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Korthals Altes, Willem K.

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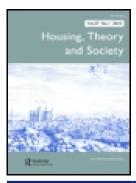
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Willem K. Korthals Altes

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ARTICLE

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Annington versus Deutsche Annington: Private Equity and Housing in the Anglo-Saxon and Rhenish Contexts

Willem K. Korthals Altes

OTB Research for the Built Environment, TU Delft, Delft, The Netherlands

ABSTRACT

Under the Rhenish model of capitalism the interests of other stakeholders than shareholders are essential to the interests of the firm. However, Rhenish institutions in Germany have been changing. In the housing sector, many organizations that promoted the provision of affordable housing are currently managed by private equity firms promoting shareholders' interests. This paper presents a dual case study on two housing providers: Annington in the UK, and Deutsche Annington in Germany which were owned by the same private equity investor. Terra Firma. The paper – based on this analysis of a single approach to the management of two comparable firms in the Rhenish and Anglo-Saxon contexts - considers the question of whether the Rhenish model is being swept away by the shareholders revolution. The paper concludes that this is not the case and that certain differences between these cases reflect the continuing differences between the Anglo-Saxon and Rhenish models of capitalism.

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Introduction

It is possible that the differences between the Anglo-Saxon and Rhenish models of capitalism may have an impact on the way that housing systems work. Under the Anglo-Saxon model, shareholders are the primary interested party in running a company, while under the Rhenish model, the interests of all stakeholders involved play a role. This extends to the way in which housing and land are managed. Is this management based primarily on the interest of landlords and landowners, or are the interests of other stakeholders, like tenants, also taken into account? Recently, many have questioned whether the Rhenish model can continue to be maintained under current economic conditions, which tend to favour the Anglo-Saxon mode of enterprise governance (Bode 2003; Wigger and Nölke 2007; Scharpf 2010; Palea 2015). Not only is there external pressure from the integration of economic markets, but also internally there is "business mobilization for neoliberal reform" (Fleckenstein and Lee 2017, 166) which may bring an end to key characteristic features: the "erosion of the post-war compromise" (175). It is also true that in the scaling-back of government funding, the search for "private equity investment" "is a quest for the 'Holy Grail' of contemporary social housing policy" (Blessing and Gilmour 2011, 453). Private equity investors are typically interested in pleasing their shareholders rather than the wider community of stakeholders associated with a particular project (Goergen, O'Sullivan, and Wood 2014). This means that the takeover of an affordable housing provider by a private equity firm represents a demanding test of the strength of an institutional system that supports the position of stakeholders. The sale of large stocks of housing previously held by public or social landlords on the free market, and especially to private equity, may place housing systems under strain.

This paper contributes to this debate through a dual case study of two large landlords: Annington UK and Deutsche Annington. While these landlords were previously owned by organizations that were guided by the public interest, their housing stock is now in the hands of the same private equity firm, Terra Firma, which promotes itself as focusing on transforming businesses to create value. The portfolio of Terra Firma is dynamic and has included companies such as AWAS (Worldwide aircraft leasing), CPC (Australian cattle farming), Everpower (US wind power), Four Seasons Health Care (UK), Odeon (Pan-European cinema group), Phoenix (Irish natural gas distribution and supply), Rete Rinnovabile (Italian solar energy), Tank & Rast (German Autobahn services) and Wyevale garden centres (UK). Its chairman has formulated the following vision:

"Our added value has always been to take poorly performing businesses or assets, often in unloved or misunderstood sectors, and improve or reposition them." (Hands 2015, a8)

Both organizations primarily hold affordable rental housing of a few decades old, which under this approach could be considered as exactly such an economically underperforming asset. There may be a rent gap - a "disparity between the potential ground rent level and the actual ground rent capitalized under the present land use" (Smith 1979, 545), and improving and repositioning these assets may involve processes of large-scale gentrification. After all, as Smith has shown - based primarily on his American experience, but also claiming relevance for Western Europe – there is limited trust in the limits that state powers place "on the landowner's control of land", which "are little more than cosmetic" (547). According to the Varieties of Capitalism thesis (Hall and Soskice 2001; Nölke 2016), differences between the relational structures by which firms are managed impact on economic organization. Therefore, it is relevant to study what happens to an asset in the Rhenish context and to compare this to what happens in the Anglo-Saxon context, in order to understand whether the German model of a social market economy can withstand certain pressures that could undermine this mode of governance. The social market economy is based on the idea that the "...market is incapable of integrating society as a whole and of producing common attitudes and value norms without which a society cannot exist" (Müller-Armack 1978, 327). This involves the development of a "life style" that combines "freedom and social security" (329). The social market economy is seen as a response to two erroneous solutions: on the one hand, the liberal error of "assuming that the market mechanism supplies morally and socially justifiable solutions" (329), and, on the other hand, the error of the "antimarket, central-control system" that claims "their ability to produce a moral order by collective interference" (329). In doing so, it provides a context in which relational interests, other than those of shareholders, play a role in the economic behaviour of firms.

The UK and Germany provide the archetypes of the Anglo-Saxon and Rhenish models (see also Hall and Soskice 2001, 16; Siepel and Nightingale 2014). In Germany, social support services, such as affordable housing, are often provided through intermediate organizations that "are situated between civil society and the government sector" (Bode 2003, 351). These intermediate organizations have been under pressure from growing marketization, resulting in a "creeping disorganization of the social sector" (359), but there are also countervailing forces at work which aim to "uphold the normative legacy of the German social model" (360). Affordable housing is one of the social services that have been provided through intermediary organizations in Germany. These organizations owned housing because it was considered to be in their relational interests. The railways, for example, owned housing for railway workers. However, many of these organizations are no longer intermediate and have fallen into the hands of private equity firms. This development can be seen as part of the shareholders revolution.

The question that we wish to explore is whether the transfer of these intermediate organizations to the market sector, through private equity, has resulted in any weakening of the Rhenish model, which can be seen as a specific institutional context. Institutions can be defined as "sets of practices and rules that regulate a particular field of human action and interaction" (Ruonavaara 2005, 214). The double case study of Annington and Deutsche Annington was chosen primarily to answer two questions. (1) Can we still see the differences in relation to different economic models in a context in which both companies are run by the same private equity firm? (2) How do the changes and challenges affect the way the Rhenish model functions? The primary interest is therefore in the development of the Rhenish model in its current context, and the UK case study functions more as a comparative case by which to study the German case study. If no differences between the case studies can be detected, this could be viewed as an indication that the Rhenish model has been swept away by the shareholders revolution through the private equity business model.

The following section outlines a comparison between the Rhenish and Anglo-Saxon models, and some challenges for the Rhenish model will be discussed and the private equity business model will be introduced. Subsequently, the two cases will be presented. The paper will conclude with a comparative discussion and conclusion.

The Rhenish model versus the Anglo-Saxon model and the private equity business model

Essentially, the difference between the Anglo-Saxon and Rhenish models is about how companies are run. In the Anglo-Saxon model, firms are instruments that work for their shareholders, who bear the residual risk of the firm (Fama and Jensen 1983). In the Rhenish model, such as in Germany, a company has

"···a distinct identity from that of its shareholders [···]. As such, it serves its own self-interest as a separate productive enterprise. Inevitably [...] this compels managers to take account of the various stakeholders of the firm: shareholders are simply one of these, to be placed alongside employees, creditors, suppliers and customers." (Pillay 2015, 88)

Therefore, a firm is not only a vehicle for private investment but can also be seen "in political terms" (Furubotn 1988, 174). In this paper, we focus on interests that relate to housing, that is, that of customers and the general interest of adequate housing provision.

Parallel to the level of the firm is the social-economic context. At this level, the Anglo-Saxon model is a building block of the liberal market economy, and the Rhenish model contributes to the social market economy, which focuses on long-term efficiency and multiple goals (Wigger and Nölke 2007). The manner in which companies are run, together with other aspects of the institutional set-up, such as the role of the state (Scharpf 2010) and the legal context (Wigger and Nölke 2007; Van der Veen and Korthals Altes 2009), plays a role in the way liberal market economies and social market economies are shaped.

In the German Rhenish context, a large role is traditionally played by block-holdings, that is, owners who hold a large share of the company for a long period (Fichtner 2015). Such owners are not primarily interested in short-term gains, but rather in long-term results based on relational assets, which involves aligning shareholder interests with the long-term interests of the firm. The value of a block-holding is based on holding the asset, which includes the value of long-term relationships between shareholders and the firm, and not on the exit price that shareholders may receive if they sell their position today (compare Palea 2015). Anglo-Saxon firms tend to have more dynamic ownership structures in which exit prices define the value of these "switchable assets" (Hall and Soskice 2001, 17). These differences in ownership structures have been mirrored by the accountancy rules that define the value of a firm's assets (Perry and Nölke 2006).

The value of assets, such as the rental dwellings owned by a landlord, are based on accountancy rules that define what an asset is and how it must be valued. This is a social process "of attributing financial value and rationales to a wide range of social practices" (Miller 1990, 317-318). Accountancy rules create realities by defining assets. Because the disciplinary discourse is that calculations must reflect realities, discourses of calculation "appear as sustained efforts to manage the paradoxical demands of creating realities without being creative" (Vollmer 2003, 372). Financial accounts are the "outcome of calculative practices" (Miller 2004, 188) - that is, they are based on a certain conceptualization of economic processes. Traditionally, there have been differences between accountancy practices in the Anglo-Saxon environment, where assets were valued based on an exit price, and those used in continental Europe, where assets have been valued based on historical costs (Perry and Nölke 2006). These differences in the definition of value reflected the differences between Anglo-Saxon and Rhenish models of capitalism (Perry and Nölke 2006).

