

Chapter 2

Institutional Differences in European Metropolitan Commercial Real Estate Markets

Ed F. Nozeman and Arno J. Van der Vlist

2.1 Introduction

Commercial real estate markets are typically considered as global markets and interlinked with the macroeconomy (Ball et al. 1998). This link is reflected once again in the decline in commercial real estate returns during the GFC. What seems to be easily overlooked is that reports by commercial real estate brokers show huge variations among metropolitan commercial real estate markets (see JLL 2009; DTZ 2010; RREEF 2013). Two mechanisms could drive these differences among European metropolitan commercial real estate markets. First, the initial macroeconomic conditions could be different in the various metropolitan areas before the GFC hit the market such that emerging and developing markets responded differently to mature markets. Such cross-sectional variations relate to differences in global connectivity, differences in tenant structure and the associated demands for space, size and sources of capital flows, the existing stock of real estate, and the supply, uptake and vacancy rate in the market (Barkham 2012). A second mechanism relates to the differential speed of adjustment across real estate markets. Some metropolitan markets in more open economies may be more deregulated than others and, therefore, more responsive to changes in market fundamentals. As Tiwari and White (2010) indicate, differences in local institutions may also lead to different or non-synchronized adjustments across real estate markets in the timing of rental value cycles and in the internationalization of investment activities and of development activities. This chapter addresses these institutional differences across European commercial real estate markets.

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Institutions can be broadly defined as the ‘rules of the game’ (North 1990) or as ‘man-made rules that are meant to constrain possibly opportunistic human behaviour’ (Seabrooke et al. 2004). Institutions have been related to formal rules (laws, constitutions and rules) and to informal rules (informal practices, belief, fashions and rules-of-thumb) (Bjornskov et al. 2010). As such, institutions relate to civil liberties, political rights to freedom, and to honesty and efficiency in governmental policymaking. Institutions also include bank lending rules and attitudes in the financing of commercial real estate (Davis and Zhu 2011). Further, institutions include the protection of property rights: to physically possess land and real estate and to derive income from it, and to transfer property rights and retain the value (Tiwari and White 2010). Furthermore, institutions include the local governance of land use, zoning and the regulation and planning of real estate development (Needham and Louw 2006; Ratcliffe et al. 2009). In addition, the organization of the real estate market itself, with real estate service providers, can be conceived as part of the institutional framework with its network of rules, conventions, standards and relationships (Adams et al. 2001; Tiwari and White 2010).

Most studies in real estate finance and economics address metropolitan real estate market dynamics using a time series framework for a single market (see Hendershott et al. 2010). While these studies are a relevant source to draw on in this chapter, they do not aim to explain the cross-sectional differences observed in metropolitan commercial real estate markets. Some studies have addressed market dynamics in a cross-sectional time series approach (Ling and Naranjo 2002; Brounen and Jennen 2009; Hendershott et al. 2013) and typically relate rental differences across metropolitan markets to differences in demand, supply and vacancy. However, they do not explain the cross-sectional fixed effects. Tiwari and White (2010) do seek to explain cross-sectional variation in institutions and the interplay with internationalization of real estate markets but use a rather narrative approach. Empirical studies that explain these differences in cross-sectional fixed effects have been thin on the ground. This chapter aims to provide a more comprehensive approach to real estate markets and institutions.

This chapter draws on earlier theoretical work in institutional economics to measure the effects of market institutions on real estate market dynamics. It is our aim to extend the previous literature on commercial real estate markets by examining the link between market dynamics on the metropolitan level and formal and informal local real estate market institutions, planning institutions and financial structures. Questions that we address include: how to characterize European metropolitan commercial real estate market dynamics; how to characterize the structures of European metropolitan commercial real estate institutions; and do European metropolitan commercial real estate market dynamics vary with institutional and financial structures? The contributions of this chapter are twofold. First, it offers a framework for decomposing cross-sectional differences in market dynamics into differences associated with market fundamentals and those associated with institutions. Second, the developed empirical model allows differences between commercial office and retail real estate markets.

The data used come from commercial broker databases for offices and retail premises in 19 major European commercial real estate markets over the period from 2000 to 2010. Information on cross-sectional institutional differences comes from a survey among commercial real estate experts as well as from public sources. We contend that dynamic panel estimation is an appropriate approach when studying institutional differences in real estate market dynamics. The first step in the empirical analysis includes corrected least squares dummy variable methods to determine common patterns within market dynamics while controlling for heterogeneity by including fixed effects. In the second step, we explore the fixed effects of a set of time-invariant moderators that characterize the institutional differences among European metropolitan markets.

This chapter is structured as follows. Section 2.2 provides the theoretical background used to discuss real estate market institutions. Section 2.3 describes the data collected and Sect. 2.4 presents the empirical model used to analyse the interactions between institutions and market dynamics. Finally, Sect. 2.5 offers a look forward to the later chapters of this monograph.

2.2 Real Estate Markets and Institutions

2.2.1 *Market Fundamentals*

The behaviour of commercial real estate markets can be explained from the stock-flow literature in which renters demand space (Hendershott et al. 2002). The demand for rental space in the commercial real estate market comes from office-based firms and retailers and is determined by market fundamentals in the local metropolitan area. This implies that the economic structure plays an important role (Keogh and D'Arcy 1994). Further, global connectivity matters as demand by multinational companies link countries in a global real estate user market (Barkham 2012). Economic growth, a rise in employment and higher incomes all contribute to a positive demand shock for rental space (Wheaton 1999). Rental prices are set by asset managers based on the demand for rental space and the available stock. Although contractual differences exist, typically long-term leases are negotiated in which rent and annual rent increases are defined, as well as the outgoings for maintenance and service fees (Englund et al. 2008).

A rental income amounts to a cash flow return on holding an asset. Subject to the capitalization rate, rising rents will increase the asset value of real estate. The capitalization rate is the rate of return demanded by investors for holding real estate, and consists of a risk free interest rate and a risk premium, corrected by the annual increase in rent. Capital for real estate can come from private and public equity, or from private and public debt (Tiwari and White 2010).

New construction is initiated if the eventual asset value will exceed the cost of construction. While perhaps not reacting instantly, real estate markets still embody

the notion of market adjustments (Tiwari and White 2010). The speed at which new construction is completed will depend on the institutional framework of the metropolitan area in which it is situated.

2.2.2 Market Institutions

Commercial real estate markets are embedded in a local institutional structure. Differences in institutions have been related to:

- a. Formal rules (laws, constitutions and rules) and informal rules (informal practices, belief, fashions and rules-of-thumb);
- b. Property rights;
- c. Local governance of land-use planning and development.

These institutional structures contain the arrangements in which property transactions take place. This relates to generic nationwide institutions and through very specific factors to local real estate markets. Keogh and D'Arcy (1994) comment that while institutions related to the transfer of legal real estate titles facilitate short-run market adjustments, it is local planning institutions that facilitate long-run adjustments. These institutional structures have been linked to market maturity and persist over long periods (Tiwari and White 2010).

2.2.3 Formal and Informal Rules

Formal and informal rules include the laws and rules in place, and the rules observed in day-to-day business (La Porta et al. 2008). European legal origins include English common law (for UK), French civil law (for Belgium, France, Greece, Italy, Netherlands, Russia, Spain, Turkey), German civil law (Austria, Czech Republic, Germany, Hungary, Poland) and Scandinavian civil law (Sweden). Williamson (2009) conceptually distinguishes between formal and informal and between strong and weak rules (see Table 2.1). Countries with strong informal rules, that regulate day-to-day business without reliance on government law creation or enforcement, are amongst those with the highest GDP per capita. However, strong formal rules are not necessarily ineffective. Williamson observes that formal and informal rules needs to be coherent, with the formal rules mapped onto informal rules. Countries with strong formal but weak informal rules are amongst the poorest countries.

Formal and informal rules also have implications for real estate markets. Tiwari and White (2010) indicate that countries with weak regulatory practices tend to have the most volatile real estate cycles. Sometimes informal rules can substitute for weak regulatory practices and this is why the professional standards of real estate service providers are considered as part of the institutional structure.

