

ECONOMIC COMMISSION FOR EUROPE  
Geneva

**HOUSING FINANCE SYSTEMS FOR  
COUNTRIES IN TRANSITION  
PRINCIPLES AND EXAMPLES**



**UNITED NATIONS  
New York and Geneva, 2005**

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Printed at United Nations, Geneva, Switzerland

UNITED NATIONS PUBLICATION
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<i>Sales No.</i>
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ISBN
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## **Foreword**

Housing plays an important role in a country's economy, typically accounting for 10 to 20 per cent of total economic activity. In addition, housing is often an individual's biggest asset. The availability of housing finance is, therefore, crucial for overall economic development as well as for a household's welfare and its quality of life.

With the large-scale privatization of the housing sector, a need for housing finance systems arose in the UNECE countries with economies in transition. There are many good examples of effective housing finance models in the UNECE region. However, while policy makers have had access to information and policy advice on individual systems, there has so far not been a method for comparing them that would help to determine their suitability for a particular country. This study aims to fill this gap by offering an in-depth analysis of the most common housing finance models in the UNECE region.

I therefore hope that this study will provide the economies in transition with an opportunity to grasp the range of experience available in the UNECE countries and will facilitate future decision-making on housing finance.

(to be signed by the Executive Secretary)

## Preface

At its 61st session in September 2000, the UNECE Committee on Human Settlements approved a proposal by its Housing and Urban Management Advisory Network to initiate a study on housing finance systems for countries in transition.

A project group was established within the Network to draft an outline for the study, which was presented to the Committee at its 62nd session in September 2001. The Committee expressed its support for the outline and invited the Network to proceed with the preparation of a project proposal and the organization of work. The Committee's Bureau subsequently approved both.

The study takes into account the Committee's previous work on housing finance and the housing concerns of the UNECE member countries with economies in transition. The Committee has, in particular, published a study on *Housing finance: key concepts and terms* (ECE/HBP/102) and *Guidelines on condominium ownership of housing for countries in transition* (ECE/HBP/123). In addition, the Committee has long been familiar with the housing concerns of socially disadvantaged population groups and is currently preparing *guidelines on social housing*.

The study on housing finance systems for countries in transition, as well as the Committee's other work, is available on its web site at <http://www.unece.org/env/hs/welcome.html>.

The study was prepared by a team of international experts:

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Their work was supported and overseen by a housing finance steering group which comprised representatives from national governments, the private sector, non-governmental organizations and the UNECE secretariat:

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Ms. Christina von Schweinichen	UNECE secretariat

This study would not have been possible without the support of the European Federation of Building Societies, the Federal Housing Office of Switzerland, the Ministry for Regional Development of the Czech Republic and the Norwegian State Housing Bank.

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# INTRODUCTION

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After more than fifteen years of transition, many countries still experience only sluggish development of market-based housing finance, due to legislative hurdles as well as to low levels of financial affordability, especially on the part of lower and middle income groups.

The goal of this study, therefore, is to assist Governments of countries in transition in designing working housing finance markets for their citizens. It is intended to enable decision makers to select appropriate measures for the implementation of different financing schemes. It is designed to show politicians, authorities, the banking community and other interested partners how housing financing policies could be developed and improved, which general housing finance systems could be applied, what experience of some specific solutions has shown and which criteria and information could be used in evaluating, preparing and selecting appropriate policy measures.

The study draws on experience from the most advanced economies of the various financing techniques. Given the heterogeneous experience of these countries, the systems and their application can not simply be copied. Properly adapted to local conditions, however, they are likely to help in laying the ground for new solutions, and thus deserve a closer look from all interested parties.

The report illustrates how over the years a great variety of distinct systems have emerged, each reflecting the historical, societal and economic particularities of a given country, and how in most cases no single type of housing finance exists. Generally, various techniques arise side by side, sometimes dominated by a typical feature. To a large extent, a combination of different financing tools is the rule, while no system can be regarded as the “best”. Whether a particular technique is appropriate for serving a given purpose depends as well on the individual benefits for borrowers and lenders, and also on the level of economic development, on the household’s capacity and willingness to make savings, and on the rate of inflation and overall monetary and fiscal policy. Other decisive factors are the legal and administrative infrastructure, and the lack or existence of primary markets for mortgages, as well as the fact that the financing of rental and home ownership units may require different approaches according to circumstances.

Common to all systems is the need for stable economic conditions and for a legal and fiscal environment conducive to an efficient allocation of capital. This requires first, and most importantly, a reliable legal system securing property rights and contractual freedom as well as rapid foreclosure procedures. Further prerequisites are modern systems of supervision of banking soundness and safety and as few obstacles as possible concerning property transactions.

Once these conditions are established, the appropriate housing finance institutions will emerge. Whether additional interventions by the government are necessary and justified to support some rather than others is a matter of endless debate. Put forward as a supportive argument is often a real or perceived public interest in the mending of market distortions, in the provision of low interest credits for disadvantaged households or in the protection of new branches against foreign competition etc. Some of them might be valid, others less. In any case, governments should be cautious and beware of ill-advised steps leading to inefficient institutional arrangements and ongoing political haggling over privileges and subsidies.

One possibility for minimizing the risks is to evaluate the policies at hand and to measure their impacts carefully. The present study, therefore, includes an analytical tool which illustrates how the various interests of lenders, borrowers and regulatory bodies can be structured, weighted and assessed, and how from the advantages and disadvantages of different finance instruments a conclusion can be drawn regarding their suitability in particular circumstances.

This evaluation method is illustrated by three distinct financing systems, whose selection must not be interpreted as an official bias towards any of these schemes. A multitude of other and often more widely applied practices exists throughout the United Nations Economic Commission for Europe (UNECE) region.

The chosen formulas bear witness to the fact, however, that housing finance has evolved over the years and that new developments may still arise.

The study contains six chapters. The first chapter describes the actual situation and conditions of housing finance in countries in transition. It highlights problems and bottlenecks regarding the housing and capital markets, and main features of the existing banking systems, summarizing some of the efforts made so far to improve their effectiveness.

Chapter II recalls the basic elements, objectives and mechanisms of housing finance. It explains the interplay between the origination, ultimate holding and servicing of mortgage loans. It indicates the major sources and ways by which financial means are provided, and the various risks linked to this particular business.

The third chapter gives an overview of the main financing instruments used in the ECE region, subdivided into conventional and specialized deposit-based systems and systems based on bond markets institutions, securization, State funds and third-party lending.

Chapter IV describes three specific financing instruments used in different parts of the ECE region today, namely the "Bausparkassen" system representing a contractual savings scheme, the Danish mortgage bond technique and the United States variety of mortgage-backed securities (MBS). A standardized outline is followed, embracing the historical background of the formula, its legal framework, its relative position within the national context, its main characteristics as regards assets and liabilities, the role played by the State and a short outlook on possible developments.

The fifth chapter looks at ways in which policy can be evaluated in the area of housing finance. Decision makers faced with the task of choosing among different alternatives are offered a checklist for structuring the evaluation criteria which occur most, reflecting the differing interests of lenders, borrowers and other stakeholders. They are moreover made familiar with the basics of cost benefit analysis which, like many similar methods, has been developed over the years to be applied in the evaluation procedures. Its practical application is illustrated in annex IV where a rough assessment of the three finance systems of chapter IV can be found.

The final chapter contains conclusions and general remarks stressing once more the importance of a sound legal environment and of the existence of efficient institutions and a stable economy, and stressing the fact that no single financing scheme is likely to respond to the different needs and requirements of the different countries. Given the merits and deficiencies that all instruments have, their appropriateness evolves over time and differs for each country in accordance with economic, political and social development.



# *Chapter I*

## *PRESENT STATE OF HOUSING FINANCE IN COUNTRIES IN TRANSITION*

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### **A. Housing conditions, housing policies and privatization**

In the former socialist countries, the State was responsible for providing citizens with adequate housing. Though there were several distinct types of housing policies, public subsidies were always crucial. The role of private finance was limited to additional (or subsequent) contributions to State grants. In most cases, housing loans with low fixed-interest rates and long maturity were allocated by the dominant State savings banks and did not have the character of collateral-based lending.

In many countries the model of centrally-planned construction of State/enterprise rental housing was applied. Lending mechanisms and home-ownership tenure was most common only in Hungary, Bulgaria, Poland and the former Yugoslavia, especially after 1980. However, even in these countries the private savings and preferential loans were accompanied by large public down-payment “family” subsidies (Hungary), or by Substantial State aid. For example, in Bulgaria flats were first constructed using State subsidies and later sold to tenants for a low residual price.

In the case of public rental housing the occupants and their families enjoyed extraordinary tenant protection, called “quasi-ownership” tenure. Once they occupied a flat, it was almost certainly theirs for life and it could be passed on to relatives. The rents were low, amounting to ‘on average’ two to three per cent of the household budget.<sup>1</sup> Though there were deep differences among countries, in the late 1980s the former regimes often succeeded in meeting their basic housing needs resulting from the post-war housing shortage. However, this was achieved by constructing large anonymous housing estates using low-cost high-rise prefabricated building technologies and/or by mobility restrictions (for example, Albania). The low standard of housing construction quality, low average dwelling space, lack of social and cultural facilities on housing estates and insufficient maintenance of both buildings and common areas has led to low levels of quality of life.

After the change in the political regime, expecting an immediately effective change in housing policy from an almost wholly State-controlled and State-financed system to one based mainly on private ownership and market financing was unrealistic. The reforms in the sphere of housing policy were often realized only partially. In their first stage they were characterized by both liberal and conservative approaches which led to sharp cuts in public subsidies; this however, did not result in the abolishing of barriers preventing their compensation by voluntary not-for-profit activities or private investment. Even today, many relics from the past still remain in place.<sup>2</sup> Though the basic legislation for market-based housing finance has often been approved in subsequent years, its slow development has led to the creation of new although often untargeted housing subsidies designated mainly for new housing construction.<sup>3</sup> These subsidies in some cases helped

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<sup>1</sup> Hegedüs, J. *Housing Finance in South East Europe*. Budapest, 2002.

Diamond, D.B. *The Transition in Housing Finance in Central Europe and Russia: 1989-1999*. Warsaw, 1999.

Lux, M. *Housing Policy: An End or a New Beginning*. Budapest, 2003.

<sup>2</sup> Examples are non-targeted first generation rent control, huge tenant protection, legal obstructions to evicting defaulters, slow legal processing, bureaucratic barriers for capital investment and reliable title registration, clientelism, confirmation of former inequalities by privatization of public dwellings and so on.

<sup>3</sup> Housing policy strategies differ considerably among transitional economies. Among such subsidies that do not apply means testing are lump-sum subsidies for families with children in Hungary, down-payment subsidies in Romania and Slovakia, subsidies for “quasi-rental/quasi-ownership” housing in the Czech Republic, different combinations of preferential loans and grants for “homeless” households (mainly those living in restituted dwellings) in Albania, and subsidized mortgages in Lithuania. Moreover, different forms of tax relief on mortgage interest having a regressive distribution effect were also introduced.

only the higher-income groups of the population, who did not need such assistance, but it did facilitate their constructing/buying larger dwellings than they would otherwise have been able to afford.

In most countries, large-scale privatization of public housing took place resulting, in some cases, in the almost complete eradication of public housing. As public housing is often the only affordable housing available on the housing market, efforts by central or local Governments to sell almost all the public housing stock has had considerable consequences for needy households. Under privatization, the public stock was first transferred to the ownership of municipalities, and later on the current tenants obtained the right to purchase their dwellings at a substantial discount or even for free. Only a few countries have not passed the “right to buy” for tenants (Czech Republic and Poland, and a limited version was introduced in Slovakia), while in most others its application has led to radical changes in tenure structure. In many countries owner-occupied housing now forms more than 90 per cent of the housing stock; in Albania, for example, it is 98 per cent. Moreover, the process of establishing homeowners’ associations often proceeds slowly because of gaps in the legislation or the slow enforcement of the law. Where established, homeowner associations often remain weak and unreliable partners for banks.

The main consequences of more restrictive public housing financing, housing privatization and liberalization of construction and utility prices were that housing affordability decreased, as well as the scale of new housing construction. Though in general it can be said that there is no great housing shortage or housing crisis in most of the countries in transition, it is clear that availability as well as affordability of housing for newly established households and those in need worsened during the 1990s.

On the supply side, public subsidies exclusively for new affordable rental housing construction appeared only occasionally (such as the TBS system in Poland). Few subsidies were designed for the regeneration of existing housing and Governments often relied on privatization as the best tool to transfer the maintenance debt to new homeowners. However, the targeting of subsidies has recently been gradually improved. Many countries have also made great strides in improving macroeconomic conditions, including reducing inflation, promoting real income growth, and strengthening the financial systems – this has had an effect on the supply and demand of market-based housing finance, though the effect has been gradual rather than immediate.

### **B. Supply of market-based housing finance**

It is commonly held that there are four necessary economic conditions for the revival of the market-based housing finance sector:<sup>4</sup> resumption of *economic growth*, *lowering of inflation*, the *recovery of real wages* and the perception of *employment stability* for a majority of the population. In addition to economic indicators, the *appropriate legislation* also needs to be introduced, the “crowding-out” effect produced by State subsidies should be lessened, and the basic stimuli for a freely functioning housing market should be present.

