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Private Equity investment in housing: The case of Germany

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Private Equity investment in housing:

The case of Germany

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Abstract:

Private equity companies have discovered the housing markets as a target for their investments. The case of Germany is exemplary in this respect. Several municipalities have sold their communal housing companies to private equity groups in recent time or intend to do so in the future due to budget problems. This means a fundamental shift on the supply side of the housing market because the new suppliers have shown a different behaviour. Their strategy is built on cost saving in housing management, on privatisation revenues and on financial schemes. These schemes include financial leverage, the sale of detached portfolios and securitisation (going public, Real Estate Investment Trusts). By using this combined approach the private equity investors try to attain their usual exorbitant rates of return. All three elements of the strategy contain considerable entrepreneurial and political risks. The new landlords will raise rents, enforce tenant privatisation and try to liquidise their investment in the medium run. The communities will have to assure the procurement of adequate housing for the needy target groups without access to a public housing stock. Also they will lack a reliable partner for community development.

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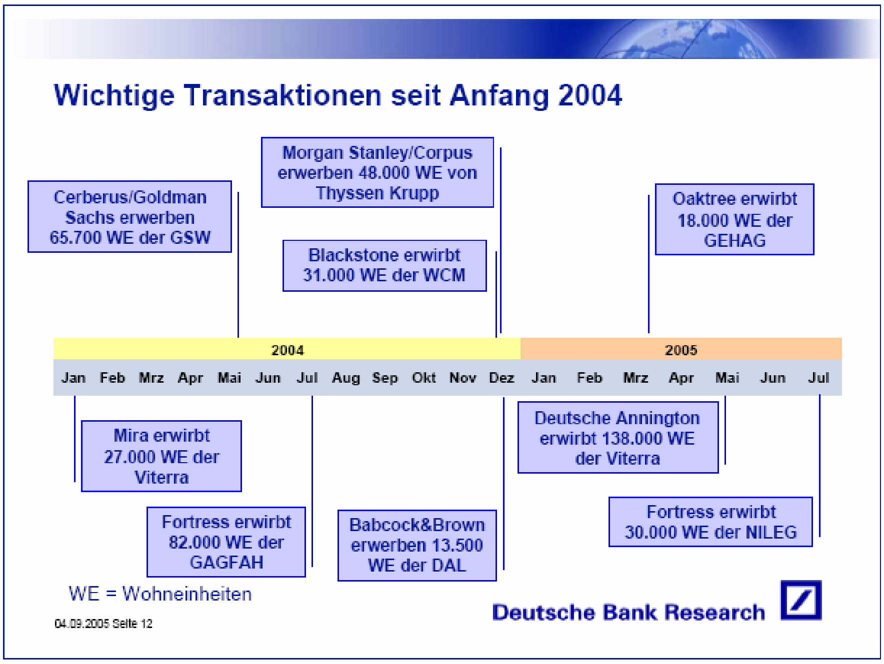
„The free game of the individual forces is a blessing insofar as competition is not corrupted and insofar as the protection of the weak, their mistreatment doesn't make state intervention necessary."

Gustav Schmoller, 1917 (translated by the author)

1 Introduction

Although the German market for housing package deals is still young it has already achieved a high level of transactions (see Rips 2005, p. 431 et sqq. for an overview). On the supply side we have industrial firms and above all public authorities. The chronic budget problems of the German state and especially of the local authorities have led to a rapidly rising selling wave of public housing companies resp. public housing stock since 1997. In view of a generally relaxed housing market situation and an excess supply of labour most industrial firms don't see the need for offering company housing any longer. In these days a company-owned housing stock doesn't help much to be regarded as an attractive employer.

When the market for housing packages was forming up banks and Real Estate PLCs were on the buyer's side. Since 2004 however Private equity groups dominate the housing investment scene.



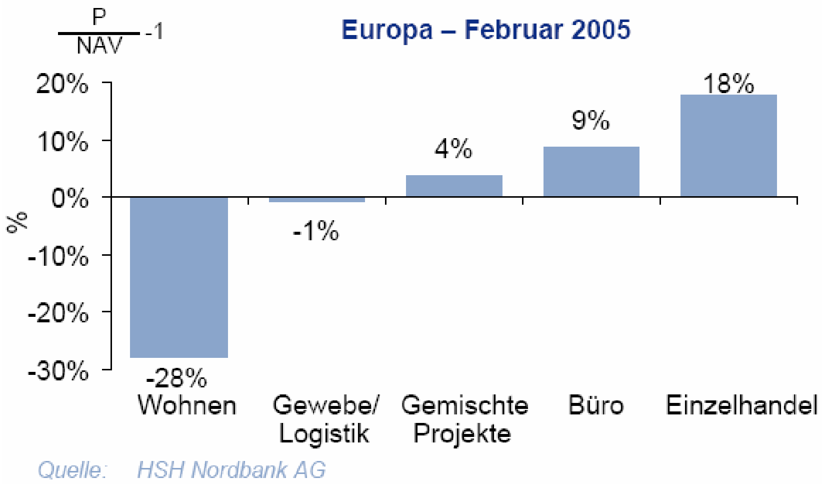
Private equity groups are non-listed companies who collect large-scale equity funds from private and institutional investors for their business of corporate raidership. Different from traditional investment funds they show entrepreneurial engagement from the very beginning. They push through radical organisation reforms and they redesign the business portfolios of the companies taken over. Their investment approach can be characterised as value-oriented in the medium term. The idea is to push up the value of the company and to realise the capital gains by selling off their holding when opportunity has come. Best suited for this investment approach are companies with valuable resources and management deficiencies.

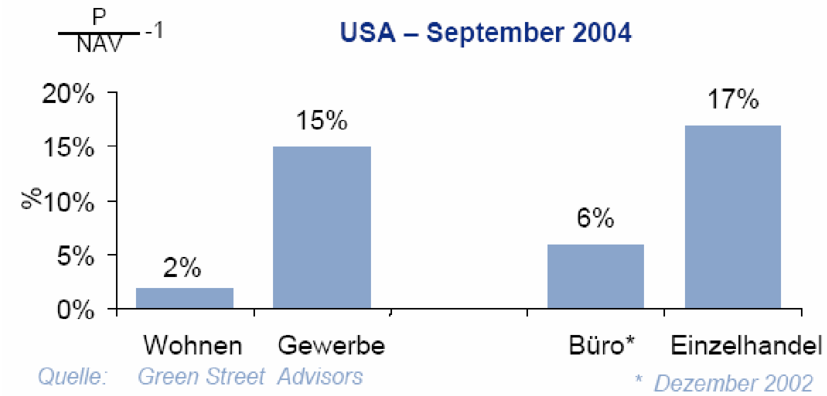
		before taxes (inflation 2 %)	after taxes (inflation 2 %)	5-7 % after taxes p.a. possible?
traditional asset-classes	**money market**	ca. 2%	ca. 1%	no
	bonds	ca. 4%	ca. 3%	no
	shares	ca. 7-8%	ca. 4-6%	yes, but with high volatiliy
alternative asset-classes	**Hedge Fonds**	ca. 5-8%	ca. 3-5%	yes, but with high selective risk
	Real Assets (real property, crude materials, gold)	ca. 5-10%	ca. 3-7%	yes, but with high volatiliy and high selective risk
	Private Equity	ca. 10-15%	ca. 10-15%	yes, but positive cash flows only after 4-5 years

source: Schäfer 2005, Feri Wealth Management

Private equity groups promise their investors to perform rate of returns between 10 and 15 per cent after inflation and taxes. Needless to say, with housing such rates can only be attained by using a “buy and sell”-approach and surely not by simply “buying and holding”. Private equity simply sticks to the old merchant’s rule „Buy low, sell high!“

Some market observers believe that compared to the U.S. residential real estate is undervalued in Europe and especially in Germany. They rely on the argument that the net asset value (NAV) of the housing stock of listed real estate companies is often higher than their market capitalisation. The discount on the NAV is explained by the inefficient allocation of the dwellings, valuation methods remote from the market and the lack of indirect instruments for real estate investment. Since the U.S. markets work more efficiently there is even a premium on residential real estate over there.





