

Housing Prices and Cultural Values: A Cross-nation Empirical Analysis

*Polina Stoykova**

*Linjie Chou***

Abstract: Most real estate studies have been concerned with exploring the macroeconomic determinants of housing prices. Little attention has been paid to the context in which property markets function. This study, however, goes beyond macroeconomic factors and explores how country specific factors such as cultural values influence residential property markets. We have tested and verified the assumption that the cultural dimension of survival values versus self-expression values influences housing price growth, using a sample of 30 countries. As a result of this research, we suggest that culture should be adopted as a long-term housing price determinant.

Keywords: Housing Markets, Property Prices, House Price Determinants, Culture, Cultural Values

JEL Classification: R2

Introduction

There has been a growing interest in the dynamics and factors which influence real estate markets over the past decade, especially in the last 5 years since the beginning of the world economic crisis which started from the US sub-prime mortgage markets. Most of the studies have focused on the determinants of the housing prices in order to be able to predict future property price growth and possible deviations from long-term trends. Researchers have managed to uncover the causality relations between the major economic indicators and the residential real estate markets. Their findings have been tested and validated in various countries.

One of the most recent studies of residential property price growth, carried out by Lloyds TSB International (3.2012), has brought to light the fact that emerging mar-

* Polina Stoykova is at Faculty of Economics and Business Administration, Sofia University

** Linjie Chou is at School of Business, University of Iceland

kets have experienced the greatest housing price growth ever over the past decade. They conclude that house prices have risen most in the countries with fastest growing economies and that future price growth will again be determined by global and regional economic recovery as well as economic growth in individual countries.

Although economic growth is a very strong property price factor which is also easily measurable and data is readily available, many studies omit other important factors, especially if we look at them on a country-specific level. We need to try to explain the fact that, while overall real residential price growth has been between 20% and 70%, there are countries in which prices rose by more than 200% (Lloyds TSB, 2012). It is necessary to ask whether this is only due to fast economic growth or if there are other factors influencing the housing prices on a national level.

As little attention has been paid so far to the context in which these markets function, this study aims to go beyond macroeconomic factors and explore the country specific factors influencing the housing property markets. We will try to discover which locally determined factors have a strong influence on the real estate markets.

Culture plays a leading role when considering country specific factors. However, the cultural factors which influence the real estate prices and returns are often ignored by the mainstream school of neo-economics. The recent advances in real estate research suggest that cultural rather than economic factors determine a large proportion of real estate price, which has motivated our present research.

We have employed the cultural dimension of survival values versus self-expression values to test whether the long-term housing price growth is influenced by aspects of national culture. If this proves to be true, culture needs to be adopted as a long-term property price factor, throwing more light on the peculiarities of the local real estate markets.

Literature Overview

Traditionally, scholarships in real estate research are viewed from a neo-institutional perspective. Cross-nationally, macroeconomic factors such as financial stability, inflation and nominal interest rates are said to be crucial in determining housing prices (Tsatsaronis and Zhu, 2004). According to this view, consumers behave as perfectly informed rational beings who are expected to make decisions to maximize utility and wealth, given price and income constraints (Gibler and Nelson, 2003). But as noted by Fisher and Jaffe (2003), after analyzing the homeownership rates of 106 countries between 1980 and 1999, there is no single equation model that can be used to measure the global real estate market.

However, various studies adopting a fundamental market value approach to house prices have achieved a consensus about the factors that play a major role in determining the long-term residential property prices in many countries around the world. Among the most important fundamental factors are those related to housing financ-

ing (household incomes, bank loans), demographic and labour market factors, legislation and taxation characteristics, and factors related to the supply side.

Tsatsaronis and Zhu (2004), examining the drivers of the house prices in 17 industrialized countries from all over the world, state that factors influencing the demand for housing over longer horizons include growth in household disposable income, gradual shifts in demographics (such as the relative size of older and younger generations), permanent features of the tax system that might encourage home ownership, and the average level of interest rates.

Case and Shiller (2003) show that per capita income alone almost completely explains home price increases in the vast majority of states, as home prices move very much in line with income. For the eight states where income is a less powerful predictor of home prices, the addition of changes in population, changes in employment, the mortgage rate, unemployment, housing starts, and the ratio of income to mortgage payment has added significant power to this explanation of home price increases (Case and Shiller, 2003).