Part of the European project is to bring an end to these differences. Since the Lisbon Treaty, financial accounting has been a competence of the European Union (Palea 2015). Palea sees a mismatch between the values enshrined in the Lisbon Treaty and the way in which it sets accountancy rules. The values of the Lisbon Treaty are clearly those of a "social market economy" (EU 2012, article 3), but its accountancy rules do not follow the principles of a social market economy, but those of a liberal market economy, corresponding to the Anglo-Saxon model (Palea 2015), which may provide a challenge to the Rhenish model. Fair value is increasingly defined as an "exit price" (7), that is to say: "the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date" (IFRS Foundation 2011, section 9). This implies that "the firm's intention to hold an asset is completely irrelevant" (Palea 2015, 7) to the valuation of its assets, and that, as a result, balance sheets "are driven by short-term market fluctuations which do not reflect their fundamentals" (7). Housing market prices can be volatile, with frequent price bubbles and crashes that do not reflect underlying fundamentals (Lind 2009). This means that the balance sheet of a company that rents houses may be dominated by the volatile real estate market, which defines the exit value of the company's activities, rather than by the intrinsic value of its properties and its ongoing

business of renting properties on the rental market. Moreover, future rental income from holding property is of no relevance to the valuation if it has no impact on the exit price. In this way, values are highly volatile and primarily of importance "to creditors and shareholders of companies that face likely liquidation rather than to stakeholders in going concerns" (Palea 2015, 7). It is this kind of short-termism that may have "disruptive effects on the Rhenish variety of capitalism" (10). It negatively "...impacts a broader socio-economic arrangement between workers, employers and other so-called 'stakeholders' which was built on the basis of more prudent accounting" (Perry and Nölke 2006, 570). Such a definition of value fits into an Anglo-Saxon model of the economy much better than it fits into a Rhenish model that emphasizes all stakeholder relationships. It therefore represents a challenge to this Rhenish model.

The shareholder revolution, which implies a reduction in the role of other stakeholders in the running of a company, is another challenge for the Rhenish model. The shareholder revolution has (according to Stockhammer 2004) been beneficial to shareholders, who tend to prefer profit over growth, but has resulted in a lower level of investment at the level of the firm. In many firms, there is a separation between ownership and control (Fama and Jensen 1983), that is, managers are salaried employees. The priorities of these managers may therefore be either to provide profits to shareholders or to take account of the other interests that serve the firm. Stockhammer (2004) indicates that this ambiguous position of managers means that their priorities are context dependent. In the context of shareholder capitalism, managers will prioritize profits over growth, which means that they will pay out higher dividends and invest less in the growth of firms. Non-financial businesses will invest more in financial assets and deprioritize the "accumulation of physical assets" (719).

The Rhenish model of capitalism – under which there is not only an orientation towards shareholders but also towards other stakeholders - may result in different patterns of growth versus profits in Germany. So, if a change in context occurs where managers prioritize profit over growth this may result in changes within the Rhenish model which can be described with the term financialisation, which, Epstein, in absence of a "common agreement about the definition of the term" has defined broadly as "...the increasing role of financial motives, financial markets, financial actors and financial institutions in the operation of the domestic and international economies" (Epstein 2005, 3). Financialization may manifest itself differently according to local circumstance and existing institutions in different varieties of capitalism (Davis and Kim 2015). Changes in the Rhenish model of capitalism may therefore have an impact on whether managers choose to invest either in growth, the accumulation of capital in physical assets, or the transfer of surpluses to shareholders or investment in financial products, that is, they may engage in a process of financialization, such as by an emerging importance of private equity finance.

Private equity broadly refers to capital outside the public stock exchange. Private equity in the narrow sense, as is used in this paper, refers to a business model (Clark 2009; Kaplan and Strömberg 2009; Andersson and Haslam 2012; Appelbaum, Batt, and Clark 2013; Clark 2013). The emergence of this business model has been predicted by Jensen (1989), who indicated that "the conventional twentieth-century model of corporate governance", that is, listed companies with tradable stocks, professional managers and a board dominated by appointed outsiders, is functioning well in a growing market in which managers get a wealth of good investment opportunities to choose from. However, it

"...is not suitable in industries where long-term growth is slow, where internally generated funds outstrip the opportunities to invest them profitably, or where downsizing is the most productive long-term strategy. [...] In [...] cash-rich, low-growth or declining sectors, the pressure on management to waste cash flow through organizational slack or investments in unsound projects is often irresistible." (Jensen 1989, 61)

Companies holding large affordable housing portfolios fit to this description of a sector in which listed companies do not provide the best model to ensure the interest of shareholders. This explains the emergence of the private equity business model, which involves the following:

A private equity firm consists of a general partner, who makes decisions, while limited partners provide equity to the firm but have no say in the daily operations. Limited partners pay a fee, for example, 2%, to the general partner for managing the investment, and the general partner may also get a share, for example, 20%, of the profits (Kaplan and Strömberg 2009; Appelbaum, Batt, and Clark 2013). The private equity firm buys a company, also known as a portfolio firm, largely on credit (Axelson et al. 2013) as "private equity firms borrow as much as they can for each deal" (Jenkinson and Sousa 2015, 400). The leverage is at a fundamental higher level than can be found in traditional companies (compare Jensen 1989). Part of this debt is financed as "pay-in-kind" (Axelson et al. 2013, 2234), which are "balloon mortgages" (Clark 2013, 145), where the value of the payments increases over time. The company purchased, and not the private equity firm, is responsible for the loan repayments. This results in the company showing less profit and, consequently, means that the takeover is partly financed by the state through a reduction in corporate tax. In this way, it functions in a similar manner to a deductible mortgage interest scheme (Boelhouwer et al. 2004). The government supports the acquisition of assets through the private equity business model in terms of its fiscal policy. This financial structure is risky (as part of the finance will have a junk-bond creditability (Axelson et al. 2013)) and means that high interest rates are payable by the company. These interest payments place significant financial pressures on the company to become leaner, resulting in the restructuring of activities aimed at generating quick money and not in those geared towards the long-term viability of the firm (Clark 2013). Further pressure is placed on management to provide financial incentives to achieve short-term financial aims. Finally, the private equity firm exits by selling the activities.

On average, a company is held for about five years by a private equity firm (Bacon et al. 2012). Usually, the company sold still has loans as a result of its acquisition by the private equity firm. If the company is sold to a second private equity firm, debt levels are even higher than they were at the first buy-out (Achleitner and Figge 2014). If a company is held for longer than what it is financed by limited partners and creditors, refinancing the investment is a sizable activity for the general partner. Private equity firms are not constrained by national borders and operate transnationally.

Much has been written on the effect of this business model on employers' relations (Clark 2009, 2013). The financial pressure is on short-term gains, resulting in staff restructuring. It has also been shown that this business model can be detrimental to various implicit contracts and agreements existing between stakeholders and the company (Appelbaum, Batt, and Clark 2013). In the case of companies where implicit contracts play a major role, this may result in failure, as seen with the takeover of EMI by Terra Firma (Andersson and Haslam 2012; Appelbaum, Batt, and Clark 2013) or the acquisition of Stuyvesant Town/Peter

Table 1. Challenges for	r the	Rhenish	model.
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	Anglo-Saxon	Rhenish	Challenges
Relevant interested parties	Shareholders	Stakeholders	Shareholders revolution
Ownership	Multiple owners	Block-holdings by parties that have relational interests	Sale of block-holdings to private equity caring less for relational interests
Orientation of owners	Short-term profits; exchange values	Long-term relational gains; growth	Orientation of private equity business model on short-term value creation; reallocation of values from stakeholders to shareholders
Definition of value	Exit value	Historical costs	EU rules to use IFRS standard based on exit value

Cooper Village, in which the private equity firm misjudged the strength of rent control in this New York housing portfolio (Appelbaum, Batt, and Clark 2013). Appelbaum, Batt, and Clark (2013) conclude that the extra returns that private equity firms provide for their shareholders do not originate from value creation through better management alone but are based on the reallocation of value by taking gains from stakeholders of the firm and redirecting these to the shareholders. The question posed in this paper is whether the Rhenish context, in which the interests of stakeholders are an integral part of the company's interest, differs from the Anglo-Saxon context in terms of housing-related interest. Literature on private equity (PE) suggests that this is not the case.

"A portfolio company's development under PE ownership is a function of the PE sponsor's investment strategy, including the way the PE sponsor intends to create value." (Hammer et al. 2017, 34)

This suggests that institutional context is of little relevance in terms of the behaviour of private equity firms. In all cases, these firms will pursue their business model, which reallocates values from stakeholders to shareholders. These are among the challenges for the Rhenish model (see Table 1 for an overview of the challenges addressed in this section).

This paper reflects on a dual case of the same private equity firm, Terra Firma, buying a similar housing portfolio using a similar approach. The fact that the same models were chosen is even indicated in their names, that is, Deutsche Annington, and Annington in the UK. Furthermore, it investigates whether these challenges result in parallel developments. Differences in outcomes therefore may relate to differences in Rhenish versus Anglo-Saxon contexts.

