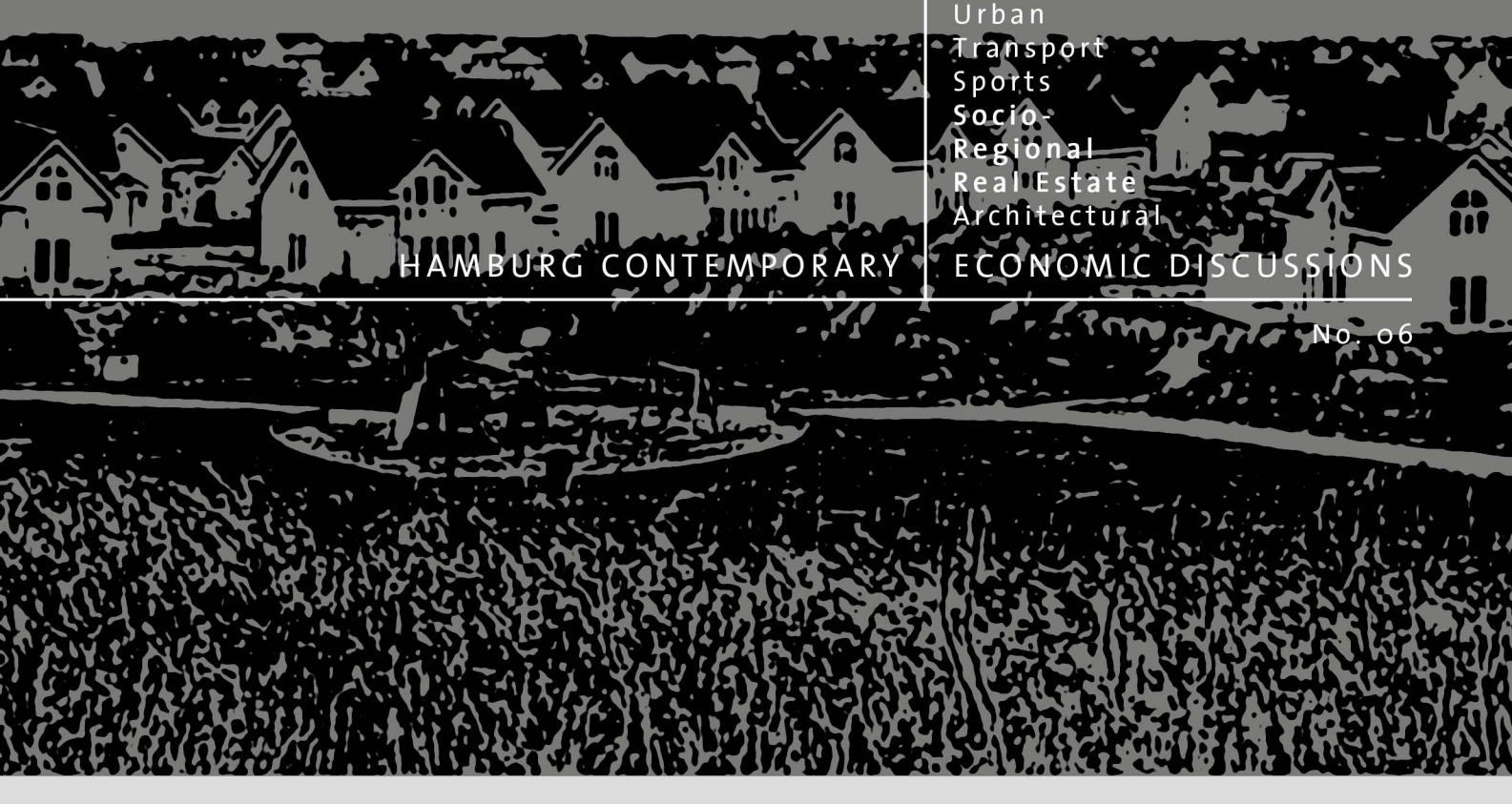
Universität Hamburg

Faculty Economics
and Social Sciences
Chair for Economic Policy

LISA DUST / WOLFGANG MAENNIG

SHRINKING AND GROWING METROPOLITAN AREAS - ASYMMETRIC REAL ESTATE PRICE REACTIONS? THE CASE OF GERMAN SINGLE-FAMILY HOUSES



Urban
Transport
Sports
Socio-
Regional
Real Estate
Architectural

HAMBURG CONTEMPORARY ECONOMIC DISCUSSIONS

No. 06

Hamburg Working Paper Series in Economic Policy
Faculty Economics and Social Science
Chair for Economic Policy
Von-Melle-Park 5
D-20146 Hamburg | Germany
Tel +49 40 42838 - 4622
Fax +49 40 42838 - 6251
http://www.uni-hamburg.de/economicpolicy