In almost all the countries in transition it has been extremely difficult to achieve macroeconomic and price stability. Though inflation in several countries fell relatively quickly in the initial years of transition, financial turmoil resulted in inflation’s rising again in the years that followed, indicating that there was still considerable volatility, a factor which affects the efficiency of the housing finance system as much as does the actual inflation level itself.<sup>5</sup> Relatively consistent and substantial drops in inflation appeared, for example, in the Czech Republic, Hungary, Poland, Estonia, the Former Yugoslav Republic of Macedonia, Latvia and Lithuania. The current level of inflation is below 10 per cent in most of the Central and Eastern European (CEE) countries and this makes the outlook for the future more optimistic.

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<sup>4</sup> Renaud, B.M. *Housing Finance in Transition Economies*. Washington, 1996.

<sup>5</sup> Eight per cent inflation in Albania in 1995 rose to 33 per cent in 1997; 64 per cent in Belarus in 1997 went to 169 per cent in 2000; 2 per cent in Bulgaria in 1999 increased to more than 10 per cent in 2000; 6.5 per cent in Slovenia in 1999 rose to 11 per cent in 2000; and 27 per cent in the Russian Federation in 1998 jumped to 86 per cent in 2000.

There are many countries in transition which did not reach the 1990 GDP level until the end of 2001 (Bulgaria, Romania, Russia, Ukraine, Serbia and Montenegro, Bosnia-Herzegovina, the Republic of Moldova and others), and there are also several countries which encountered short economic recessions after a period of relatively good economic growth (Albania, Czech Republic). In some countries the 1990 GDP levels have still not been recovered.

Unemployment was a weak point in the transformation process in almost all the countries, including those that showed promising results at the outset of the transition. In more than fifty per cent of the countries, the rate of unemployment exceeded 10 per cent in 2001, reaching 40 per cent in Bosnia-Herzegovina and 31 per cent in the Former Yugoslav Republic of Macedonia (the actual rate in several countries may in fact be much higher than the official rate, such as Ukraine, Belarus and Republic of Moldova). With the exception of Hungary and Poland, between 1995 and 2000 unemployment rose in all the countries mentioned, including those labelled as “advanced reformers” (Slovakia, Czech Republic); in Slovenia the rate remained relatively stable. Moreover, the large percentage of the population below the poverty line indicates deep inequalities in wealth distribution in several CEE countries.

### ***1. Banking reform***

State banks were originally non-profit motivated, having primitive loan servicing and no loan underwriting. The assessment of different risks was lacking and in fact there were no trained mortgage bankers. Their privatization has been seen as the most effective way to improve their performance. However, for various political reasons privatization was often postponed, and this contributed to the number of financial and bank crises in the region during the 1990s. In order to prevent increases in unemployment, Governments often pushed unreformed State banks to extend risky credits to enterprises having serious economic problems, but in the end huge public subsidies were poured into the banks to preserve their liquidity and cover their losses. Though the timing was not always the same, the banking crisis was a feature that appeared in nearly all of the countries in transition, including the advanced Visegrad countries.

All or nearly all former State banks have already been privatized in the Czech Republic, Albania, Slovakia, Poland, Hungary, the Russian Federation, Estonia, Latvia, Republic of Moldova, Bulgaria, Romania and Croatia. The State has considerable influence in the banking sector in several countries of the former Yugoslavia, Lithuania, Belarus, Ukraine and so on. The lowest interest rate spread (average lending rate minus average deposit rate) was attained in Hungary (3 per cent in 2000), the Czech Republic (3.7 per cent), and Estonia (3.9 per cent); the highest spread was found in inflationary economies: Belarus (30 per cent), Ukraine (28 per cent) and the Russian Federation (18 per cent).<sup>6</sup>

Measured by market share in mortgage outstanding among different banks on the market, the Czech Republic has the most competitive system.<sup>7</sup> In Bulgaria, for example, almost all mortgage loans were extended at the end of the 1990s by one former State saving bank (DSK). In Hungary in 1998 about 90 per cent of mortgage loans had their origins at one bank (OTP). In Poland more than 60 per cent of the mortgage loan volume was also held by one bank (PKO BP) in mid-1999.

### ***2. Legal framework and property registration***

Many countries enacted laws permitting mortgage lending. The Czech Republic, Poland and Hungary passed much-needed legislation relatively early; in other countries this did not happen until quite recently: in the Russian Federation in 1998 and in Romania in 1999. Another problem is the speed of the process. Foreclosure and eviction normally take several years, even in those countries with the appropriate legislation (legal proceedings are generally lengthy in all transitional countries). In addition, in some countries legal regulation on eviction is not supplemented by adequate provisions for social assistance to the households concerned, which is an absolute necessity.

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<sup>6</sup> According to World Bank data, 2002

<sup>7</sup> Diamond, D.B. *The Transition in Housing Finance in Central Europe and Russia: 1989-1999*. Warsaw, 1999.

Much work has been done with respect to reopening, restructuring and establishing property registers/cadastrals. Even in those countries which had a higher percentage of homeownership at the beginning of transition, registries were not up to date and considerable effort has still to be made to make them a reliable source of information on property titles. Again, proper legislation does not guarantee optimal performance; in a majority of the countries the registration of titles or mortgages takes a long time, which increases risk and consequently acts as a restraint on the demand for market housing finance.

### ***3. Residential mortgage loans extended by universal banks***

Commercial/universal banks are often the main providers of residential mortgage loans. In countries in transition they certainly have the largest share of the mortgage market, though their performance is still at an initial stage in many of them. Often only short-term housing loans (up to ten years) are available, with a much lower loan-to-value ratio than in standard developed economies (though legislation, generally, allows a higher ratio). Adjusted or completely variable interest rates and the denomination of loans in foreign currencies are used to deal with uncertain inflation in the future. Such products hold little attraction and housing loans remain a minor component of bank assets. The “lower standard” (high interest rates, short maturity, low loan-to-value ratio, conservative underwriting) and a very low number per capita of outstanding residential mortgage loans are typical for Romania, Republic of Moldova, Albania, Bulgaria, the Former Yugoslav Republic of Macedonia, Serbia and Montenegro, Bosnia-Herzegovina and Croatia. In Slovakia, Lithuania, the Russian Federation and Slovenia there was also a relatively low level of market mortgage financing at the end of the 1990s.<sup>8</sup> Hungary, Estonia, Poland and the Czech Republic (partially also Latvia, Slovakia and Slovenia) are among the countries witnessing a boom in the mortgage loan market.<sup>9</sup>

In addition to loans denominated in foreign currencies, in some of the countries with more advanced mortgage financing, other special instruments were introduced dealing with the “tilt” problem:<sup>10</sup> dual-index mortgages and deferred payment mortgages. The dual-index mortgage (payments calculated as a percentage of applicant income and further indexed to general wage development and inflation) was largely used in Poland with relative success, which was helped by falling inflation and gradual real-wage growth. Deferred-payment mortgages (establishing two interest rates, payment and contractual, with a gradual reduction of the amortization period, thus maintaining an agreed maturity) are common in Hungary. The significance of these instruments decreases as macroeconomic stability increases. Though a rigorous training of loan officers is needed, they have proven to be effective and useful in the countries mentioned.

In the Russian Federation, Hungary and several newly independent States, “lease-purchase” housing loans were extended by banks or leasing companies. The principle rests on the requirement that the ownership right to the purchased unit is not transferred until after the housing loan has been fully repaid. The purchaser/borrower has a simple rental agreement with the bank (dwelling owner) until the repayment of the loan. Such an arrangement is less risky for banks but very risky for the purchaser; in the event of default the bank does not extend the rental agreement, and the borrower is evicted with no chance of retrieving the loan sum already repaid because the bank interprets the loan repayments as rent payments. This type of lending has been found to be legally deficient<sup>11</sup>.

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<sup>8</sup> UNECE 1998, UNECE Country Profiles on the Housing Sector, Union of German Mortgage Banks, Struyk 2000, Hegedüs 2002.

<sup>9</sup> OECD 2000, OECD 2002.

<sup>10</sup> Due to the high inflation, lenders charge high nominal interest rates. This creates an affordability barrier in the case of an annuity mortgage (high initial payments), but as time passes the loan repayment is eroded by inflation. The high real value of payments at the beginning means that many households are unable to qualify for mortgage loans.

<sup>11</sup> N. Kosareva, A. Tkachenko, and R. Struyk. Dramatic Shift to Demand-Side Assistance, in R. Struyk (ed.), Homeownership and Housing Finance Policy in the Former Soviet Bloc: Costly Populism. Washington, DC, 2000

#### ***4. Mortgage banking / Mortgage securitization<sup>12</sup>***

Legislative framework for “exclusive” mortgage banking (the establishment of special mortgage banks) has been passed in Hungary and Poland; since 1998 several mortgage banks in these countries have already had a successful bond issuance.

Legislation on mortgage banking has also been introduced in some other countries (Latvia, Estonia, the Russian Federation, the Czech Republic, Slovakia, Bulgaria and Romania), but in these countries the establishment of a separate special institution is legally not required. This means that universal banks can obtain a licence for a bond issuance as long as mortgage banking operations and assets are kept in separate legal and accounting records. The mortgages serving as collateral for mortgage bonds are legally segregated to serve as first-rank collateral for the bonds in the event of default or bankruptcy. Special regulations are then applied only to those mortgages that will serve as collateral for mortgage bonds. In fact, mortgage banking is dominated by the universal banks in these countries, and only a few special mortgage banks have appeared. The highest level of mortgage bond volume per capita is in the Czech Republic, while the lowest levels are in Romania, Bulgaria and Latvia.<sup>13</sup>

#### ***5. Contractual savings for housing<sup>14</sup>***

Contractual savings for housing are popular among countries in transition. The schemes vary; systems adopted by the Czech Republic, Slovakia, Hungary and Croatia are similar to the German model (establishment of separate financial institutions, Bausparkassen, while in Poland and Slovenia they are administered by universal banks.

The Czech and Slovak Republics introduced the Bausparkasse systems in 1992, Hungary in 1997, and Croatia in 1998, and though the law on Bausparkasse was also passed in Poland in 1997, it has not yet been applied in practice. There are many variations in these four countries; the systems differ in the premium bonus paid to savers, the minimum saving period to obtain the bonus, and the minimum saving period to withdraw savings. Slovakia is the only country where the Government itself can decide upon changes in saving premiums; in all three other countries it is fixed by law and changes need to be approved by parliament.

The Polish system of housing savings (KM), established in 1996, differed in important respects from the Bausparkasse system; interest rates on both savings and loans were variable (pegged to the discount rate of the national bank) and the programme was operated through universal banks. Saving premiums took the form of a tax credit, the minimum saving period was only two years, savings could be used only for housing loans, and the whole scheme was run on a not-for-profit basis. Due to its not-for-profit character and only indirect fiscal support the system was not very popular among both banks and clients and a new system combining the features of Bausparkasse and KM has been prepared. In Slovenia the National Housing Scheme was established in 1999, resembling the compromise model being discussed in Poland; the scheme operates within the existing banking system, interest on savings and loans is variable, and the very low interest margin to cover the banks' operational costs make it not-for-profit.

Foreign assistance from international organizations greatly influenced the development of market-based housing finance. The World Bank, the European Bank for Reconstruction and Development, the International Monetary Fund, the United States Agency for International Development and the European Union have been among the most active organizations. Their activities and relatively soft loans helped to create and promote, for example, the dual-index mortgages and loan underwriting standards in Poland. Designing deferred payment mortgages in Hungary and allocating preferential loans to “homeless”

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<sup>12</sup> See also chapter III.

<sup>13</sup> Union of German Mortgage Banks.

<sup>14</sup> See also chapter III.

households in Albania are other examples. Several other organizations (the Organization for Economic Co-operation and Development, the United Nations) have offered expert know-how.

### **C. Demand for market-based housing finance and future challenges**

The demand for residential mortgage loans is lower in transitional countries when compared to volumes in the developed countries. It is clear that countries with higher unemployment, a higher percentage of people living below the poverty line, higher and more volatile inflation and low economic growth are among those with the lowest demand for market-based housing finance. Clients are recruited primarily from households in the higher-income segment, though even they often purchase their dwellings in cash.