Introduction to the case studies

This paper is based on a double case study of Annington UK (or Annington Homes) and Deutsche Annington (later renamed Vonovia). Annington Homes was established in 1996. It was the result of the purchase of 57,400 dwellings from the Married Defence Quarters by the Japanese investment banking group Nomura and the British private equity firm Terra Firma Investment Partnership. The partnership of Nomura and Terra Firma also became active in Germany in 2001 through the purchase of 65,000 dwellings from 11 railway housing corporations from State Railway Property (*Bundeseisenbahnvermögen* [see also Peter 2008]).

The following sources were studied and reviewed. Both in the UK, in relation to Annington, and in Germany in relation to Deutsche Annington, there were debates among popular

representatives based on concern about the takeover of the housing portfolios. Several studies, both in Germany (Veser, Thrun, and Jaedicke 2007; Veser, Thrun, and Jaedicke 2011; Kofner 2012; Enquetekommission Landtag Nordrhein-Westfalen 2013; BBSR 2015) and the UK (Public Accounts Committee 1998; NAO 2000; Defence Committee 2007), have been executed in the context of these debates, which also have been held outside parliamentary discussions (Kirbach 2006; Cooper 2016). These debates provide an overview of the public interests that were at stake during these developments. It is to be expected that, in a Rhenish context where stakeholders' interests are more important, these interests would play a prominent role in the political domain. A second source will be the annual accounts of Annington UK and Deutsche Annington/Vonovia. The valuations of properties in both companies are analyzed and studied to indicate whether they yield any insight into the question of capital accumulation in the Rhenish context (Stockhammer 2004) and how fair value estimations based on exit prices play a role in the way these assets are managed.

In the discussion, we will address the question of whether these outcomes provide any specific insights about the future of the German rental model in particular. Institutions matter in the way this rental model has been set up, and changes in these institutions may affect whether this model can be sustained. There are major differences between the British and German housing systems (Kemp and Kofner 2010) (Table 2). Germany has a large rental sector, which is predominantly privately owned. Tenants are protected against eviction, and there is system of rent control (Kofner 2014). The local reference rent plays an important role in this system of rent control; especially in housing markets with a high demand, this means that longer-term sitting tenants tend to have lower rents than newer tenants. There are opportunities for landlords to raise their rents based on improvements made to the property. The maximum rise in the yearly rent is 11% of certain investments made, such as investment in increased energy efficiency. Maintenance work and financing costs are excluded from these investments (Cornelius and Rzeznik 2014; Kofner 2014). Landlords are compensated for this lack of potential for rent increases by "reliable tax relief for repairs and upgrades" (Kofner 2014, 268), with the result that rent controls have not resulted in the deterioration of the quality of the building stock. Landlords may also, based on this institutional structure and as demonstrated by past developments, count on a more stable housing market, suggesting lower risks. In this way, "the German housing market seems to be integrated into a social market framework" (263) and the "regulatory framework for rental housing is generally stable, reliable and to some degree market-oriented" (264). It can provide landlords with stable long-term yields (Scanlon and Whitehead 2011).

"The security of tenure attracts long term tenants who pay their rents reliably, treat the landlord's property responsibly and care about their neighbourhood." (Westerheide 2011, 145)

Table 2. Dwelling stock by tenure in 2014 (DESTASIS, 2016b; MHCLG 2018).

	United Kingdom	Germany
Owner occupied	63%	44%
Rental	37%	56%
private	19%	
housing associations	10%	5% ¹
local authorities	8%	6% ¹

^{1.} Census data of 2011 (Zensus2011, 2014, 14). The total rental sector was 54% in 2011.

Such a long-term relationship, which benefits both tenants and landlords, fits into the Rhenish model and is therefore a relevant domain for this study.

In the UK, the private rental sector has been grown since the housing reforms by the Thatcher Government in the 1980s. These reforms have contributed to a reduction of council housing from 30% in 1981 to 8% in 2014 and to a growth of social housing rented from housing associations (MHCLG 2018) (see also Table 2). The private rental sector is dominated by assured shorthold tenancies (Orji and Sparkes 2014; Jordan 2018). These contracts have usually a term of 6 months after which there is no security of tenure. Landlords may end the contract for any reason, which makes it easy to terminate a contract if a tenant is complaining about maintenance. Moreover, the landlord may ask any higher rent if the market development in the area allows for it, that is, if the landlord expects to find another tenant who is willing to pay this higher rent. For tenants it may not be in their self-interest to pursue activities to improve the neighborhood, because this may end up in a higher rent if it results in a higher market value of their home. So, keeping attractiveness low means keeping rents affordable. These rental contracts can also be found in other Anglo-Saxon contexts as Australia and the US and explain why gentrification is a larger issue in these contexts than in contexts in which tenants are better shielded from these developments by their rental contracts (Korthals Altes 2016). The UK rental practice of shortholds as main form of rental contract in the private sector does not foster long-term landlord-tenant relationships.

Annington UK

Annington Homes was established through a sale-and-lease-back construct that the Ministry of Defence (MoD) concluded in 1996. The MoD used to own a considerable amount of housing used for the families of service personnel, who could, on condition that they paid the accommodation charges due, choose to live in accommodation provided by the MoD. These family quarters estates (also known as the married quarter estate) entailed some 75,000 houses in 1991 (NAO 2000). In 1996, the service family estates in England and Wales were sold off on a 999-year lease on all the land and became Annington Homes (Defence Committee 2007). The deal was awarded to the highest bidder and involved a direct sale price of £1.662 billion (Public Accounts Committee 1998). Dwellings on 58 sites comprising 2,374 units were considered surplus to requirements and were sold by Annington Homes (Annington 2009). The MoD leases back 55,362 housing units on 760 sites on a 200-year lease and pays rent at a 58% discount of the open market rent (reviewed every 5 years) but is also responsible for the maintenance of these dwellings. Generally, accommodation charges are lower than the rents paid by the MoD even when maintenance costs are not taken into account (NAO 2000). When the MoD no longer needs the properties, they are transferred to Annington Homes who may sell them provided that 25% of the proceeds are transferred to HM Treasury. Transferred properties must be in "good tenantable repair" (Defence Committee 2007, Ev7), which may involve additional investment to achieve this standard, especially when properties have been empty for a while. The contract was debated partly because the Conservatives (under whose administration the contract was signed) and Labour had fundamentally different opinions about the merits of such a deal. The Defence Committee formulated this as follows:

"Views on the merits of the deal differ, but it is deeply disappointing that the incentives in the deal to maintain acceptable standards of repair and fewer empty properties have not operated as intended. There is a case for a review of the whole of the married quarter estate to ensure that property is being retained and disposed of optimally." (Defence Committee 2007, 3)

The issues of empty properties relate to the fact that properties are allocated to different military ranks and different sizes of families. Furthermore, the MoD needs a buffer capacity to meet the demand from applicants and issues arising in the process of the transfer to Annington (NAO 2000). The MoD cannot transfer isolated homes whenever they become vacant because there are rules about the size of complexes that can be transferred. Furthermore, homes located behind a fence in a military site cannot be transferred. Although the MoD is the sole party that decides that certain housing is no longer needed, the transfer to Annington is a one-way option. It is a way to transfer its surplus housing onto the market. One point to note is that Annington Homes was not on the list of witnesses and did not submit written evidence to either of the House of Commons committees on this subject (Public Accounts Committee 1998; Defence Committee 2007). It is an outsider, and relations with it are guided fully by the terms of the contract, but with which there seems to be no relational involvement outside the contractual arrangements.

Alongside Annington Homes, the Annington group launched Annington Rentals to create residential investment portfolios outside the context of the MoD contract, and Annington Development as planning and development company to support the other two groups through, for example, the redevelopment of sites or infill developments on these sites in 1999 (Annington 2009). Annington Rentals has always been much smaller than the Annington Homes Group: on 31 March 2015, it owned 1,442 residential units, whereas on the same date, 39,262 units were still being rented to the MoD (Annington 2015). The activities of Annington Developments have also been limited and are based on assisting the other two groups (Annington 2015). The entire MoD deal therefore remains the backbone of the group. Sales went well until the Global Financial Crisis. On 31 March 2008, over 95% of the dwellings released by the MoD were sold (Annington 2009). The location of some complexes, such as Coltishall (Norfolk) and St. Eval (Cornwall), made the sale process difficult. After an initial period in which Annington aimed to invest in the property to attract affluent middle-class households (Hands 2016) - an approach which failed - after 1998 it opted for a policy of selling the housing as affordable properties for first-time buyers with no major improvements. This policy is, however, based purely on an economic rationale and depends on the context of the local property market. Where sites are located in an area with a significant rent gap, such as the Sweets Way Estate in the North of London, processes of gentrification may take place (Cooper 2016). Indeed, this even resulted in an open letter of solidarity from tenants' organizations representing the tenants of properties owned by Deutsche Annington to the chairman and management of the company and to the council of the London Borough of Barnet (Witten Tenants Association and Mieterforum Ruhr 2015).

The release levels of the MoD were low. Most of the properties are still being leased to the MoD (Table 3). Every five years, the rent paid by MoD is adjusted. These rent adjustments were quite substantial at the start of the deal, with an increase of 48.2% (equivalent to five annual rent increases of 8.2%) in 2002. The increase in 2007 (22.9%,

Table 3. Dwelling	s leased	to MoD	by Annington
Homes (Anningto	n. 2014.	2015).	

	Leased to MoD
1996	55,054
2002	44,987
2007	41,393
2012	39,952
2013	39,947
2014	39,433
2015	39,262

equivalent to five annual increases of 4.2%) and 2012 (10.9%, equivalent to five annual increases of 2.1%) were less substantial.

