud)$

GDP: $X = (X/L) \times L$

Where:

AZ – economically active persons in national economy, in thous. (on the basis of BAEL-LFS)

Blicz – number of unemployed (on the basis of BAEL) in thous. persons

BB – unemployment rate in % of economically active persons (on the basis of BAEL-LFS)

$BB = Blicz/AZ$

cr – crime rate, ascertained crimes in completed preparatory proceedings per 1,000 persons

GINI – wages inequality rate, in %

Dzietnosc – fertility rate (per woman in age 15–49 years)

inf – CPI in % inflation growth (to previous year)

I/X – investment rate in % GDP

L – employment in national economy, annual average on the basis of BAEL-LFS in thous. employed

lud – population, in mln

M – number of existing marriages, in mln

malz – number of new marriages, in thous.

malz/M – number of new marriages per thous. existing marriages

prog – privatization coefficient in industry in %

rozw – number of divorces, in thous.

rozw/M – number of divorces per thous. existing marriages

S – efficiency of punishment execution $S = Q/crb$

Q – adults sentences in criminal cases of first instances

crb – ascertained crimes in completed preparatory proceedings

X – GDP, index 1990 = 100

X/L – output labor ratio, GDP per employer (on the basis of BAEL-LFS, index 1990 = 100)

$(\dot{X}/L_{0-7}) = [(X/L)/(X/L)_{-8} - 1]/7$ – average growth of output labour rate in 7 previous years

Xpc – GDP per capita, index 1990 = 100

$u79_81$ $u83_87$ $u90_93$ $u92_95$ $u93_03$ – dummy 0–1 variables

two first digits denote first year, in which variable denotes value 1; last two digits denote last year, in which variable denotes value 1

wk – number of woman in age 15–49 years, in thous.

wr – average monthly real earnings in national economy, index 1992 = 100

Notes

- ¹ I am very grateful to Professor Michał Majsterek and dr Paweł Baranowski from University of Lodz for comments and helpful advice.
- ² Every person has the right to decide about his or her life and to make individual decisions. We assume, however, that living for oneself, i.e. **self-fulfillment**, especially when accompanied by a large dose of individualism, can become a kind of “self-abuse” or placement of self-restrictions on the social and family nature of man. The acceptance or rejection of the lifestyle of living for oneself is not an easy or simple decision because, *inter alia*, self-fulfillment appears to be more of a short-term lifestyle, while choosing the family model often extends far into the future, including subsequent generations.
- ³ Divorce and Economic...
- ⁴ These hypotheses are intentionally formulated in a simplified form. In the econometric verification applied to the hypotheses the number of marriages concluded are taken into consideration by the rate of marriage, defined as the number of new marriages divided by the number of existing marriages. The number of divorces are replaced by rate of divorce, defined as the number of divorces divided by the number of existing marriages. It should be noted that both these rates are often defined otherwise, i.e. in relation to the total number of inhabitants.
- ⁵ Section 2 is based on the first part of the article by (Sztaudynger 2009) with editorial changes. Section 3 is taken from the article (Sztaudynger 2012).
- ⁶ If the envisioned period is shorter, the relationship takes on a partnership character. Of course, some partnerships are also ‘forever’.
- ⁷ According to the research of J.S. Wallerstein and S. Blakeslee (1988), the effects of divorce do not disappear even sometimes after a decade or two. These effects are felt both by the former spouses as well as their children.
- ⁸ Lachowska (2010).
- ⁹ See Witkowska (2002); Lachowska (2010).
- ¹⁰ Śliwerski (2011). In a similar vein, W. Irek writes that a man “needs many social groups and socialization circles in order to, in a complementary fashion, realize himself (Irek 2005, p. 66).
- ¹¹ Czapiński, Panek (ed.) (2009), p. 163. Although this article focuses on social capital in terms of the family (family social capital), we recognize that it also may happen that an individual, even living alone, may create social capital devoting his time (and sometimes wealth) in supporting social organizations and charities. Single individuals also have the alternative, negative in terms of social utility, of living for himself or herself.
- ¹² Sztaudynger (2009).
- ¹³ Smith (2006), p. 250.