Increases in the growth rate of national income would be expected to lead over time to higher house prices (Sutton, 2002). However, additional financing through bank credit and its availability, measured by interest rates, can also be seen to explain the variance in house prices in the long run (see Tsatsaronis and Zhu (2004), Palacin and Shelburne (2005), Égert and Mihaljek (2007)). Decreases in interest rates mean increased bank lending and thus interest rate decreases lead over time to increases in house prices (Sutton, 2002).

The factors determining housing prices from the supply side are the cost of construction as a function of the price of land, the wages of construction workers and material costs (Égert and Mihaljek, 2007). Madsen (2011) even states that changes in interest rates, demography, and income are likely to have only temporary effects on house prices while in the long run house prices are determined by prices of developed land, value added taxes, stamp duties, and construction costs. His empirical estimates show that urban land prices, together with construction costs, are the key determinants of house prices in the long term.

Another method of long-term house price estimation is the price-income ratio approach. Rental income is a measure for investment attractiveness in comparison to other investment assets. The explanation for this is that the rent-price ratio in the housing market is like the dividend-price ratio in the stock market (Leamer, 2002). Gallin (2004) states that rent-price ratio is an indicator of value in the housing market in the long run and is used to measure the house prices relative to fundamental factors. The rent-price ratio approach has often been used by researchers to test whether there is a bubble and how market prices compare to their long-term equilibrium values.

Recently, some new factors which contribute to home price growth have been discovered, especially when considered on a country or region-specific level. One relevant factor in the CEE countries is rising external housing demand from foreign-

ers searching for second homes, along with the demand from residents temporarily working abroad, and investment demands by global real estate companies (Égert and Mihaljek, 2007). Stoykova (2011) validates external demand as a short-term factor for house prices rises in Bulgaria, but she also suggests that foreign property demand should be considered as a long-term property price determinant if it leads to population migrations due to housing purchases being made for relocation purposes.

From the literature which has been mentioned, it can easily be seen that most studies have focused on how housing prices are driven mainly by macro economic variables, and on trying to identify universalistic approaches to explain the real estate price dynamics worldwide. This is of course very important, especially with relation to the needs of governments and central banks to design and implement macroeconomic policies.

However, little attention has been paid to the context in which actual real estate price growth happens. This research aims to go beyond macroeconomic factors and to explore the more intangible and country specific factors that influence the housing property markets. Culture, of course, comes first in the list when we think major country specific factors.

As Minkov and Blagoev (2009) state, economic predictions are extremely prone to error. Considering cultural factors could improve the reliability of economic predictions. Because of the core of culture, value is remarkably stable over time, and an understanding of cultural value differences may prove a valuable tool in the arsenal of any expert who produces long term forecasts. The main component of culture consists of value (Hofstede, 2001), which is very stable over time and has been found to have a strong influence on economic growth, the success or failure of governmental policies and management practices in multinational companies.

The cultural factors which influence real estate prices and returns are often ignored by the mainstream schools of neo-economics. However, the recent advances in real estate research suggest there might be a non-economic but rather cultural factor in determining a large proportion of the real estate price. After comparing the data from England and Japan, Ozaki (2002) argues that cultural values such as the influence of individual living space arrangements. Elsinga and Hoekstra (2004) report that there are three housing 'regions' that can be summarized in terms of different cultural values: effective social security systems lead to large housing rental sectors, and the stress of economic independence leads to large shares of home ownerships. Finally, extended families needing a more secure base also account for a large number of home ownerships. Eichholtz et, al (1998) have found that both European and North American real estate returns depend on their home continent and in Asian countries, the continental correlation is less important, which also suggest that variations in market rationality are caused by different cultural values.

Although economic development generally tends to push societies in a common direction in its materialistic expression, when they converge, they seem to move on

parallel paths shaped by their cultural heritage (Inglehart and Baker, 2005). The changes and fluctuations in an economy do not always guarantee a shift in cultural value as a whole (DiMaggio, 1994; Minkov and Blagoev, 2009). The persistence of fundamental values in relation to the planning of social relations and approaches to life on the other hand have hardly changed throughout history. This is due to the fact that value systems in different parts of the world are often linked to the given immovable availability of natural resources, climate, terrain and geographic latitudes (Hofstede, 2001; Triandis and Suh, 2002). Each culture has thus developed its own unique structure for dealing effectively with its environment, given its available resources (Trompenaars and Hampden-Turner, 1993).