In line with the private equity business model, Annington has been loaded with debt. As its annual financial statements show, Annington has paid hardly any corporate taxes. In most years, it made an operating loss because the interest on the loan to acquire this estate was very high. However, the "total recognised gains and losses" (see for example Annington 2015, 17, 2016, 9) cited in the yearly reports are much higher, because these incorporate the value changes in the properties held by Annington; these are defined by the applicable accountancy rules.

As indicated in Section 2, a fair-value accounting system is used, resulting in a large gap between the valuation of the properties leased to the MoD based on historical costs (based on the £1.7 billion paid in the deal with the MoD) and the actual market value of the properties, which is set based on the revaluation that takes place annually and is carried out by an external assessment company "at open market value recognising the obligations to current tenants" (Annington Holdings 1998, 10). This growth in equity values is reflected in the balance sheet, presented as a gain for the property and as "profit on ordinary activities" (Annington 2016, 9), but it is not part of cash flow, and so was not taxed. This net book value after the revaluation of the property (averaging 11.2% each year, so much more than the increases in rent) reflects a large difference with the value based on historical costs (Figure 1).

One specific consideration for Annington is that in December 2012 the financial position of Nomura was taken over by its partner Terra Firma. The debts of this transaction were, just as at the start, buried by Annington, using risky, and highinterest, financial products, such as 13% payment-in-kind notes or by subordinated and unsecured (11%) loan notes to Annington Holdings (Guernsey) Limited (Annington 2012, 2016). These kinds of transactions and the interest paid to cover the costs of transaction capital ensured that the accumulation of capital within Annington Homes would be limited, but that this capital would flow to investors who could use it for other investment opportunities. The revaluation of investment properties (see also Figure 1) allowed for a rise in equity from £1,626 million in 2003 to £5,401 million in 2016.

This growth in asset value has expanded the balance sheet of Annington Homes, providing opportunities to allocate debt to the company. The interest paid on this debt outweighs the income from rent, meaning that in most years the company has run at an operational loss and hardly paid any taxes since it was established. Gains from revaluation are clearly stated in the overviews but were not taxed until recently.

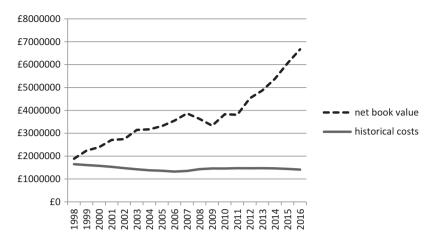


Figure 1. Book values of investment properties based on historical costs and after revaluation (based on accounts as have been filed at the Companies House).

Deutsche Annington

The German context

Germany has a substantial rented housing sector comprising around 21.7 million dwellings or 56% of the housing stock (DESTATIS 2016b). Most of these rented dwellings (over 92%) are not publicly owned, which means that they are subject to the market. Renters are, however, shielded against excessive rent increases through a system of local reference rents (Cornelius and Rzeznik 2014). Small-scale providers are the largest homeowners in the private sector (Haffner 2011). However, there are also larger owners. Historically, some of these dwellings were owned by the public sector directly, such as local authorities and states, or by companies that were part of the public sector or legal entities under public law, such as the railways, state-owned development companies (Landesentwicklungsgesellschaften), and state retirement funds. From the 1990s onwards, many of these housing portfolios started to be privatized (Fields and Uffer 2014). In Germany, there is some concern about the impact of this change. An article in Die Zeit characterized the situation as awakening from a dream of humane housing for all and a betrayal to the work of a century. The involvement of investors is seen as the end of worry-free living for German tenants (Kirbach 2006). This concern has led the Bundesinstitut für Bau- Stadt und Raumforschung (BBSR; Federal Institute for Construction, Urban and Spatial Research) to develop a database of transactions involving large housing estates (over 800 dwellings) since 1999 (Veser, Thrun, and Jaedicke 2007) and smaller housing estates (100 to 800 dwellings) since the second half of 2006 (Veser, Thrun, and Jaedicke 2011). This database is based on systematic research involving sources on the Internet and in the press. The concern expressed by the Federal Minister for Transport, Building and Urban Development, Wolfgang Tiefensee, in the preface of one of these reports, relates explicitly to private equity investment. Although the minister indicates that this may result in enhanced economic efficiency in housing management, it may have a fundamental impact on urban development, the supply of social housing and municipal powers to intervene in the field of social integration (Veser,

Thrun, and Jaedicke 2007). One of the issues that the minister mentions is the lack of cooperation in housing multi-problem households. The statistics are still being produced but, quite apart from the results of the statistics, the fact that the ministry gathers such statistics at all shows that this is an area of real concern. In the summary of the first report, a major difference is cited "in the greater extent to which the private buyers trade in property" (3). However, these higher trade volumes have not resulted in higher levels of investment in the property themselves:

"In many cases the expenditures on investments in housing stock has been reduced by the new buyers. The consequences for the tenants have so far been limited, both with regard to changes in the apartments themselves, the buildings and the tenant structure as well as in relation to changes in rental costs. Conflicts with tenants due to modernisation measures and rent increases have occurred only sporadically and represent isolated cases." (Veser, Thrun, and Jaedicke 2007, 3)

A large portion of the housing stock concerned was located in relaxed housing markets where it was not very profitable to invest in modernization. The transaction levels show two periods of increased activity between 2004 and 2007 and between 2013 and 2015 (BBSR 2015; Franke 2017) (Figure 2). While the first boom period was dominated by first-time transactions from traditional owners to market parties, the transactions in the second boom period were dominated by the reselling of portfolios between market parties (see also Wijburg and Aalbers 2017). Comparatively, these figures show that the transfers of large housing stock have been higher than the number of new homes built in recent years (Figure 2), suggesting a shift in investment away from bricks and mortar and towards the transfer of portfolios.

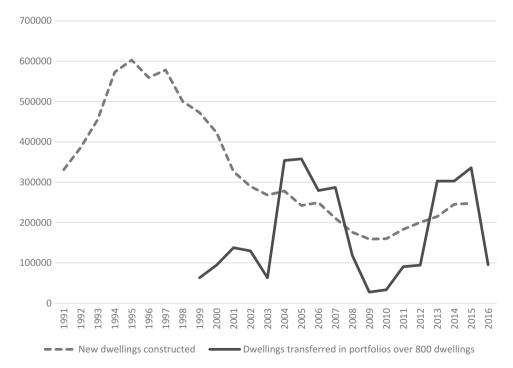


Figure 2. Dwellings transferred in portfolios over 800 units (BBSR 2015; Franke 2017) and dwellings completed per year (DESTATIS, 2016a).

The investor's strategy that can generally be expected (Kirbach 2006) involves selling the best housing, upgrading other dwellings to accommodate more affluent households, and neglect and disinvestment for the remainder. It must be noted that under the German system of tenant protection, there are limits on what landlords can do. The standard tenancy contract is still in place, rent increases must conform to locally comparative rents, and there are rules about what kinds of investment can be made and which rent rises may be imposed as a consequence. Moreover, there is an extensive network of tenants associations that monitor developments and take action if landlords fail to observe the rules. The major investors, who own large parts of housing in a community, are naturally the primary focus of these associations.

Developments have also been followed closely by politicians. The market entry of new finance investors ("Neue Finanzinvestoren") has resulted in an investigation by the parliament of the state North Rhine-Westphalia (Enquetekommission Landtag Nordrhein-Westfalen 2013), for which Kofner (2012) has written an advisory report. The bulk of private-equity investment in the Ruhr area is in neglected urban neighborhoods, and most housing stock owned by private equity is being developed according to the criteria for social housing interests (Kofner 2012). Exit is part of the strategy of private equity, and private equity managers do not work to benefit stakeholders other than their own shareholders. This has raised much concern. For his section on Deutsche Annington (DA), Kofner indicates that it is based on work by Knut Unger (see also Unger 2016), a housing activist who represents a tenants' association in the Ruhr Area and particularly the town of Witten, where a large share of the rental stock has been acquired by DA. Kofner's main conclusion (2012) is that although both the worst nightmares of critics and the sweetest dreams of private investors have not become a reality – because property prices have remained reasonably stable and the sale of housing to owner occupiers has not gone as easily as was hoped – it is nevertheless essential to develop instruments to guard against the more extreme manifestations of shareholder capitalism in the housing market. In an interview, the then director of DA, Volker Riebel, is described as "more a representative of a cosy Rhenish capitalism than the personification of an Anglo-Saxon predatory capitalism" (Kirbach 2006, 3), which relates to his previous experiences working at housing organizations when they were still owned by public authorities.

Deutsche Annington

The team of Nomura and Terra Firma was also active in Germany in 2001 for the purchase of 65,000 dwellings from 11 Railway housing corporations. Deutsche Annington became a very large landlord through the acquisition of Viterra AG from the utilities company E.ON in 2005, which added 138,000 dwellings to its portfolio (Kofner 2012). Since that time, it has been the largest homeowner of Germany. In subsequent years, further smaller acquisitions took place. A further large acquisition (from GAGFAH, the housing fund of clerks, involving 145,000 dwellings), which after a sale to a market party was headquartered in Luxembourg and also listed on the stock exchange there, came after DA had already been listed on the stock exchange and resulted in the new name of Vonovia (with about 370,000 residential units). Notably, Vonovia is still in the process of takeovers and expansion, and its holding company has become a Societas Europaea, which allows for cross-border expansion, such as the takeover of the Austria-based Conwert Immobilien Invest SE (24,500 dwellings) in the autumn of 2016.