Table 2.1 Institutional classification of rules and countries

Formal rules	Informal rules	
	Weak	Strong
Weak		Austria Belgium Italy Netherlands Sweden
Strong	Turkey	France Germany Spain UK

Source: Williamson (2009). No information on Czech Republic, Hungary, Poland, Russia

2.2.4 Property Rights

Property rights are defined as those rights that arise from the ownership of a property. It is the right, protected by law, that a person has to withhold something from others, and a right that has a monetary value that can be transferred (Abbott 2008). Thus, essential ingredients are a withholding capability by the owner, legal protection, monetary value and transferability. Seabrooke et al. (2004) agree and see property rights as social institutions: bundles of rights that are recognized and enforced. Secure property rights are the key to investments (Williamson 2009). Property rights also allow the separation of ownership and right-of-use, thus opening up international real estate markets (Tiwari and White 2010).

Transferring property rights is not without costs. Property markets are search markets that can generally be characterized by information asymmetry, extensive search efforts to find a property that matches demand, idiosyncratic preferences, frictions in supply and uptake leading to vacancies, price dispersion, and a relatively slow adjustment of supply in response to market changes. All this results in market signals being transmitted only slowly (Adams et al. 2001). Commercial brokers aim to match demand with supply, with their fee reflecting the information asymmetry in the market. Transaction costs include all the expenses involved in the process of transferring ownership rights including the agency’s fee, legal fees, transfer tax and VAT (Nozeman 2010). Yasar et al. (2010) and De Soto (2000) observe that non-pecuniary transaction costs are far higher when property rights or the formal rule-of-law are unreliable.

2.2.5 Local Governance of Land-Use Planning and Development

The local governance of land-use planning and development covers a gamut of methods or instruments ranging from caps on development through restrictive

zoning, maximum densities and boundaries on urban growth. These institutions reflect societal preferences regarding the built environment and are typically implemented on a 'very local' level. Local governance involves the democratic process through which local planning decisions are made along with a political commitment to action (Adams et al. 2001). Typically, land-use regulations form a physical constraint or restriction on the property rights associated with ownership. Although this might not prevent development, it may increase the duration and cost of development. Schuetz (2009) found that more restrictive zoning results in fewer development activities. Regulation may therefore raise real estate rents and asset prices. This was indeed what Quigley and Raphael (2005) and Quigley et al. (2007) found for residential real estate in the San Francisco Bay Area.

Table 2.2 presents an overview of formal spatial planning and development instruments by metropolitan area. These spatial instruments are considered to directly influence the supply side of real estate and also indirectly the demand side. For several reasons, the presented spatial instruments reflect only a part of local governance of land-use planning and development. First, because the overview represents a snapshot in time. Formal rules, although persistent over long periods, are reviewed and updated to reflect changing ideas about the division of public responsibilities and the roles of private parties. Second, sector-specific instruments also have a spatial impact, mostly in the form of infrastructure, economic and social directives that become integrated in spatial plans. Third, the presented spatial instruments are the statutory rules, and their actual application may be very different (Larsson 2006).

From Table 2.2, one can observe a hierarchical system of spatial planning in which the local government has to take account of regional and/or national planning directives. How this is managed depends on the flexibility within the system. In all the countries considered, apart from Austria, there is *national legislation* on physical planning and building. In most of them, this results in a framework of laws, decrees, guidelines and overviews. France is a notable exception with statutory national spatial plans. In Austria, Belgium, Germany, Italy and Spain, physical planning has been completely or largely decentralized to the regions.

Regional planning is evident in all the metropolitan areas studied and mostly results in formal plans although sometimes (as in the UK) has more of an informal nature. The planning process when producing a regional plan is rather similar in the various countries.

Municipal or *local planning* is nowadays considered as the most important planning level. Local authorities formulate strategic or structural plans covering the overall municipal area as well as more detailed plans for more limited areas. Our overview reveals that all the studied metropolitan areas have both types of plans. Variations relate to specifications of land use, types of regulations, processes and legal status. Another difference concerns the role of private parties when detailed plans are being prepared. At one end, there are countries such as the UK and France where private parties are solely responsible for making the detailed (regulatory) plans or at least prepare them in close cooperation with public authorities. At the other end, there are Sweden and the Netherlands where the public authorities draw

Table 2.2 Overview of formal spatial planning instruments in European metropolitan commercial real estate markets

	Amsterdam	Barcelona and Madrid	Berlin, Frankfurt Hamburg, Munich	Brussels	Budapest	Istanbul	London
National legislation	Wet op de ruimtelijke ordening Bouwbesluit	Ley del suelo 2007	Raumordnungsgesetz Baugesetzbuch BauGB Maßnahmen-Gesetz	Wet op de Stedebouw Ordonantie Stedebouw	1997 évi LXXVIII tv.az épített környezet alakításáról és védelméről 253/1997 (XII.20) Korm.r.az Országos Település rendezési és építési kö követelményekről	Yasa Planlama	Town & Country Planning Act Planning and Compensation Act Building Regulation
Provincial or regional legislation	No	Legislación regional	Landesplanungs gesetz	Brussels Wetboek van Ruimtelijke Ordening	Agglomerációs Tv + Balaton Tv	No	No
National plans	Structuurschets	No	No	No	Országos Trev	No	No
Regional plans	Structuurschets	Plan Director	Regionalplanung	Gewestelijk ontwikkelingsplan	Megyei területrendezési terv	Bölge Planı	Implementation plan
Strategic plan for (part of) municipality	Structuurschets	Plan General de Ordenación Urbana	Flächennutzungs plan	Gemeentelijk ontwikkelingsplan	Településszerkezeti terv	Çevre Düzeni Planı	Unitary development plan
Zoning plan	Bestemmingsplan	Programa de Actuación Urbanística	Bebauungsplan	Gewestelijk Bestemmingsplan	Fővárosi Szabályozási Keretterv	İmar Planı	Simplified planning zones
Building permit	Omgevingsvergunning	Plan Especial	Baugenehmigung	Bijzonder Bestemmingsplan	Szabályozási Terv	İnsaat Izni	Building permit
		Licencia de Edificación		Stedenbouwkundige vergunning	Szabályzat (till 2015)		
					Építési engedély		

(continued)

Table 2.2 (continued)

	Amsterdam	Barcelona and Madrid	Berlin, Frankfurt Hamburg, Munich	Brussels	Budapest	Istanbul	London
Occupancy permit	Gebruiksvergunning of - melding	Licencia Primera Ocupacion	Nutzungsgenehmigung	No	Használatbavételi engedély	Yapi Kullanma Izni	No
Number of steps from initiative till completion	14	8	9	11	26	20	9
	Milan and Rome	Moscow	Paris	Prague	Stockholm	Vienna	Warsaw
National legislation	Legge urbanistica	Gradostroitelnyi Kodeks	Code de l'Urbanisme	Stavebni zakon	Plan-och Byggnadslagen	Raumordnung-gezetz	Ustawa a planowaniu i zagospodaro-i waniu przestrzennym
	Legge no 1150-1942	Kodex Rossijskoi	Loie d'orientation sur le Développement et l'Amenagement du Territoire				
	Legge no 765-1967	Federacii			Boverkets Byggregler		Ustawa o gospodarse nierucho-mo'sciami Kodeks Budowlany
	Legge no 10-1977		Code de la Construction				
Provincial or regional legislation)	Legge regionale	Gradostroitelnyi Kodex gorada Moskvi	No	No	No	Bauordnung	No
National plans	No	No	Schéma nationale d'aménagement du territoire	No	No	No	Koncepcja Przestrzennego Zagospodarowa-nia Kraju 2030

Regional plans	Plano territoriale di coordinamento	General'niy plan	Schéma de cohérence territorial	Strategický plan uzemniho rozvoje Zasady uzemniho rozvoje	Regionplan	Strategie Plan	Wojewódzki Plan Zagospodarowania Przestrzennego
Strategic plan for (part of) municipality	Plano Regulatore Generale	General'niy plan	Schéma de cohérence territorial	Uzemni plan	Översiktsplan	Stadtentwicklungs-Plan	Miejscowy Plan Zagospodarowania
Zoning plan	Plano Particolareggiato	Plan Zonyrovanya	Plan locale d'urbanisme	Regulacni plan	Detalijplan	Flächenwidmungs- und Bebauungsplan	Plan zagospodarowania i przestrzennego
	Plano per l'edilizia economica popolare Plano di lottizzazione		Projet d'aménagement et de développement durable				
Building permit	Permesso a costruire	Rasresheniye na stroitelstvo	Permis de Constr. Construction	Stavebni povoleni	Bygglov	Baugenehmigung	Pozwolenie na budowę
Occupancy permit or permit for taking into use	Permesso occupazione	Rasreshennoe ispolsovanie	Certificat de conformité	Kolaudace	No	Benutzungs-genehmigung	Odbiór techniczny budynku
Number of steps to undertake from initiative till completion	14	42	9	33	7	13	29

Sources: Golubchikov (2004), Larsson (2006), Meijer et al. (2002), update by authors; <http://www.doingbusiness.org/data/exploreeconomies/hungary/dealing-with-construction-permits>

up these plans themselves. Former communist countries (Czech Republic, Hungary, Poland and Russia) can also be placed within the latter category. We would place the remaining countries somewhere in the middle. The contents of plans also differ between countries, as does their status. In most cases, local plans are legally binding (the UK being an exception). The legal status of higher-level plans varies among metropolitan areas although most have an indicative nature.