The large purchases of housing stock effected by the new investors have already changed the supply side of the German housing market fundamentally. The substitution of public equity through private equity is surely irrevocable. And there's more ahead since public authorities still own more than 3 Mio. dwellings and both, financial and real estate industry have tasted blood. A large part of the public housing stock will finally be re-allocated. Quite a number of municipal housing companies will be taken over or substituted by capital market-oriented suppliers who will show a rather different market behaviour.

2 The transformation of the German Housing industry

2.1 The current supply side structure

Compared with other European countries the current structure of the supply side of the German housing market has some special traits. The most eye-catching ones are the low rate of homeownership and the big market share of private rental housing. Private landlords own almost 60 per cent of total rental dwellings. This capital market share is a stabilising factor in the current privatisation process since the small portfolios of the private landlords are not attractive for the new investors due to high transaction costs (e.g. information, single property appraisal, real estate acquisition tax). They long for the large housing portfolios of the municipal housing companies. To be sure both groups of landlords are supplying very different target groups. Like everywhere the public landlords have a disproportionately high market share among the poor and needy.

Supplier	Number of dwellings in million units	Share in total housing stock in per cent
Private landlords	13,79	35,6
Municipal housing companies	2,74	7,1
Other public property	0,39	1,0
Housing cooperatives	2,29	5,9
Private housing companies	2,60	6,7
Churches	0,14	0,4
Other (e.g. banks, property funds, insurances)	1,61	4,2
Owner occupied	15,13	39,1
Total	38,69	100

source: Rips 2005, S. 430

The share of the public and "third" sector in total housing supply is only in the middle of the European field. Municipal housing, direct public housing, cooperative and church housing taken together account for only 14,4 per cent of the total German housing stock. This sector has a sharply higher market share in many other European countries like the U.K. (almost 20 per cent) and Austria (22 per cent). In Finland, Denmark, Sweden and the Netherlands the combined market share of the public and the third sector in housing is even higher. It is also doubtful whether the total stock of the municipal housing companies can be counted as part of the third sector in Germany. Quite a few of them have given up their public interest corporate culture for a more market-oriented one.

2.2 The current reorganisation of the German housing industry

The current re-allocation of the public housing stock has boosted the former tiptoeing process of dismantling the public interest culture in German housing. The final allocation of the privatised dwellings is far from being clearly predictable. At the current stage I of the privatization process we can only see the contours of the future ownership structure. One thing is for sure, anyway. The engagement of the Private equity groups will not be permanent. These groups are only *brokers* of the deals and not final owners. Their business model is to liquidise their capital sooner or later with a considerable capital gain.

The housing stock the corporate raiders are keen on consists of (current or former) social dwellings for the main part since it has always been the core business of municipal housing companies to invest in publicly subsidised social housing. A considerable part of these dwellings will be needed for the housing of the needy parts of the population permanently. In Eastern Germany the municipal housing stock comprises the former public property ("Volkseigentum") and the property not restituted. A large part of these dwellings was modernised since 1990 with the help of funds from the central government.

To make things worse most of the housing companies to be privatised (or already privatised) root in the tradition of public interest housing ("Wohnungsgemeinnützigkeit" in German). The sell-off of the public housing stock can thus be interpreted as radical *cultural break*. The remaining rests of the public interest culture in housing and the long established partnership between community and community housing are at stake.

We can denominate the current privatisations as "wild" because they were initiated by individual communities (or sometimes other public authorities like the state pension insurance) willing to ease their budget pains. The "good examples" of the forerunners have triggered off some kind of herd behaviour. It seems that each successful transaction corrupts more and more public sellers. But open questions remain anyway:

- Who will be the final owners of the privatised dwellings?
- How will the privatisations affect the supply side structure of the housing market and the behaviour of the suppliers?
- What will be the consequences for the self-conception of the housing industry and its employees?
- Can future challenges in fields like urban development, neighbourhood management and integration of minorities be mastered by suppliers with a one sided self-interested corporate culture?

As a placebo the sellers and the buyers agree upon so called „*Social charters*“, at least in some deals. These charters contain favourable clauses, e.g. dismissal protection, rent controls, protection against luxury upgrading and rebates for tenants willing to buy their own apartment. The charters have loopholes anyway and they don't cover all the benefits a municipal housing company could give to a community.

The charter of Dresden's Woba-deal for instance (see Landeshauptstadt Dresden 2005) only protects current Woba-tenants and not the ones who have rented or who will rent after the effective date. Its coverage will thus diminish gradually due to fluctuation. The additional rent controls are obviously not effective. They allow for rent increases more or less to the same extent like the civil code does. The effectiveness of the tenant privatisation percentage rebate depends on the appraisal of the property. If the clauses on cooperation in urban development are justiciable is doubtful and so forth. The most important question in such a charter is how to bind potential rebuyers effectively.

In a nutshell: There is no political strategy on the national level behind all this, in most cases not even on the local level. Housing policy is predominantly local now, but an increasing number of communities doesn’t see the need for a local housing policy any more. Most housing companies were sold in full leaving the community with almost no institutional influence on the company’s decisions after all. By doing so the communities have lost an important instrument of local housing policy.

3 The strategy of the Private Equity groups

Compared with the modest return on equity in municipal housing (around 2,1 per cent on average according to data from 1999) the return targets of the new investors sound like charlatanry. But they may be attainable if only all value levers cooperate. The value levers at hand are:

- Optimalisation of property management
  - Rent increases
  - Tenant mix
  - Administrative costs
  - Maintenance costs
- Tenant privatisation
- Financial schemes
  - Financial leverage
  - Sale of detached portfolios
  - Going public
  - Property funds
  - REITs

3.1 Optimalisation of property management

The measures for optimising property management are not free of entrepreneurial risk. The optimistic expectations of future rent increases will surely not be frustrated because of the tenancy laws or the Social charters. The crucial point here is the regional market situation. The future potential of rent augmentations will depend essentially on the regional portfolio mix of the housing stock taken over (see BBR 2006, esp. p. 6).

Apart from that the new owners might be tempted to "optimise" the tenant mix in the short run. The public housing stock with its typical allocation of tenants and dwellings is particularly suitable for this approach. It might be possible to augment the short term rent income by creating more homogeneous occupancy structures (allocation of the good locations to the most solvent tenants) if one is willing to accept the long term consequences of social segregation. The protecting tenancy laws against unfair dismissal and luxury modernisations might face a severe test.

Streamlining property administration is another possible value lever. The corresponding cost cutting measures will surely cost jobs in the housing industry. The most important cost cutting instrument will probably be the outsourcing of services which are self-provided up to the present (e.g. maintenance supervision). On the other hand the personnel intensity of housing limits the possible savings attainable here. Newly arising challenges for the housing industry like rent arrears and unstable neighbourhoods tend to create even more demand for personnel.

Another field of cost cutting is maintenance. The new owners tend to bring down the maintenance costs per square meter selectively. Needles to say, this is a risky business, too. The maintenance state of a building is an important competition parameter with a considerable influence on property valuation.

