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Revitalising East German Historic Cities with Private Funds: the case of Zittau

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Abstract:

Although massive public and private funds were directed into real estate projects in Eastern Germany especially in the 90s an important part of the precious historic building ensembles of the historic inner cities of the region is endangered or already lost. The deplorable state of many cityscapes is a source of various pecuniary and technological externalities hampering economic development and quality of life. Given the pace of the deterioration of the building structure public funds are insufficient for the preservation of the historic cityscapes. It is however extremely difficult to attract private funds for the restoration of historic buildings. A research project funded by the interior ministry of the Free State of Saxony has given a review of the situation in the historic inner city of Zittau. Although investments in historic buildings are subsidized with tax exemptions and direct funding in some cases private restoration funds flowing into the historic buildings are insufficient. The reasons for this reluctance are diverse, but neighbourhood externalities due to maintenance arrears play an important role here. The paper gives a review of the technical, legal and commercial impediments to private investment based on the results of the research project. As an alternative to individual private investment the prospects for the attraction of institutional investment funds from Closed and Open End Property Funds, Real Estate PLCs, Real Estate Investment Trusts and Public Interest Organisations, i.e. gAG: gemeinnützige (“kleine”) Aktiengesellschaft, are evaluated.

keywords: historic buildings, neighbourhood externalities, Eastern Germany, revitalisation

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Contents

1 Current situation of Zittau's historic inner city

The border town of Zittau is typical for the urban development problems of small and medium-sized East German historic cities. In the GDR Zittau had a flourishing automotive and textile industry which almost completely vanished after 1990. Due to emigration and low birth rates the population fell from 45.000 in 1989 to only 25.000 residents in 2006.

The unemployment rate in the county averaged 18,7 per cent in 2006 which is slightly above the East German average. The regional labour market is characterised by a substantial low wage segment. The share of Arbeitslosengeld II (stage II unemployment benefit) receivers (the long term unemployed, part time employed and the ones receiving low wages) among the population between 15 and 64 is 19,0 per cent. For a county this quota is exceptionally high.

The cityscape of Zittau is marked by buildings from diverse periods like early gothic period, renaissance, baroque, classicism and Jugendstil. Most of the buildings in the inner city were erected at the end of the 18th and during the 19th century. In the late years of the GDR the urban development of the town was characterised by a neglection of the historic building substance. Vacancy combined with lack of maintenance and an already damaged building substance lead to a rapid deterioration of most buildings. The situation was even worse than in other cities in the GDR because of long-term plans to give up the city of Zittau in favour of open-pit brown coal mining.

The state of construction, the unsatisfactory sanitary facilities and the difficulties of decentralised coal heating motivated the people to leave the inner city and move into the new prefabriqued and centrally-heated buildings at the outskirts of the town. As a result many buildings in the inner city were already vacant and heavily damaged in 1990.

From 1991 to 2005 € 54,4 Mio. of direct public subsidies were distributed for building measures in the historic inner city. A little more than 50 per cent of the 600 buildings in the inner city were restored until today. This is a relatively low share compared with cities like Meißen and Pirna where almost all historic buildings in the inner city were restored after 1990. Also the building damages and the restored objects in the inner city are not evenly distributed, but concentrated in certain areas. The chances of recovery for an area with mostly vacant and heavily damaged buildings in the hands of different owners are negligible because of external diseconomies leading to free rider behaviour of the individual owners.

In the 90s investment in existing buildings was hampered by unsettled property rights. But necessary investment in inner city buildings with unambiguous ownership remained undone in many cases, too. Since the late nineties the return prospects were

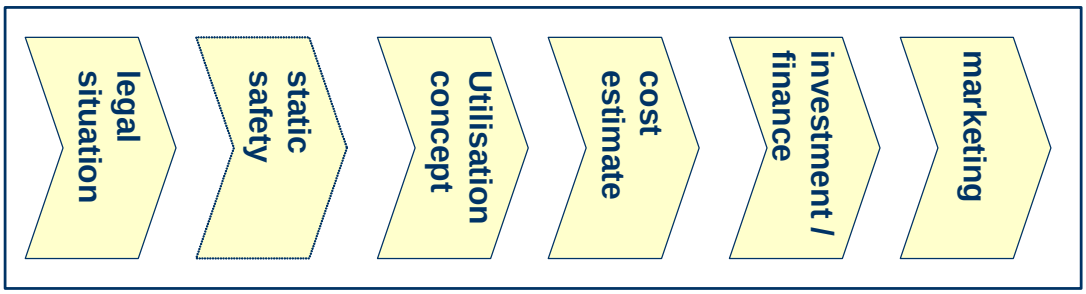
impaired by an unbalanced housing market (excess demand). The current state of the housing market is in part a result of undifferentiated federal housing subsidies of the 90s. Subsidies went mostly into prefabriqued single family homes and into the modernisation of prefabriqued dwellings built in the socialist period.

Another reason for the current state of the building substance is its high average age. The challenge of revitalising old building substance is to bring modern requirements of room layout, heating costs and comfort in accordance with the requirements of monumental protection. Although there are many good examples in this respect the prospects for the further restoration process are sombre in the face of deteriorating general conditions (low housing demand, cutback of subsidies).

2 Methodic approach

The restoration of historic buildings is not an easy task. Potential investors need to sink considerable costs for the analysis of the target objects (building damage assessment, building cost estimate, real estaste market analysis, location and site analysis, financial analysis, investment analysis) in advance. These analytical costs are lost if the project does not go ahead. The chances for revitalising an object thus improve when the investor is discharged from these tasks.

The basic idea of the project is to carry out different combinations of these analytical tasks at selected objects in Zittau's historical inner city. By taking the investor's perspective the project team hoped to gain insights into the nature and the relevance of the most pressing impediments to invest.



stages of revitalisation

2.1 Stages of revitalisation

2.1.1 Legal situation

Checking the legal situation of an investment object is the first step of revitalisation. Legal conditions like ownership and monumental status of a property have an important effect on the following stages of revitalisation.

In Eastern Germany private owners are often unwilling or unable to restore their property or even to maintain it. In such cases the means of exerting pressure at disposal of the local authorities are of special interest – including dispossession of the property as a last resort.

2.1.2 Static safety

Building measures to improve or maintain the static safety of an object are targeted at buildings worthy of preservation, but without an immediate prospect of a marketable utilisation. These measures aim at the preservation of the building substance. For their planning and implementation the state of the building and especially the building damages and their causes have to be investigated. The results of the investigation are used to filter out the damages which endanger the building construction or the static safety of the building (e.g. leaking roof). On the basis of these findings the necessary safety measures can be planned. Needless to say, this type of transitory preservation is not attractive for private investors at all. Such kind of investment needs to be subsidised at 100 per cent.