Even when the banking sector and the basic macroeconomic situation have been stabilized, growth in mortgage loan volumes was only gradual and delayed. For some time, the demand for long-term borrowing for housing remained low though the real (effective) interest rates on mortgage loans were close to zero because of the additional fiscal subsidies available. There must therefore also be other factors influencing the fact that people are so reluctant to borrow on the free market:

- Market-based financing is partially crowded out by special preferential housing loans extended either directly from the State budget or via national housing funds;
- Uncertain property titling in some countries discourages people from buying. Home-ownership is also a form of investment, and “household-investors” want to be sure that the value will appreciate over time and that they will not find themselves in a situation where their equity is shrinking (negative equity). The unsettled economic environment and high price volatility in many countries do not provide often even minimum guarantee;
- Illegal housing construction has appeared in some countries (Bosnia-Herzegovina, Albania, Croatia and others) but these properties naturally cannot be mortgaged;
- The importance of inheritance and reliance on support from parents (social expectations). The decline in population in many countries allows a reliance on inherited inter-generation assistance;
- Cash economy (often in foreign currencies) created by a non-stable financial environment;
- Lack of affordable market housing finance supply;
- Quasi-ownership tenure in rental housing. Most tenants are often de facto homeowners due to unreformed tenant protection, and do not look for higher tenure security;
- Relatively large equity held in current housing wealth (high level of homeownership), which could simply be exchanged for other housing equity. New housing is often unaffordable for most of the population due to high construction costs;
- Reluctance to pay a large percentage of income on mortgage repayments combined with specific consumption preferences for other durable goods;
- Very low mobility rate also caused by high levels of tenant protection and rent regulation (leaving a rent-regulated flat means agreeing to substantial losses, both financial and legal).
- The sharp decrease in financial affordability of housing, slow development of market-based housing finance, inherited debt on housing maintenance connected with unhealthy housing conditions in some countries, and ineffective performance of public housing policies, all require speedy redefinition of housing policy strategies. The solution based on balance between a market-based housing finance system and efficient public subsidies should, however, always reflect the economic situation and traditions of the particular country. Though there is no general solution, it

is clear that up-to-date often untargeted public subsidies as well as market-based financing did not lead to the desirable increase in general housing conditions and financial affordability of housing (but there are huge differences among the countries mentioned). The reliance on privatization of public housing, external funding from international sources, tax incentives on homeownership and limited demand side subsidies excluded affordable rental housing schemes, cooperative banking and different forms of public-private partnerships in housing finance from the policy makers' perspectives.

When taking into account all of the above, the following represent the main obstacles for the development of a genuine housing market in many countries in transition (bearing in mind, however, that there are huge differences in this field among different countries):

- *Economic obstacles* such as inflation and slow economic growth in some countries. The demand for market-based housing financing may be delayed even after general macroeconomic stabilization due to specific consumption patterns and other particular factors influencing the demand in countries in transition;
- *Socio-economic obstacles* such as employment instability, growing unemployment and a slow increase in real wages. Due to their low income, the overwhelming majority of the population cannot afford to buy housing on the open market and cannot take out a market mortgage loan;
- *Legislative obstacles* such as a poor legal framework on foreclosure, property registration, mortgage banking regulations, a new effective (well-targeted) system of social/affordable housing, and so on. Effective enforcement of the law is as important as passing the legislation itself. “It turned out that building up efficient enforcement procedures is more difficult than the creation of new laws.”<sup>15</sup>
- *Cultural obstacles*, influencing mainly the demand for market-based housing finance (cash economy, clientelism, corruption, quasi-ownership character of rental housing);
- *Institutional obstacles* such as low competition between banks (monopolization of mortgage finance) and poor institutional frameworks for capital market and banking control.

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<sup>15</sup> Hegedüs. Housing Finance in South-Eastern Europe. Budapest, 2002.





## *Chapter II*

# *MAJOR ELEMENTS OF HOUSING FINANCE*

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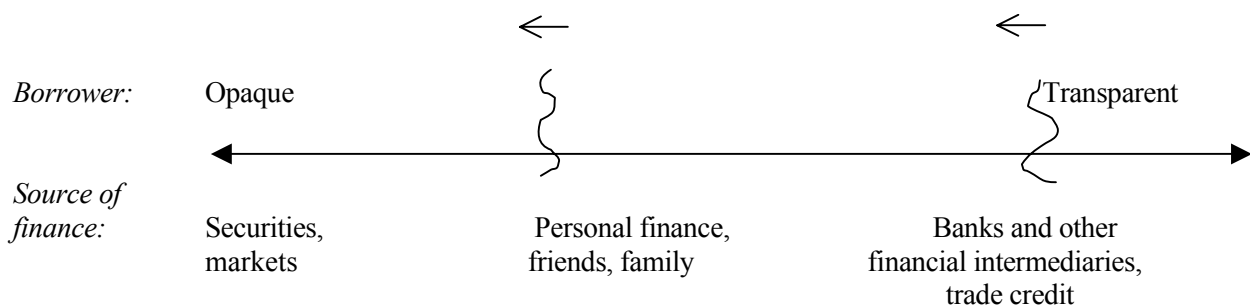
The provision of finance for the purchase of residential housing is, or should be, an important part of any society's financial structure. Compared to a household's average income, the purchase of a housing unit is a large investment – in many cases it is in fact a household's biggest life-time investment. The question of how to finance this investment is therefore a crucial one. Efficient finance for residential housing can encourage a better matching of households' preferences for housing with the available and potential supply of housing, thereby improving social welfare. Further, to the extent that efficient finance encourages more widespread ownership by occupiers, there are likely to be additional social benefits.<sup>16</sup>

Financial transactions, except for self-finance, involve at least two parties. Though financial transactions can attain great complexity, their essence can be portrayed in terms of a simple loan transaction: Party A lends money or resources to Party B at time  $t$  and expects to be repaid at some future time  $t+1$ .

At one level, this simple example may seem to be trivial and uninteresting. But it conveys the essence of finance: the time dimension, and the lender's expectation of repayment. Because repayment occurs at a future date, separated in time from the initial loan, the lender is generally concerned about the guarantee of repayment. Before making the loan, the lender will want to be assured that the prospective borrower is likely to repay the loan (and any interim interest that is charged); and even during the period of the loan the lender is likely to want to be assured that the borrower's actions are consistent with timely repayment. But the lender faces problems of "asymmetric information"; the borrower is likely to know more about his or her own proclivities with respect to repayment than does the lender. Consequently, finance is associated with extensive efforts involving pre-loan information gathering and assessment of potential borrowers, and monitoring of actual borrowers during the loan, with institutions and practices arising in order to facilitate these information-intensive processes.

In general terms, the processes of finance can be described in terms of the informational transparency or opaqueness of potential borrowers, as portrayed in Figure 1.

**Figure I. The spectrum of informational opaqueness/transparency**



<sup>16</sup> There is a small but convincing amount of literature regarding the social benefits of home ownership. See, for example, Rohe and Stegman (1994), Rohe and Stewart (1996), Rossi and Weber (1996), Green and White (1997) and DiPasquale and Glaeser (1999).

In this figure, potential borrowers are arrayed along the horizontal line, according to how informationally transparent (or opaque) they are with respect to the finance-related information that a potential lender would want to know. At the left side would be, for example, a young adult who is entering the labour force and who has had no previous financial transactions; he/she has little in the way of a “track record” that can assure a lender as to repayment, and is thus highly opaque. At the right side would be an institution whose track record for repayment, is transparent and well regarded. In between would be individuals, enterprises, organizations, and Governments of varying degrees of transparency.

These potential borrowers can be matched with various lenders, which can be roughly grouped into three categories. At the far left, highly opaque borrowers are likely to have to rely for their finance on family and friends, who may have special information about the individual or particular means of extracting repayment or who may be willing to provide “concessional finance” by converting a loan into a grant. At the far right, highly transparent (and reliable) borrowers can access the securities/bond markets, where bonds are purchased by investors (who thus lend to the borrower) who rely heavily on publicly available information about the borrower and his/her reputation. In between, financial institutions which are information gathering and assessment specialists (such as banks and other depositories, finance companies, insurance companies, venture capital firms) are likely to be the sources of finance for borrowers of intermediate transparency/opaqueness.

The legal framework and the institutional and historical context in which the financial transactions are embedded are likely to influence the specific mix of which kinds of lenders provide what kinds of finance to which borrowers. This indeterminacy is indicated by the “wiggly” lines that separate the three categories of providers of finance.

Finally, the arrows above the separation lines point to the left. This is meant to indicate the direction in which technological change in finance has pushed the boundaries. The right-hand boundary has moved to the left as technological change has permitted the securities markets to “invade” the “territory” of financial transactions that used to be the exclusive domain of the information specialist finance providers (such as banks); this is the process of “securitization” in the United States. The left-hand boundary has moved to the left as well, as technological change has permitted banks and other lenders to provide finance (for example through credit cards) to individuals who previously could rely only on family and friends. There are essentially three major elements involved in any loan:

- *Origination*: the initial granting and funding of the loan;
- *Ultimate holding and funding*: the eventual holding (and thus funding) of the loan; and
- *Servicing*: the arrangements to facilitate timely payment of principal and interest.

In addition, lenders will want some agreed arrangements for default contingencies: the procedures that will be followed in the event that the borrower fails to make timely payments. Housing finance is no exception to this pattern, and we shall describe the institutional arrangements that have arisen for housing finance.

The three elements of finance can all be performed by the same entity; this is often described as “vertical integration”. Or they can be separately performed by different, “vertically disintegrated” entities. Though the former pattern is more traditional and more common, the latter has grown in frequency with the advent of MBS as a finance alternative.

There are at least eight major ways of providing housing finance.

(i) Owner self-finance

The buyer-owner provides the finance, through prior personal saving; the other elements are irrelevant.

## (ii) Seller finance

The seller provides the finance. In essence, the seller accepts payment for the sale of the house in a stretched-out schedule, thereby extending an implicit loan to the buyer. The seller originates the loan, funds it and services it. The residential unit that is being financed will almost always serve as the collateral for the loan, which in this form would be described as a mortgage.

## (iii) Third-party finance: family or friend

A family member or friend extends the loan (mortgage) to the owner and thus originates, funds and services it.

## (iv) Third-party finance: a bank or other depository

A bank extends the loan (mortgage) to the owner and thus originates, funds and services it. In turn, the bank receives most of its financing from depositors; but the depositors' claims for repayment of their funds are directed toward the bank, not toward the borrowers to whom the bank has extended mortgages.

## (v) Third-party finance: an insurance company

Most insurance companies holding mortgages do not originate them. Accordingly, origination would be by a mortgage banker (an origination specialist), who would sell the mortgage to the insurance company. The latter funds and services it.<sup>17</sup> The insurance company, in turn, obtains its funding from the premiums paid by its insurers and from any additional borrowing that it may undertake.

## (vi) Third-party finance: a finance company

If a finance company holds mortgages, it is unlikely to originate them; again, origination would be by a mortgage banker, who would sell it to the finance company that funds and services it. The finance company's funding, in turn, comes from its borrowings in capital markets.

## (vii) Third-party finance: Government

In principle, the Government could provide the mortgage (with either direct origination, or origination by a mortgage banker), with funding ultimately by taxpayers or by government borrowing.

## (viii) Third-party finance: MBS

The originator either "packages" the mortgage (with other mortgages) into a security, or sells the mortgage to another entity which does the packaging. The "pass-through" security (so called because the borrower's interest and principal payments<sup>18</sup> are passed through to the buyer) is then sold to a party that wishes to hold the security and receive the interest and repaid principal and is thus the funder. That party may be a private investor, a mutual fund, a pension fund, a bank, an insurance company, or any other entity which is attracted to the MBS as an investment. The servicing can be carried out by the originator or may be sold to a specialist service provider. Since the MBS are securities, they may be readily sold to other investors in a "secondary market".

Mortgage lending entails certain risks that have to be properly managed if the business is to be successful.

<sup>17</sup> Again, the insurance company may contract out the servicing, perhaps to the originator.

<sup>18</sup> Minus any servicing fees and other transaction fees relating to the securitization process.

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- First of all, to avoid legal and/or regulatory risks in the activity, the existence of an adequate legal environment that supports the housing finance system is an essential prerequisite. Existing legal provisions must secure private ownership of immovable property and allow that the property title is given as a security for a mortgage loan.
  - This system has to be supported by a functioning land registry, which records the history of an immovable good, and by a foreclosure system which enables a lender to proceed to a forced sale in case of non-repayment of the loan.
  - The introduction of the relevant foreclosure system needs to be accompanied by effective enforcement mechanisms.
  - Certain macroeconomic risks or market risks are generally beyond the control of the mortgage lender. High inflation risk, for example, is often seen as an obstacle to long-term housing finance. Variable interest rate loans may sometimes be a more attractive alternative to borrowers than fixed-rate mortgage products, and vice versa.
  - Another risk relating particularly to housing finance is the volatility of the property price, that is, the uncertainty of its value as collateral for a long-term loan. This may lead, as in certain transition countries, to a lowering of loan-to-value ratios and a need for additional collateral. Sound valuation rules and prudent management are the remedies against this risk.
  - Other risks that more directly concern the housing loan providers themselves are the audit risk and the operational risk.
  - Audit risk management includes the requirement for an adequate assessment of the customer's willingness and capacity to repay the loan for its duration. It is necessary that the lender uses specific criteria which take into account the characteristics of the local market. Furthermore, in a number of countries audit risk offices have been established which retain data on customers' retail, finance and other accounts to keep track of missed payments.
  - This important support facility for the housing loan sector is, however, still limited or unavailable in most transition countries.
  - A complication for risk management is unreported income, which is often an important source of revenue but difficult to take into account without formalities.
  - Credit risk management also requires a fair portion of equity. This motivates the borrower to continue to pay, and the lender to recover the damage in case of default.
  - Another element in audit risk management is the availability and use of other kinds of collateral (if necessary). A mortgage insurance programme, as established in certain countries, as well as the provision of financial advice to the borrower may help to reduce the default risk.