3.2 Tenant privatisation

One of most important value levers of the Private equity groups is tenant privatisation. The groups try to identify the privatisable part of the housing stock taken over as soon as possible. Hereafter they start to offer the dwellings with a considerable premium on the purchase price. Real estate agents are often motivated by granting extra high brokerage fees.

The present state of the German market for residential real estate seems to be promising for tenant privatisation in general. The low homeownership rate indicates a backlog demand. Combined with the low price level and the low interest rates it seems to be the dawning of the golden age of tenant privatisation.

On the other hand the most important subsidy for homeowners, the “Eigenheimzulage” was abolished at the beginning of this year. Previous experience with tenant privatisation (esp. in Eastern Germany) has shown that out of every housing portfolio only a limited number of dwellings are suitable for privatisation. A tenant mix with a high proportion of tenants not worthy of credit as well as a portfolio mix challenging the conventional idea of a homestead (e.g. multi-story buildings) limit the quota of privatisable dwellings noticeably.

Another obstacle to tenant privatisation is the so called “remainder problem”. This problem arises whenever only a part of the dwellings in a building can be sold to the tenants. The resulting mixed ownership structure tends to make property management difficult.

3.3 Financial leverage

Compared with traditional housing companies Private equity groups are a good deal more venturesome since they have an investment portfolio allowing for a world-wide and intersectoral distribution of risk. Municipal housing companies on the other rely almost completely on residential real estate in combination with an extreme regional accumulation risk. Private equity groups can therefore bear a much wider distribution of expected return from a single investment. The capital structure of the investment usually is an important element of their risk policy. They tend to leverage the return on equity by pushing the debt equity ratio to the limit.

3.4 Exit strategy

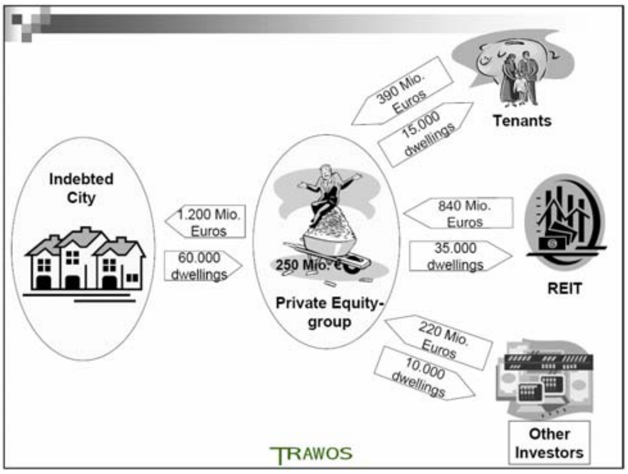
On stage I of the privatisation process the Private equity groups act as brokers. They organise the re-allocation of the housing stock taken over to the different target groups: e.g. tenants, real estate PLCs, property funds, REITs and institutional investors. The fine art of real estate brokerage is to maximize the present value of the sales revenues by optmising the allocation of portfolio segments and target groups. For this business model a timeframe of several years will normally be necessary. Especially tenant privatisation is a time-consuming business.

The different exit instruments can proceed simultaneously. A good example is the exit strategy of the U.S. Private equity group Cerberus. Together with the Whitehall group und the investment bank Goldman Sachs they had bought the GSW housing company with a housing stock of 65.000 dwellings from the city of Berlin in July 2004. The investors have issued closed-end property funds for detached portfolios while the tenant privatisation is still going on.

Another example is the Fortress Investment Group having acquired a portfolio of 158.100 dwellings with three big deals (Gagfah / Nileg / Woba, see table below). Now they want to go public as soon as they can.

Company	Date of purchase	Number of dwellings	Price (Mrd. €)
Gagfah	07/2004	82.000	3,50
Nileg	07/2005	28.500	1,70
Woba	02/2006	47.600	1,75

The capital gains realised by the IPO might have a dimension of several milliard Euros since the joint housing stock has a much better regional risk distribution than the stocks of the individual companies. Moreover the purchase prices reflect the underdeveloped German capital market structures with almost no means available to invest in residential real estate indirectly. By transactions like these the valuation discount of German residential real estate (between 20 and 25 per cent according to estimations) can be lifted up.



3.5 Entrepreneurial risk

Observers of the fundamental changes on the supply side of the German housing market ask themselves if the calculations of the new investors will come out even. The entrepreneurial risks of their strategy are obvious.

Their *market risk* (vacancy, loss of rent) depends on the locational mix of their portfolios. The individual regional housing markets will surely continue to develop differently. Until now the municipalities in the most attractive metropolitan areas (e.g. Cologne, Munich) were reluctant to privatise their housing stock because they face the most pressing provision problems. Due to this limited choice the portfolios of the Private equity groups are not free of regional accumulation risks. Because of the fierce competition they have to use almost every opportunity for acquiring additional housing stock. The leeway for steering the regional composition of the portfolios is thus rather limited.

In the housing industry the „*Operating leverage*“ reinforces occurring performance and market risks. The operating leverage is due to the high ratio of fixed costs in housing. A housing company cannot easily reduce its capacity in case of shrinking demand. Now conventional wisdom holds that in a branch with a pronounced operating leverage managers should be careful with the use of the “*Financial leverage*”. But this is exactly what the new investors don’t care about. For the traditional German bankers and housing professionals loan to value ratios of more than 80 per cent are “non-serious” anyway.

On balance the risks of the takeovers of public housing companies are not to be neglected. Some transactions might not be successful in the end. In these cases the buyers might be tempted to throw the dwellings on the market at almost any price.

4 REITs as an exit vehicle

The impending introduction of Real Estate Investment Trusts (REITs) in Germany will affect the privatisation process substantially. REITs are characterised by an explicit focus on real estate investments. Since their shares are traded at the stock exchange investors can liquidise their investment any time with low transaction costs. Income tax is only levied at the investor's level and not at the trust level ("full tax transparency"). REITs are obliged to distribute almost their entire yearly profit among their shareholders.

With these traits REITs combine the advantages of conventional property funds (tax transparency) and real estate PLCs (fungibility). Especially for institutional investors REITs are an ideal instrument for indirect investments in real estate.

	Closed end property fund	**Open end property fund**	**Real estate PLC**	**REIT**
Taxation	Investor's level	Investor's level	Investor's level and company level	Investor's level
Specialisation	Project orientation	Broadly invested, some only in specific countries, almost no residential buildings	Not clear: rarely used investment form	Specialisation on specific market segments
Fungibility	No organised secondary market	Restitution: reliable?	Shares traded at the stock exchange	Shares traded at the stock exchange
Valuation	Little transparency	Once a year by independent appraisers	Continuous appraisal of the shares at the capital market	Continuous appraisal of the shares at the capital market
Control	Low control intensity	BAFin: state supervision of investment trusts	Corporate governance standards, capital market	Corporate governance standards, capital market, high distribution quota

4.1 The role of REITs in the privatisation process

The introduction of REITs will change the market for housing packages as well as the housing market in general. REITs have the potential to re-allocate an important part of the German housing stock from direct to indirect ownership. It seems plausible that the first wave of REIT issues will concentrate on housing for two reasons:

1. Only residential real estate is under-valued. Commercial real estate like offices or shopping malls has always been on the shopping list of the large property funds.
2. The Private equity groups who are already heavily invested in residential real estate need an exit option for the non-privatisable dwellings (usually the larger part).

But this doesn't mean that the privatisations would stop immediately if only Germany wouldn't implement REITs. In this case the market participants would opt for other investment products like open-end property funds, real estate PLCs or foreign REITs.[1] Anyone who wants to stop the privatisation wave needs to do more than just lobbying against the REITs legislation.