2.1.3 Utilisation concept

A utilisation concept is a proposal for an adequate and profitable future use of a building which takes its technical, physical and spatial properties as well as the local demand situation into account. It is a crucial input for the following revitalisation stages like cost estimate, investment calculation and marketing.

In Zittau's historic inner city and also at the outskirts we have a number of buildings of historical importance tailored at the economic structure of former times. The problem is, that structural change has made the original type of utilisation obsolete, e.g. the "Salt House" (Salzhaus), the Yarn Refinement Factory (Garnveredelung) and the "Durchhaus" (a house with two gateways connecting two streets) Innere Weberstraße 20 / Lindenstraße 11. For this kind of objects it is often not easy to develop a modern and profitable utilisation concept which preserves the special historical properties of the architecture at the same time.

2.1.4 Cost estimate

The usage-dependent cost estimate is an indispensable input fort he investment calculation and the financial concept of an object. Following DIN 276 the cost estimates were structured into seven cost groups:

- cost group 100 – site
- cost group 200 – adaption and connections to public infrastructure
- cost group 300 – construction and material costs
- cost group 400 – technical facilities
- cost group 500 – outdoor facilities
- cost group 600 – equipment and art
- cost group 700 – additional building costs

In order to estimate the total costs a room directory has been compiled and the measures of the elements in each room were ascertained (e.g. inside walls, outside walls, ceilings). A class of damage was assigned to each single element. The costs per unit, element and room depending on the damage class were taken from the „Kostenspiegel zur Kostenschätzung“ (Neddermann 2005). The construction and material costs for all rooms in the building add up to the total costs in the cost group 300. A cost estimate of this kind is however subject to incertitude on a large scale. Cost divergences of more than 30 per cent are usual. This cost incertitude makes investment in historic buildings more risky than new construction. Rational investors will thus demand a higher rate of return on investments in historic objects.

2.1.5 Investment / Finance

It is of utmost importance for an investor to know how profitable his investment will be. Rates of return for the analysed objects were calculated on the basis of estimates of acquisition and building costs and of expected future cash flows (rent revenues, capital and operating costs). Tax subsidies (like higher depreciation rates) and direct subsidies (preservation of monuments) were included into the calculations.

2.1.6 Marketing

The last step in the process of revitalisation of a property is the marketing. As we said before the marketing of objects with severe building damages is a difficult task. Since potential investors will hesitate to sink the necessary analytical costs damaged properties have a considerable competitive disadvantage. Another problem is the concentration of damaged objects in certain quarters. It doesn't make sense to buy and restore an object surrounded by ruins.

2.2 The models

The different stages of revitalisation were combined to different "packages" or models reflecting typical combinations of problems:

- Model I – preservation of townscape shaping buildings: a defensive model taking into account the long time horizon of inner city revitalisation. The objects chosen were analysed in order to define adequate measures to preserve the building substance and guarantee their static safety for a given period of time.
- Model III – development of alternative concepts of usage: objects with severe damages to be revitalised. All stages of revitalisation are involved here.
- Model IV – objects ready to be marketed: objects with an inflexible structure and thus without alternatives of utilisation. The legal situation and the cost estimation are unproblematic.
- Model V – quarters marketing: A marketing concept was developed for a whole quarter of Zittau's historic inner city. The quarter chosen is among the most neglected ones characterised by loss of population, extensive building damages and a number of demolishments above the average.

3 Preservation of vacant townscape shaping buildings

„Safeguarding measures" (Sicherungsmaßnahmen) are defined in the respective administrative fiat[1] of the Free State of Saxony: "urgent and indispensable measures at objects worthy of preservation in order to avoid weather damage or the repair of

[1] Verwaltungsvorschrift über die Vorbereitung, Durchführung und Förderung von Maßnahmen der Städtebaulichen Erneuerung im Freistaat Sachsen (VwV-StBauE).

damages endangering the existence of the buildings and hampering or making impossible future restoration or modernisation of the buildings."[2]

It is a rather narrow definition not allowing for example a roof to be laid with new tiles. Either the old roof tiles have to be laid anew or the roof has to fixed provisionally by using a foil coverage.

The following three objects were chosen as pilot objects

- Baderstraße 24
- Breite Straße 2
- Lindenstraße 11

The objects Breite Straße 2 and Baderstraße 24 belong to the city. The safeguarding measures thus will be financed exclusively with state subsidies. The administrative fiat cited above is relevant here.

In order to determine the necessary volume of the safeguarding measures the constructive damages have to be investigated at first. The next step is to filter out the damages endangering the static safety of the building. Hereafter the underlying causes of those damages have to be detected by visual observation or by analysing probes, diggings, drillings or local breakups.

Due to lack of documentation it was also necessary to measure the buildings in order to draw the sketches necessary for the planning of the safeguarding measures.

The analysis of the building Baderstraße 24 resulted in an extensive and from a technical point of view hardly realisable package of measures. The surveyors thus recommended the demolition of the building as the only measure making economic sense.

In spite of an in-depth analysis new damages were detected while restoring the second object, Breite Straße 2. The complexity of the whole building project thus increased and the execution of the measures already planned was aggravated. Also the administrative fiat turned out to be too inflexible and not always in accordance with technical necessity and economic reason.

The basic problem of the third object, Lindenstraße 11, is the financial incapability of its owner. The damages will probably get worse until the authorities take action to secure the building.

[2] Sächsisches Staatsministerium des Innern: VwV-StBauE, 29.11.2002, p. 21.

The further restoration of Zittau's historic inner city will happen against a background of modest return on investment and limited public and private resources. Saving as many neglected historic buildings as possible will require preventive measures to prevent damages from emerging and to limit the consequences of damages which already have arisen. The analysis of the underlying causes of constructive damages has shown that especially vacant buildings will need more preventive maintenance in the future.

For example the severe water, moisture penetration, deformation and structural damages at Baderstraße 24 can solely be attributed to a broken roof drainage. Regular maintenance activity requiring only limited financial resources could have prevented most of the damages from emerging. The water damages in the gable could have been prevented by recreating the brick-work head capping (Mauerwerkskopfabdeckung).

The findings for Breite Straße 2 are similar. The deciding factor in the development of the heavy building damages was the omitted maintenance of the roof and the leakages entailed thereby. Other factors were an inoperative roof drainage (clad in ivy), water penetrating through a broken roof valley and a broken eaves gutter related to the neighbouring buildings. Once again limited preventive maintenance activity could have prevented heavy damages from emerging.

What's more, most of the damages at Lindenstraße 11 are a consequence of a broken roof drainage. Also broken windows and window frames expose parts of the building to the rainfall. Such damages could be limited effectively by simple measures like cleaning the roof drainage and planking of broken windows. Lindenstraße 11 also suffers from the consequences of the demolition of the neighbouring building not yet redressed, e.g. holes and an unrendered wall.