- ¹⁴ L. Kocik calls attention to the fact that “the institution of marriage and family has often been more important than religion, ethnic identity, citizenship or nationality, inasmuch as the latter attributes have changed after marriage” (Kocik 2006, p. 60).
- ¹⁵ One should also note similar bonds between grandparents and grandchildren.
- ¹⁶ So writes A. Smith (p. 198) for every man “after himself, the members of his own family, those who usually live in the same house with him, his parents, his children, his brothers and sisters, are naturally the objects of his warmest affections”. E. Zubrzycka finds the meaning of family love in the fact that love creates mutual understanding, respect, allows one to give and receive security, gives birth to loyalty and the sharing of work and responsibility (Zubrzycka 1993, p. 95). F. Adamski asserts in (2002, pp. 41–42) that above all one can satisfy one’s emotional needs in the family, and that this has a huge impact on one’s attitude toward life and activities.
- ¹⁷ Czapiński, Panek (ed.) (2009), pp. 154–155.
- ¹⁸ Family, in the traditional sense, refers to spouses and their children (including adopted), as well as those related by kinship or affinity. The similarity between the words ‘family’ and ‘birth’ (in Polish) indicates the special role of parenthood, and let’s add security and stability with the exception of dysfunctional families. One may encounter attempts to widen the concept of ‘family’ to include co-habitation arrangements. In the English language the concept of family is more closely associated with the household than in the Polish language “Family all the persons living together in one household” (The Free Dictionary by Farlex, (www.thefreedictionary.com/Family+%28sociology%29)).
- ¹⁹ The role of religion was also emphasized by A. Smith (2006, p. 215): “The administration of the great system of the universe, however, the care of the universal happiness of all rational and sensible beings, is the business of God and not of man. To man is allotted a much humbler department ... the care of his own happiness, of that of his family, his friends, his country”.
- ²⁰ John Paul II (1994), p. 11. *Letter to families* is not of a scientific nature. We cite it as an illustration of the Church’s position, which significantly affects the attitudes of many people. The importance of the family is in fact smaller for people who declare that religious practices do not constitute an important part of their lives (cf. *Nie ma jak rodzina...* 2008, p. 5). This survey was carried out on a representative, random sample consisting of 1137 adult inhabitants in Poland, from 1–4 February 2008. At the turn of the 21st Century attacks on the family took place using the UN as a forum. In the documents from a special assembly of the UN there was an attempt to replace the word ‘family’ with ‘partnership.’ The Polish representatives played a crucial role in blocking this initiative (cf. Kropiwnicki 2008, pp. 183–189).
- ²¹ They are allowed in situations whereby, *inter alia*, at the moment of concluding the marriage, circumstances took place which significantly restricted the possibility for the marriage to function, unknown to one of the persons intending to enter the marriage. According to the rules of the Civil Code, in some similar situations divorces can be granted. So it can be said that even according to the strict principles of the Catholic Church it is deemed possible and desirable to end the marital relationship between a man and a woman.
- ²² Pope John Paul II asked this rhetorical question in an address on World Peace Day in 2005 (John Paul II 2005, p. 5); cited in Bauman (2009).
- ²³ Cf. Podrez (2008), p. 57.
- ²⁴ Kocik (2006), p. 58.
- ²⁵ Tyszka (1980, cited from Kocik (2006), p. 59, who adds that “analysis of family life cannot be limited only to internal family affairs, but should also concern a family’s external relations – its place in society’s social structures, processes, and culture”.
- ²⁶ Czapiński, Panek (2009), pp. 171–173.
- ²⁷ Cf. Slany (2003), pp. 41–42.
- ²⁸ Kocik (2006), p. 314.
- ²⁹ A similar example of support for families in this area was the “Family on its own” program, which offered preferential credit and supplements from the Treasury Department for families buying a house or apartment.
- ³⁰ Smith (2006).
- ³¹ Cf. Slany (2003), p. 31.
- ³² 40% of cohabitating pairs entered into marriages (in the USA, according to Castells). Among these, 50% ended in divorce (cf. Slany 2003, pp. 43–44). Hence it may be concluded that one of the reasons for the increasing popularity of divorces is the increasing popularity of cohabitation relationships, from which arise less stable marriages. K. Slany is of the opinion that the partners in cohabitation relationships do not sufficiently invest in them (emotionally and