An accumulation of capital has taken place within DA/Vonovia. Its equity rose from €369 million in 2003 to €13,888 million in 2016, so DA is acting as a vehicle for capital accumulation and growth.

The housing stock of DA is found in various regions of Germany. Although such a large portfolio includes certain differences in terms of quality, standards of maintenance, rents, occupancy and value, the portfolio does have a particular profile. It is dominated by apartment housing built before the end of the 1970s, and many of the dwellings were built using industrial techniques to save costs (Kofner 2012). The dwellings are small by current standards. These characteristics mean that the housing held by DA is part of the affordable housing stock of the regions where it is located.

Like Annington UK, the original contract for railway workers' housing included some limitations on its usage. Housing rented by railway-company personnel could only be sold to the tenant or someone designated by the tenant. There was a maintenance obligation, specifying that a certain amount of money should be invested in dwellings rented by railway personnel. There was also a cap on sales, and, for a part of the stock, some of the proceeds of any sales were to go to the original owner (Kofner 2012).

Financial reports (Table 4) show that the revaluation of properties has had a much greater financial impact than the net result of sales. This relates partly to the accountancy standards that have been changed to allow for the incorporation of increases in the estimated value of properties. It is interesting to note that in 2016, the result of revaluation exceeded the sum of the results of the preceding 10 years. This involved a change in value of about 15%. The main contributing factor to this was the lowering of the yield from 4.5% to 4.0%, meaning that the value that corresponds to a given rent is 12.5% higher. Such a lower yield correspondents to lower interest rates, making renting a more attractive alternative, and improving confidence in the future value of the portfolio. The method used is a discounted cash flow analysis based on the notion that investment properties are held for 10 years; this is not a pure exit value. Thus, changes in rents, expected vacancy rates, the value of property over 10 years, maintenance costs and interest rates are all relevant, and these factors have been favourable in recent years. The results of the revaluation of properties are subject to corporate taxes in Germany (unlike in the UK, where until recently revaluation occurred outside the profits on ordinary activities, which are subject to corporate taxes). Currently, corporate tax rates are significantly higher in Germany than in the UK.

Rent increases at DA (an average of 2.57%) have been running above inflation and above rent increases for existing buildings (both of which average 1.35%) (Table 5). There are also regional differences in rent increases, which are more difficult to interpret as regions are not defined in the same way in all years, and changes in the property portfolio may have a larger impact in particular regions. Less marketable areas such as Berlin (1.77% rent increase per annum) and Westphalia (2.31%) have seen average rent increases below the national average (2.57%), while in Rhineland (2.97%) and Munich (3.44%), they have been above the national average.

Under German tenancy law, there is a significant distinction between maintenance costs and improvement costs (Cornelius and Rzeznik 2014). Maintenance costs cannot be transferred directly to the tenant. Investment in improvements can, provided certain requirements are met, result in a rent increase (per annum) of 11% of the investment made. Deutsche Annington's maintenance costs were, compared to some other large property companies in Germany, at a reasonable level – that is, at the lower end of what may be acceptable (Kofner

Table 4. Key figures Deutsche Annington/Vonovia SE (Kofner 2012; yearly reports).

		2006	2007	2008	5005	2010	2011	2012	2013	2014	2015	2016
Result of revaluation of investment properties	€ mln	360.7	197.6	-497.9	61.6	25.8	246.7	205.6	553.7	371.1	1323.5	3236.1
Result of property sales	€ mln	131	75	51	47	71.8	9.79	51.6	52	69	119	102.2
Rent	€/m2/m	4.67	4.78	4.91	2	5.06	5.15	5.27	5.4	5.58	5.75	6.02
Vacancies	%	5.7	4.2	3.9	5.9	5.1	4.3	3.9	3.5	3.4	2.7	2.4
Housing units		185,438	190,221	189,218	191,952	189,664	186,530	181,669	175,258	203,028	357,117	333,381
Sold units		7601	3945	2542	1880	2584	3169	4819	6720	4081	15,174	26,631
Maintenance	€ mln	134.9	119.9	118	122.9	125.5	144.3	138.9	157.6	173.8	320.1	330.7
Maintenance per unit	€ per unit	727	630	624	640	662	774	765	899	856	968	992
Improvements	€ mln	1.7	9.5	9.99	32.5	46.3	47.6	65.7	70.8	171.7	355.6	472.3

Table 5. Development of prices,	rents of existing	buildings and	rents at Deutsche	Annington (DA)
(2010 = 100) (DESTATIS 2017).				

		Rents	Rents	Rents DA	Rents DA
	Prices	nominal	real	nominal	real
2006	93.9	94.8	101.0	92.3	98.3
2007	96.1	96.1	100.0	94.5	98.3
2008	98.6	97.6	99.0	97.0	98.4
2009	98.9	98.7	99.8	98.8	99.9
2010	100	100	100.0	100.0	100.0
2011	102.1	101.3	99.2	101.8	99.7
2012	104.1	102.6	98.6	104.2	100.0
2013	105.7	104.1	98.5	106.7	101.0
2014	106.6	105.7	99.2	110.3	103.4
2015	106.9	107	100.1	113.6	106.3
2016	107.4	108.4	100.9	119.0	110.8
Average	1.35%	1.35%	0.00%	2.57%	1.20%

2012). The most problematic factor was a failed programme to save costs by centralizing maintenance by means of customer care centres, which were difficult to contact due to long telephone queues. They were also distant from issues in the properties themselves because maintenance was outsourced to third parties. This programme has been ended, and the CEO responsible for it has been replaced, because the programme contributed to tenant dissatisfaction, resulting in vacancy issues. The failure of the programme led to the return of local caretakers, and the company now carried out a large part of the maintenance work itself. Ultimately, the local, relational solution was considered more efficient. The incorporation of Gagfah, which had too low maintenance levels according to Kofner (2012), may explain the extra maintenance costs in 2016. In relation to improvements, the large growth in recent years was attributable to both top-down and bottom-up programmes. Top-down programmes include investment in the energy-efficiency of the dwellings. The top-down approach implies that tenants must be informed beforehand and have the opportunity to provide an opinion on the proposals made, which may involve steps towards legal proceedings if tenancy law is not followed. Tenants may involve tenants' organisztions in this process. In some cases, tenants' organizations begin legal proceedings based on the legal expenses insurance of one of their members. For bottom-up programmes, Vonovia has offered modernization options that tenants can choose to accept in exchange for a higher monthly rent. This programme began with three standardized and quick-to-install options for the modernization of bathrooms. The idea is that this "can boost customer satisfaction and help longer-term loyalty to the company" (Vonovia SE 2017, 94), and it is also profitable because modernization investments have achieved 6.9 to 7.8% returns in past years. This programme is now being extended to programmes that offer tenants voluntary options for burglary protection and kitchen improvements. Tenants' organizations are critical about the fact that landlords are legally obliged to ask contributions for other costs and are considering whether to initiate legal proceedings to limit these contributions (Mieterforum Ruhr 2016).

Comparative discussion

The first question asked in this paper is whether we still can see the differences in relation to different economic models in a context in which both companies are run by the same private equity firm. The answer is affirmative. Although Deutsche Annington was originally

modelled after its British counterpart, Annington, it has followed a different path. Annington has remained unchanged, retaining its primary position in housing for the defence sector and as an instrument to convert defence sector housing – in good tenable repair, but without major investments to attract more affluent households - into market housing. By contrast, Deutsche Annington has, through a process of capital accumulation, moved towards becoming the largest private homeowner in Europe.

This difference in outcomes can be explained by the differences in context. After all, the management structure and ownership structures were more or less the same: the same private equity firm with the same investor, using the same business model. The original deals had some differences, but not so significant that they can account for the subsequent divergent course taken by both companies. The German deal would have allowed for the caretaker role adopted in the UK, and the British deal did not preclude consolidation with other private homeowners. The characteristics of the housing stock were also similar. Although it is in the market sector, it is generally considered to be part of the more affordable housing stock.

One important difference is the structure of the German rental market, which has a larger emphasis on long-term relationships between stakeholders, compared to the British rental market, which is more geared towards short-term deals. In the German context, there were many larger landlords like Deutsche Annington, which meant that it was possible to aim for consolidation in the sector. This is not true of the British rental sector, where the private rental market is the domain of relatively small owners that use shortholds, six-month leases after which there is no security of tenure for the tenant, meaning that tenancy is not a reliable form of tenure for households that require longterm accommodation. Tenancy contracts are modelled on business deals, and this system tends to provide tenants with less protection than elsewhere in Europe (Jordan 2018). By contrast, the German rental market is one of protected tenants (Korthals Altes 2016), which implies that landlords have to follow extensive rules. As a result, the rental system protects renters from eviction and rent increases on the one hand, and results in sustained demand from households who wish to continue renting their homes on the other hand. This means that occupancy rates are good and stable incomes from rent are reasonable in the current context of low interest rates (Table 4). Another feature of the German system, which includes tenants' organizations, is the use of both legal and communicative means to ensure adherence to the rules.

What is remarkable is that in this context, a purely profit-driven organization such as a private equity firm has used a range of strategies that are based on the value of maintaining long-term relationships, such as the importance of keeping existing tenants, rather than deal making with new clients - that is, selling properties on the open market. These strategies do not originate from any intrinsic motivation, as was the case with the previous landlords of the portfolio whose aim was to provide affordable housing for – for example – railway workers. Rather, it stems from the Rhenish institutional context. So, it is not only the investment strategy of the private equity sponsor that matters but also the institutional context.