Experience from our model cases tells us that a regular and systematic inspection of all vacant or endangered buildings in order to identify any damages as early as possible would make much sense. The building inspectorate to be founded should be equipped with the necessary financial resources to be able to plan and execute limited maintenance and safeguarding measures (like cleaning or repairing roof drainages, planking of windows, clearing of ivy or sometimes rendering of walls) independent of the ownership situation. The inspectorate should also be responsible for the registration of severe damages as a prerequisite for a later in-depth analysis.

4 Instruments for interference by public authorities

4.1 Interference based on building regulation

On the basis of the building regulations (Bauordnungsrecht) local authorities can interfere in order to avert a danger, e.g. the danger of components crashing down. In such cases the building supervision (Bauaufsicht) has to demand the abolishment of the source of danger of the owner.

In case of unwilling or economically incapable owners the authorities have to take substitutive action (Ersatzvornahme). The legal instruments to secure the respective claims (e.g. the compulsive hypothec – Zwangshypothek) are not effective in many cases. That applies especially to foreign property owners.

Suggestions for improvement focus on the problem of claim securitisation and on enhanced possibilities to check the financial capability of an owner (e.g. disclosure of accounts).

4.2 Interference based on urban development legislation

With the redevelopment statute (Sanierungssatzung) and the preservation statute (Erhaltungssatzung) of 1993 the city of Zittau has opted for an extensive redevelopment procedure. Inside the formally designated redevelopment area (see the red border line in the picture) instruments like preemptive right, expropriation and provisons on building permissions (Genehmigungsvorbehalte) are available for purposes of public guidance and control.

borders of the redevelopment and preservation statutes of the city of Zittau (2006)

Urban redevelopment is realised by means of regulatory measures (Ordnungsmaßnahmen, e.g. land reallocation - Bodenordnung - or exposure of sites - Freilegung von Grundstücken) or building measures (e.g. modernisation, restoration, new construction).[3] In the case of Zittau's redevelopment area the execution deficit is vast. Little more than half of the buildings was restored up to today. This execution deficit can be attributed to the following reasons:

- the insufficient engagement of private owners with respect to modernisation and restoration of historic buildings,

[3] Urban redevelopment is financed with federal and state funds according to the Städtebauförderungsprogramm (§§ 164a, b BauGB).

- insufficient legal forms of pressure,
- insufficient financial resources of local authorities for purposes of urban redevelopment and
- difficulties in acquiring private investors.

Even in a redevelopment area the possibilities of local authorities to induce unwilling owners to undertake building measures at their property are rather limited. To take substitutive action requires a toleration agreement (Duldungsvertrag) between community and owner. Unwilling or economically incapable owners will however not accept such an agreement in most cases since the authorities can demand compensation for outlay. The only effective instrument to enforce building measures against the will of the owner is an "order based on urban-planning grounds" (städtebauliches Gebot).

The special powers constituted in a preservation statute require adequate financiel resources, too. If for example the city of Zittau refuses permission for a demolition the owner can demand the takeover of the property from the city under certain circumstances. If the community does not find another investor it has to finance the restoration itself. The exercise of a preemptive right poses the same kind of problems.

The execution deficit with respect to the statutes is a proof for the ineffectiveness of the special interference instruments applicable in the areas covered by the statutes. Experience in Zittau tells us that selling tendererd or otherwise acquired neglected property to other private owners often does not result in subsequent investment.

After the German reunification experts had hoped that „communities in the New Länder would have had more courage to state orders based on urban-planning grounds" (Lege 2005, p. 881). Despite widespread and increasing urban deficiencies these hopes were illusive.

This type of orders only had a very limited practical relevance until today. Inquiries about the matter at divers cities and counties in Eastern and Western Germany have proven that orders based on urban-planning grounds are hardly ever used (Lege 2005, p. 881).

The instrument of "modernisation and restoration order" (Modernisierungs- und Instandsetzungsgebot) was occasionally used in West German redevelopment areas, but only as an instrument of pressure. Demolition orders were only stated on rare occasions. Building orders were only resorted to in times of severe housing shortages. In low demand areas building orders might not be enforceable because of economic unacceptability.

Qualitative expert interviews with representants of public urban development corporations (Stadtentwicklungsgesellschaften) and building control departments in East German cities like Bautzen, Dresden, Görlitz und Zittau have confirmed that because of incertain jurisdiction, long administrative procedures, the cost and time requirements of legal disputes and insufficient financial resources of local authorities the order powers with respect to urban planning were not yet used (see also Hoppenberg / Witt 2006, B, Rn. 1207). The use of these powers is however indispensable to force irresponsible owners to cooperate.

To give an example: With a building order infillments can be ordered even in a not planned inner zone. Because of the requirement of economic acceptability even this instrument is not very effective. In many cases an infillment or replacement order will be objectively economically unacceptable. Furthermore in case of subjective economic unacceptability the owner can demand the takeover of the property from the community inclusive of a compensation. Financial resources and private investors are necessary here, too. Otherwise an order of this kind does not make sense. If the investor is unwilling despite of an economically acceptable order the only way out for the authorities is to adopt coercive measures including dispossession as a last resort.

The successful implementation of a modernisation and restoration order also depends on its economic acceptability. The community is obliged to compensate the owner for non-profitable costs. If only the local authorities had enough financial resources in view of their respective stock of neglected historic buildings the modernisation and restoration order would have the potential to evolve into an important instrument of pressure for coping with urban deficiencies – despite of an elaborate administrative procedure. It needs to be used consequently including coercive measures however.

4.3 Interference based on monumental protection law

If an owner does not attend to his duties to preserve and – if necessary – restore the monument he owns (§§ 8,9 SächsDSchG, Hoppenberg / Witt, D, Rn. 234) the monumental protection authorities can proceed against him. The agency can for example state a preservation order (Erhaltungsgebot).

The practical importance of these powers is however very modest. If the owner is able to substantiate that the order is economically unacceptable the monumental protection authority has to cover the costs itself. In the face of limited financial resources the authorities are not able to do so in most cases.

4.4 Passage of title

The legal possibilities to induce transfers of properties have not been made much use of until today. Given the state of construction of many buildings it would make much sense however for the city of Zittau to consolidate the property rights of endangered objects worthy of preservation as far as possible. It would be a way to internalise the neighbourhood externalities caused by neglected buildings. Despite of risks, costs and long administrative procedures a selective transfer of property rights into public property is necessary to reinstall incentives to invest.

