

Energy-saving measures in rented buildings - Manuscript -

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1 Introduction

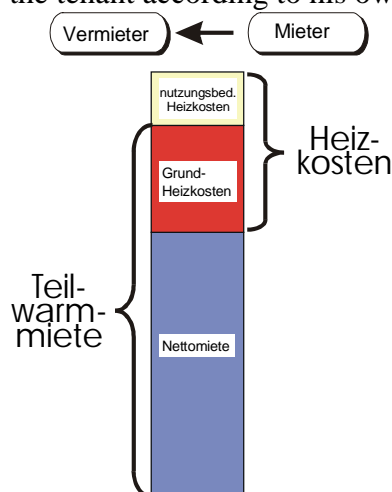
A so called user-investor-dilemma exists at energy-saving measures in rental housing stock: The landlord has to pay additional investments for energy-saving. Afterwards the tenant faces lower energy costs. At the same time the tenant only has to contribute a relatively low proportion of the investment costs for the energy-saving measures. As a result the investment incentive for the landlord is correspondingly low.

In face of this background the Institute Wohnen und Umwelt in Darmstadt examined the present principle conditions for energy-saving measures and the scope for improvements of the basic conditions for energy-saving measures [Knissel et al; 2001].

Whether an energy-saving measure is economically profitable for the landlord depends on the rental law and the tax law. These two determine the additional income which arises for a landlord after carrying out energy-saving measures. Calculation led to an unsatisfactory result. The cases investigated (German multy storey dewelling) do not offer any profitability to the landlord. Simultaneously the rent including heating costs increases for the tenant within the years. So actually we have a "lose-lose-situation" for the tenant as well as for the landlord.

2 First attempt: "rent including heating"

The first examined attempt is called "rent including heating". In this attempt the landlord carries the costs to heat the dwelling up to for example 18 °C. In return the tenant reimburses the rent including heating up to 18 °C to the landlord. So the "rent including heating" consists of the usual net rent and the ordinary heating costs (see illustration 1). The still remaining heating costs have to be payed by the tenant according to his own consumption.



illus.: Principle of the share rent including heating

Before an energetic modernization such a "rent including heating" is different from today's situation only by the way the heating costs are cashed up. Neither for the landlord nor for the tenant the amount of the payments or reimbursements changes. Even after an energetic modernization nothing changes for the tenant. He pays the "rent including heating" at the same level as he did before. This although the tenant profits from the energy-saving measures by a higher comfort of the home.

But there are differences for the landlord. After the energetic modernization the landlord has to pay lower fuel costs for the ordinary heating up to for example 18 °C because of the lower energy consumption of the - now insulated - building. A part of the ordinary heating reimbursement is left to him since the landlord gets the same "rent including heating" as before the energetic modernization. With this amount he can refinance the energy-saving measures. At first this attempt seems to have a number of advantages. The most important are:

- Before and after energy-saving measures the expenditures for the net rent and the heating costs are constant. The tenant has moreover the advantage of a higher space luxury.
- The landlord has a direct benefit from energy-saving measures since actual costs for the ordinary heating of the building are reduced. He will therefore carry out economic energy-saving measures in his own interest.

Despite the first positive assessment there are a number of difficulties. The most important are:

- The "rent including heating" is not applicable in cases where the tenant settles up with the energy provider directly.
- A new legal definition of the rent becomes necessary since the ordinary heating cost is part of the net rent. This requires a new (civil law) legal basis, which is usually extremely difficult to implement.
- Energetic and not energetic modernization measures have to be cashed up separately. If they are converted simultaneously, the modernization costs have to be partitioned correspondingly. This includes particular organizational efforts by the landlord.
- A change of existing rental contracts towards the "rent including heating" can be implemented only on a voluntary base. But it will need several years until all leases are changed into the new system. During this period we will have "old cold leases" and "new rent including heating leases" within a building. If a landlord carries out energetic modernization measures in this time period, he must calculate upon different models depending of the leases in his house. His organizational effort becomes substantially greater with that. At the same time the transparency decreases.

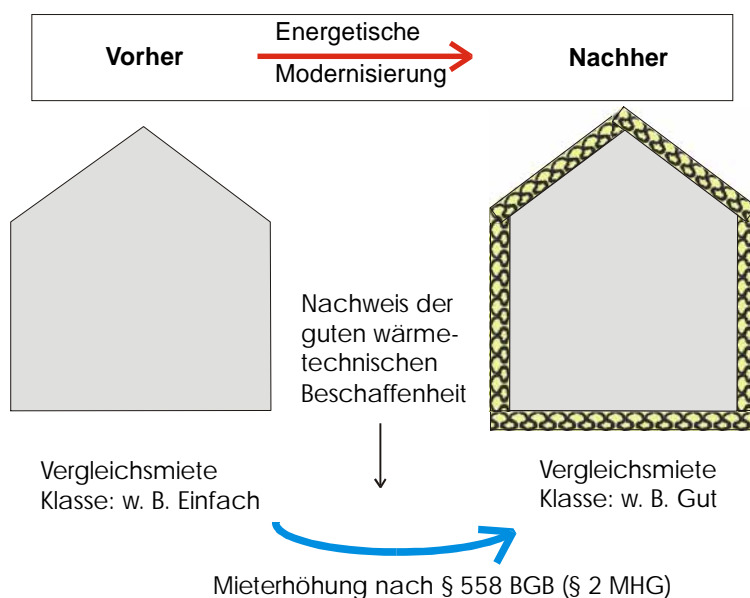
So there are many problems. Let alone this it is not probable, that there will be an agreement in the society to change the respective laws and to accept the new procedure. The attempt "rent including heating" does not seem suitable to improve the conditions for energy-saving measures.