Editor: Wolfgang Maennig

Wolfgang Maennig
University of Hamburg
Von-Melle-Park 5
20146 Hamburg | Germany
Tel +49 40 42838 - 4622
Fax +49 40 42838 - 6251
maennig@econ.uni-hamburg.de

Lisa Dust
Hamburger Weltwirtschaftsinstitut (HWWI)
Neuer Jungfernstieg 21
20354 Hamburg | Germany
Tel +49 40 340576 - 0
Fax +49 40 340576 - 76

ISBN 978-3-940369-26-0 (Print)
ISBN 978-3-940369-27-7 (Online)

Wolfgang Maennig & Lisa Dust

Shrinking and Growing Metropolitan Areas – Asymmetric Real Estate Price Reactions?

Abstract: The population of Germany will be one of the first in the western hemisphere to undergo considerable permanent shrinkage. In view of the relatively low elasticities of supply and demand significant negative price reactions might be expected. This work supplements existing studies by estimating real estate prices for single-family homes on the disaggregate level of Germany's metropolitan areas. It highlights asymmetric price reactions: growth in population numbers has no significant price effects, whereas declining population numbers lead to significant negative price effects.

Keywords: shrinking population, real estates, asymmetric price reactions, regional analysis

JEL classification: R12, R21, R31

1 Introduction

Numerous studies[1] have been published on the future demographic development of European societies, all of which, whilst differing in detail, come to the general conclusion that by the year 2050 not only will the populations age significantly, but also that in numeric terms they will decline considerably. The decline in the case of Germany, due as it is to a very low fertility rate not compensated for by an adequate degree of net immigration, could prove to be particularly dramatic. Whilst the tenth coordinated German population projection assumes that a medium scenario would see a reduction of population numbers by around 10% to some 75 million inhabitants by the year 2050, this process of decline intensifies to around 18% in the minimal variant (2003). The pessimistic variant of Institut fuer Bevoelkerungsforschung und Sozialpolitik (2005) even arrives at a figure as

[1] Cf. for a global comparison and literature sources, United Nations Organisation (2003) as well as Mc Morrow & Roeger (2004).

low as 58.7 million inhabitants, or a decline of 28% as compared with the present level. Furthermore, these average figures tend to hide the fact that these processes of population shrinkage will affect the German regions to differing degrees of intensity. In general the regions in southern Germany will be affected less, whilst those in eastern Germany will bear the brunt of the decline (Bundesamt fuer Bauwesen und Raumordnung, 2003, 2004a, 2004b).

The fact that these envisaged demographic developments will have a significant effect on the pensions, health and nursing care insurance systems, and will hence heavily influence the lives of people in Germany, has not only been extensively underpinned with quantitative data but has also generally been recognised by the population at large, even if the emphasis tends to be on the ageing phenomenon rather than population decline. By contrast, awareness of the effects of projected population decline and ageing on adjacent areas of greater or lesser importance such as regional real estate markets, remains in its infancy.

In one of the first empirical studies on the issue of demographics and real estate, Mankiw & Weil (1989) in this journal find a significant and positive relationship between house prices and housing demand in the United States using a housing demand variable constructed on the basis of demographic determinants. Their work motivated a series of other works. Engelhardt & Poterba (1991) find distinctly different (i.e. insignificant) relationships for Canada. Poterba (1991) embarks on a regionalised analysis for the United States and confirms significant effects of housing demand on housing prices. DiPasquale & Wheaton (1994) challenge the view of instantaneous adjustment and make the case for a gradual price adjustment process. DiPasquale & Wheaton (1996) contrast former works by a cross section analysis for the United States.

Studies for regions outside Northern America are rare. Meese & Wallace (2003) elaborate on the real estate market in Paris. Terrones & Otrok (2004) estimate the growth in house prices in a multivariate model and arrive at a significant influence of population growth on a highly aggregated national level for 18 industrialised countries (yearly basis, 1970-2003) or 13 countries (quarterly basis, 1980-2004).