The statutory requirements for the exercise of the general preemptive right (which the community possesses in any redevelopment area) should be given in Zittau's inner city. It is a matter of public interest to save buildings worthy to be preserved through acquisition from unwilling or economically incapable owners. The problem of the instrument is that it only applies in case of a sale.

Compared with the general preemptive right the legal requirements of a dispossession are much higher. A dispossession is more or less a last resort in cases where the purpose of the dispossession cannot be attained otherwise.

In general local authorities should have adequate financial resources to perform their assigned tasks. This includes resources for the exercise of preemptive rights and dispossession procedures if these instruments are necessary for purposes of an orderly urban development.

In the present situation the consolidation of property rights is an essential prerequisite to sustain the revitalising and restoration process. Local authorities need resources not only for compensations but also for qualified personnel.

4.5 Summary

The possibilities of interference based on building and urban development regulation are diverse but not always effective. Even the additional powers in redevelopment or preservation areas are insufficient to induce non-cooperative owners to invest. The monumental protection laws provide more possibilities to pressurise owners but their scope of application is restricted to monuments.

A modernisation and restoration order combined with coercive measures is the most suitable instrument for the purposes of urban restoration. If this instrument was used consequently additional investment could be induced and passage of title accelerated.

Adequate funding however is the linchpin of the entire revitalisation process. The local authorities need to be enabled to apply the available set of instruments consequently.

5 Investment Analysis

The special problems of an investment analysis for a historic residential building are illustrated using the vacant object Innere Oybiner Straße 5 as a case study. The building is located in a quiet side street in the historic center.

The object with 8 dwellings of different size and room layout (altogether around 600 m^2 living space) and in need of restoration is for sale. The acquisition costs including all additional costs are estimated at € 102.000. A private investor aims at buying and restoring the object.

The building is under monumental protection and is located in a statutory development are. As a consequence the investor could make use of the higher depreciation scheme stipulated in § 7h resp. 7i of the German income tax law. We assume a marginal tax rate of the investor of 35 per cent.

The total costs of the project are made up of the following types of cost:

total costs

type of cost	amount €	€ per m^2 living space
land value	48.000	80
value of the building substance	52.002	86,67
restoration costs	0	0
modernisation costs	463.500	772,50
total costs	563.502	939,17

We assume that all costs are subject to activation. Also we leave out the interest costs during the building period. Finally we assume the loss of rent risk not to be higher in the first year of re-use.

The following table exhibits the basic financial data, the financial structure and the composition of the cash flow in year 1:

I.	**basic data**	
	living space in m^2	600
	number of units	8
	interest rate for debt capital in per cent year 1-10	4,5
	administration costs per unit year 1 €	370
	maintenance costs per m^2 year 1 €	7,00
	Loss of rent, percentage of target rent year 1	5,0
II.	**total costs**	
	land value per m^2 living space €	80
	value of the existing building substance per m^2 €	86,67
	restoration costs per m^2 living space €	
	modernisation costs per m^2 living space €	772,50
	total costs per m^2 living space €	**939,17**
III.	**financial structure**	
	equity capital €	100.002
	debt capital €	463.500
	total costs €	**563.502**
IV.	**cash outflows in year 1**	
A.	**capital costs**	
	annuity fort he mortgage € (1 per cent of the initial principal)	25.493
B.	**operating costs**	8.924
	administration €	2.960
	maintenance €	4.200
	restoration €	0
	modernisation €	0
	loss of rent €	1.764
V.	**rent revenue after modernisation in year 1 €**	**35.280**

For the development of the average rent per m^2 (initially € 4,90) we assume a growth rate of 1,8 per cent per year in the first five years. In the following 5 year intervals the growth rate is assumed to fall successively to 1,2, 0,6 and finally to 0 per cent.

The term of the mortgage is 20 years, the fixed interest rate for the first ten years is 4,5 per cent and the initial principal amounts to 1 per cent of the initial debt. Total capital costs thus amount to:

€ 463.500 * (0,045 + 0,01) = **€ 25.493**

The net cash flow before taxes in year 1 is rent revenue minus operating and capital costs:

rent €	35.280
- capital costs €	25.493
- operating costs €	8.924
= cash flow €	**863**

The assumptions for the further development of the cash flow components are as follows:

- **Holding period and conservation of value**: After restoration the object will be rented out for 20 years and then be sold. The original state after restoration will be maintained by adequate maintenance expenditure (no modernisation).
- **Rent revenue**: The initial rent revenue is given by the following product:
  € 4,90 * 600 m^2 * 12 months = **€ 35.280**
  For the assumptions about their further development see above.
- **Loss of rent risk:** 5 per cent of the target rent.
- **Capital costs:** The restoration will be financed exclusively with debenture capital, the purchase price however solely with equity capital. The credit needs of € 463.500 will be financed with a 10 year FRM at an interest rate of 4,5 per cent. For the prolongation period a rate of 6,0 per cent is expected. The initial principal is 1 per cent of the initial debt.
- **Administration costs:** a customary in trade value of € 370 per unit is assumed here.
- **Maintenance costs:** due to the restoration just finished only € 7,00 pro m^2. All operating costs are expected to rise with a rate of 2 per cent per year.
- **Restoration costs during use:** none.
- **Modernisation costs during use:** none.
- **Cap rate / Exit cap rate / capital gains / value development:** The entry cap rate is 4,68 per cent. Until the end of the holding period this rate is expected to rise to 8,2 per cent due to the age of the property and the risk of a housing market slump. With this exit cap rate we can expect a net sale revenue in year 20 of € 346.650 (Cash flow in year 20 + capital costs in year 20 divided by the exit cap rate). This corresponds to a yearly decrease in value of 2,4 per cent.

dynamisation: assumptions	per cent
growth rate rent year 1-5	1,8
growth rate rent year 6-10	1,2
growth rate rent year 11-15	0,6
growth rate rent year 16-20	0,0
growth rate operating costs	2,0
loss of rent / rent revenue	5,0
cap rate	4,68
exit cap rate	8,20
capital gains per year	-2,4

The following table exhibits the development of the principal balance:

t	**Principal balance €**	**interest €**	**principal €**
1	463.500	20.858	4.635
2	458.865	20.649	4.844
3	454.021	20.431	5.062
4	448.960	20.203	5.289
5	443.671	19.965	5.527
6	438.143	19.716	5.776
7	432.367	19.457	6.036
8	426.331	19.185	6.308
9	420.024	18.901	6.591
10	413.432	18.604	6.888
11	406.544	24.393	4.635
12	401.909	24.115	4.913
13	396.996	23.820	5.208
14	391.788	23.507	5.520
15	386.268	23.176	5.852
16	380.416	22.825	6.203
17	374.214	22.453	6.575
18	367.639	22.058	6.969
19	360.669	21.640	7.387
20	353.282	21.197	7.831