On the other hand communities have the chance to circumvent the brokers by selling directly to a REIT or by converting their housing company into a listed REIT. By privatising this way they might even preserve more influence by holding a certain quota of the shares of the REIT.

The public authorities willing to privatise would have to wait however until REITs were established at the capital market. Also transaction costs might be higher in a REIT-privatisation especially if individual buildings would have to be sold. The German REITs might include some tax breaks here (exceptions from the real estate acquisition tax and tax relief for hidden reserves in case of a conversion into a REIT).

More important is the regional accumulation risk which in most cases will make the simple conversion of a municipal housing company into a REIT impossible (if size doesn't). A way out could be a merger of two or more housing companies (from different regions) and the subsequent conversion of the merged company into a REIT.

4.2 Future market structure

Ten years from now the structure of the supply side of the German housing market will have changed dramatically. But the changes will differ from region to region and from town to town. Some cities will resist the pressure to privatise and these cities will preserve the established structures more or less. In the cities where the municipal housing companies were sold REITs or real estate PLCs or both will appear on the scene.

The brokers will leave a rag rug ownership structure behind them. 10 years from now they will surely have stepped out of the market already. What's left will be a higher homeownership rate, a much lower market share of municipal housing (might be even zero) and the engagement of REITs or real estate PLCs. These owners will then hold the bulk of former public housing.

For the evaluation of the consequences of these changes in ownership on local housing policy it would be important to know which types of REITs will be invested. Pure apartment REITs might behave more than a traditional housing company at least in certain respects (although self-interested, more profit-minded and transaction-oriented). But all REITs investing in housing will care about their regional risk distribution. There will be no local REIT for Dresden or Cologne but supra-regional or national REITs.

Since supra-regional REITs don't have roots in the communities they cannot be used for purposes of urban development, social policy or integration policy, to name a few. There will be no partner for local housing policy.[2]

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[1] The Commerzbank-affiliate Commerz Grundbesitz has already issued a REIT listed at the Paris stock exchange. Most of the shares of this REIT are held by the German open end property fund hausInvest europa.

[2] Jones gives a review of the U.S. Housing equity REITs scene. These REITs surely don't show a "buy and hold"-behaviour (2004, p. 8): "The success of US housing equity REITs has been based on the ability to restructure their portfolios by buying and selling properties and undertaking development and refurbishment." Also "most REITs work across a range of states but quite often there is a regional focus." (Jones 2004, p. 24).

5 Institutional alternatives

5.1 Rediscovering public interest housing

5.1.1 The cultural transformation of the German housing industry

The supply side of the German housing market is changing fundamentally in theses days. At the end of this process not much will be left of the “housing industry”. The introduction of REITs in Germany can be interpreted as another (the last?) step in the tiptoeing historical process of loosing her identity. Several aberrations have been contributing to the gradual erosion of the ideological basis of public interest housing in Germany. These include:

- the quantitative building programmes of the post-war period including all the sins in urban planning and architecture made then (e.g. urban densification, multi-story buildings, lack of infrastructure in the new developments),
- massive corruption in the largest public housing company of the time (“Neue Heimat”) and
- the formal cancellation of the legal framework of public interest housing in 1990 (paving the legal way for the privatisations of our days).

The cultural transformation of housing has changed the professional jargon, too. Names of textbooks, courses and lobbying organisations have changed over time. In German there is a big difference between “Wohnung” and “Immobilie”. The term “Wohnung” (dwelling) refers to the perspective of the user. It puts the human being and the focal point of his life (including neighbourhood and social relations) in the foreground whereas the term “Immobilie” (real estate) takes the perspective of an investor and reduces the dwelling to a fungible, cash flow-generating “underlying asset”. The capital market perspective clearly neglects the spiritual, social and emotional context of a home.

Public interest housing on the other hand tries to act as a broker between the interests of the investors and those of the tenants, the community and the society. In public interest housing the profit orientation of a landlord is restrained by the public interest spirit. Social sector housing professionals have internalised their respective responsibilities. The mission of improving the chances of disadvantaged people in life is an important element of the altruistic spirit in public interest housing. Adam Smith’s famous quotation:

“It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their self-love, and never talk to them of our own necessities but of their advantages.”

is surely not applicable on the housing profession – as it is not on the profession of a development aid volunteer, a restorer and many others.

The great idea of public interest housing deserves a second chance in Germany. Housing policy is transforming into a special form of social policy (see also Fallis 2004). The new housing policy will be more qualitative than quantitative. Housing policy is more than just covering quantitative housing needs. It is about integration, participation, equal opportunities, crime prevention and a lot more. And here public interest housing comes into play.

5.1.2 An alternative approach to privatisation

An alternative approach to privatisation should take the renaissance of public interest housing into account as well as the budget constraints of the municipalities. Communities should have the possibility to reduce their equity shares in their municipal housing companies if it is guaranteed that the company will be run in accordance with the principles of public interest housing in the future. In this case additional equity or debenture capital can be injected into the public housing company via the capital market.

The instruments submitted for this purpose I have called Housing Investment Trusts (HIT) and Social Mortgage Bonds (SMB).[3] Both are tax-privileged forms of indirect ethical investments in public interest housing. In Germany this approach would require a re-regulation of the public interest housing sector. The final receivers of the tax subsidies need to be qualified and committed to the principles of public interest housing in the long run.

5.1.3 The idea of public interest housing

Public interest housing companies are "Social enterprises" and as such part of the third sector of the economy. Their corporate culture can be summarised as follows: „To maximise the contribution to the well being of communities".

An important part of the housing industry is deemed to be part of the third sector. Obviously enough some groups of tenants deserve the landlord's (and the society's) special attendance. Purely self-interested behaviour tends to be a source of external diseconomies in social housing.

Public interest housing shouldn't be mixed up with public housing. Public property is not a necessary element of a public interest culture. To be independent from the community to some degree might even be an advantage for a public interest housing company.

More important than ownership is the institutional safeguarding of the specific public interest corporate culture. A sector-specific institutional framework is needed for the restoration of the public interest culture in German municipal housing. The supervision of the sector is of special importance here. In German public interest housing the principle of self-administration has always been of particular importance (including management efficiency). Other vital elements of the sector-specific institutional framework are stand-alone courses of education and stand-alone professional organisations.

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[3] The SMBs resemble the tax-privileged Austrian „Wohnbauanleihen" whereas the HITs were inspired by the foredoomed British Housing Investment Trusts.

5.1.4 Public interest housing as a form of intervention

The special traits of the housing market justify state intervention into the market process. From an economic point of view we have to deal with different forms of market failure. Furthermore housing has the characteristics of a merit good. It is not an exaggeration if we state here that the housing market is one of the most imperfect markets of all. In principle state intervention in the housing market can take the following forms:

- regulation (e.g. rent controls),
- subsidies (e.g. social housing programmes, housing allowances),
- information (e.g. housing needs forecasts) and
- public interest housing.

Among these instruments public interest housing is the most extensive and also the most flexible one. It even has the potential to partially replace the other instruments. The following table contains the assignment of special traits of the housing market requiring intervention and the most suitable instruments for intervention.