Of course, operational risks have also to be tackled. Where operational errors and fraud occur, operational costs increase and the business is no longer profitable. Useful tools to reduce these operational risks are the training of staff to increase efficiency and reduce the potential for error, the use of technology (which increases the volume of operations and facilitates the collection and analysis of data), and the standardization of documents and operations (which should lead to lower costs).

# Chapter III

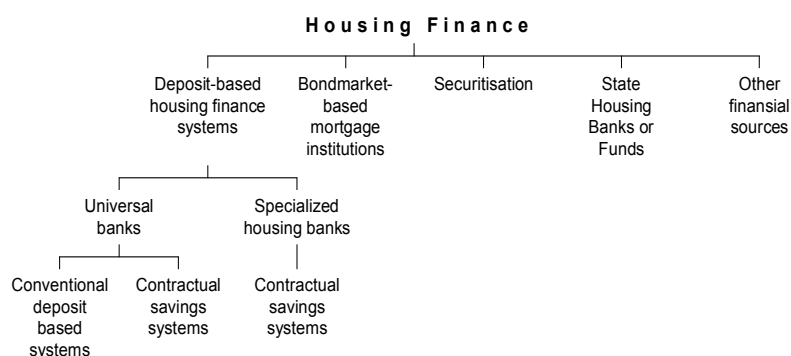
## MAIN FINANCING INSTRUMENTS IN THE ECE REGION

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Five main housing financing systems are described here (see chart). They are classified according to how their fund raising is organized and their main sources of capital. Most institutions may, and do of course, obtain financing by other means as well.

- A. Deposit-based housing finance systems
- B. Bond market-based mortgage institutions (“mortgage banks”)
- C. Securitization
- D. Housing loans provided by national housing agencies, State housing banks and housing funds
- E. Other financial sources

**Figure II. Housing finance**



The main European housing financing institutions are deposit banks and mortgage credit institutions. However, there are considerable differences between countries in as much as in some countries the market share of deposit banks is markedly bigger, while in others the mortgage banks have the lion’s share (see annex I).

### A. Deposit-based housing finance systems

This group includes ordinary deposit banks, which raise the bulk of the capital required by means of deposits. In addition to deposit activities, these banks may raise finance needed for lending by issuing bonds and by securitizing their loan holdings.

The deposit-based housing finance system comprises universal banks and specialized housing banks.

Of these, the universal banks obtain most of their financing through ordinary deposit accounts, but in some countries they also accept contractual savings.

Deposit finance has traditionally been the major vehicle for housing finance in the advanced market economies. As a group, these credit institutions pool large amounts of deposits and serve as intermediaries taking on mismatches between the deposit sources and the housing loans in terms of amount, credit risk and duration. The type of funds obtained via retail deposits may take one form or another: deposits redeemable at maturity, deposits redeemable at notice or overnight deposits. The use of savings deposits (side and turn deposits) to finance housing loans is the most widespread method in the region. Savings deposits are used by a variety of mortgage lenders. But this category comprises mainly the historically developed regional and national savings banks and the commercial banks. Today, apart from a different historical development and the often still remaining special regulatory framework for both types of institutions, there is no intrinsic difference between savings banks and commercial banks.<sup>19</sup>

Contractual savings schemes are another type of deposit finance used in a number of countries to provide funding for home purchases. In principle, the provider obtains deposits from the applicants, generally at a below-market interest rate, and extends the housing loan to them at favourable terms once the deposits taken have accumulated to a certain level. The system is termed as contractual, as it is based on prior savings by the potential borrower whom these savings entitle to obtain a loan at predetermined conditions, which are generally more favourable than market conditions. The German and Austrian Bausparkassen are derived from the idea of a mutual credit based on collective savings. This is a “closed” collective system, that is, the loans are financed only by means of mutual savings and consequently the date of granting the loan is not set in advance.

The other variant is that of deferred credit (*crédit différé*) of the French type, which is based on the idea of equivalence between the depositing of savings and the benefit of the loan. The date of the loan must be set in advance and the credit institution must consequently dispose of external resources to meet any shortfall in new contracts. In addition a system has evolved in France whereby a government subsidy on certain forms of savings deposits ensures a steady flow of capital for housing purposes. More recently, however, the system has been criticized as it can result of a situation of mismatching, whereby interest rates on savings accounts are higher than interest rates on housing loans.

The specialized contractual savings for housing (or *crédit différé*), on the other hand, are in practice based on deposits by private households according to prior agreements. Correspondingly, the size of the loan depends on the amount saved by the household.

The decision maker’s choice between different deposit-based financing systems should be based on consideration of the appropriateness of contractual savings systems versus the conventional deposit-based systems, and also whether it serves the purpose to use either universal banks or specialized housing banks for the contractual savings system.

Another system is that of British and Irish building societies. These specialized institutions have been the traditional mortgage lenders in these countries, attracting funds through various savings schemes and granting housing loans on a variable rate basis. This variation applies to both sides of the balance sheet and there is therefore no mismatching of the funds. Nowadays, building societies are closer to the category of savings banks in some countries, since they refinance their lending activities to a significant extent by savings deposits. But contrary to the concept of contractual saving schemes, these savings are not directly related to a specific lending activity.

## **B. Bond market-based mortgage institutions (“mortgage banks”)**

The mortgage credit institutions raise their finance through sales of bonds, both to institutional investors (such as pension funds) and to private investors. Ideally, a mortgage institution acquires the financing needed for a loan by selling, during the same day, a bond for the same period and of the same classification. This is the case for the Danish Mortgage Bank institution described in chapter IV.

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<sup>19</sup> UNECE. Housing Finance: Key Concepts and Terms, 1998.

The balance between credit losses, other running expenditure and the financial gain rest on the fact that the interest on the loans issued is somewhat higher than the interest paid on the bonds issued.

In the area of housing finance, there are generally two ways to raise funds from the capital markets: by issuing either mortgage bonds or mortgage-backed securities. The mortgage bonds are issued by the lending institutions to raise funds as a complement to or instead of deposit-taking from the public. The mortgage bonds themselves remain on the issuer's balance sheet and the credit quality is based on the creditworthiness of the lending institutions. In contrast to the on-balance-sheet issuance of mortgage bonds, the issues of mortgage-backed securities occurs off-balance-sheet and is based on the legal separation of the assets from the lender. The securities and the underlying loans are therefore transferred from the issuer's balance sheet. The issuance of mortgage bonds is the second most important type of funding method after retail deposits. The issuance of mortgage bonds allows lenders to obtain funding at reduced borrowing costs in the capital market and is therefore a cost- efficient method of housing funding. At present, three European countries share around 88 per cent of the overall mortgage bond markets:

Germany's "Hypotheken-Pfandbrief" with a share of 44 per cent, followed by Denmark with 29 per cent and Sweden with 15 per cent. In terms of volume, mortgage bonds provide around 20 per cent of the funding of mortgage credit in the European Union (EU).<sup>20</sup>

Mortgage bonds are generally issued by specialized mortgage banks and are regulated by law. Issuing mortgage bonds is indeed a highly regulated activity, requiring special legislative and supervisory provisions. Mortgage bonds are securities which have as collateral the corresponding bundle of mortgage loans and represent guaranteed claims against the issuer, and are therefore enjoying a degree of special security. Furthermore there are limits to the loan-to-value ratio of the mortgages and in some countries there are also strictly defined and applied valuation techniques. Despite their important role in capital markets and in refinancing housing finance in Europe, there is today no common definition of a mortgage bond. Nevertheless, mortgage bonds have been defined for investment purposes within the framework of the 1989 European Commission (EC) Directive on Undertakings for Collective Investments in Transferable Securities (UCITS). Article 22 § 4 of this directive foresees that mortgage bonds may benefit from increased investment possibilities and favourable solvency ratio weighting if they fulfil the following characteristics:

- The bonds must have been issued on the basis of legal provisions to protect their holders.
- They must be subject to special supervision by the public authorities.
- The sums deriving from the issue of these bonds must, according to the legal provisions, be placed in assets which provide sufficient cover for the liabilities deriving from the bonds during their entire duration.
- In the event of the bankruptcy of the issuer, the sums deriving from the issue of the bonds are intended as a priority to repay the capital and interest becoming due.

According to Article 20 of this directive, mortgage bonds that fulfil these common characteristics have to be notified by the Member States to the EC. Germany, Denmark, Austria, France, Spain and Luxembourg have done this notification so far. A special mortgage law exists in these countries and in Finland. These acts are in line with the above provision but some characteristics may differ strongly in their substance from one country to another. The cover principle, for example, is regulated very strictly in German legislation. According to the cover principle and the matching principle, the totality of the bonds in circulation must be covered to the nominal value at all times by mortgages of the same value and at least at the same interest rate. In addition, an appointed trustee must ensure that the statutory cover is maintained at all times.

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<sup>20</sup> OECD, European mortgage markets: structure, funding and future development, Contribution by J. Hardt/D. Manning.

Legal provisions in the countries concerned normally require that the claim of a mortgage creditor be separated from the other assets in the case of bankruptcy, that is, bond creditors usually have a first claim on the underlying assets. Bond creditors tend to have strong rights in countries with a large issuance of mortgage bonds.<sup>21</sup> And finally there is an institutional framework to guarantee the safety of the bond. In most countries the legislation therefore defines a special category of banks as “mortgage banks” which are authorized to issue mortgage bonds. These institutions may be subject to extra licensing, regulation and supervision. Despite the tendency observed in some countries towards universal banking, there were and are still reasons leading to the establishment of a mortgage bond system within specialized institutions.

### C. Securitization

In Europe, there are hardly any financing institutions exclusively based on securitization. Instead, this type of financing is used by banks or State housing funds for fund-raising.

The main basis for the use of securitization in Europe is that off-balance-sheet treatment is then possible, so that increased lending does not require additional fund raising for own capital in order to meet capital adequacy requirements which may lead to a need for additional own equity capital.

Since the funding sources, in securitization, are largely the same as, or similar to, those for mortgage bonds (see above), in a European context, securitization can clearly be considered as an alternative to mortgage bonds.

But in Europe there are no national government or EU-sponsored agencies to help mortgage lenders to fund their loans, as in the United States mortgage market. Indeed, loans have to be funded on the basis of the financial solidity of the granting institutions and/or the quality of the issued securities. There are, however, some privately-owned, centralized issuing institutions as in Switzerland, France, Austria and Sweden, but they sometimes have difficulty creating enough liquidity. In some countries their existence is even threatened because of the varying ratings given to the issuing institutions. It seems clear that government-sponsored agencies following the United States model would be forbidden by virtue of Art. 87 of the EC Treaty, as its directivity is going to affect trade between EU Member States, which is incompatible with the common market. The relevant EU directive (98/32/EC) so far also allows for a 50 per cent weighting of MBS, a less favourable weighting than the one given to the securities issued by the United States agencies. This is why securitization in Europe remains capital intensive and costly (0.75 per cent to 1 per cent over Euribor). The funding instruments are mortgage bonds. Furthermore, the legal and fiscal complexities and the lack of standardization in Europe make it more difficult to securitize. One central issue in this respect is the lack of harmonized legislation concerning the transfer of assets.

Taking into account the role of the MBS in the promotion of residential mortgage finance in the United States, some observers had expected that this technique would spread to many European countries. In fact, in various countries a number of measures have been taken to facilitate securitization of mortgage loans. This can be seen as a part of the deregulation process of the financial markets, which started in the early 1980s and which went on, at different speeds, throughout the EU. Securitization was introduced in the United Kingdom (1987), Finland (1989), Spain (1992) and Ireland (1995). In France the system of the securitization of mortgage loans was reformed in 1999. In Spain and France and to a certain extent also in other countries, mortgage loans and MBS are considered to be alternative and/or complementary funding instruments.

The United Kingdom is the largest MBS market in the EU, with a 4.5 per cent share of domestic gross mortgage lending in 1999 (MBS issue worth 8.2 bn euros). In Spain and France, securitization of mortgage loans also plays a role and in Ireland its importance stands to increase as more mortgage lenders acquire the expertise to issue MBS and to free up capital for new lending. Some experience with MBS has also taken place in Belgium, the Netherlands and Germany. In Europe, MBS are in general issued by commercial/universal banks. Their outstanding value is estimated at 16 bn euros (1998).

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<sup>21</sup> UNECE. Housing Finance: Key Concepts and Terms, 1998.



While the number of transactions and the amount of funds raised so far is relatively small, numbers of European countries have some involvement in securitization. But it is difficult today to predict whether this source of funding will grow in the coming years and to what extent. A disadvantage is that transactions must be large in order to absorb the high costs (including debt rating), which could prevent smaller lenders from operating within a securitized market. In a securitized system, however, the lender can make efficient use of capital, as the risk involved in the mortgage lending activity is sold to third parties. The lender does not have to have sufficient funding over the duration of a loan and has, therefore, higher liquidity and good conditions for successful in lending.