As far as the authors are aware, no differentiated modelling of population growth and decline, or of their effects on real estate prices, currently exists. Although this lack might be understandable, given that decreases in population numbers in the regions of the analyses mentioned have hardly ever been previously recorded, such a task could still be worth performing. Leaving aside any regional restrictions on land available for building, the chronic under-utilisation of European building production capacities means that an increase in demand could largely be satisfied without positive price impulses. By contrast, if demand were to be reduced there is a possibility of a relatively inelastic supply reaction in view of the typical construction methods prevalent in the European economies. The example of eastern Germany, one of the regions in the world most affected by population decline, shows that in spite of considerable levels of unoccupied buildings – up to 20% in some areas (Dascher, 2005) – capacity reductions by demolition are only being induced by cost-covering state demolition subsidies that in some cases even include debt repayments.[2]

Given that demand – both in the rental and the property sectors – also reacts with low price elasticity,[3] significant price decreases in the real estate sector could result. The dominant position of real estates assets in private household portfolios in most western economies[4] means that significant complications could arise e.g. for consumption and growth.

This work supplements existing studies by examining real estate prices for single-family houses on the disaggregate level of German metropolitan areas (*kreisfreie Staedte*) and explicitly studying the differing effects of population growth and decline. At the same time, checks are made for other potentially relevant factors influencing real estate prices such as household income, building costs etc.

---

[2] For details of the Stadtumbau Ost (City Reconstruction East) programme, cf. Kofner (2001, p. 9).

[3] Cf. for example Ermisch, Findlay, & Gibb (1996) as well as Boersch-Supan, Heiss, & Seko (2002).

[4] Cf. Deutsche Bundesbank (2002) and also Rady & Ruflig (2004, p. 17), who arrive at a value percentage of up to 88% for real estate in relation to national economic assets.

2 Methodology and data

This paper examines the house prices in metropolitan areas in Germany in the year 2002. It follows the log-log approach used by e.g. Mankiw & Weil (1989), Engelhardt & Poterba (1991), Poterba (1991) and DiPasquale & Wheaton (1994).[5] The real estate prices (*PRICE*) are taken from the real estate price index for residential real estate published by RDM (2003), whereby the total property prices for ready-to-inhabit detached houses of medium housing quality[6] are used. At around 41%, the level of residential property in Germany is one of the lowest in Europe, but within the group of detached houses it stands at 87% (Bundesamt fuer Bauwesen und Raumordnung, 2004a, p. 79), the majority of which are homes of medium housing quality.[7] The arithmetic mean of the house prices is €231,239.

The cross-section analysis covers 98 of the 118 metropolitan areas in Germany. Of these, 78 are in western Germany and 20 in eastern Germany. Their geographical position can be seen in Illustration 1. No price data is available for the metropolitan areas not included in our study. Berlin is excluded from the analysis because house prices are reported separately for the east and west Berlin, whilst the other data for Berlin is published for the city as a whole.

Taking the above-mentioned estimating equation by DiPasquale & Wheaton (1996) as our starting point, it also appears appropriate for Germany to test the population of the metropolitan areas (as well as their growth in the previous 10

---

[5] The alternative of an estimation in percentage changes, recommended by one anonymous referee could not be realised due to data restrictions. No cost data on the level of metropolitan areas is available for 1992 (Email Information by Bundesamt fuer Bauwesen und Raumordnung of October 30th, 2006). Even if the cost data were available, the validity of the results would probably be limited. In 1992, some months after German re-unification, prices for real estate in Eastern German cities, as well as in many Western German cities, had few chances to find their new equilibrium values. In addition, for 13 cities – most of them in the East –, no data is available on 1992 real estate prices.

[6] Medium housing quality is defined as (RDM 2003): single family house in a central residential area with a balanced population structure, approx 125 m^2 living area, central heating, bathroom and WC. Grounds and garage included (RDM 2003).

[7] Information by telephone by German Realtor Ring (RDM), March, 21st 2005, 6:30 p.m.

years as determinants. Given that no data is available at district level for the number of households, the (log of the) size of the population (*POP* and *POPGROWTH*)[8] is taken from the INKAR PRO database from BBR (2006). Overall the population in all the examined cities fell by just under 3%. In order to accommodate for this peculiarity of the German cities and to be able to explicitly estimate the potential consequences of a general reduction in population levels in the future, two dummy variables are introduced that are multiplicatively linked with the *POPGROWTH* variable. The variable *INCREASE* takes the value of 1 if a city grew between 1992 and 2002, and otherwise takes a value of 0. Analogously, the variable *SHRINK* takes the value of 1 if the city in question had negative population growth between 1992 and 2002, and otherwise takes a value of 0.

The *COST* variable (log of construction costs) is made up of the regional costs for new residential buildings per square meter as estimated by BBR (2004b).[9] The arithmetic mean of the construction costs per square meter is €1.214.