Characteristic	Instrument
Special traits of the investment decision (immobility, extra high capital commitment, extra long payback period, interest rate risk, misinvestment risk)	Degressive depreciation Social housing Hedging instruments, e.g. share in the costs with tenants Public interest housing companies as pilot investors
Externalities of land use Neighbourhood externalities, e.g. o lack of maintenance, o one sided tenant mix → equal opportunities	Planning law (e.g. separation of land uses) Building order (e.g. fire protection) Subsidies for reconstruction and redevelopment Neighbourhood law Public interest housing companies as responsible pilot investors: urban development, revitalisation, preservation of historic buildings and monuments (no free rider behaviour) Public interest housing as an element of participation (tenant advisory committee, community empowerment) Public interest housing as an instrument for the integration of disadvantaged / discriminated groups (contribution to neighbourhood management) Hub function of public interest housing companies, e.g. for probation officers, youth welfare, bureaus against ethnic discrimination
Difficult market access for certain groups o higher rent for same quality o or lower quality for the same rent o social exclusion / social segregation o disadvantageous clauses o precarious housing and living conditions o at worst homelessness	Intensified dismissal protection Anti-discrimination laws Personal subsidies: e.g. housing allowances Object-related subsidies: provisioning function of social housing Public interest housing as trustworthy receiver of object-related and other subsidies (e.g. municipal building programmes) Public interest housing companies as non-discriminating landlords because of their specific corporate culture Public interest housing stock as part of the local housing reserve
Frictions in price formation because of inelastic supply and demand functions o overshooting of rents o pig cycles o housing shortages	Rent controls Flexibilisation of housing land provision Stabilisation of expectations (e.g. housing needs forecasts) Anti-cyclical steering of the completion of dwellings Public interest housing companies as pilot investors
Mismatching: imperfect allocation of housing stock and tenants	always sufficient housing stock including an adequate vacancy reserve Public interest housing companies as pilot investors
Merit good character of housing (minimum standards relating to quality and quantity of housing provision including residential space and social neighbourhood) → equal opportunities	Social housing Housing allowances Unemployment benefits Public interest housing as trustworthy receiver of object-related subsidies Public interest housing as an instrument of integration Hub function of public interest housing companies

5.1.5 Why do we need public interest housing companies?

The most important functions of public interest housing companies are:

- hub function towards local authorities, charities and the like,
- neighbourhood management function (neighbourhoods as focal points of social policy),
- integrative function,
- participative function and
- pilot investment function.

The hub function requires a landlord with an indefinite time horizon because personal and institutional networks need time to develop. For the neighbourhood management function a landlord with a large market share in the critical quarters and a public interest corporate culture would be suited best.

The integrative function counts on this culture, too. The alternatives like anti-discriminating laws and differentiated dismissal protection are costly and have side effects. Public interest housing on the other hand can give a good example to other landlords.

An institutionalised form of participative involvement of the tenants would be hardly accepted by private landlords. In case of a dislocated portfolio this wouldn't make much sense anyway. But tenant participation is important especially in problematic neighbourhoods with a one-sided tenant mix. It has the potential to evoke a sense of community and to encourage people to take over responsibility in their neighbourhood. Tenant participation is a countervailing power ensuring that

- self-interested management behaviour is restrained and
- the organisation always keeps the tenants in the center of its attendance.

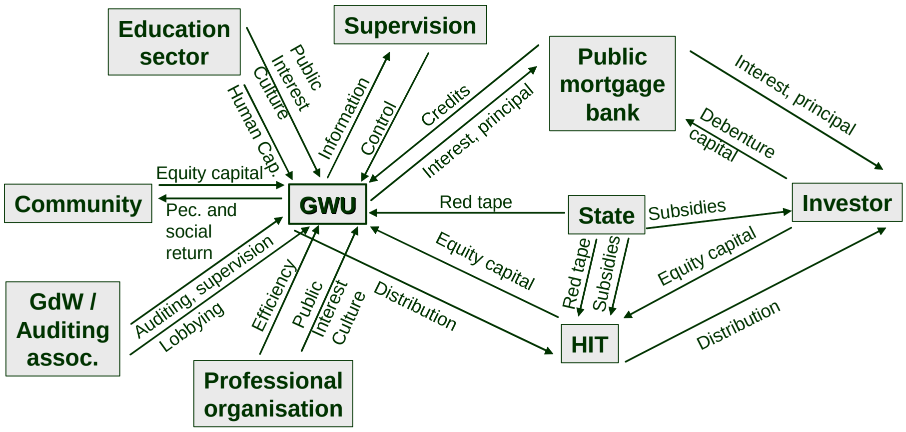
In their role as pilot investors the public interest companies are almost irreplaceable. They are pure housing companies re-investing a substantial part of their profits in housing. This feature together with their specific corporate culture and their unlimited time horizon qualifies them as pilot investors. In cases like a looming local housing shortage or a derelict quarter a public interest housing company could give the first impulse by investing in good time. By doing so the external diseconomies of the free rider-behaviour of private owners could be compensated.

All the basic functions of public interest housing are bound to the ownership of an important part of the dwellings in the target quarters and neighbourhoods. By their very nature the integrative, the participative and the pilot investment function cannot be outsourced. Admittedly there are other policy instruments at hand for the fulfilment of the integrative and the pilot investment function, but these instruments cover only parts of the whole range of the respective function. Furthermore they are costly and have side effects (like anti-discrimination laws making market access more difficult). The hub function and the neighbourhood management function relate to partner organisations and authorities. It would be efficient to assign these functions to the organisation most deeply involved (normally the housing company).

5.2 A blueprint for the future structure of public interest housing

The new model of the public interest housing sector developed here differs in crucial points from the model practised in Germany until 1990. The new public interest housing companies will have access to sector-specific financial means (Housing Investment Trusts and Social Mortgage Bonds). Tax privileges will be granted to the issuers of these securities and the ones investing in them. The housing companies themselves will benefit indirectly.

The two level approach of regulation / subsidisation has been chosen deliberately. It combines the local rootedness of the public interest housing companies with a privileged access to the capital market. Apart from that the new model lays more stress on the formation of a corporate culture according to the principles of public interest housing which is a mindset and not a subsidising technique in the first place.



5.2.1 Housing Investment Trusts (HITs) as sources of equity capital

Housing Investment Trusts provide the public interest housing sector (registered companies) with equity capital and by doing so they give the municipalities the opportunity to sell off part of their share. HITs will have to be listed at the stock exchange and they will enjoy special tax privileges. This regulation will create an extra segment of the capital market. Because of the tax advantages granted only for a specific type of investment executed by a specific type of investment trust, HITs will normally depend on demand from other HITs if they would like to sell their shares in registered housing companies.

HITs will compete with each other for the scarce capital either with moral or commercial arguments. They will have to analyse the different registered housing companies on a regular basis and they will have to implement a strategic portfolio management system alone to attain an acceptable degree of risk distribution in their portfolio. They will invest in several target companies for reasons of regional risk distribution. Also normally a couple of HITs will be invested in one housing company. Municipalities might want to limit the influence of a single HIT by installing voting rights caps or golden shares

	British REIT	German REIT	German HIT
Legal form	Capital company, listing obligatory	REIT-AG (PLC); separate trust capital, necessary listing seeked	AG (PLC), listing not obligatory
Shareholder structure	Restriction on 10 per cent of the shareholder's capital	No restriction	Restriction on 25 per cent of the shareholder's capital
Income- / asset structure	minimum 75 per cent of distribution qualified real estate income	minimum 75 per cent of income from rent and lease	Minimum two thirds of non-current assets shares in public interest housing
Secondary business	Maximum 25 per cent	Maximum 20 per cent from secondary business via subsidiaries	Maximum one third of non-current assets otherwise invested, minimum 50 per cent thereof in real estate including mortgages and mortgage covered bonds
Managemen t	Internal Management	External option for separate trust capital	Internal Management
Profit distribution	95 per cent minimum distribution	Minimum 90 per cent of distributable trust profit	75 per cent minimum distribution
Assessment basis of distribution	Qualified real estate income	Revenue including realized capital gains (if not re-invested or allocated to investment reserve)	Real estate income including realised capital gains (if not re-invested or allocated to investment reserve), but without capital gains from shares in public interest housing
Minimum capital / debenture capital	No minimum capital, max. 2,5 : 1 (debt / equity)	Minimum capital € 5 Mio., trust capital € 50 Mio., no limit on debt / equity ratio	Minimum capital € 240.000, max. 3 : 1 (debt / equity)
Tax exemption	Tax exemption for „qualified real estate income“ at the trust level	Tax exemption at the trust level if minimum distribution is paid out	At the trust level tax exemption for income from shares in public interest housing At the investor's level tax advantage in comparison with other capital investments including REITs with limited regressive distributive effects (e.g. tax credit)
Capital gains realised by sale of real estate	Tax-free, if source of qualified real estate income and held for at least 12 months	If distributed taxation at the investor's level; if retained tax deferral by allocation to investment reserve possible	Realised capital gains from the sale of shares in public interest housing tax-free if held for more than five years
Deduction at source	Deduction effected by REIT	20 per cent of current distribution	20 per cent of current distribution
Capital gains realised by sale of REIT- / HIT-share	Capital gains tax	Tax-free if held for more than a year	Tax-free if held for more than five years