#### **D. Housing loans provided by national housing agencies, State housing banks and housing funds**

An example of direct government lending is presented in annex II, namely the Norwegian State Housing Bank. The basic idea is that the means accruing from interest and repayments of previous debts are returned to the fund, and these means are used for awarding new loans. Additionally, the fund may raise loan financing on the open market, either by selling bonds or by securitization (this has been done by the Finnish State Housing Fund, see Annex III). Housing funds may also receive additional financing under government budgets.

An alternative to government lending is State guarantees and State interest subsidies to loans awarded by banks or mortgage institutions.

When considering the advantages and disadvantages of these systems, it should be borne in mind that the credit risk is basically the same with regard to State loans and State guarantees. If the State (or a fund) can obtain the required funds more advantageously on the open market than through the private financing institutions, it may, for the provider of the subsidy, be cheaper to channel financing through government institutions. Another factor in favour of government financing is that on the open market it may be difficult to find financing for specific purposes.

State housing fund loans have generally been channelled to social rental housing projects, for which it is difficult to obtain funds on the open money and capital markets.

#### **E. Other financial sources**

Competition in the mortgage market has increased in recent years in several countries, as barriers to entry have been reduced. A range of new financial service providers, many with different approaches and targeting different customer segments, have, for example, entered the United Kingdom market. Competition through product innovation is intensifying in the United Kingdom, the Netherlands and Denmark.

The increasing importance of Internet distribution, the growing availability of outsourcing options, and wider funding options have lowered barriers to entry mortgage markets. It is foreseeable that technological development will continue to reduce the barriers to entry even further, at least in certain countries.

Furthermore, the traditional financial services brand is no longer a prerequisite for offering financial services. Especially in the United Kingdom, a number of supermarkets and other retailers are offering financial services, including mortgages, and using their existing customer relationships.

The wave of demutualization of United Kingdom building societies in the 1990s has seen the remaining societies reassess their strategies, consisting mainly in emphasizing member benefits and narrowing their profit margins. The operational strategies of the remaining mutuals vary between those who have maintained their focus on the core savings and mortgages, whilst others are trying outsourcing solutions to bring them competitive advantage.

Insurance companies constitute a major category of mortgagees in certain countries. They have become so by insuring the outstanding balance and by combining endowment policies with the granting of mortgage loans. In the case of insurance of the outstanding balance, the mortgagor, in addition to capital and interest payments to the lender, pays premiums to an insurance company which may also be the lender. The insurance company makes a payment only in the event of the death of the insured borrower, to the amount of the outstanding balance at that time. In the case of endowment insurance, the mortgagor, in addition to his interest payments to the lender, pays a premium to a life assurance company, which undertakes to repay the capital. The insurance company then always makes a payment, either on the death of the insured borrower, or at the end of the insurance contract, which usually coincides with the end of the loan. The role of insurance companies in the mortgage market varies considerably, however, according to the country concerned, and is non-existent in some countries.

# *Chapter IV*

## *SELECTED THREE PRIVATE HOUSING FINANCE INSTRUMENTS*

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This chapter describes three specific financing instruments used in different parts of the ECE region today, namely the “Bausparkassen” system, representing a contractual savings scheme, the Danish mortgage bond technique and the United States variety of mortgage-backed securities (MBS). They are the systems currently most often considered for application in countries in transition. These countries therefore need guidance and practical tools to carry out their own analysis to select those instruments and models most suitable for their country and their particular context.

### **A. Contractual savings schemes for housing: “Bausparkassen”**

#### ***1. The development of the Bauspar system in Germany after the Second World War***

The Bauspar system offers a dedicated loan-linked form of saving. It links a phase of contractual savings remunerated below market interest rates to the promise of a housing loan, for which the interest rate is fixed at a rate at the bottom of the market at the time of the conclusion of the overall Bauspar contract. Having its roots in the United Kingdom about 300 years ago, Bausparkassen were founded as mutual self-help organizations as a result of the poor housing conditions after the First World War (especially for lower and middle income groups). These “savings communities” allowed the participants to save regularly and to receive a loan according to predetermined queuing rules.

Soon after their inception, Bausparkassen specialized in loans secured by second-ranked mortgages and established the “division of labour” among them and commercial banks or mortgage banks offering home financing secured through first-ranked mortgages. After the Second World War, the German Government promoted the Bauspar system largely in order to stimulate housing when there was a shortage of more than six million dwellings as a result of the war. The underlying strategy of the Government in its support of the Bauspar system has been aimed at promoting the accumulation of own funds dedicated to housing to ensuring the safe and favourable financing structure of homes. Today, Germany has 27 Bausparkassen managing more than 32 million contracts worth €670 billion.

#### ***2. Conditions of the legal framework for use of the Bauspar technique***

##### ***(a) The legal basis for the activity and the normative basis principles***

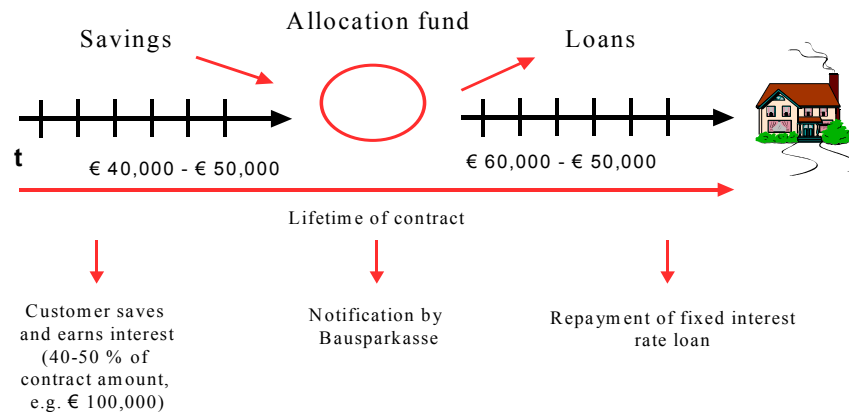
As banks, Bausparkassen are subject to regular German banking legislation with which they have to comply fully. Since they are specialized in housing finance for individuals, they are in addition subject to the Act on Contractual Savings Banks (“Bausparkassengesetz”). The main objective of this act is to set out the business activities of the Bausparkassen and to secure customers’ deposited savings in the Bausparkasse.

The main normative principle in the Bauspar system is the Bauspar contract which governs the relationship between the bank and the customer. It consists of four elements (see the diagram below):

- (i) Conclusion of the contract itself, which fixes items such as the Bauspar contract amount (e.g. €100,000.00), the savings rate, repayment rate and interest rates for the savings and for the loan. The conditions of Bauspar contracts are fixed in the tariffs, that is, every tariff offers a specific combination of interest rates on savings and deposits and the amount of savings and loan instalments paid by the customer.

- (ii) Savings period, in which the customer saves up to 40–50 per cent of the Bauspar contract amount (e.g. €40,000 - €50,000).
- (iii) Allocation period: Since the Bauspar system is managed as a closed system, banks can only allocate those saved funds, in the form of loans to customers, which the banks have previously collected. Hence, customers are subject to a waiting period the length of which depends on the availability of funds. Specific rules determine the sequence of loan disbursements to the customer. Savings are paid into the allocation fund which serves to disburse the Bauspar loans. The allocation fund is also filled by the redemption payments of the Bauspar loans.
- (iv) Loan period: The customer repays his loan on the basis of the agreed interest rate.

**Figure III. Basic principles of the Bauspar contract**



*(b) General terms and business principles*

Usually, an Act on Contractual Savings Banks (CSB) defines in Germany the role of Bausparkassen in the housing finance market: accepting Bauspar deposits and granting Bauspar loans. Only Bausparkassen are authorized to conduct this kind of business. The loans granted by the Bausparkassen shall be used only to finance housing purposes, that is, construction or purchase of a dwelling, acquisition of land, renovation, modernization and the redemption of other mortgage loans granted by different financial institutions.

The Act on CSB stipulates that every Bausparkasse is obliged to conduct its operations on the basis of General Business Principles (GBP) and Standard Terms and Conditions for Bauspar Contracts (STCB). GBP govern waiting periods, composition of the allocation fund, financing activities of the Bausparkassen, calculation of property valuation and procedures governing the repayment of deposits. As an integral part of the Bausparkasse contract, STCB defines the legal relationship between the customer and the Bausparkasse. STCB comprises regulations such as interest rates for the Bauspar deposits and loans, the ranking of claimants to Bauspar loans and the required security for loans and guarantees, as well as specifications with regard to the increase of credit volumes, and the transferability and termination of Bauspar contracts.

*(c) Prudential requirements and specificities*

Supervision of Bausparkassen is executed by the German Federal Financial Supervisory Agency (BAFIN) and the Central Bank. BAFIN issues the licences permitting a Bausparkasse to take up business. It also approves Bauspar contract tariffs. The Central Bank monitors the liquidity position of every Bausparkasse. In general, supervisory activities of the Central Bank are conducted according to existing legislation on banking monitoring and supervision in Germany.

In this context, the supervisory bodies monitor the correct use of the allocation funds. Bausparkassen are expected to maintain short and continuous waiting periods (= the time the customer has to wait until his loan will be allocated) in order to avoid big fluctuations in their lending activities.

In addition, Bausparkassen are obliged to avoid exchange rate risks. In the case where Bausparkassen offer Bauspar contracts in foreign currency, they must form separate allocation funds for these contracts and ensure their correct use (according to the Act on CSB).

**3. The importance of contractual savings for housing and of the Bausparkassen in Germany***(a) Role in the credit sector***Table 1. Role of Bausparkassen in the credit sector (2000– 2002). All figures in millions of euros**

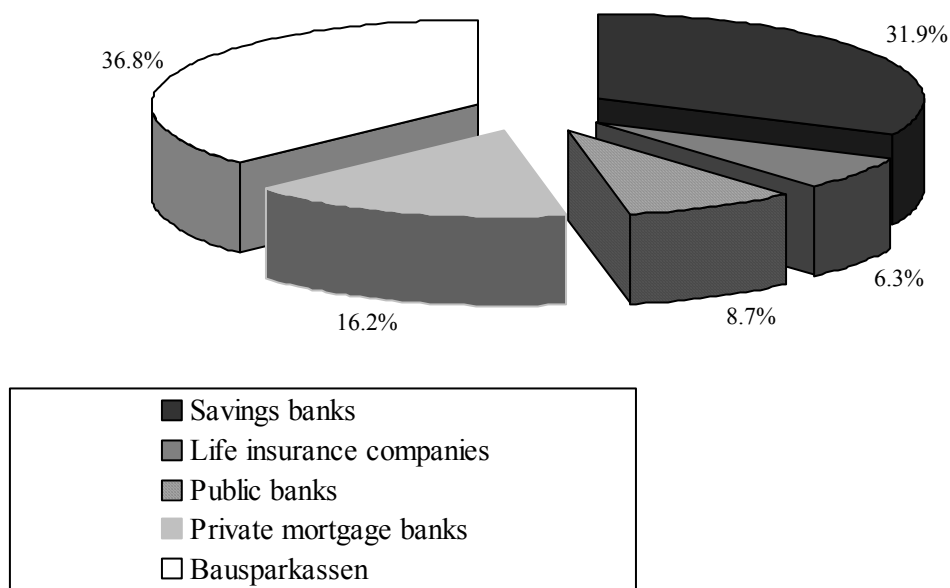
	2000	2001	2002
Loan disbursements of financial institutions (including life insurance companies)	104,226	100,130	94,068
Loan disbursements of Bausparkassen	38,048	36,784	34,623
Sale of new contracts			
▪ New Bauspar contracts	3,615,853	3,719,312	3,842,760
▪ Aggregated amount of contracts	73,558.7	75,620.4	80,422.3
Inflow of funds to Bausparkassen	36,654.6	36,557.1	37,379.9
Aggregated balance sheet volume of all Bausparkassen	153,881.5	158,764.5	163,493.3

Source: Association of Private Bausparkassen, Public Bausparkassen, German Central Bank

The table above shows that in 2002, loan disbursements of all financial institutions amounted to €94 billion. Of this, Bausparkassen disbursed €34.6 billion. Bausparkassen are therefore one of the most important loan providers in housing finance in Germany. Although loan disbursements have declined, the share of Bausparkassen loans has remained unchanged. In order to finance these loans, Bausparkassen collected €37.4 billion in 2002; that is, inflow of funds exceeded outflow of funds.

*(b) Importance in the housing finance sector*

In 2002, the market share of the Bausparkassen amounted to 36.8 per cent followed by the savings banks with a market share of 31.9 per cent, which represents a loan volume of about €30 billion. On the third rank, the market share of private mortgage banks is 16.2 per cent with a loan volume of €15.2 billion. Public banks and life insurance companies paid out €8.2 billion and €6 billion respectively.

**Figure IV. Market share of financial institutions in mortgage lending in Germany (2002)**

A combination of Bauspar loan and mortgage loan has appeared as the standard structure in housing finance in Germany. Usually, Bauspar funds account for roughly 30 per cent of the purchase price of a home, whereas the mortgage loan granted by a mortgage bank or a different bank covers up to 50 per cent of the purchase price. The down payment constitutes 20 per cent and more of the purchase price. As a result, the Bauspar system has a complementary function.