At the end of the holding period a principal balance of € 345.451 remains which has to be balanced with the revenue from the sale.

mortgage: basic data

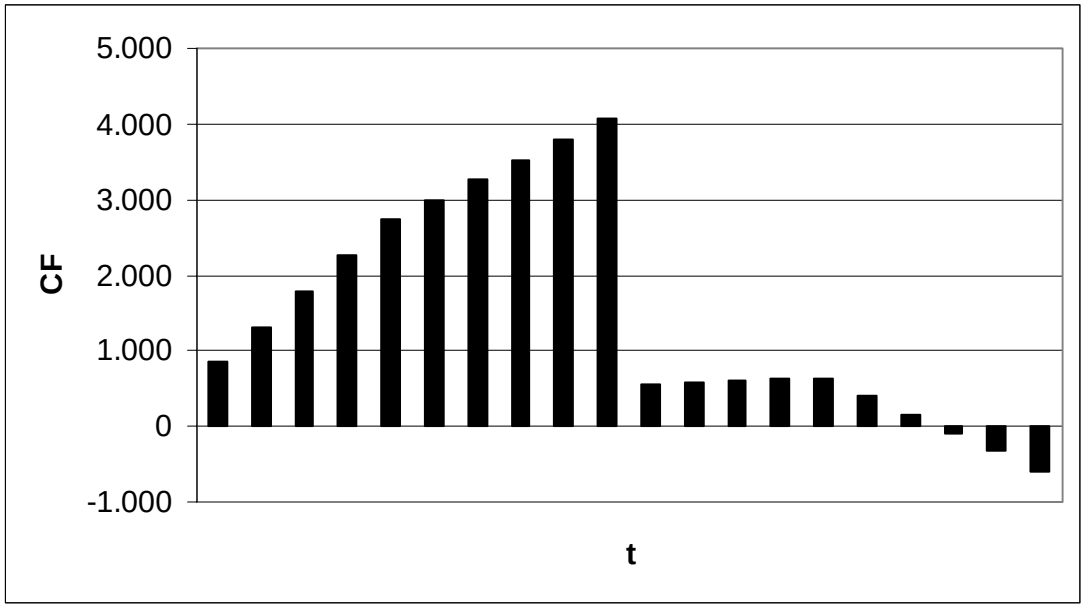
debt capital €	463.500
i t_0 in per cent	4,5
i t_{10} in per cent	6,0
init. principal per cent	1,0
ann t_0-t_{10} €	25.493
ann t_{11}-t_{20} €	29.028

The development of the cash flow components and of the value of the property are shown in the following table:

t	A_0/R_{20} €	rent €	Capital gain €	value €	capital €	Adm. €	CF €
0	-100.002	0		563.502		0	0
1		35.280	-13.524	549.978	25.493	8.924	864
2		35.915	-13.199	536.778	25.493	9.102	1.320
3		36.562	-12.883	523.896	25.493	9.285	1.784
4		37.220	-12.573	511.322	25.493	9.470	2.257
5		37.890	-12.272	499.051	25.493	9.660	2.737
6		38.344	-11.977	487.073	25.493	9.853	2.999
7		38.804	-11.690	475.384	25.493	10.050	3.262
8		39.270	-11.409	463.974	25.493	10.251	3.527
9		39.741	-11.135	452.839	25.493	10.456	3.793
10		40.218	-10.868	441.971	25.493	10.665	4.061
11		40.459	-10.607	431.364	29.028	10.878	554
12		40.702	-10.353	421.011	29.028	11.096	579
13		40.946	-10.104	410.907	29.028	11.318	601
14		41.192	-9.862	401.045	29.028	11.544	620
15		41.439	-9.625	391.420	29.028	11.775	637
16		41.439	-9.394	382.026	29.028	12.011	401
17		41.439	-9.169	372.857	29.028	12.251	161
18		41.439	-8.949	363.908	29.028	12.496	-84
19		41.439	-8.734	355.175	29.028	12.746	-334
20	1.199	41.439	-8.524	346.650	29.028	13.001	-589

The IRR before taxes of this investment is negative. The cash flow increases at first because the absolute rent increase overcompensates the absolute increase in operating costs while capital costs remain constant. From year 11 on however the cash flow just remains positive because of the higher interest rate (6,0 per cent). Towards the

end of the holding period the cash flow gets even negative because rents cannot be raised any more.



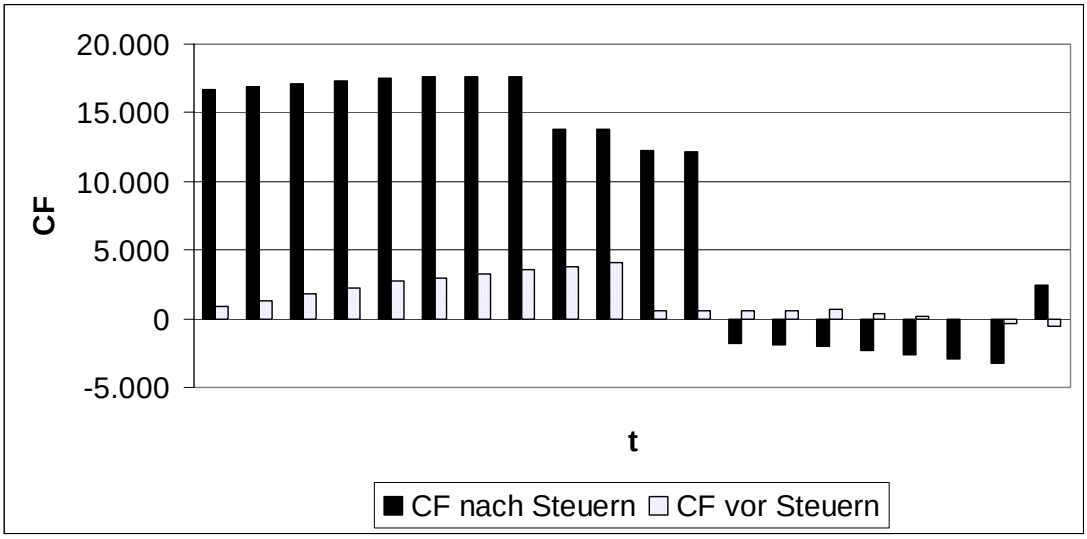
CF before taxes, basic model

The next step is to calculate the after tax rate of return of the investment project. From the basic data we know the determination base for the depreciation: € 563.502 (acquisition costs plus modernising costs).