Tax instruments show a strong similarity across metropolitan areas. Corporate tax, transfer tax or stamp duty, real estate tax are all quite ubiquitous, although the levels differ as does the receiving authority. Real estate tax is mostly a local source of income, and sometimes also a regional one (as in Belgium). Corporate and transfer taxes are mostly collected for national objectives. Legal systems to protect tenants seem to be more evident in the retail sector than for tenants of office buildings, particularly in systems building on French civil law (Belgium, France and the Netherlands) but less so in countries originating from common law (UK).

The private development process in itself does not differ much between the various markets. Any initiative has to pass several stages before execution and completion can take place. Commonly identifiable phases include (i) taking an initiative, (ii) programme definition including a design and feasibility study, (iii) realization and construction and (iv) completion and handing over to the user and/or owner/investor. Within these phases, there is a wide variation as to the timing and extent of the involvement and influence of the planner/architect, the investor, the tenant, the construction firm, market researchers and other consultants. These variations have little to do with the nature of the market and much more to do with variables such as the chosen development strategy, land ownership, size of the project and availability of financial resources.

Differences between markets can be illustrated by the average number of steps the developer needs to take from the initiative through to completion. In the studied emerging markets, that number varies between 20 (Istanbul) and 42 (Moscow). In developing markets there are slightly fewer steps, between 26 and 33 in our survey. Mature markets show considerably fewer steps, ranging between 7 (Stockholm) and 14 (Amsterdam).

2.3 Data on European Metropolitan Markets

2.3.1 *Real Estate Market Variables*

The data cover 19 major European Metropolitan regions¹ over the period from 2000 to 2010 and come from commercial broker databases for the office and the retail sectors (see [Appendix](#)). We have information on most of the main real estate market

¹ Amsterdam, Barcelona, Berlin, Brussels, Budapest, Frankfurt, Hamburg, Istanbul, London, Madrid, Milan, Moscow, Munich, Paris, Prague, Rome, Stockholm, Vienna and Warsaw.

indicators, including data on stock, real rents and yields for offices and retail premises, except for occupancy rates. The data on real rents are deflated using annual inflation figures (base year: 2000).

2.3.2 Real Estate Market Institution Variables

Real estate market institution variables relate to the ‘rules of the game’ with the main moderators summarizing the formal and informal rules, property rights and local governance of land-use planning and development. These variables are used to control for time-invariant institutional differences between the metropolitan commercial real estate markets. First, the moderators on formal and informal rules include information on governance that reflect accountability, government effectiveness, regulatory quality and control of corruption in everyday business. These were obtained from the World Bank’s Worldwide Governance Indicator database.² Second, information on property rights and their transfer include transfer taxes, legal costs and agents’ fees. These measures are used to control for differences in market transparency between real estate markets. Third, we considered land-use institutions within the European metropolitan areas. For this, we used the *Berkeley Land Use Regulatory Index* proposed by Quigley et al. (2009) to characterize land-use regulations for commercial real estate development. This index includes measures of political involvement, reviews required with and without zoning changes and development restrictions such as development caps, density restrictions, open space requirements and compulsory inclusions. The more the restrictions and involvement of local government in land-use planning and development, the higher the regulatory index. We asked a group of experts in each of the European metropolitan areas to complete a survey for both office and retail real estate development.

2.3.3 Economic and Financial Control Variables

Economic and financial control variables are used to summarize cross-country differences between real estate markets. We have country-level GDPs (in constant US\$ppp), investment sentiments (Economic Sentiment index), inflation and long-term interest rates. These variables reflect the market fundamentals that can vary over time and between metropolitan real estate markets and are derived from OECD and ECB databases.³ These macroeconomic variables show high correlations, and we therefore use GDP only in the empirical analysis.

² See info.worldbank.org/governance/wgi/index.asp.

³ See stats.oecd.org/ and ecb.int/stats/.

2.3.4 *Descriptive Statistics*

We characterize the European metropolitan real estate markets based on the distributions of yields and of rents as this appears to be the most illuminating approach in differentiating between real estate markets. Figure 2.1 maps yields (the upper panel) and rents (lower panel) for offices and retail premises for 2010 by metropolitan area.

Analyzing the yield and rent distribution, three groups, or clusters, of real estate markets appear. At one end one observes global cities with emerging real estate markets such as Istanbul and Moscow. These markets are characterized by low levels of commercial real estate stock per capita, low rents and high yields. At the other extreme, one observes the mature markets which include most of the metropolitan areas in Europe including the very international cities of London and Paris. These real estate markets have the largest stocks of commercial real estate, high rents and the lowest capitalization rates or yield. Between these two extremes are the developing markets of Budapest, Prague and Warsaw.

To further examine the nature of the real estate markets, we map the market rent (Fig. 2.2) and yield (Fig. 2.3) across metropolitan areas over time for office and retail markets. The rent and yield structures reveal some remarkable differences among European real estate markets over 2000–2010. First, one observes a difference between office and retail markets. Office markets seem to have been hit harder by the GFC than retail markets. Unlike retail rents, office rents fell after 2008 (Fig. 2.2). Also, yields from offices are typically higher than retail yields (except for Moscow and Warsaw). Second, one observes large differences over time between metropolitan markets. For example, Vienna's office market rents saw an upward lift in the mid-2000s that can be attributed to the 2006 EU enlargement (see Chap. 12). This made Vienna's real estate market rather robust when the GFC struck in terms of both rents (Fig. 2.2) and yields (Fig. 2.3). German office rents (Fig. 2.2) and yields (Fig. 2.3) were relatively flat over this period. This can be related to restrictive bank lending conditions for new developments in this period with long-term rental contracts being a prerequisite for obtaining development finance. This resulted in new construction being limited (see Chap. 8). This trend can also be clearly observed when considering real estate development as shown in Fig. 2.4 which illustrates the change in stock over the decade relative to the stock of 2000. From Fig. 2.4 one can see that development rates in German metropolitan areas were amongst the lowest. Spain shows the highest development rates within the mature real estate markets. This can be related to the real estate and construction-driven economy of Spain (see Bielsa and Duarte 2011). Developing markets and particularly the emerging markets of Istanbul and Moscow also show high development rates. In Moscow, new developments in the period 2000–2010 account for an average annual development rate of 20 % for offices and 50 % in retail space.

European metropolitan real estate markets also differ in their governance structures. The governance indicator used here summarizes the degree of