3 Second attempt: "Ecological rent mirror"

The second examined attempt is called "ecological rent mirror". So called "rent mirrors" are tables in a municipality about the average rent for flats. Rent mirrors provide information about actually paid rents for individual flats at different quality standards. They increase the market transparency and make an important contribution to avoid conflicts. In Germany municipalities have to develop rent mirrors if there is a need for them. Usually the rent mirrors need to be adapted to the market developments periodically.

In this context the hypothesis is that the heating efficiency of a building has a significant influence on the net rent. Provided that this hypothesis can be proven by empirical investigation the energetic quality of a building or a dwelling can become an additional factor for the determination of the average or usual rent level in the rent mirror. Such an extended rent mirror is called "ecological rent mirror" as distinction among the usual form of the mirror.

A factor reflecting the heating efficiency of a building in rent mirrors has effects on energy-saving measures in rental housing stock. After the introduction of an "ecological rent mirror" the landlord has the possibility to get a surcharge for energy-saving measures based on the "ecological rent mirror" and to raise the net rent on the higher rent level (see the following illustration).



illus.: Rent increase after an energetic modernization based on an "ecological rent mirror"

4 Assessment

At present there are not any resilient empirical measurements concerning the coherence between heating efficiency of a building and the level of the net rent. To make a principle assessment of the

"ecological rent mirror", theoretical investigations were made. They led to the following statement: **The integration of the heating efficiency of a building in the rent mirror increases the precision of the rent mirror and with that the rent justice. At the same time the lose-lose-situation can be changed into an win-win-situation:**

- Rent calculations not including heat efficiency as a rent determining factor produce unjustified gains for those landlords who have not carried out any energetic modernizations. On the other hand that situation produces unfavorable effects for a landlord who has improved the energetic value of his building. Usually energy-saving measures are not appreciated in the rent mirror. Through this the landlord will not receive additional rent to refinance his energy-saving measures.
- The advantages and disadvantages appear to the tenants in a reversed manner. The tenants of buildings which are not energetically modernized have to pay the same net rent level as tenants in energetically modernized buildings. But they have to pay high heating costs whereas the tenants of well refurbished buildings profit from the lower heating costs.

In the "ecological rent mirror" a higher usual net rent is attached only to the buildings actually modernized, a the high net rent correlates with low heating costs. So the ecological rent mirror is not only in correspondence with to the existing rent law. The ecological rent mirror is even more precise and therefore the ecological rent mirror constitutes an improvement anyway.

5 Outlook

The legal prerequisite to integrate the criterion "heating efficiency of a building" in rent mirrors is the empirical proof of a significant relationship between the net rent and the heating efficiency. This has to be shown in the context of pilot projects. In connection with this, further essential questions arise:

- In which way is it possible to measure the "heating efficiency of a building" and how much does it cost?
- The improvement of the heating efficiency of a building and the technical quality of a building requires corresponding knowledge. In the context of the quality measurement there is the question whether and in which way the interviewers have to be trained to obtain adequately data.
- The majority of the rent mirrors in Germany are negotiated and not based on empirical survey. It is to be found out how in this cases indicators for a differentiation of the rent mirror values can be defined.
- It is not yet clear how the correlation between the theoretical and the measured value of energy consumption of a building looks like.

- There is also the question of the acceptance of a "ecological rent mirror". Is it possible to induce and to quantify changes in the behavior of the tenants and landlords?

These systematic questions on implementation of the new rent mirror are open till now. However they do not represent any principle problems and they are all solvable. The energetic quality of a building can be considered as a criterion in the calculation of the local usual rent on the base of existing laws in Germany.

6 Actual development

The Institute Wohnen und Umwelt has been charged by the City of Darmstadt to find out, whether there is a significant relationship between good insulation and the net rent of dwellings in Darmstadt. For this the Institute collects the data of more than 900 flats in cooperation with the guild of the chimney-sweeps. If a significant relationship established between the energetic quality of a building and the net rent, the results are tied in the first ecological rent mirror. The project shall be completed until the end of 2002.

7 References

[Knissel et al; 2001] Knissel, Alles Behr, Hinz, Loga, Kirchner; "Mietrechtliche Möglichkeiten zur Umsetzung von Energiesparmaßnahmen im Gebäudebestand"; Institut Wohnen und Umwelt; Darmstadt; 2001