t	A_0/R_{15} €	rent €	Interest cost €	Inter.-inc. €	Total cap. costs €	Op. costs €	CF before taxes €	IRR1	Det. base €	Depr. rate per cent	Depr. €	Taxable income €	Income tax €	CF after taxes €	IRR2
0	-100.002					0	0	-100.002						-24.000	
1		35.280	20.858	0	25.493	8.924	864	864	563.502	9,00	50.715	-45.217	15.826	16.689	
2		35.915	20.649	26	25.493	9.102	1.320	1.320	512.787	9,00	50.715	-44.526	15.584	16.904	
3		36.562	20.431	66	25.493	9.285	1.784	1.784	462.072	9,00	50.715	-43.803	15.331	17.115	
4		37.220	20.203	122	25.493	9.470	2.257	2.257	411.356	9,00	50.715	-43.047	15.067	17.323	
5		37.890	19.965	193	25.493	9.660	2.737	2.737	360.641	9,00	50.715	-42.257	14.790	17.527	
6		38.344	19.716	281	25.493	9.853	2.999	2.999	309.926	9,00	50.715	-41.659	14.581	17.580	
7		38.804	19.457	379	25.493	10.050	3.262	3.262	259.211	9,00	50.715	-41.038	14.363	17.625	
8		39.270	19.185	489	25.493	10.251	3.527	3.527	208.496	9,00	50.715	-40.392	14.137	17.664	
9		39.741	18.901	609	25.493	10.456	3.793	3.793	157.781	7,00	39.445	-28.452	9.958	13.751	
10		40.218	18.604	741	25.493	10.665	4.061	4.061	118.335	7,00	39.445	-27.755	9.714	13.775	
11		40.459	24.393	885	29.028	10.878	554	554	78.890	7,00	39.445	-33.371	11.680	12.233	
12		40.702	24.115	928	29.028	11.096	579	579	39.445	7,00	39.445	-33.025	11.559	12.137	
13		40.946	23.820	974	29.028	11.318	601	601	0	0,00	0	6.783	-2.374	-1.773	
14		41.192	23.507	1.021	29.028	11.544	620	620	0	0,00	0	7.162	-2.507	-1.886	
15		41.439	23.176	1.070	29.028	11.775	637	637	0	0,00	0	7.558	-2.645	-2.009	
16		41.439	22.825	1.121	29.028	12.011	401	401	0	0,00	0	7.725	-2.704	-2.303	
17		41.439	22.453	1.167	29.028	12.251	161	161	0	0,00	0	7.903	-2.766	-2.605	
18		41.439	22.058	1.207	29.028	12.496	-84	-84	0	0,00	0	8.092	-2.832	-2.916	
19		41.439	21.640	1.241	29.028	12.746	-334	-334	0	0,00	0	8.294	-2.903	-3.237	
20	1.199	41.439	21.197	1.268	29.028	13.001	-589	610	0	0,00	0	8.510	-2.978	-2.368	**0,11668628**

We assume that the losses can be immediately set against taxable income from other sources (no losses carried forward).

The higher depreciation rates due to the monumental status have a noticeable influence on the cash flow in time. Until t_{12} the cash flows after taxes are more than three times higher than before taxes. After the object has been written off completely the cash flows are however slightly negative.



CF after taxes, basic model

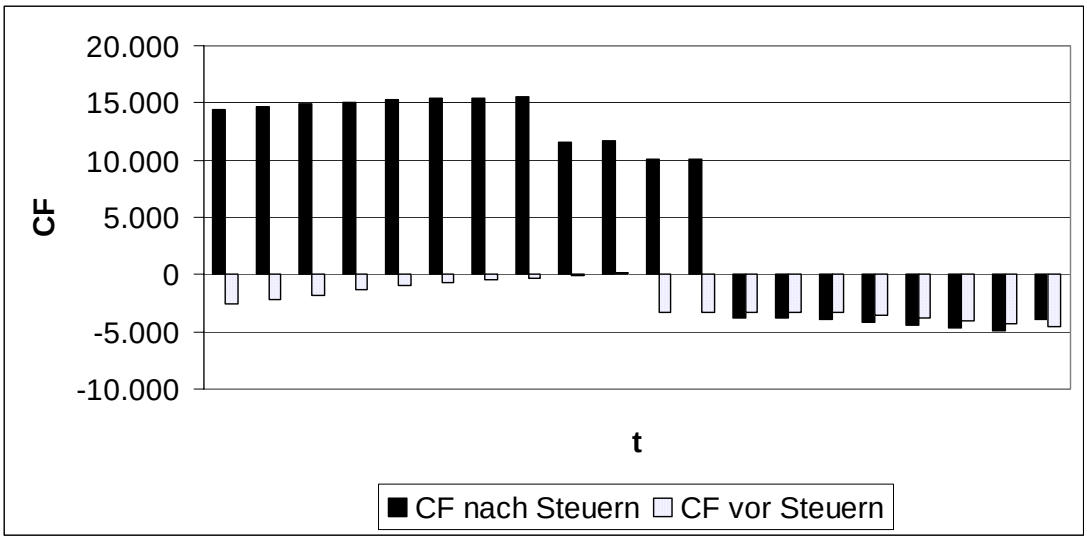
The accounting profit at the end of the holding period is not taxable if the object is held as private property and not commercially traded.

Revenue from sale €	346.650
- accounting value €	0
= accounting profit €	**346.650**

The impact of the higher depreciation is overwhelming. The IRR after taxes amounts to 11,67 per cent.

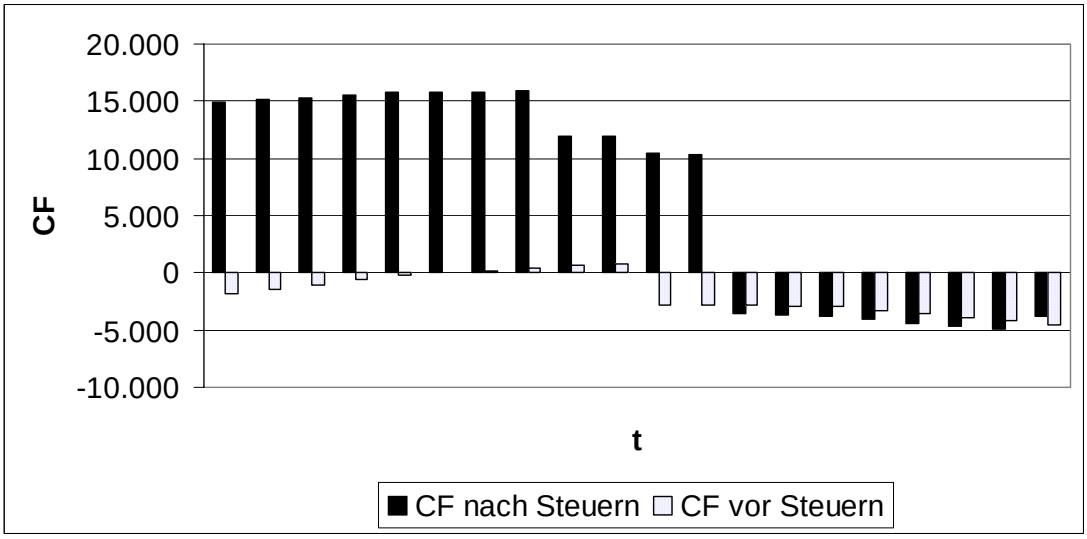
Finally we analyse the sensitivity of the internal rate of return with respect to changes of rent level, loss of rent, restoration costs per m^2 and interest rate. The effect of these changes on the sale revenue at the end of the holding period are taken into account by keeping the difference in percentage points between cap rate and exit cap rate constant (0,0352).