Finally, in the case of Germany it seems appropriate to test the regionally available annual per capita income (*INCOME*) as delimited by the regional Offices of Statistics as an influencing factor.[10] The arithmetic mean of the sample for this value is €16,547.

---

[8] Population size and number of households do not develop in a completely parallel manner. Whilst the German population over the observation period 1992 to 2002 grew slightly (+1.5%), the number of households grew by +6.2%, as the proportion of smaller households increased (BBR 2004a, p. 20).

[9] The construction costs include the expenditure for building works as listed in the cost estimate, including excavation work, installation and utilities at the time of the granting of building permission. Cf. on this and the influence of building costs on real estate prices (BBR 2004a, p. 31).

[10] Available income = primary income of the private households (income from employment and assets) + monetary fringe benefits and other current transfers income and property taxes, social security contributions and other current transfers (Arbeitskreis "Volkswirtschaftliche Gesamtrechrechnungen der Laender", 2004).

The estimating equation is:

$$\ln(PRICE) = b_0 \ln(POP) + b_1 (INCREASE \times POPGROWTH) + b_2 (SHRINK \times POPGROWTH) + b_3 \ln(COST) + b_4 \ln(INCOME) + u$$

whereby u is the random error term.

3 Results

Since the White test rejected homoscedasticity, the White correction was used in the following regressions. Table 1 starts by depicting the results of estimating the model by DiPasquale & Wheaton (1996) which in its cross section approach is most similar to this study (model 1, column 2). Population size, building costs, population and demographic changes do have significant effects with the expected signs.

Column 3 in Table 1 displays the results of the estimate from equation (1). The previously highly significant population growth is only statistically significant when it is negative. However, a growing population has no significantly positive influence. This asymmetry or ratchet effect could be explained by the fact that a sufficient level of construction capacity (high supply elasticity) could produce an adjustment to increasing demand in the medium term without price effects. In shrinking cities by contrast, the more permanent construction methods favoured in central Europe mean that no adequate reductions in capacity can occur, resulting in vacancy or falling prices. Adjusted R^2_{adj} takes a value of 0.66 and indicates an increased goodness of fit of the estimation compared to model 1.[11]

For the purpose of a sensitivity analysis the estimation was subjected to several modifications. Firstly, to depict possible influences of regional residential development structures on real estate purchase prices (BBR 2004a, p. 103), the types of

[11] The Akaike and Schwarz information criteria also become smaller, pointing towards an improvement in the model.

urban district were taken into consideration. The 98 cities in the sample are distributed as follows among the district types:[12]

41 core cities in agglomeration areas (type 1)

2 districts with high population density in agglomeration areas (type 2)

0 dense districts in agglomeration areas (type 3)

1 rural district in agglomeration areas (type 4)

27 core cities in urban areas (type 5)

11 dense districts in urban areas (type 6)

0 rural districts in urban areas (type 7)

14 dense rural districts (type 8)

2 low-density rural districts (type 9).

Different estimates showed that merely the first district type (core cities in agglomeration areas) has a significant influence on housing prices. The results of the estimate including a dummy variable for core cities in agglomeration areas (Model 3) are displayed in column 4 of table 1. The results of the estimate of Model 2 are essentially confirmed: a decline in population significantly decreases prices, whereas population increase has no influence on purchase price. Construction costs and income are highly significant.

In order to test for a possible price-increasing influence in connection with the activities pertaining to the seat of a regional government, a dummy variable *CAPITAL* was introduced for the state capitals of the 16 *Laender* (Model 4). This variable did not however prove to be significant.[13] In order to test whether land regulation and other building restrictions are important determinant of prices, the fraction of land zoned for residential purposes was used (Model 5).[14] Although

---

[12] Information on DISTRICT TYPES (Kreistypen) via Email from Mr. C. Schloemer (Federal Office for Building and Regional Planning (BBR)), Juni 19th, 2005.

[13] The supply of building land for residential purposes is not available for Germany on a regional basis (email information by Bundesamt fuer Bauwesen und Raumordnung, Referat I 1 Raumentwicklung, Federal Office for Building and Regional Planning, Department of Spatial Development) from November 17th, 2006.

[14] Data is from Statistisches Bundesamt (2004).

the variable *SHARE HOUSING AREA* did display the expected sign, it nevertheless did not prove to be significant. However, the relevant data for 15 of the 98 cities is not available, which might explain the reduced goodness of fit of the estimation. As an alternative the fraction of land zoned for residential and commercial purposes was used (Model 6), which only has two missing values. This determinant had the expected sign, but was also insignificant.