5.2.2 The organisation of intra-sectoral competition in the public interest housing sector

Even though the public interest housing companies don't compete with landlords from outside their sector for the scarce capital of the HITs they would compete with each other for the HIT capital. Now intra-sectoral competition could be restrained by a distribution limit. In this case the HITs wouldn't be able to force the public interest housing companies to a profit-maximising behaviour. But it wouldn't be wise to eliminate competition completely. No competition means no incentives for efficient management. We shouldn't count only on accountants to ensure efficiency afterwards. A certain degree of competition among public interest housing companies should be allowed for. The distribution limit could refer to a reference interest rate like the base interest rate of the European Central Bank (e.g. base rate plus 2,5 per cent).

The distribution limit would only be an upper limit. The actual volume of profits distributed would depend on the economic situation of the company. Furthermore the percentage distribution limit would be calculated on the basis of the fully paid shares. Retained profits couldn't be distributed to the shareholders. Even in the case of liquidation the shareholders would only receive what they have paid up before. A part of public interest capital is in fact a revolving capital fund.

Another parameter of competition is the investment risk. The choice here is not between full and no competition at all. We have to define an adequate degree of competition however. Risk and competition could be limited by capital guarantees granted by public authorities. Only the HITs should profit from such guarantees and only in case of the insolvency of a public interest housing company. The guarantee should refer to the difference between the capital the investor has fully paid up for shares and his share in the company's net assets. From the amount of this difference 75 per cent should be guaranteed.

5.2.3 Social Mortgage Bonds (SMBs) as sources of credit capital

The Social Mortgage Bond (SMB) proposed here as a privileged instrument for the financing of public interest housing with outside borrowed capital is based on the Austrian "Wohnbauanleihe". There are differences in detail though.

The tax-privileged SMBs are to be issued by public mortgage banks which safeguard that the underwriting revenue will only be used for granting mortgages to registered housing companies. In the first five years after the introduction of SMBs there will be no obligation to finance real estate investment like new buildings or the modernisation of existing buildings however. Public interest housing companies will thus have the possibility to re-finance other debt or to take up additional debenture capital if they have sufficient securities at hand. Since the receiver companies will have to be registered there is no need for special regulation on the dwellings' maximum size or rent here. The interest revenue from SMBs shall be taxed lower than revenue from other comparable capital investments, possibly with limited regressive distributional effects.

SMBs will form an own segment of the general bond market. If the arrangement of terms is left to the market forces an equilibrium of after tax rates of return for comparable bonds (risk, duration) will be the result. The SMBs will pay an interest rate so low that the tax advantages will just be compensated for. With SMBs the issuers thus have a very cheap refinance instrument at hand.

The SMBs shall be taxed as follows:

- An important part of the acquisition costs for the first purchase can be deducted as special expenses from the income tax burden if the SMB is lodged with a bank for at least 10 years.
- Interest revenue is tax-free up to the base interest rate of the European Central Bank. Additional interest revenue to be taxed with a lump sum rate of 20 per cent.
- Realised capital gains are fully taxable within the speculative period.

5.2.4 Registration and supervision of public interest housing

The public interest housing companies are the final receivers of the tax advantages granted via HITs and SMBs. These tax advantages are justified by the use of the subsidised capital according to the principles of public interest housing. Independent of their ownership structure the public interest housing companies have to fulfil certain registration criteria in order to qualify as privileged receivers of state subsidies:

- submission to a registration procedure and to a current surveillance (self-administration via auditing associations in cooperation with a supervisory body, e.g. "Housing Corporation")
- distribution limit
- cost covering rent calculation
- restrictions relating to product range (e.g. cheap housing) and target group (e.g. disadvantaged groups)
- efficient management of the housing stock
- narrower definition of the toleration duties in case of modernisation measures
- additional anti-discrimination requirements
- reservation of a certain share of the housing stock for municipal occupancy
- tenant participation, e.g. advisory committees, three thirds constituency structure
- equity participation of the locational communities
- cultural orientation towards the tenant's best and the best of the locational community

5.2.5 The role of professional organisations

The new start-up for the consolidation of the idea of public interest housing in Germany should be less technical and more cultural than the last try. It should rely more on people than on regulation. Public interest housing is a great idea to be filled with enthusiasm. The idea is lived by the people working in social housing and by the tenants of social dwellings. Their relationship needs to be based on fair partnership. Tenants are neither objects of administration nor cash cows, but members of a house community, a neighbourhood, a quarter and a community. Public interest housing is about integration, participation and equal chances in life.

Housing professionals are no administrators of a housing stock, but service providers and partners for their tenants. They need to internalise the idea of public interest housing and in this respect a stand-alone professional organisation can make an important contribution. A good example is the „Chartered Institute of Housing" which services especially housing professionals in British social housing. Their system of professional qualification is tailor-made for the needs of the housing associations and the local authorities in the U.K. The system is based on personal membership and it aims not only at establishing the highest possible professional standards in housing, but also at the moral orientation and rootedness of its members. To allege an example the discrimination of minorities – in whatever form – is against the moral code of conduct of the members of the Chartered Institute of Housing.

The approach of affecting the behaviour of a housing supplier by the qualification and the value orientation of its employees and especially of its managers and executives is much more effective than all forms of subsidies and regulations.

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Appendix: investment analysis

		Scenario 0	Scenario 1	Scenario 2	Scenario 3
I.	**basic data**				
	linving space in sq. ms	650.000	650.000	650.000	650.000
	number of dwellings	10.000	10.000	10.000	10.000
	sq. ms per unit	65,00	65,00	65,00	65,00
	interest for debt per cent	4,50	4,50	4,50	4,50
	adm. costs per unit €	450	300	300	300
	mainten. costs per sq. m €	21,00	14,00	14,00	14,00
	loss of rent in per cent of total rent	2,00	2,00	2,00	2,00
	acqusition cost €	410.000.000	410.000.000	410.000.000	410.000.000
	acquisition cost per sq. m €	630,77	630,77	630,77	630,77
	number of dwellings sold per year	0	0	100	400
	selling price per sq. m	1.000	1.000	1.000	1.000
	sales revenue per year	0	0	6.500.000	26.000.000
	holding period years	10	10	10	10
II.	**financial structure**				
	equity capital €	82.000.000	20.500.000	20.500.000	20.500.000
	debenture capital €	328.000.000	389.500.000	389.500.000	389.500.000
	total costs €	**410.000.000**	**410.000.000**	**410.000.000**	**410.000.000**
III.	**current payout in the first year**				
A.	capital costs				
	annuity on mortgage €	**18.040.000**	**21.422.500**	**21.422.500**	**21.422.500**
B.	operating costs	**18.898.800**	**12.848.800**	**12.848.800**	**12.848.800**
	adm. costs €	4.500.000	3.000.000	3.000.000	3.000.000
	mainten. costs €	13.650.000	9.100.000	9.100.000	9.100.000
	loss of rent 2 per cent	748.800	748.800	748.800	748.800
IV.	**total rent revenue in year 1 €**	**37.440.000**	**37.440.000**	**37.440.000**	**37.440.000**
	per month and sq. m €	4,80	4,80	4,80	4,80
	per month and sq. m €	5,74	6,83		