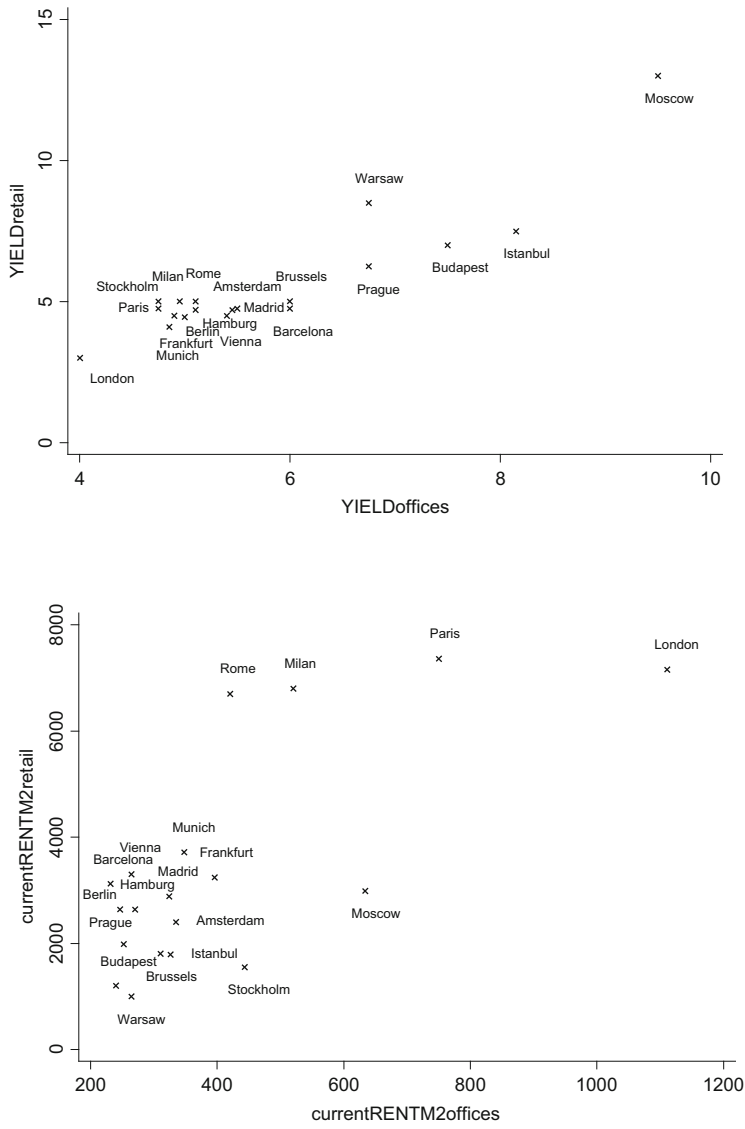


Fig. 2.1 Yield (*upper panel*) and current rent per € per m² (*lower panel*) for offices and retail premises by MSA, 2010 (*Source*: authors' calculations)

accountability,⁴ the political stability and the control of corruption in daily business. These three aspects are shown in Fig. 2.5.

⁴The WB Accountability index is highly correlated (−0.90) with the JLL Transparency Index (JLL 2008).



Fig. 2.2 Time series of rents in € per m² (offices and retail) by metropolitan area, 2000–2010 (Source: authors' calculations)

The scatter plots in Fig. 2.5 highlight the three clusters of emerging, developing and mature metropolitan real estate markets. The upper panel maps accountability to rules used to control corruption, while the lower panel maps accountability to political stability. Emerging markets, such as Istanbul and Moscow, have low levels of accountability, limited rules to fight corruption and limited stability and weak informal rules. Mature markets on the other hand have strong informal rules with high levels of accountability, rules to prevent and fight against corruption and a high degree of political stability. The institutional structure of developing markets, in these terms, are much closer to mature markets than to emerging markets.

The European metropolitan real estate markets also differ in terms of pecuniary transaction costs. Figure 2.6 show the differences in legal fees, VAT, notary fees, transfer tax, corporate tax and agent fees across the studied metropolitan markets. First, we observe that fees and taxes, although varying among the European metropolitan markets, with the exception of transfer tax do not show a clear association with accountability. Second, the figure highlights a positive association between fees and taxes, a negative association between the agent fee and the legal fee and a positive association between the agent and notary fees. Third, we see that there appears to be no clear association between the pecuniary transaction costs and the degree of accountability.

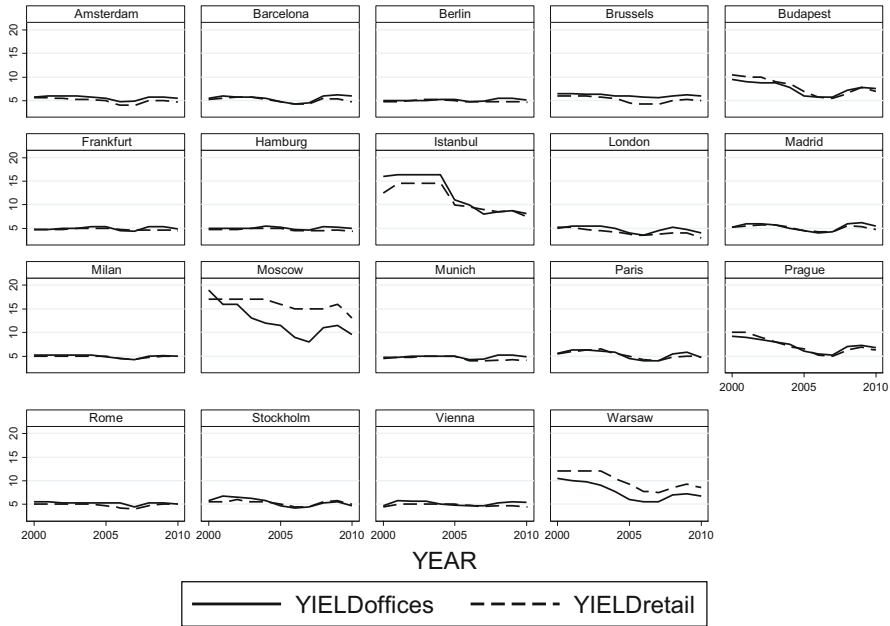


Fig. 2.3 Time series for yields (offices and retail) by metropolitan area, 2000–2010 (*Source: authors' calculations*)

Figure 2.7 reflects the results from the land-use regulatory survey. One can see a high political involvement in land use and real estate development in Vienna and a low involvement in Amsterdam. From Fig. 2.7 one sees that differences in the local governance of land use show no clear correlation with the more general institutional accountability classification. The perceived political influence of real estate agents in real estate development thus has no clear relationship with the degree of government accountability.

2.4 Empirical Analysis

2.4.1 Empirical Model

We analyse the impact of institutional structure on rents of both office and retail premises. The rationale behind this follows from the stock-flow model, with formal and informal institutions, property rights framework and local governance of land-use planning and development all affecting supply responses to demand shocks. The institutional structure is thus revealed through supply responses and reflected in

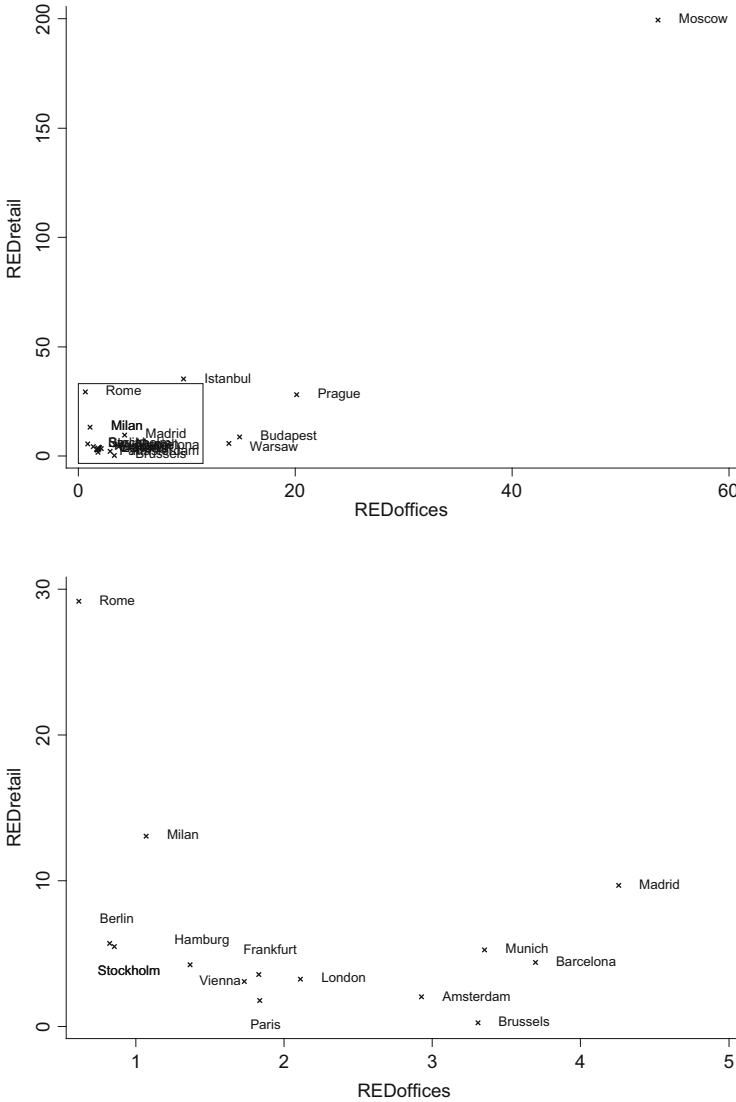


Fig. 2.4 Average annual real estate development rates (offices and retail) by metropolitan area, 2000–2010. The *lower corner* of the *upper panel* is expanded in the *lower panel* (Source: authors' calculations)

market rents. We use a dynamic model approach to allow for time or serial dependency in rental values over time. The proposed model enables us to determine the effects on rents of differences in institutions and land-use regulations. As such, the dynamic adjustment of rents in metropolitan area $i = 1 \dots I$ at time $t = 1, \dots, T$ is modelled as a first-order autoregressive distributed lag (ADL) model represented as:

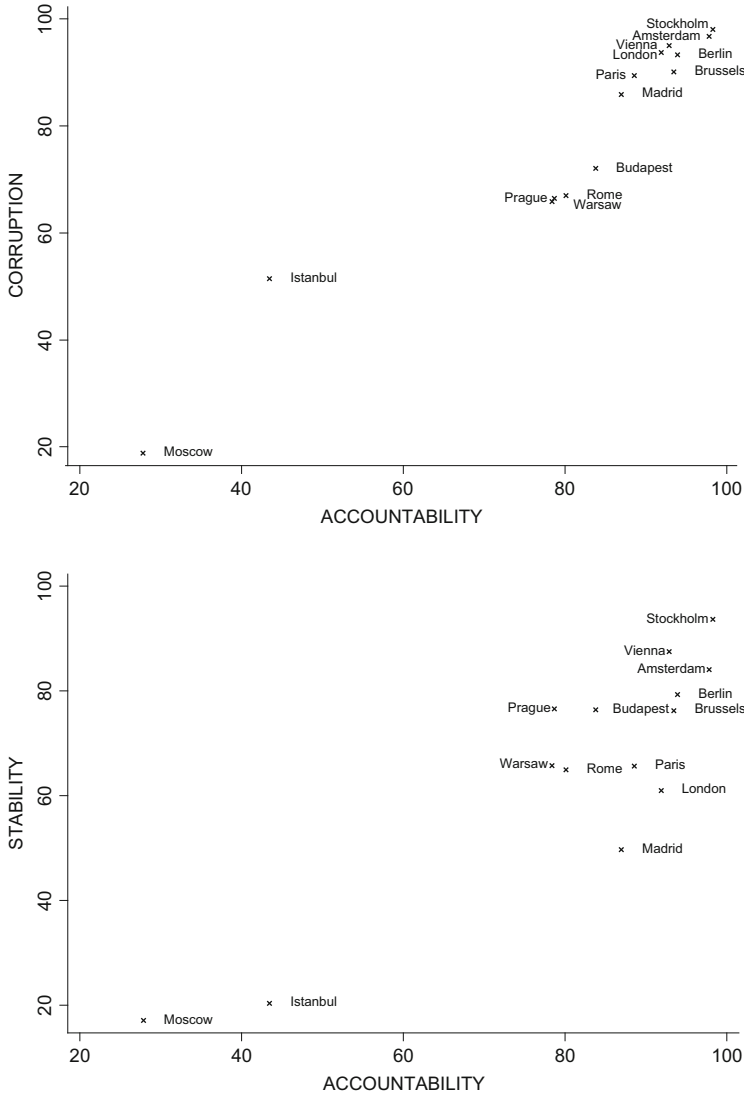


Fig. 2.5 Scatter plots of the World Bank Index for control of corruption (*upper panel*) and stability (*lower panel*)—as measures of the institutional context—against accountability (*Source*: authors' calculations)

$$RENTM2_{it} = \lambda_1 RENTM2_{i,t-1} + \beta_1 STOCK_{it-1} + \beta_2 X_{it} + u_i + \varepsilon_{it} \quad (2.1)$$

where λ_1 is the autoregressive parameter, β_k parameters of the stock and of the market indicators X that summarize the state of the economy, and ε_{it} the error term. The metropolitan-specific fixed effects are represented by u_i . These fixed effects

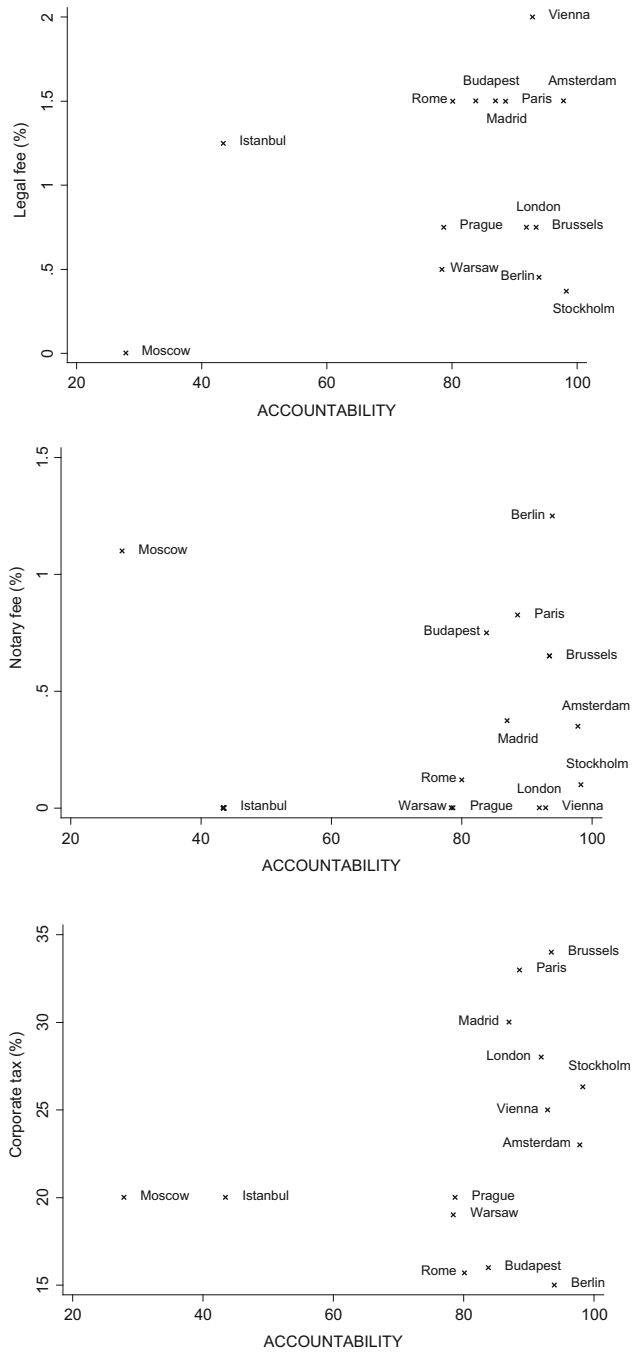


Fig. 2.6 (continued)

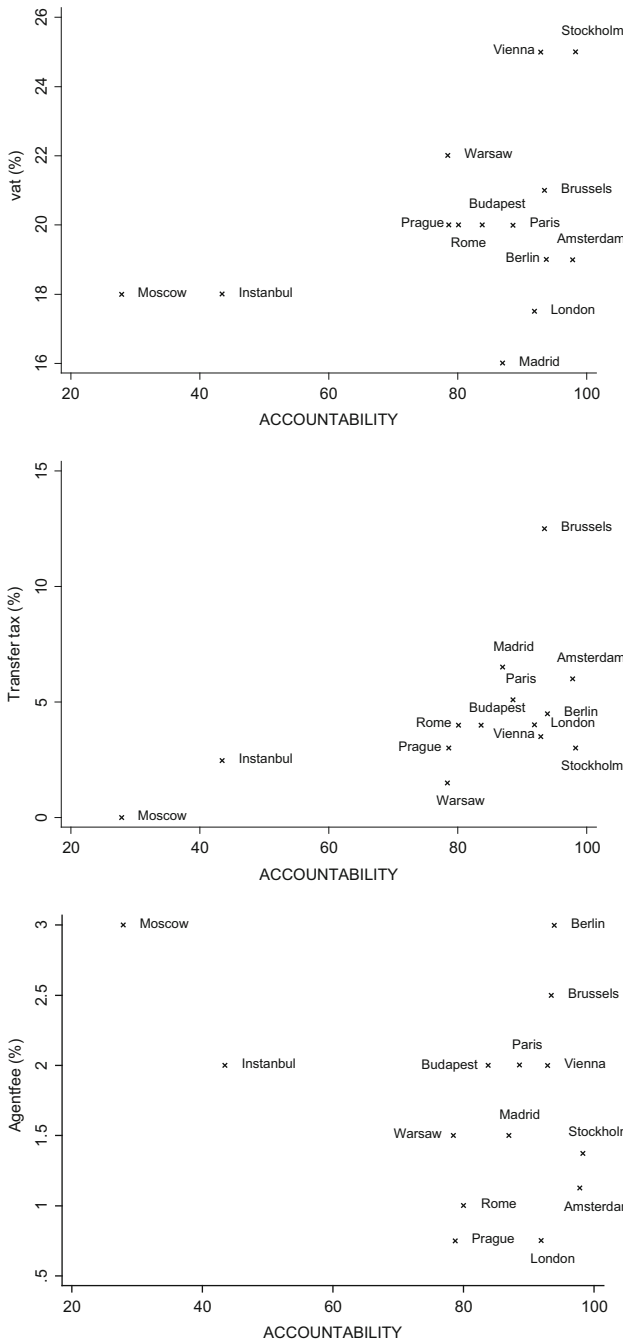


Fig. 2.6 Legal fee, notary fee and corporate tax against accountability. Value added tax (VAT), transfer tax and agent fee against accountability (*Source:* authors' calculations)