In an isolated usage a dummy showing membership of an urban district to a state in eastern or western Germany also proved to be insignificant (Model 7). Finally a regression with the interaction between the *WEST*-dummy and the asymmetric effect of population growth was run (Model 8). The *WEST*-dummy is significant in this case. The asymmetric effects of population growth and population shrinkage are not lost. The goodness of fit does not increase with regard to the models that also include the eastern metropolitan areas.

4 Summary and conclusions

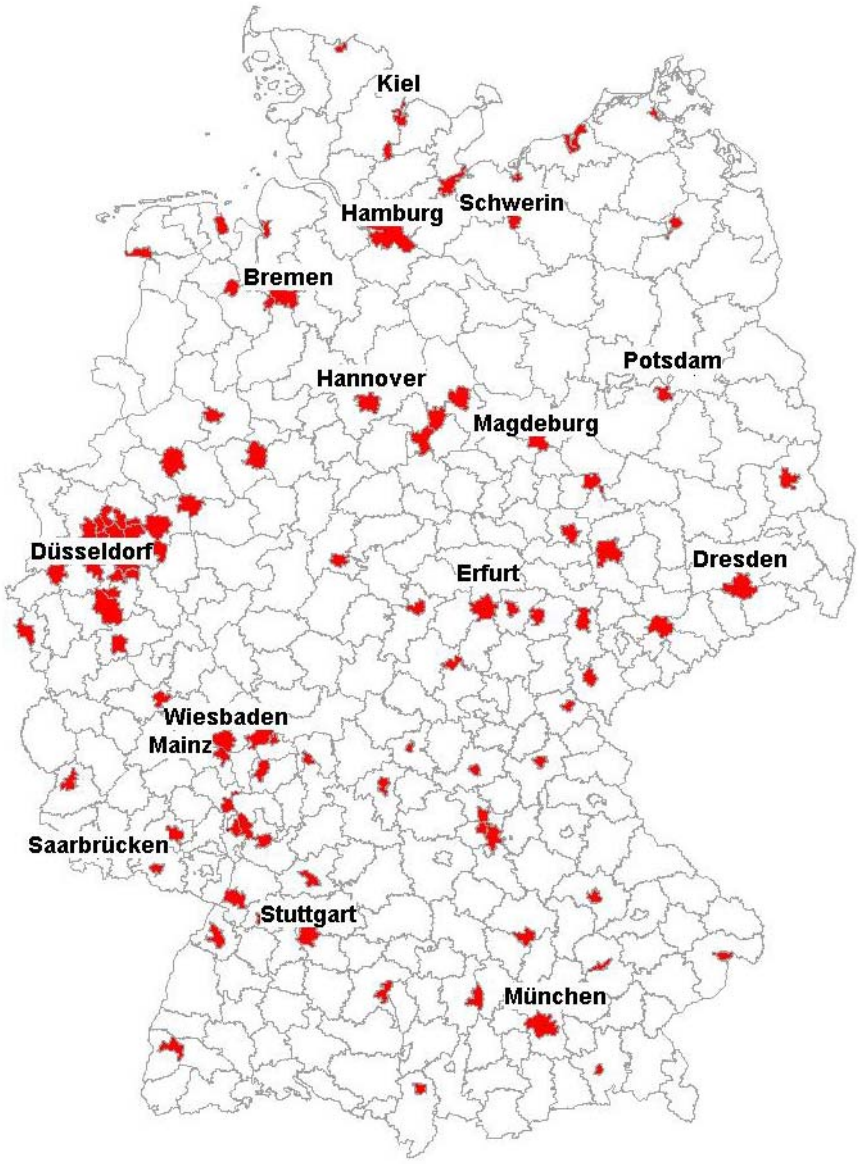
This examination of the prices of single-family houses in 98 of the 118 metropolitan areas in Germany in the year 2002 initially confirms existing empirical results that the absolute population size and membership of the "core cities in agglomeration areas" district type leads to higher purchase prices. Significant positive effects were also shown for disposable income and construction costs. The differentiation of population growth by shrinkage and increase revealed an asymmetrical supply reaction: population growth and the resulting increases in demand have no significant price effects. However, a declining population leads to significantly negative price effects.

Bundesamt fuer Bauwesen und Raumordnung (2003) forecasts that 74 of the 98 cities considered here would lose population by the year 2020, with cities in eastern Germany, but also North Rhein-Westphalia, particularly affected. The greatest decline is predicted for Jena in Thuringia at -25%. Construction costs will probably tend to fall (Bundesamt fuer Bauwesen und Raumordnung, 2004c, p. 10).