- materially, and in terms of having children). On the other hand ... in the event of marriages there is a certainty that the investment is legally and socially protected". Slany (2003), pp. 44, 49.
- ³³ Attention was drawn to the aspect of divorce by P. Starosta (19.11.2008, direct conversation).
- ³⁴ "The family has a huge social value... as a stabilization factor for individuals and in social life". (Kocik 2006, p. 63). The tasks of the family include, inter alia... ensuring all its members feelings of security and respect, as well as appropriate material conditions (cf. Zubrzycka 1993, p. 97). Both of these tasks are of great significance with respect to effective work and people's participation in professional affairs.
- ³⁵ The interests of children are particularly hard to define, especially when the children are not yet adults. The interests of young children are defined by adults. This produces the paradox that children are not sufficiently represented in defining their own interests (cf. Wallerstein, S. Blakeslee 1988).
- ³⁶ Giddens (1991), p. 11.
- ³⁷ Employers and employees both consider the most important element in their relations to be keeping one's word, i.e. performance of contracts (deemed most important by 75%, based on a questionnaire survey of 1,200 persons). This was considered more important than, among other things, trust, clear and reliable information, and preparations on the merits (Fedorczyk et al. 2009, pp. 70–72)].
- ³⁸ The first model was presented in Sztudynger, Zatoń (2010). New elements include the equations concerning family, divorces, and fertility rates, as well as the economic growth equation including these variables. The earlier analysed period ended in 2006, the period covered in this article ended in 2011.
- ³⁹ The variables are listed in the order of their significance. The symbols in parentheses indicate the direction of their influence.
- ⁴⁰ We also tried to enter the divorce rate in the model. The results showed that an increase in the divorce rate caused an increase in fertility rates. This result was rejected.
- ⁴¹ The parabola has the shape of an upside-down letter "U". The statistical data are localized almost wholly on the right, declining side of the parabola. An increase in the divorce rate causes an exponential decrease in work efficiency. Put simply, it may be said that for every three divorces, one is neutral with respect to economic growth, one is harmful to economic growth, and one is very harmful thereto.
- ⁴² Sztudynger (2009).
- ⁴³ Wallerstein, Blakeslee (1988).
- ⁴⁴ A cause in the Granger sense. This test does not exclude the possibility of an apparent correlation.
- ⁴⁵ M. Czyżewski calls this anti-family capitalism and refers particularly to the period after 1989 (direct conversation, September 2009). This problem was researched in the equation of marital disintegration (divorces). M. Czyżewski's postulate was not confirmed.
- ⁴⁶ The rate of marital disintegration (divorces) should then grow (as in the case of growth in the number of divorces).
- ⁴⁷ M. Czyżewski uses this term for pro-family capitalism.
- ⁴⁸ Wallerstein, Blakeslee (1988).
- ⁴⁹ Sztudynger (2009), p. 202.
- ⁵⁰ Sabatini (2006); Growiec, Growiec (2010); Beugelsdijk, Smulders (2009).
- ⁵¹ This was verified econometrically, and the model may be used for prognosis. These arguments are of significance only to those who consider the researched connections to be ones of cause-and-effect, and not based on appearances.
- ⁵² The proposed solutions offered by K. Slany move in the same direction (2003, pp. 49–50). She writes that: "Marriages and families **should** be assigned their traditional values. The reconstruction of family structures **should** take place by families themselves, the Church, neighborhood organizations, mass media etc., and not by government subsidies and programmes. (...) These solutions **should** be supported and their universal values emphasized. They are the basis for our continued existence, the foundations of our morality and for our social organization. The family is the most powerful social capital, and its formation **is and should be** the most important form of investment into social capital".
- ⁵³ If we were justifying the theses that we must be concerned with our future planet's existence, the permanency of nature and the natural environment, for it forms a part of sustainable development and our quality of life, accusations about our "unscientific context" would almost certainly not be formulated or heard.
- ⁵⁴ Dzionek-Kozłowska (2006), p. 76.
- ⁵⁵ She also refers to A. Marshall, in whose texts "the idea appears, that economists should avoid commenting on moral topics, because since economics has gained the status of an independent scientific discipline it has simply

lost the ability to resolve these types of questions” (Dzionek-Kozłowska 2006, p. 70). Yet Marshall himself suffered a spectacular defeat in his propagation of positivist economics. In his works Marshall taught people to get control of themselves, and show moderation, internal discipline and creativity (Dzionek-Kozłowska 2006, p. 75).

⁵⁶ Blaug (1997).

⁵⁷ The Economist Intelligence...

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