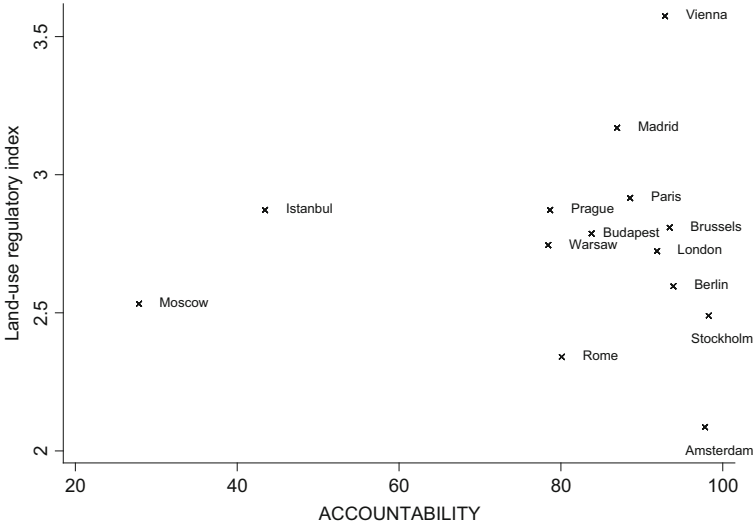


Fig. 2.7 Land-use regulatory index against accountability (*Source:* authors' calculations)

correct for any unobserved metropolitan-specific differences that affect market rents. The autoregressive parameter λ_1 indicates the proportion in rents maintained at time t with $\lambda_1 - 1$ the speed of return, with the inequality $|\lambda_1| < 1$ assumed to ensure stability.

The lagged dependent variable in Eq. (2.1) is, by construction, correlated with the fixed effects, and this renders the standard least squares dummy variable method (LSDV) inconsistent (see Davidson and MacKinnon 1993; Baltagi 1995). We therefore estimate the model using corrected least squares dummy variable estimation (Kiviet 1995), an approach which performs well with balanced panel series (Judson and Owen 1999).

A further analysis of the institutions is based on a cross-sectional analysis of the metropolitans' fixed effects u_i from the dynamic panel model of Eq. (2.1). These effects will be recovered in a similar way to in the static fixed effects panel models (see Wooldridge 2002) and, given the small number of cross-sections, used in a narrative approach. We conjecture that these effects are determined by time-invariant real estate market institutions such as government accountability, control of corruption and the land-use regulatory context in a metropolitan area.

2.4.2 Estimation Results

We first address the time series properties of the variables before moving on to estimate model (2.1). In particular, we tested whether market rent and stock are integrated series of the same order. We applied the augmented Dickey-Fuller

Table 2.3 Results of unit root panel test

Panel test ^a	RENTM2		STOCK		
	Office	Retail	Office	Retail	GDP
Fisher test	115	44	76	13	21
p-Value	0.00	0.23	0.00	0.99	0.00
Ha test	5	20	23	24	22
p-Value	0.00	0.00	0.00	0.00	0.00

Source: Authors’ calculations
^aFisher: Augmented Dickey Fuller panel test. H₀: all series are non-stationary. H1: at least one series is stationary. Ha: Hadri (2000) test. H₀: series are stationary. H1: series are non-stationary

(ADF) unit root test and, given the short time period, experimented with one and two lags to test the null hypothesis of a unit root. Results are given in Table 2.3.

This analysis indicates that the market rent series in levels are non-stationary. The Fisher panel test for offices does however reject the hypothesis that all series are non-stationary. The lack of power in short series is well known and has been observed earlier (see, among others, Hendershott et al. 2002). We therefore also used the Hadri test that allows for heterogeneous series and did find clear evidence that both office and retail market rent series are non-stationary. The Hadri test also indicates non-stationary series for stock and GDP in levels.

We continued our analysis by assessing whether the market rent and stock series are co-integrated. We performed a panel co-integration test with a parsimonious specification in terms of the number of lags and leads given the data’s short time series. The t-test-based co-integration test developed by Westlund (2007) rejects the null hypothesis of no co-integration for both the office and retail sectors. However, the normalized co-integration tests did not reject the null hypotheses and Banerjee et al. (1998) indicate that this relates to the low power of the normalized tests. On the basis of the above results, we considered it valid to estimate the ADL model of Eq. (2.1).

The results for the autoregressive parameters of our rent series are given in Table 2.4 for both office and retail premises. The estimates for the coefficient of the lagged dependent variable of market rent satisfy the inequality specified above which suggests stability in the autoregressive structure of the data.

The results suggest interesting differences between office and retail markets. Overall, office rents show faster rent correction than do retail rents. For mature markets, the results indicate a rent correction of -0.32 ($0.68-1$) for office rents and of -0.13 ($0.87-1$) for retail rents. Similar conclusions have been drawn for UK commercial rents (Hendershott et al. 2002) and the differences were related to differences in rental revisions and contracts (Tiwari and White 2010) and stricter retail planning regulations (Barkham 2012). Anecdotal evidence supports these findings. This is also supported by our survey on land-use restrictions which indicated that the supply of land, development requirements relating to infrastructure and parking, and the duration of the entitlement process are all generally speaking more important (i.e. restrictive) in retail developments than with office developments. In developing markets, the calculated rent corrections for

Table 2.4 Estimation results for the autoregressive parameter λ_1 by market, corrected LSDV estimates

Market ^a	Office			Retail		
	Parameter		s.e.	Parameter		s.e.
Mature	0.68	***	0.07	0.87	***	0.05
Developing	0.71	***	0.19	0.79	**	0.22
Emerging	0.55	***	0.14	0.53	***	0.14
Pooled	0.62	***	0.06	0.73	***	0.06

Source: Authors' calculations

^aMature markets include Amsterdam, Barcelona, Berlin, Brussels, Frankfurt, Hamburg, London, Madrid, Milan, Munich, Paris, Rome, Stockholm and Vienna. Developing markets include Budapest, Prague and Warsaw. Emerging markets include Istanbul and Moscow. The model specification is $\log \text{RENTM2}_{it} = \lambda_1 \log \text{RENTM2}_{it} + u_i + e_{it}$

*, ** and *** denote significance at 10 %, 5 % and 1 % levels respectively

Table 2.5 Estimation results for the pooled dynamic panel model, corrected LSDV estimates

	Offices			Retail		
	Parameter		s.e.	Parameter		s.e.
log RENTM2 it						
log RENTM2 it-1	0.61	***	0.06	0.69	***	0.06
log STOCK it-1	-0.17	*	0.10	-0.06		0.04
log GDP it-1	0.39	*	0.20	0.46	**	0.15

Source: Authors' calculations

*, ** and *** denote significance at 10 %, 5 % and 1 %

NT = 190. R^2 values 0.42 and 0.56 for offices and retail, respectively

commercial rents are, at -0.29 ($0.71-1$) for offices and -0.21 ($0.79-1$) for retail premises. Emerging markets show even higher rent corrections in both office (-0.45) and retail rents (-0.47). This is in line with the much higher real estate development rates in these markets.

Besides these similarities, there are also differences linked to the degree of maturity. The greatest differences are in retail markets where the autoregressive parameter is larger in developing markets than in mature markets for retail rents, whereas the opposite is the case with office rents. Further, retail rent correction in emerging markets exceeds office rent correction. This could reflect our earlier finding that retail development is greater than office development in the emerging and developing markets.