scenario 0

t	A_0/R_{20}	units	sq. m	rent	rent/sq. m	sales rev.	cap. gains	perform.	cap. costs	adm./unit	adm. costs	maint./sq. m	maint. costs
0	-82.000.000							410.000.000					
1		10.000	650.000	37.440.000	4,80	0	-4.168.028	405.831.972	18.040.000	450	4.500.000	21,00	13.650.000
2		10.000	650.000	38.188.800	4,90	0	-4.125.657	401.706.315	18.040.000	461	4.612.500	21,53	13.991.250
3		10.000	650.000	38.952.576	4,99	0	-4.083.715	397.622.600	18.040.000	473	4.727.813	22,06	14.341.031
4		10.000	650.000	39.731.628	5,09	0	-4.042.201	393.580.399	18.040.000	485	4.846.008	22,61	14.699.557
5		10.000	650.000	40.526.260	5,20	0	-4.001.108	389.579.291	18.040.000	497	4.967.158	23,18	15.067.046
6		10.000	650.000	41.336.785	5,30	0	-3.960.433	385.618.858	18.040.000	509	5.091.337	23,76	15.443.722
7		10.000	650.000	42.163.521	5,41	0	-3.920.172	381.698.686	18.040.000	522	5.218.620	24,35	15.829.815
8		10.000	650.000	43.006.791	5,51	0	-3.880.319	377.818.367	18.040.000	535	5.349.086	24,96	16.225.561
9		10.000	650.000	43.866.927	5,62	0	-3.840.872	373.977.494	18.040.000	548	5.482.813	25,59	16.631.200
10	82.480.995	10.000	650.000	44.744.266	5,74	0	-3.801.826	370.175.668	18.040.000	562	5.619.883	26,23	17.046.980

rent loss	rent loss %	op. costs	CF	disc. factor	pres. value	IRR	CF2	acc. factor	fin. value	return
				1,0000	-82.000.000	-82.000.000	-82.000.000	1,0000	-82.000.000	
748.800	2,000	18.898.821	500.729	0,9786	490.018	500.729	18.540.729	1,5513	776.795	
763.776	2,000	19.367.548	780.791	0,9577	747.744	780.791	18.820.791	1,4775	1.153.584	
779.052	2,000	19.847.917	1.064.186	0,9372	997.343	1.064.186	19.104.186	1,4071	1.497.416	
794.633	2,000	20.340.220	1.350.923	0,9171	1.238.987	1.350.923	19.390.923	1,3401	1.810.366	
810.525	2,000	20.844.752	1.641.011	0,8975	1.472.843	1.641.011	19.681.011	1,2763	2.094.392	
826.736	2,000	21.361.819	1.934.458	0,8783	1.699.078	1.934.458	19.974.458	1,2155	2.351.345	
843.270	2,000	21.891.730	2.231.269	0,8595	1.917.852	2.231.269	20.271.269	1,1576	2.582.973	
860.136	2,000	22.434.807	2.531.449	0,8411	2.129.322	2.531.449	20.571.449	1,1025	2.790.923	
877.339	2,000	22.991.377	2.835.002	0,8232	2.333.644	2.835.002	20.875.002	1,0500	2.976.752	
894.885	2,000	23.561.774	3.141.929	0,8055	68.973.170	85.622.924	103.662.924	1,0000	85.622.924	
					0	**0,02185903**			**103.657.471**	**0,0237234**

scenario 1

t	A_0/R_{20}	units	sq. m	rent	rent/sq. m	sales rev.	cap. gains	perform.	cap. costs	adm./unit	adm. costs	maint./sq. m	maint. costs
0	-20.500.000							410.000.000					
1		10.000	650.000	37.440.000	4,80	0	-3.481.884	406.518.116	21.422.500	300	3.000.000	14,00	9.100.000
2		10.000	650.000	38.937.600	4,99	0	-3.452.314	403.065.802	21.422.500	308	3.075.000	14,35	9.327.500
3		10.000	650.000	40.495.104	5,19	0	-3.422.996	399.642.806	21.422.500	315	3.151.875	14,71	9.560.688
4		10.000	650.000	42.114.908	5,40	0	-3.393.927	396.248.879	21.422.500	323	3.230.672	15,08	9.799.705
5		10.000	650.000	43.799.504	5,62	0	-3.365.104	392.883.775	21.422.500	331	3.311.439	15,45	10.044.697
6		10.000	650.000	45.551.485	5,84	0	-3.336.526	389.547.249	21.422.500	339	3.394.225	15,84	10.295.815
7		10.000	650.000	47.373.544	6,07	0	-3.308.191	386.239.058	21.422.500	348	3.479.080	16,24	10.553.210
8		10.000	650.000	49.268.486	6,32	0	-3.280.097	382.958.961	21.422.500	357	3.566.057	16,64	10.817.040
9		10.000	650.000	51.239.225	6,57	0	-3.252.241	379.706.721	21.422.500	366	3.655.209	17,06	11.087.466
10	-1.693.476	10.000	650.000	53.288.794	6,83	0	-3.224.621	376.482.099	21.422.500	375	3.746.589	17,48	11.364.653

rent loss	rent loss %	op. costs	CF	disc. factor	pres. value	IRR	CF2	acc. factor	fin. value	return
				1,0000	-20.500.000	-20.500.000	-20.500.000	1,0000	-20.500.000	
748.800	2,000	12.848.814	3.168.686	0,7810	2.474.666	3.168.686	24.591.186	1,5513	4.915.672	
837.158	2,150	13.239.673	4.275.427	0,6099	2.607.680	4.275.427	25.697.927	1,4775	6.316.753	
935.943	2,311	13.648.520	5.424.084	0,4763	2.583.679	5.424.084	26.846.584	1,4071	7.632.230	
1.046.384	2,485	14.076.776	6.615.632	0,3720	2.461.053	6.615.632	28.038.132	1,3401	8.865.580	
1.169.858	2,671	14.526.009	7.850.995	0,2905	2.280.929	7.850.995	29.273.495	1,2763	10.020.081	
1.307.901	2,871	14.997.956	9.131.029	0,2269	2.071.783	9.131.029	30.553.529	1,2155	11.098.822	
1.462.233	3,087	15.494.540	10.456.504	0,1772	1.852.885	10.456.504	31.879.004	1,1576	12.104.711	
1.634.777	3,318	16.017.891	11.828.095	0,1384	1.636.870	11.828.095	33.250.595	1,1025	13.040.474	
1.827.680	3,567	16.570.373	13.246.353	0,1081	1.431.637	13.246.353	34.668.853	1,0500	13.908.670	
2.043.347	3,834	17.154.606	14.711.688	0,0844	1.098.817	13.018.212	34.440.712	1,0000	13.018.212	
					0	**0,28044989**			**100.921.206**	**0,1727973**