Under these circumstances, people have used Bauspar funds in order to finance new construction or the purchase of a home. Bausparen plays a pivotal role for first-time buyers, especially young families, who do not have enough own funds. Bauspar funds have also proven a popular tool for financing renovation or modernization projects which regularly require lower financing volumes (that is, €10,000 to €20,000). Mortgage banks usually grant loans starting at €50,000 because lower loan amounts are not profitable for them. Another alternative would be a consumer loan. However, interest rates on such loans are always considerably higher than the rates on mortgage loans. Bauspar loans are offered with interest rates varying from 4 to 5 per cent p.a., whereas consumer loans are priced 600 to 800 Basis Points (BP) higher than Bauspar rates.

#### ***4. The assets side of the business***

The Bauspar system links a savings process to the granting of a loan. Both processes are closely intertwined. This special commitment of the Bausparkasse has to be taken into consideration in an assessment of the Bauspar system. The following section looks first at the lending side of the Bauspar system, and secondly at the savings activities.

##### *(a) Standard product(s) for housing finance*

When the customer has completed his contractual obligations as stipulated in the Bauspar contract, the Bausparkasse is obliged to grant the loan (= the difference between the Bauspar contract amount and the paid-in savings). The terms and conditions of the Bauspar loan will have been fixed at the time of the conclusion of the Bauspar contract; customer and Bausparkasse have agreed on a certain tariff which defines both the conditions of the savings periods and the loan period.

**Table 2. Tariff conditions of a standard Bauspar contract**

Up front fee	1 per cent of contract sum
Monthly instalments in the savings period	0.4 per cent or 0.5 per cent of contract sum
Minimum savings period	18 months
Minimum savings amount	40 per cent of contract sum
Monthly redemption payment	0.6 per cent of contract sum
Average redemption period	up to 11 years

Source: Association of Private Bausparkassen, Public Bausparkassen

The table above shows the standard conditions of a Bauspar contract. The customer determines the loan amount through the contract sum. Eligibility for loan allocation is conditional on completing the savings period (= minimum savings amount and minimum savings period).

Bauspar loans are offered up to an LTV ratio of 80 per cent whereas universal banks and mortgage banks grant mortgage loans up to an LTV ratio of 60 per cent. These different LTV ratios reflect the division of labour between banks and Bausparkassen.

The Bauspar loan will be redeemed through regular instalments which comprise the redemption of the principal and the interest payments. The customer is entitled at any time to make pre-payments, which are free of charge.

In order to bridge the allocation period (= the time until the loan will be allocated to the customer), Bausparkassen offer to the customer interim financing according to market conditions. The amount and duration of this bridging loan is determined by the amount of the Bauspar loan and the time of its allocation. The bridging loan will be repaid through the Bauspar loan.

*(b) Conditions concerning the contractual relationship with the borrower*

In the Bauspar system, the waiting period balances supply and demand of funds (time-by-amount system). In order to determine the sequence of the individual loan allocations, Bausparkassen refer to an assessment figure which is aimed at measuring the saving performance of every saver. The calculation of these figures takes into consideration the amount of funds and the period of time the Bauspar contract saver has made his savings available to the Bauspar community in relation to the total commitments of the Bausparkasse. The higher the assessment figure, the earlier the customer becomes eligible for allocation of the Bauspar loan.

The saver can reduce the allocation period by making higher savings contributions. However, the ultimate timing of the allocation is contingent on the total volume of funds available to the Bausparkasse in the form of savings plus redemption and interest payments. Therefore, the Act on CSB prevents the Bausparkassen from entering into any obligations to disburse individual Bauspar contracts at a predefined date because the Bausparkassen are not able to assess the future inflow of funds at the time the contracts are concluded.

Bauspar loans are usually secured by a subordinated mortgage. The customer is also allowed to present a substitute security in the form of savings, marketable securities or a bank guarantee and so on. For loans up to €15,000, the Bausparkassen do not require a mortgage. They accept instead a negative pledge clause, that is, a declaration presented by the borrower that he will not pledge unmortgaged property to different lenders before consulting the Bausparkasse. According to the Act on CSB, the share of Bauspar loans without collateral is limited.

*(c) Complementary products and channels of distribution*

Bauspar products are sold through the Bausparkassen sales network (agents, branches) or the branch network of a partner (bank or insurance company), or a combination of both since Bausparkassen are often part of a financial group. In this context, Bauspar products belong to the wide array of housing finance products. They are often sold as a prerequisite to obtaining a regular mortgage loan.

Since the Bauspar product is a mass product, a deep penetration of the market is of major importance for viability of the system. Therefore, the agents network is the most important sales channel for the Bausparkasse. Agents for the Bausparkasse are fully-employed sales staff, part-time employees or even freelancers. All these groups are regularly trained in order to maintain well-qualified personnel. A further sales channel is the Web which has been used more extensively in the last five years.

**5. The liabilities side of the business**

*(a) Basic principles for refinancing*

Refinancing of Bauspar loans is done exclusively by savings and by redemption payments on already-allocated loans. According to the Act on CSB, Bausparkassen are also entitled to issue bonds. These bonds are not subject to definite maturities. Usually, these funds generated through bond issues are used to refinance bridging loans.

Moreover, Bausparkassen are authorized to sell or pledge claims arising from Bauspar loans in the secondary market. To date, Bausparkassen have referred to synthetic MBS transactions.

In order to keep waiting periods short and consistent and to avoid big fluctuations in lending activities, Bausparkassen may not transform all in-going funds into loans. These free funds can be invested only according to strict rules. For example, Bausparkassen may not buy shares or derivatives (futures, options, hedge funds), nor transactions in foreign currency instruments (swaps). Forms of investment are deposits at banks and bank bonds or treasury bonds as well as treasury bills of the German Government or comparable instruments of the European Union and its member States, among others.

In addition, Bausparkassen are allowed to use these free funds for bridging loans. However, the share of bridging loans must not exceed 70 per cent of the funds allocated to, though not yet taken up by, Bauspar customers for Bauspar loans. The maximum term for these loans is 48 months. Loans which exceed a term of 36 months shall not exceed 25 per cent of the funds allocated to, though not yet taken up by, Bauspar customers for Bauspar loans.

A reserve fund is a further tool for stabilizing the Bauspar system. Bausparkassen are required to pay into this reserve a certain percentage of their non-allocated funds. The reserves are used in times of decreasing new Bauspar business in order to keep the waiting periods equal in length and as short as possible. Consequently, a substantial prolongation of the waiting periods can be avoided.

*(b) Risks taken by the institution at the granting of the loan*

The risk management of a Bausparkasse focuses on the following risks in the loan portfolio:

- Credit risk: Since the saver has demonstrated during the savings period his ability to budget and set aside a portion of income for savings during an extended period (at least four or five years), this behaviour is likely to indicate a reliable borrower. As a result, lending to a Bauspar client is perceived as less risky than lending to an average borrower. This assumption can be confirmed by the low default rates of the Bausparkassen, which oscillate around 0.02 per cent of their entire loan portfolio.



- Liquidity risk can be caused by insufficient funds to meet future loan demands. The possibility of a cash shortfall arises when the cash from new deposits and existing loan payoffs is insufficient to fund loan commitments (that is, loans to savers who have completed the savings period). The magnitude of liquidity risk is determined by three factors. First, the duration of the loans and the savings deposits: the longer the maturities of the savings and the loan period the lower the liquidity risk. Second, the loan-to-savings multiple: the larger the multiple, the greater the liquidity risk. Third, the nature of the loan commitment: the liquidity risk is lower if the bank determines funding of the loan commitment.
- Interest rate risk is in a closed Bauspar system limited by contract design. Rates on savings and the loan are fixed for the whole duration of the contract and do not vary with changing market conditions.

## **6. The role of the State in connection with the Bauspar technique**

### *(a) Aid to customers*

The customer of a Bausparkasse is entitled to State support in the form of a bonus on his savings. However, the payment of this bonus is subject to income thresholds (taxable yearly income up to €25,600 for a single person and €51,200 for a married couple) and is linked to a minimum savings period of seven years. If he uses his Bauspar funds for housing purposes within this period of seven years, he is not obliged to pay back the bonus. If the saver fulfils these criteria, he will receive a bonus of 8.8 per cent of his annual savings up to a maximum of €45.06 (for a single person) or €90.11 (for a married couple). The Government does not grant any tax exemptions on Bauspar contracts.

The payment of the premium is not regulated in the Bausparkassen Act but in a different act called the Act on Savings Premium Dedicated to Housing (*Wohnungsbauprämiengesetz*). This act is also aimed at supporting other savings models dedicated to housing with a premium. To date, the Bausparkassen have been the only financial institutions which offer such products.

### *(b) Aid to institutions*

There is no institutional aid to the Bausparkassen in Germany.

## **7. Tendencies for further development of the technique**

Intensifying competition, greater market transparency and high demands made by customers have led to a decline in margins and fees in recent years and to increasing pressure for rationalization, which in turn has caused significant changes in the housing finance market. The former sharply-defined differences between banking and insurance products are becoming increasingly blurred. Whereas the main focus was in the past on the development of new distribution channels, competition has accelerated in recent years on the products side, particularly through the rising importance of private pension schemes.

Bausparkassen have faced stiff competition due to low and stable interest rates in the capital markets which have induced other financial institutions (especially insurance companies) to enter the housing finance market because they are able to offer loans with interest rates which are often only slightly above those of Bauspar loans.

The Bausparkassen have responded to this development by introducing tariffs with lower interest rates on loans and longer maturities to recover their advantage over capital market interest rates. In addition, they have improved the flexibility of the Bauspar contracts by expanding the Bauspar savers' options to tailor contract terms to their individual needs. Today, both tariffs that maximize interest return on savings and tariffs with very low interest rates on Bauspar loans are on offer. Customers may even change

the terms and conditions of their contracts after conclusion of the initial contract if their preferences have changed.

During the past two years, the Bausparkassen have benefited from the deep plunge in share prices. In addition, the rising difficulties of the State pension schemes induce people to seek secure investments in order to ensure calculable retirement provisions, of which housing is considered a vital element. As a result, inflow of savings to the Bausparkassen increased in 2003 by 9.9 per cent to €27.8 billion.

Besides Germany, the Bauspar system is an integral part of the national housing finance system in Austria, the Czech Republic, Slovakia, Hungary and Croatia, and is expected to start in Romania in 2004. Outside Europe, India and China (from 2004) have also adopted Bauspar systems.

In Austria, the volume of sold Bauspar contracts rose from 5.05 million in 2002 to 5.14 million in 2003. The Bausparkassen delivered loans totalling €2.07 billion, which represents about one quarter of the total volume of housing loans in the country. As in Germany, customers are entitled to a savings bonus which is linked to the development of the secondary capital market yield. In 2002, the bonus amounted to 4.5 per cent. The maximum amount for savings eligible for State support is €1,000 per annum per person. Thus, the maximum bonus amounted to €45. In total, customers received €145 millions from the Government.

In 1999, the Austrian Bausparkassen introduced flexible interest rates as a result of the rising competition from foreign-currency denominated loans (particularly in Swiss francs and Japanese yen) which have become very popular in housing finance. The interest rate risk for the customer has been reduced through the introduction of a cap for the Bauspar loans and the Bauspar savings.

## **B. Mortgage bonds (Denmark)**

### ***1. Development of the technique in Denmark after the Second World War***

Copied from Germany about 200 years ago, the mortgage credit system was introduced in Denmark as a result of capital shortage for long-term loans for housing; the conversion of property into liquid funds was restrained by weak legislation and regionally fragmented capital markets. In addition, central and local government finances were not in a position to support housing.

The mortgage credit system introduced an intermediary between the individual debtor (or owner of property) and the creditor (or investor). This intermediary was an association of borrowers who all accepted joint liability for each other's loans. The acceptance of this mutual solidarity heightened the creditworthiness of every borrower. The association of borrowers could pool the credit demands of the individual borrowers and issue bonds to the investors in order to refinance the loans. These bonds were covered by the mortgages of the individual debtors and a mutual solidarity pledge of all debtors. In addition, these associations were able to accumulate own funds, which served as a cover for their issuance of bonds. Gradually, they transformed themselves into mortgage banks.

### ***2. Legal framework conditions for the use of the mortgage bond technique by the mortgage banks***

The system is based on precise legal definitions of each step in the process, which are stipulated in the mortgage Credit Act:

(i) The mortgage deed, which is issued by the borrower to the mortgage bank after registration in a public register. This register secures a clear definition of each property and full transparency with respect to existing burdens on each property. The mortgage bank will accept the private deed only if it ranks sufficiently high in comparison to other registered claims.