The critical initial rent is € 4,40. With this initial rent level and a revenue from sale of € 329.967 the cash flows before and after tax develop as follows:



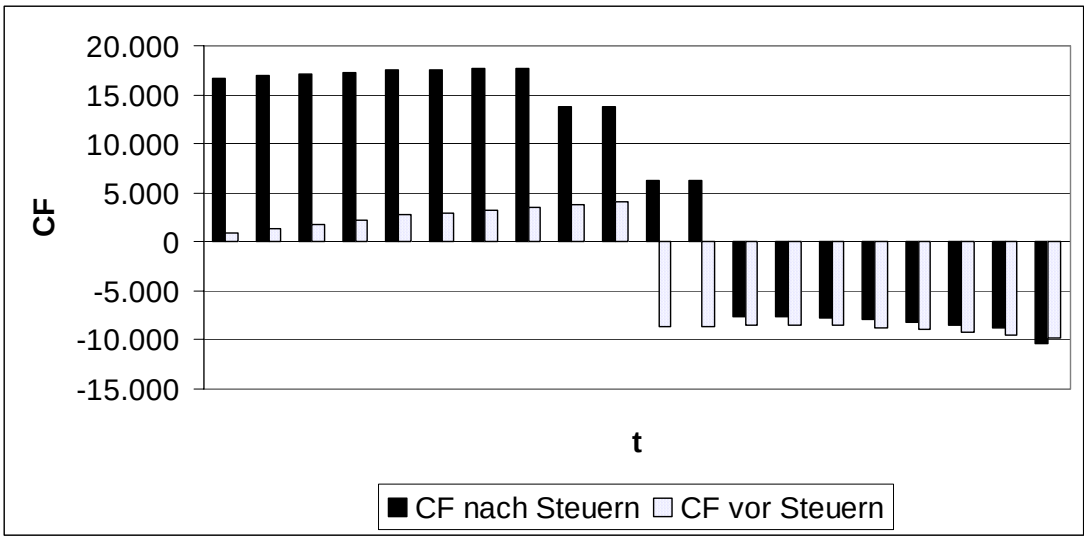
CF before and after taxes, low initial rent

With an initial rent of only € 4,40 the IRR after taxes falls to 5,46 per cent – a minimum level only just acceptable. This minimum level of the IRR after taxes can also be a result of a loss of rent per year of 12,8 per cent (with an initial rent of € 4,90).



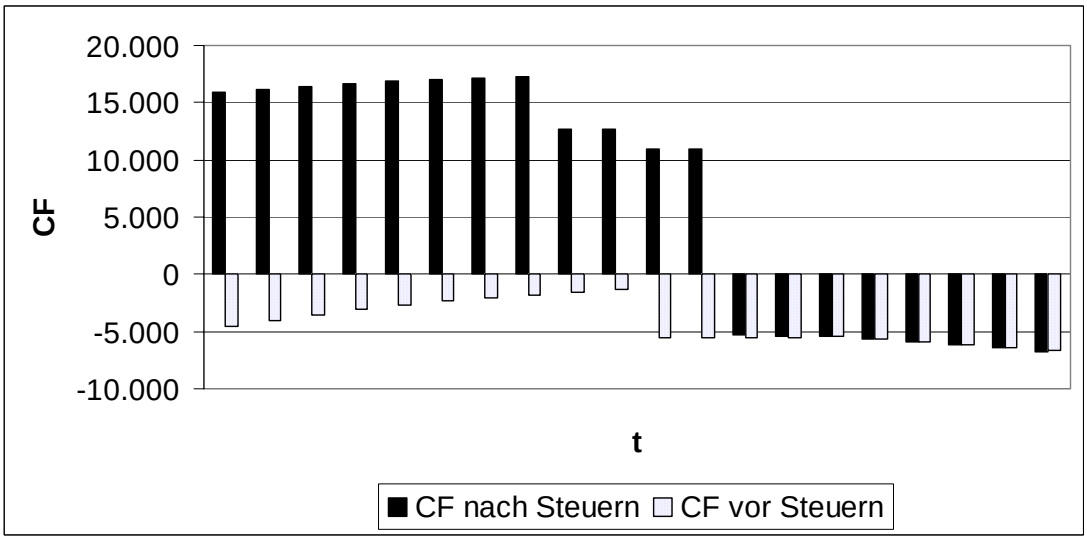
CF after taxes, high loss of rent

The assumption about the interest rate for the second 10 year period is also relevant for the IRR after taxes. Our project is resistant against rising interest rates up to an interest rate of 8,25 per cent. Under these assumptions the IRR after taxes will fall to the same level of 8,25 per cent – regarded as a minimum in this capital market situation.



CF after taxes, rising interest rates

If we vary the restoration costs per m^2 we find that the project is robust up to costs of € 935 pro m^2 (resulting IRR after taxes: 5,26 per cent). This corresponds to a cost increase of 21,04 per cent compared with our original estimate. The statistical margin of error is however not exhausted with this.



CF after taxes, higher restoration costs

The result of our calculation finally reacts sensitively on variations of the sale revenue resp. the exit cap rate. An exit cap rate of 10,95 per cent and a corresponding sale price at the end of the holding period of € 259.714 result in an IRR after taxes of 7,03 per cent. If we consider that the higher exit cap rate is partially to be attributed to the capital market situation at the end of the holding period this level of the IRR can be regarded as critical.

All in all the project can be evaluated as follows: The basic model suffers from the fact that a positive IRR can only be attained after taxes. If the 11,67 per cent after taxes we calculated will be attained depends on the validity of our assumptions. The IRR falls to minimum levels just as a consequence of the variation of single parameters and we do not need to assume extreme values here. If the assumptions do not hold in two or more cases and if one violation is heavy, then the IRR will fall below the level of safe long term capital market investments (e.g. ongoing interest 8,25 per cent and restoration costs per m^2 of € 850). Even losses can occur then.