The result is that much more capital has accumulated in Deutsche Annington than in Annington (Figure 3) and that much more tax has been paid relative to the equity of company (Table 6). But this higher exposure to tax has not deterred DA from investing in more housing portfolios. However, in both contexts, investment in new buildings has been limited. Compared to the investments made in the existing stock, investment in

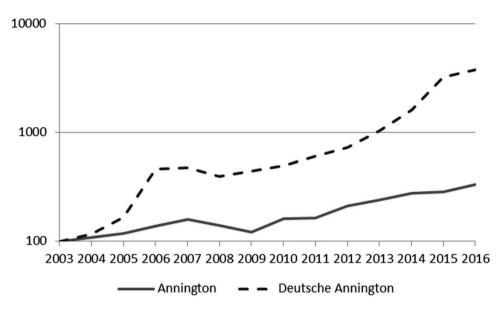


Figure 3. Capital accumulation in Annington and Deutsche Annington. Development of equity, 2003 = 100 (source yearly reports, Annington at date 31/03 and Deutsche Annington at date 31/12).

Table 6. Corporation tax as percentage of	f equity (annual reports).
Annington	Deutsche Annington

	Annington	Deutsche Annington
2003	_	0.5%
2004	_	5.6%
2005	_	-16.9%
2006	_	11.7%
2007	_	14.3%
2008	_	-7.4%
2009	0.8%	3.3%
2010	-0.6%	-1.8%
2011	_	6.9%
2012	_	1.6%
2013	_	5.4%
2014	_	3.0%
2015	2.7%	6.2%
2016	0.7%	9.7%

new buildings has been largely in line with maintaining the position of the portfolio as part of the affordable housing stock. However, in both contexts, examples can be found where the company has aimed to close the rent gap by upgrading its properties to a higher standard, resulting in issues of disposition.

Annington paid taxes over its direct yield, the rents received, but not over its indirect yield, the increase in the value of its properties. In fact, they do not pay much tax at all because the interest paid over its loans that is backed up by the fair value of the assets is higher than its income from rent. Only since 2015 has tax been paid on profits from the revaluation of properties. The corporate tax paid by Deutsche Annington has always been based on both the direct (rent) and the indirect (value increases) yields from its properties. This means that under the UK tax system, it has been more attractive to invest in properties where indirect yields are relatively high, such as in the centre of London, while in Germany



this has not been the case. An interesting question is the extent to which these different tax systems have played a role in reproducing the existing centralized (UK) and polycentric (Germany) urban systems. For Annington, however, this is not the case because Annington's properties are located on military sites, which are often in peripheral locations.

The difference of outcomes in the UK and Germany shows that financialization by the acquiring of a large housing portfolio using a private equity business model may have a variety of outcomes depending on the context. There are, however, also developments that are common to both contexts, such as, that no major investment has been taken place in building new affordable housing. Such an investment in brick and mortar would better fit in a traditional company in which managers are, next to rewarded based on profit, also rewarded based on growth. As indicated by Jensen (1989), such companies are better suited to operate in growing markets. The tight financial context provided by the private equity business model results in a preference for capturing cash flows and value development, and it does not result in the reinvestment of cash flows and extra value in the development of new housing.

Conclusion

The comparative discussion shows that the answer on the paper's first question is affirmative. We can still see the differences in relation to different economic models in a context in which both companies are run by the same private equity firm. The paper's second question is how the changes and challenges affect the way the Rhenish model functions. In relation to the challenges identified based on these changes (see Table 1), it is undeniable that the shareholders revolution is considered to be an issue in the Rhenish context. This is especially the case in situations where large portions of affordable housing portfolios are sold from block-holders interested in long-term relational gains, to private equity, which follows a business model aimed at short-term value creation, including the reallocation of values from stakeholders to shareholders. It shows that other institutional safeguards of the Rhenish model still hold. German rental law, far more so than the UK shortholds, is based on the long-term relationship between tenants and landlords, and there is an institutional structure of tenant associations that monitors compliance with rules. In addition, the IFRS accountancy standards are used differently. In the UK, exit value was more dominant than in Germany, where housing stock was predominantly assessed according to a ten-year holding period before sale, basing the value more on long-term interests, that is, primarily a going concern value rather than an exit value. This means that the Rhenish model still functions in the housing sector and has not been swept away by the private equity business model. Context is thus important in the operation of private equity firms.

Further research, looking at a broader range of cases, could investigate whether the prominent position of private equity on the German housing market is due to the Rhenish context, or whether it exists despite the Rhenish context. The large rental sector in Germany, and especially the block-holdings of property portfolios by intermediate organizations, provided far easier access to the private equity business model than the British housing sector. It may be that in a context where companies are less concerned with short-term profits, and where shared relational values and implicit contracts play a role, there are greater opportunities for short-term profits for roleplayers who follow a different strategy, because there are fewer competitors following this strategy, and it may be easier to reallocate values from stakeholders to shareholders.

The Rhenish network of relationships was not so tight that it shielded the market from new entrants, and neither was the institutional structure so weak that it collapsed under the pressure of the private equity model, but it did result in a process of social interaction. Using the relational structure of the housing sector, for example by placing caretakers at housing complexes or offering existing renters the option of improving or buying their homes, proved to be more profitable than less relational strategies, such as replacing faceto-face contact with centralized call centres. This latter strategy was a failure as it was considered to result in higher vacancy levels. The incapacity of this system to address the needs of the tenants was widely communicated by tenants' organizations. Therefore, the private equity business model not only resulted in changes to the housing system, but the Rhenish context also affected the business practices of private equity firms.

All in all, we still see a clear difference between the Anglo-Saxon and Rhenish models, and there is a chance that these differences will widen again as a consequence of the UK's withdrawal from the European Union. Based on the EU's SME agenda, the UK, despite opposition from the British Conservatives, had to implement elements of an SME as the directive on consumer protection and directives relating to fair labour conditions (Geyer and Mackintosh 2005). As the UK ceases to be part of the European project to develop a SME, it may opt to develop a purer liberal market economy (LME). In the EU context, where policy making is often a political compromise between member states (Scharpf 2010), the member states and the powers that advocate moves towards an LME will be weakened by the UK's departure, which may contribute to a strengthening of SME institutions in relation to social policy, which includes the housing system. This may have consequences for housing provision in both contexts, contributing to diverging trajectories: serving the immediate interests of shareholders on the one hand or longterm relationships with stakeholders on the other hand.

The case studies show that rules that protect renters from short-term rent-seeking by landlords do not necessarily distract private investment from entering the housing market. Relevant is that these rules provide a certain balance between the interests of tenant and landlord. The German rental system provides (as shown by Scanlon and Whitehead 2011) also important benefits, such as low vacancy rates, to the landlord. The cases also show that Vonovia, the current brand of Deutsche Annington, had not become the largest private homeowner of Europe by building new housing, but by the takeover of existing portfolios. Investment through the private equity business model in affordable housing portfolios will rarely result in new housing, which will only be constructed as a major rent gap can be closed. This shows that there is a clear difference between attracting private investment to housing companies and efforts to produce housing.

Disclosure statement

No potential conflict of interest was reported by the author.