(ii) The mortgage bond enjoys a special legal status because only mortgage banks are entitled to issue them. The mortgage banks are covered by special legislation and supervision. The legislation restrains

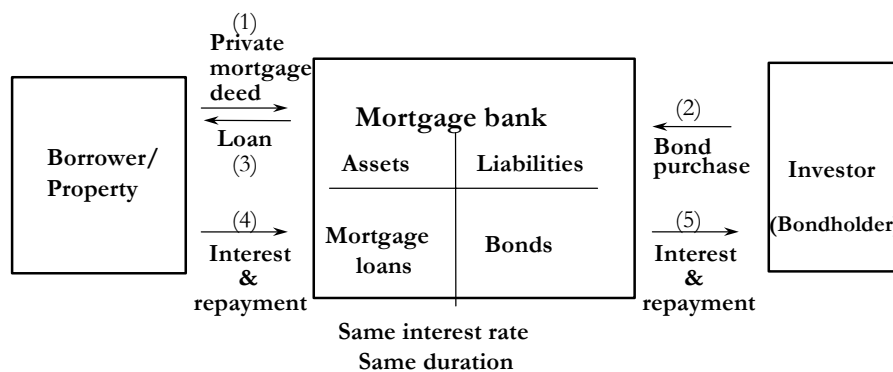
their activities to mortgage lending. This special legislation also stipulates a limit on the size of the loan compared to the value of the property. For housing loans, the LTV ratio is 80 per cent.

(iii) The evaluation of the pledged property must be based on strict guidelines which are a part of the regulation issued by the supervisory authority which monitors the activities of the mortgage banks (*Finanstilsynet*).

(a) *General terms and business principles*

The diagram below illustrates the principle of the balanced book of the Danish mortgage system.

**Figure V. The balanced book principle of the Danish mortgage system**



In order to finance the purchase or construction of a home, the property owner issues a standardized private mortgage deed (1) to the mortgage bank. This deed defines loan amount, duration, size of repayments and interest to be paid by the debtor to the mortgage bank. The mortgage bank will add up all individual requests with the same interest rate and the same maturity and will issue against these requests mortgage bonds with conditions identical to those enumerated in the individual deeds.

Theoretically, these mortgage bonds can be given back to the borrower. However, the borrower usually asks the bank to sell the bonds (2) in the capital market on his behalf. The proceeds of the bond sale flows back through the mortgage bank to the borrower (3).

The borrower repays the loan at regular intervals (for example, every three months). Each monthly instalment is made up of three components: interest, principal and a fee to the mortgage bank in order to cover its administrative costs, expenses for loan provisions and so on (4). The mortgage bank transfers the interest and principal payments to the bond holders (5). Simultaneously, it accumulates the repayments of the borrowers who have been covered by the same bond issue and draws a corresponding volume of mortgage bonds. Through constant reduction of outstanding bonds, the mortgage bank maintains a precise balance between its remaining claims on the borrowers (on its asset side) and its remaining debt to the holders of its mortgage bonds (on its liability side).

In summary, this system is based on the principle of a balanced book; each loan from the mortgage bank is matched by bonds in the same amount, of the same maturity, carrying the same rate of interest, in the same currency. The balance is maintained through the duration of the loan, since repayments on the asset side are matched by a reduction of bonds in circulation on the liability side. The system thus implies 100 per cent funding through the issue of bonds, and the system reduces the risk of a mismatch.

*(b) The prudential requirements and specificities*

The mortgage banks are subject to EC directives on prudential supervision. They define elements of own funds for credit institutions, the solvency required to meet credit risk and risks from the trading book, and operational risks.

As another safeguard inspired by the EU, a Guarantee Fund for Depositors and Investors has been introduced. It protects customers of credit institutions from losses in the case where the credit institution is unable to return securities (owned by the customer) that are held in safe custody or are subject to management or administration procedures. A specific Danish prudential regulation for mortgage banks prescribes that at least 60 per cent of its own funds should be invested in bonds quoted on the stock exchange.

**3. The importance of the mortgage bond and of the mortgage banks in the country of origin***(a) Their importance in the credit sector (role of credit supply)*

Figures for September 2002 show total outstanding credits from all credit institutions (commercial banks, savings banks and mortgage banks) to households and non-financial companies amounting to Dkr 2.009 billion (€270 billion) which corresponds to 145 per cent of gross national product (GNP). About 63 per cent of all outstanding mortgage loans are granted by mortgage banks.

*(b) Their importance in the housing finance sector*

The table below shows new gross lending (that is, new lending before deductions of repayments in the same period) and outstanding loans distributed according to categories of mortgage:

**Table 3. Mortgage loans distributed according to category of mortgage**  
(Billion Dkr)

	1999		2000		2001	
	New loans	Outstanding	New loans	Outstanding	New loans	Outstanding
Dwellings						
Owner occupied	189	614	111	647	215	705
Rented accommodation	29	218	30	228	34	237
Commercial						
Agriculture	48	130	24	134	46	134
Manufacturing, crafts	15	38	5	38	10	39
Offices, shops	33	76	12	77	24	82
Other categories	5	18	2	18	5	21
Total	319	1,094	184	1,142	334	1,218

Source: *Realkreditrådet*

Expressed in euros, the figures for 2001 correspond to €45 billion for new loans and €164 billion for outstanding loans at the end of the year.

The mortgage banks cover more than 90 per cent of all credits to the housing sector in Denmark. The commercial banks and the savings banks provide bridging finance for the purchase of housing and for projects under construction, but once a new owner is registered in the public register, and once the value of a new project has been assessed, the owner will turn to the mortgage bank for permanent financing, since the costs are lower than for bank credits.

The mortgage banks also play an important role as a source of finance for fixed enterprise investments. Their position in the market is supported by the fact that the structure of private enterprise in Denmark is dominated by small and medium-sized enterprises. Unlike bigger companies, they cannot issue corporate bonds, and instead rely on funding of their fixed assets through mortgage credits.

#### ***4. The assets side of the business***

##### *(a) Standard product(s) for housing finance*

The mortgage banks offer the following loan products:

- The traditional mortgage loan is a 30-year fixed-rate annuity loan with a right to repay at par with no penalty. Shorter loan terms (such as 10, 15 or 20 years) are also available. The mortgage loans are funded and matched by callable annuity bonds.
- The adjustable rate mortgage loan is a 30-year annuity loan with an interest adjustment every year (or every 2 or 3 up to 10 years). They are available with any maturity up to 30 years. The bank will adjust the interest rates according to its cost of funds at the time of fixing the interest rate for the next period. These loans are financed and matched through non-callable bullet bonds. In the case of a prepayment, the borrower has to buy back the issued bond at market prices.
- The interest-only mortgage is a 30-year fixed-rate loan. However, the borrower pays only the interest. The principal will be repaid at the end of the loan term.
- The index-linked loan is no longer offered, which indexes payments and loan amount to the Consumer Price Index (CPI). It was funded and matched through index-linked bonds.
- Euro loans: the mortgage banks offer the same type of loans. However, they are denominated in euros instead of DKr.

Apart from a handling fee which is added to the interest rate of the loan, mortgage banks charge an up-front fee of about €200,00. In addition, the local administrative bodies or courts charge a fee of 1.5 per cent of the principal for the registration of the deed in the public register.

##### *(b) Conditions concerning the contractual relation with the borrower*

Whereas the mortgage loans are irrevocably granted by the mortgage banks, borrowers are at any time entitled to repay their loans. The procedures for prepayment are governed by the “balanced book principle” which requires that the debtor’s repayment of a loan should be matched by an identical reduction in the outstanding bonds which have initially financed the loan.

In this context, the borrower can execute his right of prepayment by buying the bond in the market (or by asking the mortgage bank to buy it). This approach seems reasonable for him if the price of this bond is below par. If the price of the funding bond has risen above par, the borrower can repay the principal at par in cash. The mortgage bank will then draw (or call) the corresponding volume of bonds in the market, and thus “force” the bond investor to sell back at par. The easy access to prepayment of loans combined with the rapid decline in interest rates in recent years has led to a huge wave of prepayments.

##### *(c) Complementary products and channels of distribution*

Mortgage bonds are distributed through the following channels:

- The mortgage banks' own channels such as branches and affiliated estate agents: In this case, loan origination is done at the point of sale whereas the servicing of the loan is handled by the mortgage banks.
- The branch network of commercial banks: The loan appraisal is outsourced to the originating bank, but is supervised by the mortgage bank. The servicing of the loan is split between the bank and the mortgage bank.

Since competition has increased during the last 15 years, access to distribution networks has become a major parameter of competition. Whereas mortgage banks are restricted by smaller distribution channels, commercial banks have a competitive advantage because of their wide branch networks. As a consequence, mortgage banks have formed alliances with groups of estate agents in order to improve their market position.

### ***5. The liabilities side of the business***

#### *(a) Conditions concerning the contractual relation with the borrower*

When the mortgage banks receive the repayments (normally every three months), a corresponding volume of bonds is withdrawn from the market, matching the repayments in order to meet the principle of the balanced book (that is, to restore the required identity between the outstanding debt of the borrowers and the volume of bonds in circulation).

These regular drawings force the investors (or bond buyers) to reinvest the repaid funds after each drawing in order to maintain their portfolio. In this context, callable bonds are traded at slightly lower prices in the market than non-callable bonds, giving the investor a marginally higher interest yield while borrowers are likely to cover higher interest payments.

#### *(b) Risks taken by the institution at the granting of the loan*

The principle of the balanced book serves as a tool to reduce liquidity risk for the mortgage banks. In addition, regulation does not allow for any mismatch induced by prepayments. Since the banks are obliged to match the interest rates of the loans and the bonds, interest rate risk appears minimal.

The maximum LTV ratio of 80 per cent operates as a cushion against credit risk. The monitoring of the loan performance is facilitated by the fact that instalments are paid every quarter and approximately 80 per cent of all repayments are executed as direct debits. This means that arrears can be quickly detected because the borrower's bank has cancelled the direct debit agreement. In this case, the mortgage bank contacts the customer in arrears in order to discuss possible solutions with him.

### ***6. The role of the State in connection with the technique***

The Danish mortgage system is based on a market system without public subsidies. Special schemes for loans to narrowly defined "social housing" have, however, been practised, allowing a higher loan-to-value limit, or a slower repayment profile, often combined with a government guarantee.

Payment and repayment of the mortgage loans, and the interest payments from the debtor to the mortgage bank and from the mortgage bank to the bondholder, are subject to the normal tax regulations.

### ***7. Tendencies for further development of the mortgage bond technique***

Mortgage loans have gained a market share of 63 per cent of the Danish credit market. This important market share is the result of the low interest margins and a continued development of new loan products which allow the borrower to benefit from market-induced changes in short-term and long-term interest rates.

There are two trends in the Danish housing market. First, old mortgage banks are losing market share to new players with access to the affiliated banks' branch network. Second, the rapid increase in prepayment activity in recent years requires close contact with the customer in order to retain the business. In 2003, prepayments amounted to about US\$ 45 billion or 35 per cent of the callable mortgage loan stock.

As a result, speed of execution has become an important element in attracting customers. In addition, a wide network is considered crucial for access to the market. In this context, customers also expect high standards of financial advice which has induced considerable investment in IT in order to handle all products in the market at all times.

In 1985, the Danish mortgage banks were allowed to start activities abroad within the OECD area. Danish mortgage banks have expanded into Germany and the United Kingdom, often in connection with Danish building export projects.

Internationalization of the mortgage banks has been hampered by funding the loans because the Danish authorities required the banks to obtain funding in the country of the borrower. Both in Germany and the United Kingdom, it has proved difficult to launch relatively small bond issues. However, cross-border lending has been facilitated through financial deregulation by the EU. As a result, banks have been allowed to issue bonds denominated in euros on the Copenhagen Stock Exchange.

### **C. Secondary intermediation (the United States of America)**

#### ***1. The development of the technique in the United States of America after the Second World War***

The secondary mortgage market was originally developed in the United States in the 1970s as a method of selling mortgage loans (that is, achieving off-balance sheet financing) in order to reduce the risk (both interest rate and liquidity) associated with fixed-rate mortgage lending. A secondary market involves the sale of mortgage loans (or loan portfolios) or MBS backed by specific pools of mortgages.<sup>22</sup> As such, it involves the transfer of the risks and ownership of mortgage loans to a third party. The loans may be sold to specialized institutions called conduits or through special purpose vehicles (SPV), which are separately capitalized. These entities raise funds through the issuance of securities backed or collateralized by the loans.

In the United States, the provision of payment guarantees with the securities issued by Government Sponsored Enterprises (GSE) has facilitated investor acceptance of these securities. These institutions are either explicitly or implicitly guaranteed by the federal Government. The following GSE are active in the secondary mortgage market:

- The Government National Mortgage Association (GNMA) of Ginnie Mae guarantees pools of loans originated by mortgage banks. These loans, which are targeted towards lower/moderate income buyers, are insured by the Federal Housing Administration (FHA). Ginnie Mae is a government-sponsored enterprise, which guarantees the timely receipt of principle and interest. MBS issued by Ginnie Mae benefit from a zero per cent solvency risk weighting, the same as United States Treasury bills. Investors buying these MBS do not, therefore, need to allocate capital to back these purchases.
- There are two other federal agencies which play as market leaders: the Federal Home Loan Mortgage Corporation (FHLMC), or Freddie Mac, and the Federal National Mortgage Association (FNMA), or Fannie Mae. The MBS issues by these agencies are weighted with only 20 per cent solvency risk ratio for investors, compared with the internationally agreed 50 per cent weighting for conventional residential mortgages (Basle Agreement – BIS).