To further analyse cross-sectional differences in commercial real estate markets, we estimated a pooled model that include indicators for both the real estate stock and the state of the economy. The corresponding results are given in Table 2.5 for both office and retail markets.

The model results indicate the expected relationship in that a growing stock will lower market rents. This is true for both office and retail sectors. As a result, the flat rent series for German metropolitan areas can be readily explained by the low rate of real estate development revealed in our descriptive statistics. Further, the results

indicate that both the state of the economy and financial markets affect commercial real estate markets. An increase in demand will raise market rents, as indicated by the positive effect of GDP on real market rent. We also find interesting differences between commercial office and retail real estate markets. The results indicate greater rent elasticity of stock in the office market than in the retail market.

2.4.3 *Institutional and Land-Use Regulatory Context*

In further investigating institutional and land-use regulatory differences, and their impact on the rent structure, we analyzed the fixed effect u_i , the metropolitan-specific constant, from the dynamic panel model of Eq. (2.1). Its interplay with accountability, control of corruption and the land-use regulatory context are summarized in Fig. 2.8a, b for the office and retail sectors respectively.

The upper panels in Fig. 2.8 illustrate the relationship between the institutional context of accountability and the fixed effect of market rent. One can observe from the upper panels that higher levels of accountability are associated with higher mean market rents. As can be seen from the middle panels of Fig. 2.8, a similar relationship exists for control of corruption. As such, institutional differences in accountability and in control of corruption are reflected in real estate market rents. The lower panels of Fig. 2.8 show the land-use regulatory index plotted against fixed effect. Here, there is no obvious relationship between land-use regulation and mean market rents. This suggests that a complex interplay may be at work between land-use regulation and commercial real estate markets that cannot be captured in a single land-use regulatory index.

A further decomposition of the land-use regulatory index reveals a pattern with more restrictive land-use policies in metropolitan areas with high fixed effects (as is Stockholm, Brussels, Vienna and London) relative to metropolitan areas with low fixed effects (as is Istanbul). For office developments, metropolitan areas such as Brussels, Stockholm and Vienna have, in contrast to Istanbul, local land-use policies based on:

- large involvement of stakeholders;
- limited supply of developable land;
- density restrictions;
- requirements in terms of infrastructure, parking and the environment;
- long period of entitlement.

These land-use policies essentially regulate new construction and can be related to the long-run adjustment process in real estate markets as described by Keogh and D’Arcy (1994).

For the retail sector, local land-use policies may also be related to the existence of a historical district with only limited possibilities for new retail development. This particularly applies to Budapest, Prague and Vienna in our sample. Such history-related explanations have also been noted by Keogh and D’Arcy (1994).

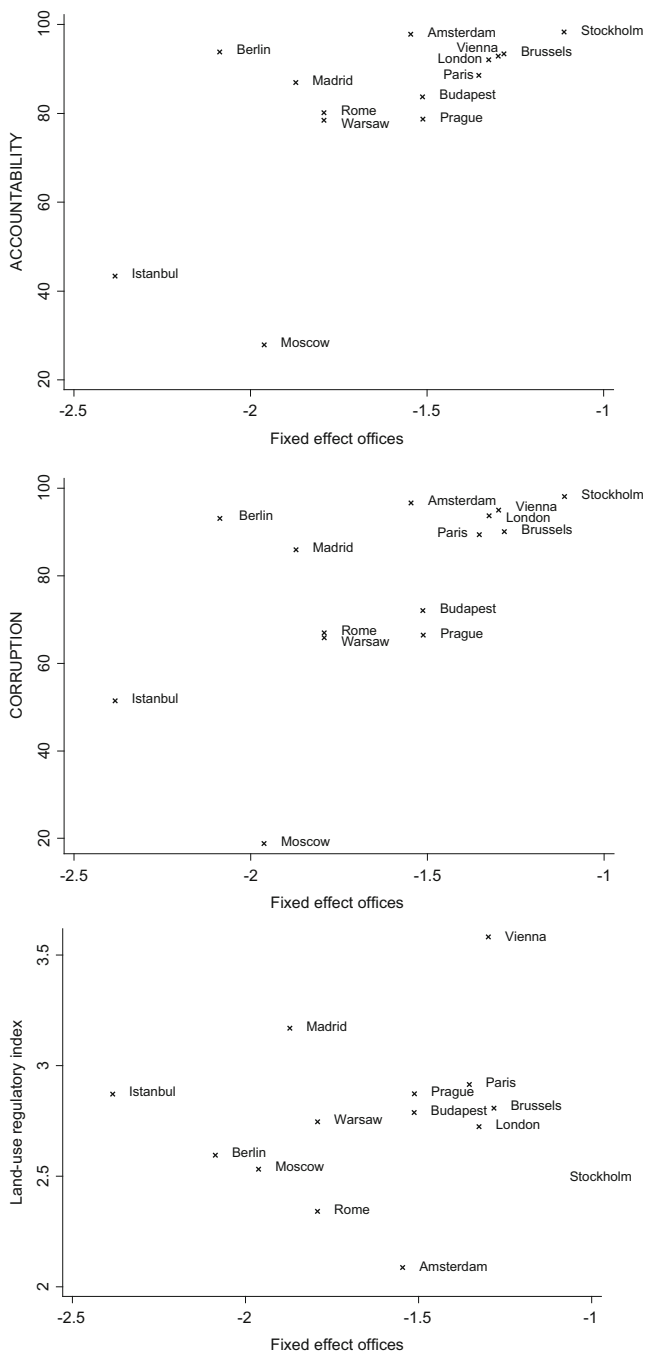


Fig. 2.8 (continued)

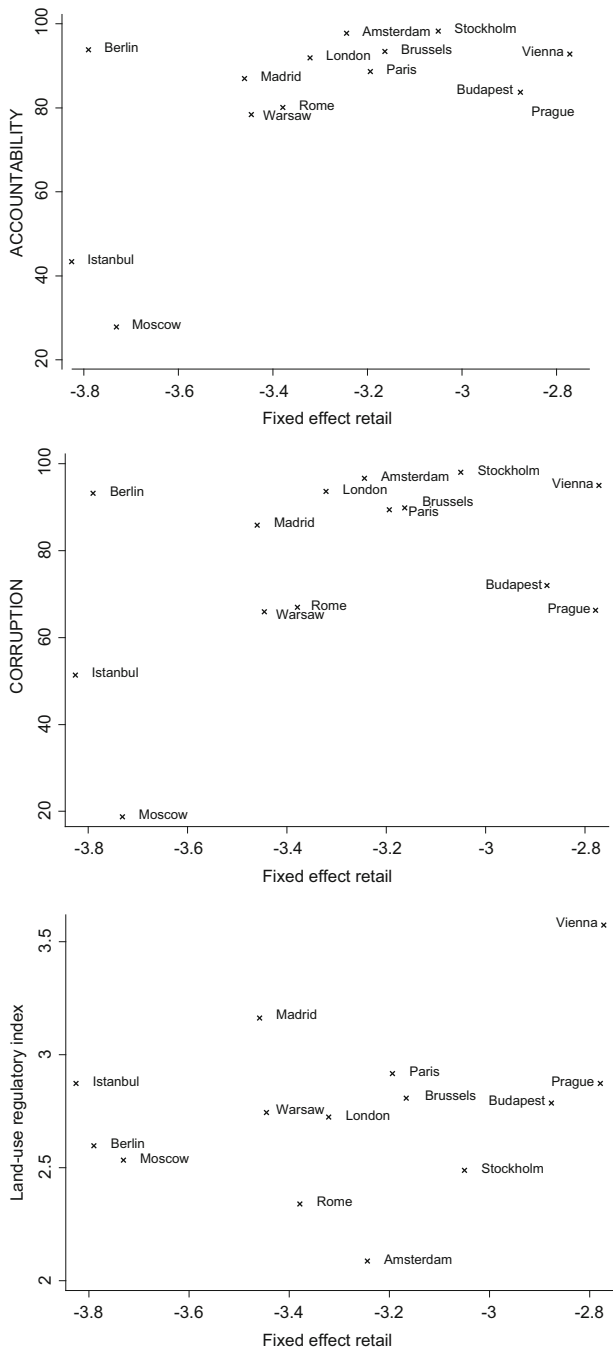


Fig. 2.8 (a) Accountability (*upper*), corruption (*middle*) and land-use regulatory indices (*lower panel*) against fixed effect for the office sector (*Source*: authors' calculations). (b) Accountability (*upper*), corruption (*middle*) and land-use regulatory indices (*lower panel*) against fixed effect for the retail sector (*Source*: authors' calculations)

2.5 Overview of This Book

Having explained the background of this monograph by providing a basic understanding of the mechanisms linking commercial real estate dynamics and institutions, we now provide an overview of the following 10 chapters that deal with individual metropolitan areas and focus on the turmoil during the period of 2000–2010.