Survival vs. Self-expression cultures

Rich evidence from cross-cultural management research has suggested that culture as a definition consists of both practice and value (Husted, 2003; Taras et al., 2009). Thus, one cannot merely study culture as an ideational system. It must be thinkable and learnable as well as liveable (Keesing, 1974). What essentially guides cultural behavior is that value systems that are driven by our psychological and evolutionary variations.

Maslow (1954), who contrasted lower-order needs for nutrition and health with higher-order needs for the expression of capacities and talents, has suggested that cultures differ in the extent to which they can go beyond the gratification of survival needs towards the gratification of self-expression needs. An obvious and promising further speculation associates miserable climatoeconomic niches with cultures of survival and enjoyable climatoeconomic niches with cultures of self-expression.

To directly or indirectly meet climate-contingent homeostatic needs, people buy clothing, housing, food, home appliances, household energy, medications, health and other care services, transportation, and so forth. In higher-income societies, families appear to spend up to 50 percent of their household income on a wide variety of such homeostatic goods (Parker, 2000, pp. 144-147)

Survival and self-expression values are linked with the transition from industrial society to post-industrial societies, which brings a polarization between Survival and self-expression values. The accumulated wealth in advanced societies has led to taking survival for granted by a large part of the population. Thus, their priorities have shifted from an emphasis on economic and physical security above all, toward increasing emphasis on subjective well-being, self-expression and the quality of life (Inglehart and Welzel, 2005). In poorer societies, on the other hand, survival values are stronger and the emphasis is put on physical survival and security.

Additionally, by using climate and affluence as two controlling variables, Van de Vliert (2009) anticipated that survival cultures (Inglehart and Baker, 2005) are more

likely to exist in resource deprived societies where the essential components of life dissatisfaction have led to competition, working for money and social distrust. In such circumstances, a struggle-based food-chain type hierarchy usually dominates in both organizational and social life.

“They feel unhappy and unhealthy. Adults, working more for money than for achievement, deem it necessary to enlist their children in the struggle to survive as a family. They also encourage their children to behave egoistically. In general, people think it is necessary to be very careful about trusting other people, with the consequence that they endorse autocratic rather than democratic leadership. The same people, with the same materialistic and egoistic lenses, and the same fundamental attitudes of dissatisfaction and distrust, are the architects and construction workers of organizations as systems of task coordination.” (Van de Vliert, 2009, pp. 169)

On the other hand, in the cultures of self-expression, the population gives priority to the realization that a nurturing, non-confrontation and cooperative spirit must prevail over competition and hierarchical tension based culture (Hofstede, 2001; Van de Vliert, 2009).

“From early childhood, inhabitants of richer countries with more demanding climates are given more encouragement to behave cooperatively, and apparently not in vain. As adults, they tend to trust rather than distrust other people and embrace democratic than autocratic leadership ideals.” (ibis, pp. 170)

Compared to higher-income societies in harsher climates, lower-income societies in these climates are expected to value greater cognitive, affective, and behavioural investments in survival and competitiveness rather than in personal growth and cooperativeness (cf. Van de Vliert, 2006). For the theoretical, methodological, and practical reasons discussed above, this hypothesis was put to the test using the World Values Surveys’ dimension of survival values versus self-expression values (Inglehart & Baker, 2005; Inglehart et al., 2004).

In the transformed paradigm, societal cultures would be conceptualized as first-stage consequences of climatic composites, and as second-stage intermediaries between these climatic composites and their indirect consequences for the sociopsychological functioning of markets, organizations, teams, and individuals (Climatoeconomic Roots of Culture 26)

A vital element of the survival vs. self-expression dimension embroils the polarization between materialist and post-materialist values. In survival cultures, people give priority to economic and physical security over self-expression and quality of life. Moreover, the majority of the population believes that they have to be very careful about trusting people.

People in survival cultures stress the importance of cost as the premier characteristic for selecting housing arrangements, while people from cultures of self-expression are keener to develop and express individual tastes and values in relation to their housing arrangements (Harris and Young, 1983). These different sets of values in

turn profoundly influence the long term house price growth. The housing supply also varies greatly between countries due to the demographic and spatial development (Czischke, 2011) that evolves from particular cultural values (Hofstede, 2001).

Data and Methodology

Given the literature and research findings presented above, we may expect that culture has a long-term influence on residential property price growth.

Hypothesis: Long-term house price growth is influenced by the national culture through the survival versus self-expression dimension.