Whilst these generally foreseeable recessive price developments are strongly divergent at regional level, they are nevertheless to be expected, and further examination of these developments and their effects on consumption and growth in the economy as a whole could be a fruitful area of research. It is probably also worthwhile examining whether the asymmetries noted in this case also occur in other contexts, e.g. housing rents. From the point of view of the potential consequences for economic policy in particular, an analysis could also be made of tax-related influencing factors such as the recently abolished Home Owner Allowance. The degree of take-up of the Home Owner Allowance differed from region to region (Bundesamt fuer Bauwesen und Raumordnung, 2002, p. 16), although no data has yet been made available at district level. Attention should also be paid to the financing conditions. This was not possible in the cross-section analysis carried out here due to the fact that – in as much as it is possible for regionally differing values to exist at all – no data was available for lending limits etc. at district level.

Appendix

Fig. 1: Cities included in the analysis



Source: BBR (2003), authors own illustration.

Tab. 1: Determinants of (log of) single-family house prices in German metropolitan areas

	1	2	3	4	5	6	7	8
CONST	4.550***	-0.651	-0.880	-0.476	0.48	0.033	0.626	1.681
	(0.156)	(2.076)	(2.098)	(2.037)	(2.61)	(2.156)	(2.201)	(2.386)
	(1.444)	(2.241)	(2.225)	(2.275)	(2.62)	(2.235)	(2.302)	(2.323)
ln POP	0.185***	0.161***	0.121***	0.135***	0.128***	0.133***	0.119***	0.114***
	(0.035)	(0.033)	(0.040)	(0.038)	(0.048)	(0.045)	(0.040)	(0.034)
	(0.028)	(0.027)	(0.027)	(0.037)	(0.040)	(0.036)	(0.034)	(0.040)
POPCHANGE	2.330***							
	(0.380)							
	(0.383)							
SHRINK*POPCHANGE		2.465***	2.341***	2.281***	2.526***	2.334***	1.846**	
		(0.437)	(0.446)	(0.473)	(0.668)	(0.457)	(0.633)	
		(0.456)	(0.453)	(0.459)	(0.615)	(0.460)	(0.618)	
INCREASE*POPCHANGE		-0.187	-0.005	-0.018	0.683	0,681	0.128	
		(1.236)	(1.267)	(1.240)	(1.131)	(1.181)	(1.275)	
		(1.177)	(1.162)	(1.164)	(1.273)	(1.201)	(1.165)	
ln COST	0.790***	0.678***	0.708***	0.718***	0.625***	0.669***	0.703***	0.688***
	(0.203)	(0.205)	(0.193)	(0.192)	(0.207)	(0.194)	(0.194)	(0.186)
	(0.195)	(0.188)	(0.185)	(0.186)	(0.204)	(0.189)	(0.185)	(0.199)
ln INCOME		0.648***	0.614***	0.630***	0.614***	0.617***	0.536***	0.417**
		(0.199)	(0.190)	(0.185)	(0.222)	(0.192)	(0.195)	(0.228)
		(0.217)	(0.214)	(0.216)	(0.244)	(0.215)	(0.224)	(0.200)
CORE			0.111**	0.103**	0.124**	0.124**	0.112**	0.133**
			(0.052)	(0.050)	(0.059)	(0.054)	(0.052)	(0.056)
			(0.056)	(0.057)	(0.064)	(0.059)	(0.056)	(0.051)
CAPITAL				-0.057				
				(0.078)				
				(0.067)				
SHARE_HOUSING_AREA					-0.485			
					(0.638)			
					(0.554)			
SHARE_HOUSE_AND_BUSIN_AREA						-0.122		
						(0.333)		
						(0.308)		
WEST							0.101	0.392***
							(0.080)	(0.074)
							(0.086)	(0.069)
WEST*SHRINK*POPCHANGE								3.398***
								(1.146)
								(1.073)
WEST*INCREASE*POPCHANGE								-0.497
								(1.235)
								(1.340)
R2adj	0.61	0.66	0.67	0.67	0.62	0.68	0.67	0.67

** = significant at the 5% error level
*** = significant at the 1% error level
numbers in parentheses are t-values: first value is with, second wothout White-correction.

Literature

Arbeitskreis "Volkswirtschaftliche Gesamtrechrechnungen der Laender". (2004). Einkommen der privaten Haushalte 2002 (Working Group Economic Accounting of the Federal States, Private Household Income 2002). Stuttgart: Statistisches Landesamt Baden-Württemberg.

Boersch-Supan, A., Heiss, F., & Seko, M. (2002). Housing demand in Germany and Japan [Electronic Version]. Retrieved October 11th, 2005 from http://www.mea.uni-mannheim.de/mea_neu/pages/files/nopage_pubs/dp08.pdf.