2.5.1 *Macroeconomics and Real Estate Markets*

In Chap. 3, Richard Barkham, Maurizio Grilli and Cynthia Parpa describe the interrelationship between commercial real estate and global financial markets. London's real estate market is primarily driven by its financial markets, with profitability and remuneration in many of London's financial sector's companies directly linked to the performance of the stock market. As such, the development of the real estate market is closely linked to the global economy and only somewhat regulated by national and local planning policies. The authors give attention to the size and dynamics of London's commercial real estate markets, followed by the major market institutions with special attention given to planning regulation and taxation.

In Chap. 4, Paloma Taltavull-De La Paz and Federico Pablo Marti continue the discussion on the interrelationship between commercial real estate and the macroeconomy in their focus on building activities in Spain. The authors describe how retail and office markets are organized in two distinct regions, the relationship with the economic structure and with demographics, and their relevance within the Spanish economy. The authors describe the monocentric (Madrid) and polycentric (Barcelona) metropolitan structures of the real estate market. Further, a statistical analysis is provided of the stock and of new construction dynamics in both markets.

2.5.2 *Vacancies in Real Estate Markets*

In Chap. 5, Henk Brouwer addresses the role of land policy in vacant commercial real estate office properties. The author highlights the considerable increase in office space in the Amsterdam region and the role of land policy in this. The author observes that, in Amsterdam, a permanent tendency to oversupply exists and that this is related to the institutional structure of the market. The economic, financial and spatial policies pursued by municipalities in the Amsterdam region favour the construction of new offices, with investors willing to purchase newly built offices. The author indicates that new developments give rise to a rapid filtering down process in the existing stock, resulting in two distinct market segments of new and of older offices, and that the mechanism that usually restores equilibrium within a single market is no longer effective.

In Chap. 6, Marc DeCeuster and Robert Van Straelen further explore the role of vacancies in real estate commercial markets. These authors describe the dynamics within the Belgian commercial real estate markets and relate the dynamics in vacancies to market fundamentals as well as to the institutions. They highlight the role of the vacancy rate in matching demand to supply and provide an estimate of the “natural” vacancy rate in Brussels.

2.5.3 Urban Structure and Real Estate Markets

In Chap. 7, Aron Horvath and Gábor Soóki-Tóth describe the urban structure of real estate markets in Budapest. Here, the geographical characteristics—the hilly Buda side and the flat Pest side—have affected real estate developments. Budapest has experienced significant real estate development and construction activities. The absence of modern retail spaces in the 1990s provided large-scale opportunities for developers, and the supply of modern retail space has grown steadily over the past decade. The chapter describes the conversion process to the widespread construction of hypermarkets. Turning to the office sector, the authors describe the formation of sub-centres within the Budapest office market and the associated changes in the urban hierarchy.

In Chap. 8, Andreas Schulten and Ulrich Denk similarly address the urban structure by focusing on the polycentric structure of the German commercial real estate market. The authors pay specific attention to the stable profile of the German office market, summarized as low-risk and low-yield, but with long-term investment opportunities. The authors offer detailed insights into both office and retail real estate in the major German commercial real estate markets, analysing the distinct rental gradients for offices and for retail premises in the main metropolitan areas.

In Chap. 9, Maciej Turala and Dorota Sikora-Fernandez address the issue of urban renewal in Warsaw’s commercial real estate markets. The authors provide an overview of the general context for urban renewal activities in this real estate market and this enables a better understanding of various determinants of markets in transition. Three specific issues are described. First, the general economic conditions that underpin development trends in Warsaw. Second, the authors discuss specific institutions and the real estate development process, the planning regulations and the financial determinants behind development activities. Third, a description of urban renewal activities in Warsaw is provided.

2.5.4 Geopolitics and Real Estate Markets

In Chap. 10, Thomas Drtina and Jan Kratochvil look at the geopolitical changes and the remarkable increase in the commercial real estate market in Prague during the

last decade. The authors describe the supply dynamics of the office and retail markets in Prague, thus providing insight into the commercial real estate development boom in the Czech capital. This identifies the expansion process, the phases through which it passed and in which city districts it was concentrated. These activities changed the urban landscape. The chapter as such addresses the urban hierarchy and considers spatial aspects of office and retail developments.

In Chap. 11, Gunther Maier, Phillip Holzmann and Edwin Baroian continue the discussion on the impact of geopolitical change on commercial real estate markets. With the transformation of Central and Eastern Europe (CEE) and the integration of these countries and of Austria into the European Union (EU), Vienna has moved from being somewhat on the periphery to a much more central position in its market. This positive long-term development has opened up opportunities for the city and for foreign investors. These developments have had many implications for the city and especially for its commercial real estate market which are discussed in this chapter. The authors further characterize the institutional framework of the commercial real estate market in Vienna.

In Chap. 12, Herman Kok describes the changing urban hierarchy in the emerging market of Istanbul. Istanbul has been among Europe's most dynamic cities in terms of urban development and the commercial real estate market since 2000. The city witnessed a rapid geographical expansion with new infrastructure corridors being built. As such, locations and the location hierarchy in the city have seen rapid dynamic changes. The main CBD office area has moved a couple of times and a series of new sub-CBDs have emerged at strategic locations created by new infrastructure in the last decade. Modern shopping centre development, which started in 1988, has been highly dynamic, especially in the last decade. Although top high-street locations have been relatively stable, the hierarchy of shopping centre locations has changed considerably due to evolving locations, scales and concepts. Given the economic, political and demographic developments forecast, Istanbul's commercial real estate market is likely to be among the most dynamic in Europe.

2.6 Conclusions

In this chapter, we have considered the interplay between institutions and commercial real estate market dynamics across European metropolitan areas. The GFC has once again reminded us that real estate markets are affected by global shocks and are embedded in, and influenced by, local institutions.

The data analysed cover office and retail sectors in 19 major European commercial markets in the period from 2000 to 2010. Information on cross-sectional institutional differences comes from a survey of the land-use regulatory contexts within European Metropolitan Areas as well as from public sources. The dynamic adjustment of commercial real estate rents is modelled using an autoregressive,

distributed-lag panel model. We also extracted the fixed effects to determine the influence of institutions on market rents.

The estimation results suggest that market rent dynamics are related to global and local developments in demand and supply. We were able to show significant differences among metropolitan areas even after controlling for global developments. These differences among markets can be related to differences in local market fundamentals such as local economic activity and developments in local stock. The further analysis of time-invariant institutions rested on a cross-sectional analysis of the fixed effects. Here, the results indicate a strong linkage with land-use regulations. Markets that have a large involvement of stakeholders, limited supply of developable land, density restrictions, and long period of entitlement seem to have higher market rents.

Our results have important implications for research, for public policy and for real estate practice. First, the results indicate an important need for a more in-depth approach towards institutions in real estate. Most studies in real estate finance and economics fail to explain the cross-sectional differences among real estate markets. This study should only be seen as a first step towards a better understanding. Second, these initial results reveal that commercial real estate markets are much more interwoven with public policy than is typically thought. This suggests that policy proposals aiming for a recovery should also address the implications of institutional reform for commercial real estate markets. Third, institutions play a fundamental role in real estate practice. This is not only true for real estate development but also in real estate asset management. This underpins this publication's aim of improving understanding of institutions in European metropolitan commercial real estate markets.

Appendix

Variable	Definition	Source
Yield offices	Yield prime office	JonesLangLaSalle
Yield retail	Yield prime high street retail	Cushman&Wakefield
RENTM2 offices	Prime office rent per m ² (in € per year)	JonesLangLaSalle
RENTM2 retail	High street retail rent per m ² (in € per year)	Cushman&Wakefield
Stock offices	Stock prime offices (in 1,000 m ²)	Cushman&Wakefield
Stock retail	Stock retail shopping centres (in 1,000 m ²)	Cushman&Wakefield
Accountability	Government accountability	Worldbank
Corruption	Control of corruption	Worldbank
Stability	Political stability	Worldbank
GDP	GDP levels	OECD

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