We expect that within countries that carry national culture of more survival-based characteristics, there will be greater increase in long-term property price due to a primary orientation towards securing housing, in which people tend to give high priority over buying a home as one of the most important decisions in peoples' lives.

If this is found to be true, we recommend that a cultural value horizon should be adopted and observed by property researchers as a long-term property price indicator.

Additionally, it may be expected that countries with self-expression cultures will experience more stable and more evenly distributed house price growth and so their property markets are less risky and not so vulnerable in economic crises. On the other hand, countries with survival cultures tend to experience more extreme and unstable house price growth and their property markets are relatively more risky. An explanation for that can be found in the priority these cultures put on the price factor.

In order to test our hypothesis, we have constructed a linear regression model with the long-term residential property price growth being a dependant variable and the cultural value of survival vs. self-expression culture being an explanatory variable. To check additional expectations about the stability of the price growth in various cultural contexts, we will analyze the summary statistics of the annual property price growths of the observed countries for the longest periods for which such data is available for each country (in some of the countries this may exceed the ten-year period).

We have collected residential property prices and statistics about their nominal annual growth of more than 40 countries from all over the world. The housing price data comes mainly from the national statistics offices or national central banks, as well as from some big real estate agencies and banks. While in some countries (like India, Norway and others) real estate prices have been observed officially for only a few years, we had to narrow the sample of countries to just the ones with available data for at least 10 years – between 1999 and 2009 or 2000 and 2010, which resulted in a sample of 30 countries.

For these same countries we took the latest available data from the World Values Survey (WVS) about how they scored on the cultural dimension of surviving vs.

self-expression. The data for the countries in our sample is from the fourth and fifth waves of the WVS and was collected during the periods 1994-2004 and 2005-2008 respectively.

We have then constructed a linear regression model in which cultural value surviving/self-expression is used as an explanatory variable for long-term property price growth in the countries being observed

Although 10 years is not such a long period of time, it does give a fairly good picture of how individual property markets have developed. Also, the past 10 years have marked a similar pattern in all markets. The general instability during 2001-2002 was followed by a period of economic growth between 2003 and 2008, and then by the world economic crisis of more recent years. Having started in the property market in the USA, the crisis spread to all economies and property markets worldwide. So, bearing in mind these limitations, we may still say that these past 10 years can be a suitable starting point to analyze the residential property markets in various countries and to find some interesting relationships which can be further explored.

Here is a list of the 30 countries included in our study. They are in various geographical locations and have a range of national cultures. The choice of the countries, although predetermined by the availability of data about property prices, is generally random, so we may expect to achieve valid results from our research. The summarized data about the cultural values and the long-term residential property price growth is presented in the table below.

Table 1.

Country	Survival/Self-expression cultural value national score	10Y residential property price growth, %
Russia	-1.42	810.44
Hungary	-1.22	75.33
Bulgaria	-1.01	201.66
Lithuania	-1.00	128.91
Hong Kong	-0.98	105.75
Ukraine	-0.83	560.23
Serbia	-0.62	109.35
Estonia	-0.36	196.47
Poland	-0.14	91.13
Japan	-0.05	-23.40
Malta	-0.03	67.13
Slovenia	0.36	79.01
Portugal	0.49	21.32
Spain	0.54	110.40

Country	Survival/Self-expression cultural value national score	10Y residential property price growth, %
Greece	0.55	73.51
Italy	0.60	63.10
Germany	0.74	-0.16
Finland	1.12	63.90
France	1.13	124.81
Luxembourg	1.13	114.92
Belgium	1.13	112.47
Ireland	1.18	22.86
Netherlands	1.39	40.95
Austria	1.43	26.65
Iceland	1.63	97.47
United Kingdom	1.68	105.91
United States	1.76	34.75
Denmark	1.87	86.54
Canada	1.91	51.68
Sweden	2.35	104.38

In most of these countries, residential property prices have risen over the 10-year period being observed. The rise in house prices in these countries has been associated with strong economic expansion and bank crediting activities. The greatest increases have occurred in Russia, Ukraine, Bulgaria, Lithuania, Estonia, Sweden, France, UK, Luxembourg, Spain and Hong Kong. However, there are 2 countries in our sample with falling prices -Japan and Germany. In Japan, residential property prices have continued their gradual but steady decline since 1990. In Germany the housing market is still suffering from the hangover following the unification boom and from the withdrawal of tax subsidies which were introduced in the early 1990s (Organisation for Economic Co-operation and Development, 2001).