Bundesamt fuer Bauwesen und Raumordnung, B. B. R. (2002). Bericht zur Inanspruchnahme der Eigenheimzulage in den Jahren 1996-2000 (Federal Office for Building and Regional Planning: Report on availment of the home owner allowance in the period 1996-2000). Bonn.

Bundesamt fuer Bauwesen und Raumordnung, B. B. R. (2003). Raumordnungsprognose INKAR PRO 1999–2020 (Federal Office for Building and Regional Planning, Spatial Planning Forecast INKAR PRO 1999-2020). Bonn.

Bundesamt fuer Bauwesen und Raumordnung, B. B. R. (2004a). Berichte, Bd. 18, Wohnungsmärkte in Deutschland (Federal Office for Building and Regional Planning: Reports, Volume 18, Housing Markets in Germany). Bonn.

Bundesamt fuer Bauwesen und Raumordnung, B. B. R. (2004b). Raumordnungsprognose ROP 2020, 1999–2020, Bevoelkerung, Private Haushalte, Erwerbspersonen (Federal Office for Building and Regional Planning, Spatial Planning Forecast ROP 2020, 1999-2020, Population, Private Households, Economically Active Persons). Bonn.

Bundesamt fuer Bauwesen und Raumordnung, B. B. R. (2004c). Wohnungspolitische Konsequenzen der langfristigen demographischen Entwicklung, (Federal Office for Building and Regional Planning: Housing Policy Consequences of Long Term Demographic Developments, Research). Bonn.

Dascher, K. (2005). Why Demolish? – East Germany´s Vacant Housin [Electronic Version]. Retrieved October 11th, 2005 from http://viadrina.euv-frankfurt-o.de/~dascher/Der_Stadtumbau_in_Ostdeutschland_web.pdf.

Deutsche Bundesbank. (2002). Der Wohnungsmarkt in den neunziger Jahren (The Housing Market in the Nineties). Monatsbericht Januar 2002, 29-39.

DiPasquale, D., & Wheaton, W. C. (1994). Housing Market Dynamics and the Future of Housing Prices. Journal of Urban Economics, 35(1), 1-27.

DiPasquale, D., & Wheaton, W. C. (1996). Urban Economics and Real Estate Markets. Englewood Cliffs, NJ: Prentice Hall.

Engelhardt, G. V., & Poterba, J. M. (1991). House Prices and Demographic Change: Canadian Evidence. Regional Science and Urban Economics, 21(4), 539-546.

Ermisch, J. F., Findlay, J., & Gibb, K. (1996). The Price Elasticity of Housing Demand in Britain: Issues of Sample Selection. Journal of Housing Economics, 5(1), 64-86.

Institut für Bevölkerungsforschung und Sozialpolitik, I. B. S. (2005). Simulationsrechnungen zur Bevölkerungsentwicklung der BRD (Institute for Population Research and Social Policy, Simulation calculation for population development in Germany) [Electronic Version]. Retrieved May 2nd, 2005 from http://www.uni-bielefeld.de/fb19/17b1.htm.

Kofner, S. (2001). Die Leerstandskrise in den ostdeutschen Städten: Betriebswirtschaftliche, wohnungspolitische und städtebauliche Ansätze der Krisenbewältigung (The vacancy crisis in east German towns: economic, housing policy and urban planning approaches to mastering the crisis) [Electronic Version]. Retrieved September 29th, 2005 from http://www.wowi.de/info/wohnungsmarkt/aufsaetze/leerstandskrise.doc.

Mankiw, N. G., & Weil, D. N. (1989). The Baby Boom, the Baby Bust, and the Housing Market. Regional Science and Urban Economics, 19(2), 235-258.

Mc Morrow, K., & Roeger, W. (2004). The economic and financial market consequences of global aging. Heidelberg and New York: Springer.

Meese, R., & Wallace, N. (2003). House Price Dynamics and Market Fundamentals: The Parisian Housing Market. Urban Studies, 40(5-6), 1027-1045.

Poterba, J. M. (1991). House Price Dynamics: The Role of Tax Policy and Demography. Brookings Papers on Economic Activity n2, 143-183.

Rady, S., & Rußig, V. (2004). Fluktuationen des Wohnimmobilienmarkts, Mikroökonomische Grundlagen und makroökonomische Auswirkungen (Fluctuations on the housing market, microeconomic effects). ifo-Forschungsbericht Nr. 23, Munich.