ORCID

Willem K. Korthals Altes http://orcid.org/0000-0002-2745-0007



References

- Achleitner, A.-K., and C. Figge. 2014. "Private Equity Lemons? Evidence on Value Creation in Secondary Buyouts." *European Financial Management* 20 (2): 406–433. doi:10.1111/eufm.v20.2.
- Andersson, T., and C. Haslam. 2012. "The Private Equity Business Model: On Terra Firma or Shifting Sands?" *Accounting Forum* 36 (1): 27–37. doi:10.1016/j.accfor.2012.01.002.
- Annington. 2009. Annington Annual Report & Accounts 09. London. Accessed April 15 2016. http://www.annington.co.uk/cms_reports_accounts/annington_2009_report_and_accounts.pdf.
- Annington. 2012. *Press Release*. London: Annington Finance No. 5 plc Announces Closing of Offering of Senior PIK Notes Due 2023. Accessed January 9 2017. http://www.annington.co.uk/cms/cms_files/microsoft_word_-_harry_-_press_release_-_closing.pdf.
- Annington. 2015. Annington Annual Report and Accounts 2015. London. Accessed April 15 2015. http://www.annington.co.uk/cms_reports_accounts/mkt01407_annington_ra_2015_web_brochure3_2.pdf.
- Annington. 2016. Annual Report and Financial Statements. For the Year Ended, March 31. Cardiff: Companies House. Accessed January 9 2017. https://beta.companieshouse.gov.uk/company/08271384/filing-history/MzE1ODq4NjYwNGFkaXF6a2N4/document?format=pdf.
- Annington Holdings. 1998. Report and Accounts Period Ended. Cardiff: Companies House. Accessed March 31 1998. https://beta.companieshouse.gov.uk/company/03232652/filing-history/MDA1MTc4MzYyMGFkaXF6a2N4/document.
- Annington. 2014. Annington Annual Report & Accounts 2014. London. Accessed May 22 2018. http://www.annington.co.uk/cms_reports_accounts/mkt00320_ah_ara_2014_web_2_1.pdf.
- Appelbaum, E., R. Batt, and I. Clark. 2013. "Implications of Financial Capitalism for Employment Relations Research: Evidence from Breach of Trust and Implicit Contracts in Private Equity Buyouts." British Journal of Industrial Relations 51 (3): 498–518. doi:10.1111/bjir.2013.51.issue-3.
- Axelson, U., T. Jenkinson, P. Strömberg, and M. S. Weisbach. 2013. "Borrow Cheap, Buy High? The Determinants of Leverage and Pricing in Buyouts." *Journal of Finance* 68 (6): 2223–2267. doi:10.1111/jofi.12082.
- Bacon, N., M. Wright, M. Meuleman, and L. Scholes. 2012. "The Impact of Private Equity on Management Practices in European Buy-Outs: Short-Termism, Anglo-Saxon, or Host Country Effects?" Industrial Relations 51 (SUPPL. 1): 605–626.
- BBSR. 2015. Zweite Hochphase des Transaktionsgeschehens mit Mietwohnungsbeständen: Aktuelle Ergebnisse der BBSR-Datenbank "Wohnungstransaktionen" [Second Boom of the Transfers with Rental-Dwelling Portfolios: Current Outcomes of the BBSR Data Base]. Bonn: BBSR. Accessed April 22 2016. http://www.bbsr.bund.de/BBSR/DE/Veroeffentlichungen/AnalysenKompakt/2015/AK162015.html.
- Blessing, A., and T. Gilmour. 2011. "The Invisible Hand? Using Tax Credits to Encourage Institutional Investment in Social Housing." *International Journal of Housing Policy* 11 (4): 453–468. doi:10.1080/14616718.2011.626609.
- Bode, I. 2003. "The Creeping Disorganization of Welfare Capitalism or What Is the Future of Germany's Social Sector?" *Review of Social Economy* 61 (3): 341–363. doi:10.1080/0034676032000115813.
- Boelhouwer, P., M. Haffner, P. Neuteboom, and P. De Vries. 2004. "House Prices and Income Tax in the Netherlands: An International Perspective." *Housing Studies* 19 (3): 415–432. doi:10.1080/0267303042000204304.
- Clark, I. 2009. "Owners and Managers." Work, Employment and Society 23 (4): 775–786. doi:10.1177/0950017009344920.
- Clark, I. 2013. "Templates for Financial Control? Management and Employees under the Private Equity Business Model." *Human Resource Management Journal* 23 (2): 144–159. doi:10.1111/hrmj.2013.23.issue-2.
- Cooper, V. 2016. "Wild-West Property Trading in Offshore Tax Havens." Tax Justice Focus 11 (1): 8–10. Cornelius, J., and J. Rzeznik. 2014. TENLAW: Tenancy Law and Housing Policy in Multi-level Europe: National report for Germany. Bremen: Zentrum für Europäische Rechtspolitik, Universität Bremen. Accessed March 27 2017. http://www.tenlaw.uni-bremen.de/reports/GermanyReport_09052014.pdf.



- Davis, G. F., and S. Kim. 2015. "Financialization of the Economy." Annual Review of Sociology 41 (1): 203-221. doi:10.1146/annurev-soc-073014-112402.
- Defence Committee. 2007. The work of Defence Estates, Fifteenth Report of Session 2006-07. London: House of Commons. Accessed April 8 2016. http://www.publications.parliament.uk/ pa/cm200607/cmselect/cmdfence/535/535.pdf.
- DESTATIS. 2016a. Bauen und Wohnen: Baugenehmigungen/Baufertigstellungen. Wiesbaden: Statistisches Bundesamt. Accessed March 31 2017. https://www.destatis.de/DE/Publikationen/ $The matisch/Bauen/Bautaetigkeit Wohnungsbau/Baugenehmigungen Baufertigstellungen PDF_$ 5311101.pdf.
- DESTATIS. 2016b. Households in Owner-Occupied Property and Rented Dwellings in Germany in 2014, by Household Type. Wiesbaden: Statistisches Bundesamt. Accessed February 26 2018. https:// www.destatis.de/EN/FactsFigures/SocietyState/IncomeConsumptionLivingConditions/Housing/ Tables/Tables HouseholdsInOwnerOccupiedPropertyFormer.html.
- DESTATIS. 2017. Verbraucherpreisindizes für Deutschland: Jahresbericht 2016. Wiesbaden: Statistisches Bundesamt. Accessed March 21 2017. https://www.destatis.de/DE/Publikationen/ Thematisch/Preise/Verbraucherpreise/VerbraucherpreisindexJahresberichtPDF_5611104.pdf? blob=publicationFile.
- Enquetekommission Landtag Nordrhein-Westfalen. 2013. Abschlussbericht der Enquetekommission "Wohnungswirtschaftlicher Wandel und neue Finanzinvestoren auf den Wohnungsmärkten in NRW" [Final Report of the Investigative Committee 'Transformations in Housing Economics and New Financial Investors on the Housing Markets in NRW']. Düsseldorf. Accessed April 29 2016. https:// www.landtag.nrw.de/portal/WWW/dokumentenarchiv/Dokument?ld=MMD16/2299.
- Epstein, G. A. 2005. Financialization and the World Economy. Cheltenham: Edward Elgar.
- EU. 2012. "Consolidated Version of the Treaty on European Union." Official Journal of the European Union 55 (C326): 13-46.
- Fama, E. F., and M. C. Jensen. 1983. "Separation of Ownership and Control." Journal of Law and Economics 26 (2): 301-325. doi:10.1086/467037.
- Fichtner, J. 2015. "Rhenish Capitalism Meets Activist Hedge Funds: Blockholders and the Impact of Impatient Capital." Competition & Change 19 (4): 336-352. doi:10.1177/1024529415586324.
- Fields, D., and S. Uffer. 2014. "The Financialisation of Rental Housing: A Comparative Analysis of New York City and Berlin." Urban Studies 53 (7): 1486-1502. doi:10.1177/0042098014543704.
- Fleckenstein, T., and S. C. Lee. 2017. "The Politics of Labor Market Reform in Coordinated Welfare Capitalism: Comparing Sweden, Germany, and South Korea." World Politics 69 (1): 144-183. doi:10.1017/S0043887116000228.
- Fnde der Hochphase Franke, 2017. zweiten des *Transaktionsaeschehens* Wohnungsbeständen: Aktuelle Ergebnisse der BBSR-Datenbank Wohnungstransaktionen [End of Second Wave of Transactions with Housing Portfolios: Recent Outcomes of the BBSR Housing Transaction Databank]. Bonn: BBSR. Accessed March 29 2017. http://www.bbsr. bund.de/BBSR/DE/Veroeffentlichungen/AnalysenKompakt/2017/ak-04-2017-dl.pdf?__blob= publicationFile&v=2.
- Furubotn, E. G. 1988. "Codetermination and the Modern Theory of the Firm: A Property-Rights Analysis." The Journal of Business 61 (2): 165–181. doi:10.1086/jb.1988.61.issue-2.
- Geyer, R., and A. Mackintosh. 2005. Integrating UK and European Social Policy: The Complexity of Europeanisation. Abingdon: Radcliffe.
- Goergen, M., N. O'Sullivan, and G. Wood. 2014. "The Consequences of Private Equity Acquisitions for Employees: New Evidence on the Impact on Wages, Employment and Productivity." Human Resource Management Journal 24 (2): 145-158. doi:10.1111/1748-8583.12032.
- Haffner, M. 2011. "Secure Occupancy in Rental Housing: A Comparative Analysis." Country Case Study: Germany. Delft: Onderzoeksinstituut OTB. Accessed April 19 2016. http://repository. tudelft.nl/assets/uuid:885ad9dd-4a76-432a-859f-a03b7855fd56/269955.pdf.
- Hall, P. A., and D. Soskice. 2001. "An Introduction to Varieties of Capitalism." In Varieties of Capitalism: The Institutional Foundations of Comparative Advantage, edited by P. A. Hall and D. Soskice, 1-68. Oxford: Oxford University Press.