The data on residential property prices is not easily comparable across countries because of differences in methodologies, types of properties being observed and frequency of observations. In the majority of countries the house price index covers housing prices on a national basis, measuring prices in the biggest cities. However, there are some exceptions. In Japan the price index refers to residential land prices. In Ukraine and Slovenia, prices relate only to the capital cities. In some countries the index relates to prices of existing and/or new housing, or to a mixed-adjusted house price index taking into account several property types. Also, the indexes vary in their frequency of observation. Some of them are constructed on a monthly basis; others are available on a quarterly basis and some on an annual basis.

In this study we are interested in annual house price growth rates, so we have transformed the available data in order to present the annual figures and the 10-year growth for each country.

The Regression Model

In practice, regression analysis dominates the empirical modeling of real estate markets, especially when there are data limitations (Brooks and Tsolacos, 2010). Considering the relatively short data time series and the ease with which regression models can be interpreted, in this study we will use a simple linear regression model constructed with the 10-year residential property price growth as a dependant variable and the cultural measures of the surviving vs. self-expression aspect of culture as an explanatory variable. We adopted this simple form of the model in order to explore the existence of a cultural impact over the property price growth. This should not be interpreted as an attempt to deny all other important factors. Modeling all factors together with cultural impact is not the aim of this present study and may be a subject of a following research.

The simple linear regression model we have constructed is in the following form:

$$y = \alpha + \beta * x + u \quad (1)$$

Where:

y is the 10Y residential property price growth

α is a constant

β is the coefficient before the explanatory variable

x is the national cultural score on surviving vs. self-expression cultural dimension

u is a general error term

Model: OLS, using observations 1-30

Dependent variable: y

	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio -</i>	<i>p-value</i>	
A	160.003	29.6093	5.4038	<0.00001	***
B	-74.5337	25.2412	2.9529	0.00631	***

Mean dependent var	121.9158	S.D. dependent var	164.2643
Sum squared resid	596687.9	S.E. of regression	145.9804
R-squared	0.237460	Adjusted R-squared	0.210226
F(1, 28)	8.719364	P-value(F)	0.006310
Log-likelihood	-191.0374	Akaike criterion	386.0749
Schwarz criterion	388.8773	Hannan-Quinn	386.9714

Estimating equation (1) for our sample of 30 countries we obtain the following regression equation:

$$\hat{y} = \hat{\alpha} + \hat{\beta} * x = 160.00 - 74.53 * x \quad (2)$$

Or, in other words the estimated relationship between culture and price growth is:

$$\begin{aligned} \text{Long-run property price growth} &= 160.003 - 74.5337 * \\ &* \text{Surviving/Self-expression national cultural value} \end{aligned} \quad (3)$$

The model is statistically significant with a significance level -p-value = 0.006310 and passes diagnostic testing. Both the constant and the independent variables are statistically significant. The result from the regression model shows that the cultural aspect, measuring whether the culture is one of survival or self-expression, explains nearly 24% of the long-term property price growth (R-squared = 0.237460).

The relationship between the culture of a country and its long-run property price growth takes a expected negative expression, meaning that the more of a survival culture a country can be said to be (taking negative sign in the cultural value measurement scale), the greater the expected long-term property price growth is likely to be. We should mention that removing some outliers such as Russia, Ukraine, Germany and Japan (the countries with the highest and lowest price growth) leads to a statistically significant model again with similar characteristics as the ones presented above. So, we have kept all countries from the initial sample.

From the results from the empirical modeling, we may conclude that our hypothesis is valid. The long-term housing price growth is influenced by the national culture through the dimension of survival versus self-expression.

Summary statistics of the annual property price growth

We have presented the results from the summary statistics for the annual residential property price growth for each of the observed countries in Appendix 1. The countries are ordered from survival to self-expression cultures. It can be observed that when moving towards more self-expression cultures, the mean annual price growth becomes lower and the minimum and maximum price growths are also lower.

While in countries with survival cultures, we may see maximum price growth of over 50% and sometimes even exceeding 100%, when moving towards self-expression cultures the observed maximum annual growth rarely exceeds 20%. The same is also true when looking at negative growth (property price drops). We may see that the biggest annual price drops are the highest in the countries with survival cultures (reaching 40-50%), while markets with self-expression culture have experience of more moderate price drops, mainly between 5 and 10%.