Ring Deutscher Makler, R. D. M. (2003). Preisspiegel 2002, (German Realtor Ring: Price index 2002) [Electronic Version]. Retrieved May 22nd, 2005 from http://www.rdm-bundesverband.de.

Statistisches Bundesamt. (2003). 10. koordinierte Bevölkerungsvorausschätzung für die Bundesrepublik Deutschland, Presseexemplar (Federal Statistical Office Germany,10th co-ordinated population projection for the Federal Republic of Germany, Press copy). Wiesbaden.

Statistisches Bundesamt. (2004). Statistik regional 2004. Wiesbaden.

Terrones, M., & Otrok, C. (2004). The global house price boom. World Economic Outlook: The Global Demographic Transition, International Monetary Fund.

United Nations Organisation, U. N. O. (2003). World population prospects: The 2002 Revision. New York.

Hamburg Contemporary Economic Discussions

(Download: http://www.uni-hamburg.de/economicpolicy/discussions.html)

01/2005 FEDDERSEN, A. / MAENNIG, W.: Trends in Competitive Balance: Is there Evidence for Growing Imbalance in Professional Sport Leagues?, January 2005.

02/2005 SIEVERS, T.: Information-driven Clustering – An Alternative to the Knowledge Spillover Story, February 2005.

03/2005 SIEVERS, T.: A Vector-based Approach to Modeling Knowledge in Economics, February 2005.

04/2005 BUETTNER, N. / MAENNIG, W. / MENSSEN, M.: Zur Ableitung einfacher Multiplikatoren fuer die Planung von Infrastrukturkosten anhand der Aufwendungen fuer Sportstaetten – eine Untersuchung anhand der Fussball-WM 2006, May 2005.

01/2006 FEDDERSEN, A.: Economic Consequences of the UEFA Champions League for National Championships – The Case of Germany, May 2006.

02/2006 FEDDERSEN, A.: Zur Verwendung von Markov-Ketten bei der Messung der langfristigen Wettbewerbsintensitaet in Teamsportligen, July 2006.

03/2006 FEDDERSEN, A. / VOEPEL, H.: Staatliche Hilfen fuer Profifussballclubs in finanziellen Notlagen? – Die Kommunen im Konflikt zwischen Imageeffekten und Moral-Hazard-Problemen, September 2006.

04/2006 MAENNIG, W. / SCHWARTHOFF, F.: Stadium Architecture and Regional Economic Development: International Experience and the Plans of Durban, October 2006.

Hamburg Contemporary Economic Discussions

(Download: http://www.uni-hamburg.de/economicpolicy/discussions.html)

01 AHLFELDT, G. / MAENNIG, W.: The Role of Architecture on Urban Revitalization: The Case of "Olympic Arenas" in Berlin-Prenzlauer Berg, January 2007.

02 FEDDERSEN, A. / MAENNIG, W. / ZIMMERMANN, P.: How to Win the Olympic Games – The Empirics of Key Success Factors of Olympic Bids, January 2007.

03 AHLFELDT, G. / MAENNIG, W.: The Impact of Sports Arenas on Locational Attractivity: Evidence from Berlin, February 2007.

04 DU PLESSIS, S. / MAENNIG, W.: Soccer World Cup 2006 in Germany and 2010 in South Africa – Similarities and Differences from an Economic Perspective, February 2007.

05 HEYNE, M. / MAENNIG, W. / SUESSMUTH, B.: Mega-sporting Events as Experience Goods, February 2007.

06 DUST, L. / MAENNIG, W.: Shrinking and Growing Metropolitan Areas – Asymmetric Real Estate Price Reactions? The Case of German Single-family Houses, March 2007.

07 JASMAND, S. / MAENNIG, W.: Regional Income and Employment Effects of the 1972 Munich Olympic Summer Games, March 2007.

08 HAGN, F. / MAENNIG W.: Labour Market Effects of the 2006 Soccer World Cup in Germany, June 2007.

09 HAGN, F. / MAENNIG, W.: Employment Effects of the World Cup 1974 in Germany.

10 MAENNIG, W.: One year later: A re-appraisal of the economics of the 2006 soccer World Cup.

11 AHLFELDT, G., MAENNIG, W.: Assessing External Effects of City Airports: Land Values in Berlin.

12 AHLFELDT, G.: If Alonso was Right: Accessibility as Determinant for Attractiveness of Urban Location

13 AHLFELDT, G.: A New Central Station for a Unified City: Predicting Impact on Property Prices for Urban Railway Network Extension

Hamburg

Contemporary Economic Discussions

ISBN 978-3-940369-26-0 (PRINT)
ISBN 978-3-940369-27-7 (ONLINE)