scenario 2

t	A_0/R_{20}	units	sq. m	rent	rent/sq. m	sales rev.	cap. gains	perform.	cap. costs	adm./unit	adm. costs	maint./sq. m	maint. costs
0	-20.500.000							410.000.000					
1		9.900	643.500,00	37.065.600	4,80	6.500.000	-13.526.823	396.473.177	21.422.500	300	2.970.000	14,00	9.009.000
2		9.800	637.000,00	38.158.848	4,99	6.500.000	-13.080.543	383.392.634	21.422.500	308	3.013.500	14,35	9.140.950
3		9.700	630.500,00	39.280.251	5,19	6.500.000	-12.648.986	370.743.648	21.422.500	315	3.057.319	14,71	9.273.867
4		9.600	624.000,00	40.430.312	5,40	6.500.000	-12.231.668	358.511.980	21.422.500	323	3.101.445	15,08	9.407.717
5		9.500	617.500,00	41.609.529	5,62	6.500.000	-11.828.117	346.683.863	21.422.500	331	3.145.867	15,45	9.542.462
6		9.400	611.000,00	42.818.396	5,84	6.500.000	-11.437.881	335.245.982	21.422.500	339	3.190.571	15,84	9.678.066
7		9.300	604.500,00	44.057.396	6,07	6.500.000	-11.060.520	324.185.462	21.422.500	348	3.235.545	16,24	9.814.485
8		9.200	598.000,00	45.327.007	6,32	6.500.000	-10.695.608	313.489.854	21.422.500	357	3.280.773	16,64	9.951.677
9		9.100	591.500,00	46.627.695	6,57	6.500.000	-10.342.736	303.147.118	21.422.500	366	3.326.240	17,06	10.089.594
10	-85.029.964	9.000	585.000,00	47.959.915	6,83	6.500.000	-10.001.506	293.145.612	21.422.500	375	3.371.930	17,48	10.228.188

rent loss	rent loss %	op. costs	CF	disc. factor	pres. value	IRR	CF2	acc. factor	fin. value	return
				1,0000	-20.500.000	-20.500.000	-20.500.000	1,0000	-20.500.000	
741.312	2,000	12.720.312	9.422.788	0,6720	6.332.067	9.422.788	30.845.288	1,5513	14.617.837	
835.679	2,190	12.990.129	10.246.219	0,4516	4.626.960	10.246.219	31.668.719	1,4775	15.138.332	
941.960	2,398	13.273.146	11.084.605	0,3035	3.363.709	11.084.605	32.507.105	1,4071	15.597.153	
1.061.645	2,626	13.570.807	11.937.005	0,2039	2.434.219	11.937.005	33.359.505	1,3401	15.996.728	
1.196.408	2,875	13.884.737	12.802.292	0,1370	1.754.357	12.802.292	34.224.792	1,2763	16.339.329	
1.348.128	3,148	14.216.765	13.679.131	0,0921	1.259.665	13.679.131	35.101.631	1,2155	16.627.069	
1.518.915	3,448	14.568.945	14.565.951	0,0619	901.366	14.565.951	35.988.451	1,1576	16.861.909	
1.711.141	3,775	14.943.591	15.460.916	0,0416	642.930	15.460.916	36.883.416	1,1025	17.045.660	
1.927.467	4,134	15.343.301	16.361.894	0,0279	457.223	16.361.894	37.784.394	1,0500	17.179.989	
2.170.878	4,526	15.770.996	17.266.419	0,0188	-1.272.497	-67.763.545	-46.341.045	1,0000	-67.763.545	
					0	**0,48810621**			**77.640.461**	**0,14244**

scenario 3

t	A_0/R_{20}	units	sq. m	rent	rent/sq. m	sales rev.	cap. gains	perform.	cap. costs	adm./unit	adm. costs	maint./sq. m	maint. costs
0	-20.500.000							410.000.000					
1		9.600	624.000,00	35.942.400	4,80	26.000.000	-15.447.773	394.552.227	21.422.500	300	2.880.000	14,00	8.736.000
2		9.200	598.000,00	35.822.592	4,99	26.000.000	-14.865.740	379.686.487	21.422.500	308	2.829.000	14,35	8.581.300
3		8.800	572.000,00	35.635.692	5,19	26.000.000	-14.305.636	365.380.851	21.422.500	315	2.773.650	14,71	8.413.405
4		8.400	546.000,00	35.376.523	5,40	26.000.000	-13.766.636	351.614.215	21.422.500	323	2.713.764	15,08	8.231.752
5		8.000	520.000,00	35.039.604	5,62	26.000.000	-13.247.943	338.366.272	21.422.500	331	2.649.151	15,45	8.035.758
6		7.600	494.000,00	34.619.128	5,84	26.000.000	-12.748.794	325.617.478	21.422.500	339	2.579.611	15,84	7.824.819
7		7.200	468.000,00	34.108.952	6,07	26.000.000	-12.268.451	313.349.027	21.422.500	348	2.504.938	16,24	7.598.311
8		6.800	442.000,00	33.502.570	6,32	26.000.000	-11.806.207	301.542.820	21.422.500	357	2.424.919	16,64	7.355.587
9		6.400	416.000,00	32.793.104	6,57	26.000.000	-11.361.378	290.181.441	21.422.500	366	2.339.334	17,06	7.095.978
10	-98.927.445	6.000	390.000,00	31.973.277	6,83	26.000.000	-10.933.310	279.248.131	21.422.500	375	2.247.953	17,48	6.818.792

rent loss	rent loss %	op. costs	CF	disc. factor	pres. value	IRR	CF2	acc. factor	fin. value	return
				1,0000	-20.500.000	-20.500.000	-20.500.000	1,0000	-20.500.000	
718.848	2,000	12.334.848	28.185.052	0,4217	11.884.731	28.185.052	49.607.552	1,5513	43.724.266	
813.173	2,270	12.223.473	28.176.619	0,1778	5.009.910	28.176.619	49.599.119	1,4775	41.629.699	
918.136	2,576	12.105.191	28.108.001	0,0750	2.107.374	28.108.001	49.530.501	1,4071	39.550.780	
1.034.505	2,924	11.980.022	27.974.001	0,0316	884.376	27.974.001	49.396.501	1,3401	37.487.837	
1.162.981	3,319	11.847.890	27.769.214	0,0133	370.183	27.769.214	49.191.714	1,2763	35.441.336	
1.304.144	3,767	11.708.574	27.488.055	0,0056	154.514	27.488.055	48.910.555	1,2155	33.411.902	
1.458.390	4,276	11.561.639	27.124.813	0,0024	64.293	27.124.813	48.547.313	1,1576	31.400.362	
1.625.845	4,853	11.406.351	26.673.719	0,0010	26.659	26.673.719	48.096.219	1,1025	29.407.775	
1.806.256	5,508	11.241.569	26.129.036	0,0004	11.012	26.129.036	47.551.536	1,0500	27.435.487	
1.998.849	6,252	11.065.594	25.485.183	0,0002	-13.051	-73.442.262	-52.019.762	1,0000	-73.442.262	
					0	**1,37153460**			**246.047.183**	**0,2821134**

	scenario 0	scenario 1	scenario 2	scenario 3
IRR	0,022	0,280	0,488	1,372
comp.	0,050	0,050	0,050	0,050
rent1	0,020	0,040	0,040	0,040
rent2	0,020	0,040	0,040	0,040
adm.	0,025	0,025	0,025	0,025
maint.	0,025	0,025	0,025	0,025
rent loss	0,000	0,075	0,095	0,135
cap rate	0,0452	0,0600	0,0600	0,0600
exit rate	0,0572	0,0960	0,1320	0,1680
cap. gains	-0,0102	-0,0085	-0,0330	-0,0377
sell. price	370.175.668	376.482.099	293.145.612	279.248.131
res. debt	287.694.673	378.175.576	378.175.576	378.175.576

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