This confirms our expectation that countries with self-expression cultures experience more stable and more evenly distributed house price growth and that their residential property markets are thus less risky and not so vulnerable in times of economic crisis. On the other hand, countries with survival cultures tend to experience more extreme and unstable house price growth and these property markets are relatively more risky.

Conclusions

This paper has traced the peculiarly non-economic dimension of long-term housing price growth. This is a rather new paradigm in researching the development in real estate literature. This paper has recalled the classic debate between *homo economicus* and *homo agens*: whether human societies are created by a set of predictable rationales or set of intentionality resulting from their specific environment. Current real estate literature often overlooks the applied aspects of the price prediction, which fits well with the agenda of *homo economicus* but ignores the very nature of housing as a human creation that serves physio-biological needs. A survival and self-expression cultural value horizon can provide a *sui generis* approach to examining the roots of housing price growth variations across nations. Though this paper is far from a comprehensive coverage of the field as a possible emergent area of inquiry, we foresee that this could well be the first step on a long journey that may contribute to a new branch of studies in real estate financing and price estimations.

REFERENCES

- Brooks, C. and Tsolacos, S. (2010): *Real Estate Modelling and Forecasting*, Cambridge University Press
- Case, Karl.E., and Robert J. Shiller. 2003. Is There a Bubble in the Housing Market? *Brookings Papers on Economic Activity*, 2: 299-342.
- Czischke, D. (2011). Housing and human development, Conference paper, *Housing Forum Europe & Central Asia*, July 7.
- DiMaggio, P. (1994), Culture and economy, In Smelser & Swedberg, eds., *Handbook of Economic Sociology*, Princeton University Press. pp. 27-57.
- Égert, Balázs, Mihaljek, Dubravko, Determinants of House Prices in Central and Eastern Europe, *William Davidson Institute Working Paper Number 894*, 10.2007.

- Eichholtz, P., Huisman, R., Koedijk, K. and Schuin, L. (1998). Continental factors in international real estate returns, *Real Estate Economics*, 26 (3), 493-509.
- Elsinga, M. and Hoekstra, J. (2004). Home ownership and housing satisfaction: A study of the literature and an analysis of the European Community Household Panel, ENHR Conference, Cambridge, 2-6 July.
- Fang, T. (1999), *Chinese business negotiation style*, Sage Publications, Thousand Oaks, CA.
- Fisher, L. and Jaffe, A. (3003). Determinants of international house ownership rates, *Housing Finance International*, 18, 34-42.
- Gallin, Joshua H. 2004. The long-run relationship between house prices and rents. *Federal Reserve Board Finance and Economics Discussion Series*.
- Gibler, K.M. and Nelson, S.L. (2003). Consumer behavior applications to real estate education, *Journal of Real Estate Practice and Education*, 6 (1), 63-83.
- Harris, I. & Young, S. (1983). Buyer motivations: human needs. *Real Estate Today*, 29-30.
- Husted, B.W. (2003), Globalization and cultural change in international business research, *Journal of International Management*, vol. 9, no. 4, pp: 427-433.
- Inglehart, R. and Baker, W.E. (2005), Looking forward, looking back: Continuity and change at the turn of the millennium, *American Sociological Review*, vol. 65, no. 1, pp: 19-51.
- Inglehart, R. and Welzel, C. (2005), *Modernization, Cultural Change and Democracy* New York, Cambridge University Press.
- Keesing, R.M. (1974), Theories of culture, *Annual Review of Anthropology*, vol. 3, pp: 73-97.
- Leamer, Edward E. (2002). "Bubble trouble? Your home has a P/E ratio too", UCLA Anderson Forecast, June 2002.
- Lloyds TSB International (2012), Emerging markets top global house price league over the past decade, March 2012
- Madsen, Jakob B. (2011): A model of house prices, *Monash University, Department of Economics Issn 1441-5429*, Discussion paper 03/11
- Minkov, M. and Blagoev, V. (2009), Cultural values predict subsequent economic growth, *International Journal of Cross-Cultural Management* Vol 9(1): 5-24
- Organisation for Economic Co-operation and Development (2001): House prices and economic activity, *Economics Department Working Paper*, no 279.
- Ozaki, R. (2002). Housing as a reflection of culture: Privatised living and privacy in England and Japan, *Housing Studies*, 17 (2), 209-227.
- Palacin, Jose and Shelburne, Robert C., "The Private Housing Market in Eastern Europe and the CIS", United Nations Economic Commission for Europe, *Discussion Paper Series*, Geneva, Switzerland, United Nations, 2005.
- Stoykova, P. (2011), Housing price determinants and the price cycle: Are the fundamentals valid, what it specific and what steers the cycle? *Journal of International Business and Economics*, Vol. 11(2): 107-117
- Sutton, Gregory (2002): "Explaining changes in house prices", *BIS Quarterly Review*, September.
- Taras, V., Rowney, J. and Steel, P. (2009), Half a century of measuring culture: Review of approaches, challenges, and limitations based on the analysis of 121 instruments for quantifying culture, *Journal of International Management*, vol. 15, no.1, pp: 357-373.
- Triandis, H. and Suh, E.M. (2002), Cultural influence on personality, *Annual Review of Psychology*, vol. 53, no. 1, p: 133-160.
- Trompenaars, F. and Hampden-Turner, C. (1997), *Riding the waves of culture: Understanding cultural diversity in business*, Nicolas Brealey, London.
- Tsatsaronis, K. and Zhu, H. (2004). What drives housing price dynamics: Cross-country evidence, *Bank for International Settlement Quarterly Review*, 3, 65-78.
- Van de Vliert, E. (2009) *Climate, affluence, and culture*, Cambridge Press, New York