The case study has demonstrated the overwhelming influence of the tax subsidies on the expected rate of return. The problem is that the return prospects before tax are different between objects. With the instrument of extra depreciation no fine tuning is possible. Some investments will be too profitable and others will not be profitable even after taxes. We would recommend fine-tuned individual subsidies instead of the general tax subsidies. The individual subsidy could be calculated on the basis of the results of a dynamic investment calculation reflecting the project-immanent risks.

6 Acquisition of suitable investors

All in all the prospects fort he further revitalisation of Zittau's historic inner city are not favourable. About 30 per cent of the building stock are acutely endangered. The restoration process is currently so slow that further considerable losses of historic buildings worthy of preservation seem inevitable in the medium run.

There is a concrete danger that the inner city will loose its character when whole building lines are demolished and no profitable re-use can be found for the remaining open space. Such a development would surely have a negative impact on the economic development of the region. In case of large-scale demolitions the historical cityscape would loose its functions of a soft location factor and tourist attraction. Also its identity-establishing role and its role as an archive of regional and cultural history are at stake. The preservation of historic cityscapes clearly exhibits the properties of a merit and public good.

The reasons for the dissatisfactory restoration progress since 1990 are diverse: above all unsettled property rights and federal housing subsidies with a decided preference for new construction. Almost 17 years after the German reunion the mistakes of the past can only be corrected with great effort. The acutely endangered objects are mostly vacant and require fundamental restoration. Uncertain demand prospects overshadow the long-run return prospects and the special marketing problems of neglected historic buildings (extra-high analytical costs) make the search for investors difficult. In most cases investors can only be acquired if massive direct subsidies are granted.

Furthermore the building damages in the inner city are concentrated in certain areas. Even if an owner was willing and able, he would retreat from an investment if his investment object

was surrounded by ruins. Each damaged building radiates external diseconomies on the surrounding properties and thus hampers the chances for further restoration progress in the surrounding area. In the ill-kept quarters free rider-behaviour is often the only rational choice for owners: Let's wait until the others go ahead with investments in their buildings.

Against this background noticeable further restoration progress is only likely if

- property rights are consolidated,
- institutional investors can be acquired,
- investors are ready to accept modest rates of return and
- the allocation of public subsidies is optimised.

6.1 The necessity of a „Big Push"

In 1943 Paul Rosenstein-Rodan developed the challenging idea that economic development required a critical mass of investment, the so-called „big push". Single investment projects often remain undone because pecuniary and technological external economies do not appear in an investment calculation. Investors tend to behave as "free riders" – they wait for other entrepreneurs to invest. This microeconomic perspective however does take into account the complementarity of investment projects. In economically backward regions a coordination of investment decisions is necessary to induce a wave of simultaneous investment. Paul Rosenstein-Rodan has dealt with the possible contribution of private and public economic institutions to this coordination effort.

The theoretical approach of Rosenstein-Rodan can be apllied to the situation of Zittau's historic inner city. If free rider behaviour is rational for single investors we need to find a coordination instrument for the internalisation of the externalities of restoration. Different from most individual investors institutional investors are able to invest in large-scale projects. Thanks to their risk-compensating and financial abilities they are in the position to buy packages of neighbouring sites and subsequently restore the buildings or build anew (big push). By doing so they also attain more leeway for complex investments in the surroundings.

The profitability of such a big push is higher than that of single investments of individual owners. Each restored object enhances the chances of renting out dwellings in the neighbouring buildings as well as the profitability of investments already made there. A completely restored inner city would be like a new starting position for the local economy. If marketed persuasively the restored cityscape would have the potential to develop into a touristic attraction for the whole region.

6.2 Suitability of different legal forms

There are different legal forms for indirect investment in real estate. The question is which one is best suited for our purposes. The possibility of loss allocations – accruing from the higher depreciation rates in a formal preservation area – in favour of the individual investor is an argument for choosing closed-end property funds. The remote location, the small size of the city and the demographic development in the region give however rise to doubts if initiators of such funds would be interested. The only closed-end property funds active in Zittau is invested in two large-scale hypermarkets. From the point of view of the initiators it is decisive to be able to win enough investors willing to buy shares. Zittau is competing here with other East German locations like Leipzig which has an enormous stock of monuments to be restored.

An alternative to the engagement of closed-end property funds could be to mobilise regional equity capital. The idea is to motivate as many households in the region as possible to invest on a small scale into the restoration of the cityscape of Zittau. Local patriotism could help to motivate people to engage themselves in this way. The successful placement of the shares in the region would require a campaign bringing together all institutions interested in the economic development of the region.

As a legal form for this regional corporation the "public interest little public limited company" (gemeinnützige „kleine" Aktiengesellschaft gAG) would be best suited. Citizens and enterprises from the region could become shareholders or make (tax-deductible) donations. Under this legal form the company wouldn't have to pay any income related taxes. Also this legal form is suited to collect small invested amounts and donations from many shareholders / donators.

The shares of a "little" AG are not traded at the stock exchange. On the other hand this smaller variant has important cost advantages, e.g. founders can be members of the board of directors (Vorstand) and it is possible to reduce the executive board to just one person. The minimum equity capital is only 50.000 Euro.

The public interest status would require certain limitations of the business activities of the company, e.g.

- limitations of distributed income,
- a focus on investments objects unappealing to individual investors,
- a commitment to reinvest the largest part of its cash flow in other restoration projects in Zittau's historic inner city,
- rent limitations,
- to rent out primarily to disadvantaged parts of the population.

6.3 Public interest property development as a business model

The gAG shall invest as much of the collected capital as possible directly into the restoration of historic buildings. The organisation should be of a virtual kind as far as possible. The company could draw on the personnel resources of other public institutions like the urban development corporation or the municipal housing company. The business mission of the gAG is to buy and restore historic buildings at a stretch in Zittau's historic inner city. After having redeveloped a section the objects are to be sold to investors, if possible. They shall only become a part of the fixed assets of the company if a sale would lead to unbearable losses. The primary mission is to reinvest the revenue from the sales in other sections in the historic inner city. In a nutshell the business mission is public interest property development.

The business model presented here is admittedly risky. Its chances for success depend on certain prerequisites:

- in case of bankruptcy a public guarantee of o certain percentage of the funds invested,
- public guarantees for a part of the credit risks,
- a good understanding with regional banks,
- engagement of all institutions interested in the economic development of the region for the placement of the shares.

Even if these requirements were fulfilled the business model would still be shaky. It depends on the consolidation of the fragmented property rights structure. Current owners might demand excessive sales prices or not be ready to sell at all. Another instability factor is the local tax office responsible for the acknowledgement of the public interest status. The placement of the shares finally requires a feeling of solidarity of the citizens in the wider region with the town of Zittau.

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