- Hammer, B., A. Knauer, M. Pflücke, and B. Schwetzler. 2017. "Inorganic Growth Strategies and the Evolution of the Private Equity Business Model." Journal of Corporate Finance 45: 31-63. doi:10.1016/j.jcorpfin.2017.04.006.
- Hands, G. 2015. "Letter from the Chairman." Annual Review 2014 Transforming Businesses, a4-a10. Delivering value. https://www.terrafirma.com/annual-reviews.html?file=assets/downloads/ Annual%20Reviews/2014 Annual Review2.pdf.
- Hands, G. 2016. Brexit and its Impact on UK Property Investment, October 16. UK: MIPIM. https:// www.terrafirma.com/communications/chairmans-letters/chairmans-letter-article/items/guyhands-speech-at-mipim-uk-brexit-and-its-impact-on-uk-property-investment.html.
- IFRS Foundation. 2011. IFRS Standard 13: Fair Value Measurement. London: IASB. Accessed December 22 2016. http://eifrs.ifrs.org/eifrs/bnstandards/en/2016/ifrs13.pdf.
- Jenkinson, T., and M. Sousa. 2015. "What Determines the Exit Decision for Leveraged Buyouts?" Journal of Bankina & Finance 59: 399-408. doi:10.1016/i.ibankfin.2015.06.007.
- Jensen, M. C. 1989. "Eclipse of the Public Corporation." Harvard Business Review 67 (5): 61-74.
- Jordan, M. 2018. "The British Assured Shorthold Tenancy in a European Context: Extremity of Tenancy Law on the Fringes of Europe." In Tenancy Law and Housing Policy in Europe: Towards Regulatory Equilibrium, edited by C. U. Schmid, 239–259. Cheltenham: Edward Elgar.
- Kaplan, S. N., and P. Strömberg. 2009. "Leveraged Buyouts and Private Equity." Journal of Economic Perspectives 23 (1): 121–146. doi:10.1257/jep.23.1.121.
- Kemp, P. A., and S. Kofner. 2010. "Contrasting Varieties of Private Renting: England and Germany." International Journal of Housing Policy 10 (4): 379-398. doi:10.1080/14616718.2010.526401.
- Kirbach, R. 2006. "Wenn der Investor klingelt." Die Zeit, January 5. Accessed January 9 2017. http:// www.zeit.de/2006/02/Wohnungen Head/komplettansicht.
- Kofner, S. 2012. Aktuelle Geschäftsmodelle von Finanzinvestoren im Themenfeld Wohnungswirtschaftlicher Wandel und neue Finanzinvestoren: Gutachten. Düsseldorf: Landtag NRW. Accessed April 29 2016. https://www.landtag.nrw.de/portal/WWW/GB I/I.1/EK/16.WP/EK I/Gutachten Enquete 2011 -EndEndfassung_Juli_2012_Arbeitsstand_24.02.2013.pdf.
- Kofner, S. 2014. "The German Housing System: Fundamentally Resilient?" Journal of Housing and the Built Environment 29 (2): 255–275. doi:10.1007/s10901-013-9383-0.
- Korthals Altes, W. K. 2016. "Forced Relocation and Tenancy Law in Europe." Cities 52: 79-85. doi:10.1016/j.cities.2015.11.020.
- Lind, H. 2009. "Price Bubbles in Housing Markets: Concept, Theory and Indicators." International Journal of Housing Markets and Analysis 2 (1): 78-90. doi:10.1108/17538270910939574.
- MHCLG. 2018. Dwelling Stock: by Tenure. London: Ministry of Housing, Communities & Local Government. Accessed February 26 2018. https://www.gov.uk/government/uploads/system/ uploads/attachment data/file/609286/LT 101.xls.
- Mieterforum Ruhr. 2016. Nebenkosten: Erfindungsreichtum ohne Grenzen [Auxiliary Costs: Unbounded Creativity]. Bochum. Accessed March 21 2017. http://www.mieterforum-ruhr.de/ 32.html?&tx_ttnews%5Btt_news%5D=2699&cHash=3c1e8215acfe8bd48519c64b1984a718.
- Miller, P. 1990. "On the Interrelations between Accounting and the State." Accounting, Organizations and Society 15 (4): 315-338. doi:10.1016/0361-3682(90)90022-M.
- Miller, P. 2004. "Governing by Numbers: Why Calculative Practices Matter." In The Blackwell Cultural Economy Reader, edited by A. Amin and N. J. Thrift, 179-189. Malden: Blackwell.
- Müller-Armack, A. 1978. "The Social Market Economy as an Economic and Social Order." Review of Social Economy 36 (3): 325-331. doi:10.1080/00346767800000020.
- NAO. 2000. Managing Reductions in the Number of Vacant Family Quarters. London: National Audit Office. Accessed April 7 2016. https://www.nao.org.uk/wp-content/uploads/2000/04/9900435.pdf.
- Nölke, A. 2016. "Economic Causes of the Eurozone Crisis: The Analytical Contribution of Comparative Capitalism." Socio-Economic Review 14 (1): 141-161. doi:10.1093/ser/mwv031.
- Orji, P., and P. Sparkes. 2014. TENLAW: Tenancy Law and Housing Policy in Multi-level Europe: National report for England and Wales. Bremen: Zentrum für Europäische Rechtspolitik, Universität Bremen. Accessed October 23 2014. http://www.tenlaw.uni-bremen.de/reports/ England&WalesReport_09052014.pdf.



- Palea, V. 2015. "The Political Economy of Fair Value Reporting and the Governance of the Standards-Setting Process: Critical Issues and Pitfalls from a Continental European Union Perspective." Critical Perspectives on Accounting 29: 1-15. doi:10.1016/j.cpa.2014.10.004.
- Perry, J., and A. Nölke. 2006. "The Political Economy of International Accounting Standards." Review of International Political Economy 13 (4): 559-586. doi:10.1080/09692290600839790.
- Peter, B. 2008. "Railway Reform in Germany: Restructuring, Service Contracts, and Infrastructure Charges." PhD diss., Berlin: TU Berlin. Accessed January 9 2017. https://www.deutsche-digitalebibliothek.de/binary/NBNCPYOQVYVUU6DJYKEDROAQUOQAMS2B/full/1.pdf.
- Pillay, R. 2015. The Changing Nature of Corporate Social Responsibility: CSR and Development The Case of Mauritius. Abingdon: Routledge.
- Public Accounts Committee. 1998. Ministry of Defence: Sale of Married Quarters Estate, Forty-Eighth Report. London: House of Commons. Accessed April 8 2016. http://www.publications.parlia ment.uk/pa/cm199798/cmselect/cmpubacc/518/51802.htm.
- Ruonavaara, H. 2005. "How Divergent Housing Institutions Evolve: A Comparison of Swedish Tenant Co-Operatives and Finnish Shareholders' Housing Companies." Housing, Theory and Society 22 (4): 213-236. doi:10.1080/14036090500375373.
- Scanlon, K., and C. Whitehead. 2011. "Conclusions the Implications for the UK." In Towards a Sustainable Private Rented Sector: Lessons from Other Countries, edited by K. Scanlon and B. Kochan, 139-153. London: LSE London.
- Scharpf, F. W. 2010. "The Asymmetry of European Integration, or Why the EU Cannot Be a 'Social Market Economy'." Socio-Economic Review 8 (2): 211-250. doi:10.1093/ser/mwp031.
- Siepel, J., and P. Nightingale. 2014. "Anglo-Saxon Governance: Similarities, Difference and Outcomes in a Financialised World." Critical Perspectives on Accounting 25 (1): 27-35. doi:10.1016/j.cpa.2012.10.004.
- Smith, N. 1979. "Toward A Theory of Gentrification A Back to the City Movement by Capital, Not People." Journal of the American Planning Association 45 (4): 538–548. doi:10.1080/01944367908977002.
- Stockhammer, E. 2004. "Financialisation and the Slowdown of Accumulation." Cambridge Journal of Economics 28 (5): 719-741. doi:10.1093/cje/beh032.
- Unger, K. 2016. "Financialization of Rental Mass Housing in Germany: Understanding the Transaction Cycles in the Mass Rental Housing Sector 1999–2015." In Urban Austerity: Impacts of the Global Financial Crisis on Cities in Europe, edited by B. Schönig and S. Schipper, 176-190. Berlin: Theater der Zeit.
- Van der Veen, M., and W. K. Korthals Altes. 2009. "Strategic Urban Projects in Amsterdam and New York: Incomplete Contracts and Good Faith in Different Legal Systems." Urban Studies 46 (4): 947-965. doi:10.1177/0042098009102136.
- Veser, J., T. Thrun, and W. Jaedicke. 2007. Veränderungen der Anbieterstruktur im deutschen Wohnungsmarkt und wohnungspolitische Implikationen [Changes in the Supply Structure on the German Housing Market and Housing Policy Consequences]. Bonn: BMVBS/ BBR. Accessed April 19 2016. http://www.bbsr.bund.de/BBSR/DE/Veroeffentlichungen/BMVBS/Forschungen/ 2007/Heft124.html.
- Veser, J., T. Thrun, and W. Jaedicke. 2011. Transaktionen kleiner Mietwohnungsbestände [Transactions Smaller Rental-Dwelling Portfolios]. Berlin: BMVBS. Accessed April 19 2016. http://www.bbsr.bund. de/BBSR/DE/Veroeffentlichungen/BMVBS/Forschungen/2011/Heft152.html.
- Vollmer, H. 2003. "Bookkeeping, Accounting, Calculative Practice: The Sociological Suspense of Calculation." Critical Perspectives on Accounting 14 (3): 353-381. doi:10.1006/cpac.2002.0528.
- Vonovia SE. 2017. Annual Report 2016. Bochum. Accessed March 21 2017. http://investoren. vonovia.de/download/companies/deutscheanningtonimmo/Annual%20Reports/ DE000A1ML7J1-JA-2016-EQ-E-00.pdf.
- Westerheide, P. 2011. "The Benefits of Long Term Rental Arrangements." In Towards a Sustainable Private Rented Sector: Lessons from Other Countries, edited by K. Scanlon and B. Kochan, 145. London: LSE London.
- Wigger, A., and A. Nölke. 2007. "Enhanced Roles of Private Actors in EU Business Regulation and the Erosion of Rhenish Capitalism: The Case of Antitrust Enforcement." Journal of Common Market Studies 45 (2): 487-513. doi:10.1111/j.1468-5965.2007.00719.x.



Wijburg, G., and M. B. Aalbers. 2017. "The Alternative Financialization of the German Housing Market." Housing Studies 32 (7): 968-989. doi:10.1080/02673037.2017.1291917.

Witten Tenants Association and Mieterforum Ruhr. 2015. Hold the evictions at Sweets Way!. Signed by Knut Unger, Witten. Accessed January 4 2017. http://www.hic-gs.org/content/toGuyHands_ SweetsWay_10-04-15.pdf.

Zensus2011. 2014. Gebäude- und Wohnungsbestand in Deutschland - Erste Ergebnisse der Gebäudeund Wohnungszählung 2011. Hannover: Statistische Ämter des Bundes und der Länder. Accessed February 26 2018. https://www.destatis.de/DE/Publikationen/Thematisch/ Bevoelkerung/Zensus/ZensusBuLaGWZersteErgebnisse5121103119004.pdf.