Data appendix

Cultural Values provided by:

WORLD VALUES SURVEY 1981-2008 OFFICIAL AGGREGATE v.20090901, 2009. World Values

Survey Association (www.worldvaluessurvey.org). Aggregate File Producer: ASEP/JDS, Madrid.

Residential property prices provided by:

Austria - European Central Bank
Belgium – Statistics Belgium
Bulgaria - National Statistics Institute
Canada - Cansim, StatCanada
Denmark - StatBank Denmark
Estonia – Statistical Office Estonia
Finland - StatFin Online Service
France – INSEE
Germany - European Central Bank
Greece - Bank of Greece
Hong Kong - Ratings and Valuation Department
Hungary - FHB Bank
Iceland - Statistics Iceland
Ireland - ESRI House Price Index
Italy - European Central Bank
Japan - The Land Institute of Japan
Lithuania - Ober-Haus Real Estate Advisors
Luxembourg - European Central Bank
Malta - Central Bank of Malta
Netherlands - Statistics Netherlands
Poland - Central Statistical Office
Portugal - European Central Bank
Russia - Federal State Statistics Service
Serbia - Statistical Office of the Republic of Serbia
Slovenia - Slonep Real Estate Agency
Spain - European Central Bank
Sweden – Statistics Sweden
Ukraine - Blagovist Real Estate Agency
United Kingdom – Nationwide
United States - Federal Housing Finance Agency

Appendix 1

Summary statistics of the annual property price growths, %

Country	Mean	Minimum	Maximum	Survival/Striving
Russia	24.20	-6.37	65.19	-1.42
Hungary	11.64	-6.27	46.24	-1.22
Bulgaria	56.85	-21.36	598.35	-1.01
Lithuania	10.91	-26.19	47.84	-1.00
Hong Kong	6.59	-31.09	40.70	-0.98
Ukraine	21.44	-26.77	60.31	-0.83
Serbia	14.58	-48.30	113.81	-0.62
Estonia	13.83	-39.39	51.79	-0.36
Poland	5.85	-11.29	17.76	-0.14
Japan	-4.16	-14.40	4.20	-0.05
Malta	6.83	-5.02	20.31	-0.03
Slovenia	6.24	-5.00	17.71	0.36
Portugal	2.93	0.40	9.01	0.49
Spain	7.11	-6.69	17.60	0.54
Greece	6.89	-4.37	14.40	0.55
Italy	3.67	-1.21	11.95	0.60
Germany	-0.22	-6.48	3.60	0.74
Finland	6.11	-4.08	19.91	1.12
France	6.95	-5.83	16.65	1.13
Luxembourg	6.47	-5.56	14.05	1.13
Begium	6.04	0.04	14.76	1.13
Ireland	7.71	-15.54	24.13	1.18
Netherlands	3.28	-3.30	18.20	1.39
Austria	2.42	-2.19	5.68	1.43
Iceland	8.22	-9.70	28.53	1.63
UK	7.00	-7.37	19.83	1.68
USA	3.17	-7.47	10.38	1.76
Denmark	7.52	-8.91	21.16	1.87
Canada	2.61	-2.32	9.84	1.91
Sweden	6.59	0.27	12.20	2.35