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<sup>22</sup> An MBS is a pass-through security in which borrowers' monthly principal and interest payments and loan payoffs are passed directly to the investor net of servicing and guarantee fees.

Due to the implicit government guarantees, the agencies are able to provide cheaper sources of funding than other sources (estimated at about 50 basis points in terms of funding costs) and to operate with much lower capital-to-assets ratios than banks.

During the 1980s and the early 1990s, Fannie Mae and Freddie Mac importantly contributed to the development of secondary mortgage markets and to the diversification of funding sources for depository institutions and other mortgage originators. Today, these two institutions dominate the financing of residential housing. They now stand behind more than US\$ 4 trillion mortgages – or more than three quarters of the single-family mortgages in the United States – either by holding the mortgage-related assets directly or by assuming their credit risk.

## ***2. Legal framework conditions for the use of the technique***

### *(a) The legal basis for the activity and the normative basic principles*

Secondary intermediation requires the following framework:

- The institutional development of a set of specialized originators, servicers and securities packagers;
- A legal and institutional framework which provides incentives and penalties to motivate these parties to perform their roles honestly and efficiently, and which does not hinder the standardization of mortgage arrangements, including terms and documentation;
- A legal and tax framework which does not hinder the specific steps necessary to create securities and to structure securities so as to deal with credit risk and prepayment risk, and which does not discourage investors of any kind – individuals, banks and other depositories, insurance companies, pension funds, mutual funds, finance companies, overseas investors, and so on – from buying and holding MBS; and
- A securities markets institutional framework (brokers, dealers, market makers, analysts, and so on) which facilitates the buying and selling of securities.

### *(b) General terms and business principles*

The advantages of the MBS process can now be seen. By converting the hitherto (generally) non-traded and non-tradable mortgage into a liquid security,<sup>23</sup> the MBS process widens the potential market for funding mortgages beyond just the depositor-driven funding that underlies a bank-oriented mortgage system. It thereby increases the supply of finance for housing; the ultimate providers of funds have the choice of investing directly in housing finance through the purchase of MBS (or through the purchase of shares in intermediaries which invest in MBS, such as mutual funds), or of investing indirectly in housing finance through deposits in banks. In turn, the increase in supply of funds should lower interest rates. Furthermore, the added depth of the securities markets should make supply generally more elastic, which should allow the overall mortgage finance system to be more flexible, more accommodating of fluctuations in the demand for finance, and less prone to supply-driven liquidity “crunches”.<sup>24</sup>

There are, however, tradeoffs with respect to widening the supply of housing finance beyond a bank-focused system, because the introduction of the secondary intermediation will mean that interest rates in the

<sup>23</sup> Technically, the MBS is not the mortgage itself but a claim on the “pass through” of the cash flows of the mortgage, less any fees charged by servicers, packagers, and so on.

<sup>24</sup> Whether a secondary intermediation is inherently more efficient than a depository-oriented system, without the special governmental and regulatory advantages that are attached to Ginnie Mae, Fannie Mae and Freddie Mac, remains an open question. For competing views on this topic, see Van Order (2000a, 2000b, 2000c, 2001) and White (2003).



housing finance sector are now linked to the wider securities markets and their fluctuations which affect those markets, rather than being solely determined by the specialized lenders.

Equally important, the creation of securities based on the mortgage cash flows permits a “slicing and dicing” of those flows into more finely structured securities that can appeal more closely to the preferences and tolerances of investors with respect to credit risk, maturity and prepayment risk. Two methods of slicing and dicing exist: the senior/subordinated structure to deal with credit risk, and the collateralized mortgage obligation (CMO) multi-tranche structure<sup>25</sup> to deal with prepayment risk. Another straightforward way of dividing the cash flows is to separate them simply into principal repayments (principal only, or PO) and interest payments (interest only, or IO), and to sell the PO and IO securities separately.

*(c) The prudential requirements and specificities*

Supervision of GSE is executed through the Office of Federal Housing Enterprise Oversight (OFHEO). They are not subject to standard financial supervision and regulation. OFHEO’s mission is to ensure that both enterprises are adequately capitalized and operate in a safe manner. The Office’s regulatory authority is similar to other United States financial regulators. In order to fulfil its mission, OFHEO requires the enterprises to meet adequate capital standards and conducts examinations. The Office classifies the enterprises’ capital on a quarterly basis using a minimum capital ratio. The minimum capital level is not designed to address specific credit risk exposures or the exposure to interest rate risks. GES are, however, required to hold sufficient capital to withstand a ten-year stress period.

In addition to the monitoring of capital adequacy, OFHEO examines the financial safety and soundness of the GES. These examinations include on-site and off-site financial analysis and supervisory monitoring. They should identify the risks inherent in the enterprises’ activities and products. They complement the quarterly capital assessment of the enterprises. It may be noted that both the methodology and the resulting capital requirements differ greatly from current international banking regulations.

Fannie Mae and Freddie Mac are GSE and at the same time private firms owned by stockholders. According to their charters, the mission of both enterprises is to provide stability in the secondary market for residential mortgages and to promote nationwide access to mortgage credit. In this connection, Congress also required the enterprises to promote affordable housing activities by assisting low-income families to obtain mortgage finance. This is the reason why Congress granted them specific advantages which are not available to other private companies active in the field. These benefits include exemptions from State and local income taxes, access to a US\$ 2.25 billion line of credit each at the United States Treasury and exemption from the registration requirements of the Securities and Exchange Commission (SEC).

***3. The importance of the MBS technique and of the issue of MBS in the United States of America***

*(a) Their importance in the credit sector (role of credit supply)*

National and international banks are the leading holders of "agency" securities, which includes the MBS of Ginnie Mae, Fannie Mae and Freddie Mac but also the straight debt issues of Fannie Mae, Freddie Mac and the Federal Home Loan Bank system. The second most important group are non-United States

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<sup>25</sup> Collateralized mortgage obligation (CMO) is a securitization payment method where the cash inflows of the SPV are divided into several tranches, each tranche having a different payback period and seniority profile. These tranches, which are often designated as A to Z pieces or securities, are normally in the form of bonds. The different tranches can be structured as per the objectives of the investors as to pay-back period and the inherent risk. The common CMO structures are: interest only, principal only, floater, inverse floater, planned amortization class, sequential and targeted amortization class, and Z or accrual bond. Often, many of these securities contain option characteristics. Related structures are collateralized bond obligations and collateralized loan obligations.

investors. Mutual funds and money market mutual funds are the next two largest holders, and these four leading groups together account for over 50 per cent of the holdings of these securities. A big change from a decade earlier has been the increase in holdings by non- United States. investors. In 1991, this group held only 3.7 per cent of the total, as compared with 14 per cent in 2001.

(b) *Their importance in the housing finance sector (market share, destination of loans)*

The table below provides time series data on the overall size of the residential mortgage market, as measured by the stock of mortgages outstanding, and the percentage of mortgages accounted for by holders of various kinds, including mortgages that are converted into MBS. As can be seen, the percentage of mortgages that have been converted into MBS has continued to rise; in 2001, MBS of all kinds accounted for over half of single-family residential mortgages and almost a third of multi-family residential mortgages.<sup>26</sup> Furthermore, the data indicate that non-governmental MBS, after starting later than government MBS, have been growing more rapidly, especially in the multi-family area.<sup>27</sup> Nevertheless, the data clearly indicate that the overall government presence in mortgages – government MBS plus “federal and related agencies” – is substantial: over 50 per cent for single-family mortgages, and approaching a third for multi-family mortgages.

**Table 4. The percentage distribution of residential mortgage debt outstanding, 1970-2001**

	1970	1975	1980	1985	1990	1995	2000	2001
Single-family residential mortgages (total amount in US\$ billion) <sup>a</sup>	\$280	\$491	\$987	\$1,537	\$2,616	\$3,510	\$5,201	\$5,733
Commercial banks	15.0%	15.7%	16.2%	14.0%	17.4%	18.4%	18.6%	17.9%
Savings institutions	57.9%	55.8%	49.3%	36.0%	22.9%	13.7%	11.4%	10.8%
Life insurance companies	9.6%	3.7%	1.8%	0.8%	0.5%	0.3%	0.1%	0.1%
Federal and related agencies <sup>b</sup>	7.9%	7.7%	6.2%	7.2%	5.9%	6.5%	4.0%	3.8%
Individuals and others <sup>c</sup>	9.6%	11.4%	14.0%	15.5%	13.3%	10.6%	9.4%	8.7%
MBS, government <sup>d</sup>	0.2%	5.7%	12.3%	24.9%	37.8%	44.0%	47.0%	47.9%
MBS, non-government	0.0%	0.0%	0.4%	1.6%	2.0%	6.5%	9.6%	10.3%
Multi-family residential mortgages	\$60	\$101	\$141	\$205	\$287	\$277	\$418	\$455
Commercial banks	5.0%	5.9%	9.2%	11.2%	12.9%	15.5%	18.7%	18.7%
Savings institutions	36.7%	38.6%	38.3%	43.9%	32.1%	22.4%	14.6%	14.3%
Life insurance companies	26.7%	19.8%	14.2%	9.8%	10.1%	10.5%	8.1%	7.9%
Federal and related agencies <sup>b</sup>	5.0%	11.9%	10.6%	5.9%	12.2%	13.0%	9.8%	11.2%
Individuals and others <sup>c</sup>	26.7%	21.8%	22.0%	22.9%	30.0%	23.5%	21.5%	17.6%
MBS, government <sup>d</sup>	0.0%	1.0%	5.7%	6.3%	10.1%	9.4%	15.8%	18.0%
MBS, non-government	0.0%	0.0%	0.0%	0.0%	0.3%	5.8%	12.0%	12.5%

Source: Federal Reserve

Note: The percentages for each category, such as commercial banks, represent the “whole loans” that are held and that have not been securitized. Totals may not come to exactly 100 per cent because of rounding.

<sup>a</sup> Includes 1-4 residential units.

<sup>26</sup> These percentages somewhat overstate the MBS presence in the market, since they include MBS that are held by Fannie Mae and Freddie Mac in their portfolios. But the trends are quite clear.

<sup>27</sup> That there would be faster growth by non-governmental MBS in the multi-family area is understandable. This is an area with greater heterogeneity, and it is less susceptible to the “cookie cutter” approach of much of the single-family “conforming loan” market that is the staple of the MBS of Fannie Mae and Freddie Mac, which should give other MBS issuers a greater relative advantage.

<sup>b</sup> Includes the portfolio holdings of Fannie Mae, Freddie Mac, Ginnie Mae, FHA, VA, the Farmers Home Administration, the Federal Land Banks and other federal agencies.

<sup>c</sup> Other holders include mortgage companies, real estate investment trusts, State and local credit agencies, State and local retirement funds, credit unions and finance companies.

<sup>d</sup> Includes MBS that are held in portfolio by Fannie Mae and Freddie Mac.

The addition of an MBS channel to an already established depository-oriented channel, as occurred in the United States, would be expected to expand supply and reduce interest rates, as compared with what would otherwise have occurred in the absence of that addition. There have been a number of efforts to analyse the consequences of the introduction and expansion of the MBS channel in the United States<sup>28</sup>; they show ambiguous results. Although they indicated that more securitization had resulted in lower mortgage rates, it has to be mentioned that they had not disentangled the effects of the explicit or implicit government support from the pure effect of the addition of MBS (even if non-governmental) on mortgage rates.<sup>29</sup>

Consequently, one can only offer the conclusion that the effects of the introduction of MBS into the United States residential housing finance system have certainly been substantial, especially when one includes the elements of government support, and therefore an exact quantification of those effects still remains to be done.

#### ***4. The assets side of the business***

There is a potential disadvantage to a system that uses MBS for residential housing finance. As compared with a bank-based system, the vertical disintegration of the finance process that accompanies the MBS approach has the potential for creating additional problems of asymmetric information. In the secondary intermediation, the securities packager must rely on the originator to deliver good mortgages, and the securities buyer must rely on the packager to deliver good securities and also on the servicer to forward cash flows honestly and to pursue delinquent borrowers conscientiously. If incentive mechanisms for good performance, the reputations of the parties involved and/or penalties for non-performance are inadequate, the secondary intermediation may disintegrate, with losses for “burned” investors and social adjustment costs for replacing the secondary intermediation with something else.

#### ***5. The liabilities side of the business***

##### *(a) Basic principles of refinancing*

Fannie Mae and Freddie Mac are involved in two principal lines of activity: purchasing mortgages and issuing MBS. Both enterprises purchase residential mortgages from the mortgage originators or lenders and either package the mortgages into MBS for resale to investors in the capital markets or hold the mortgages in their own portfolios. To fund their portfolios, the enterprises issue a mixture of straight and callable debt in the capital markets. Fannie Mae and Freddie Mac primarily purchase conventional residential mortgages. Their charters specify the maximum size that they are permitted to purchase. In addition to the loan size, mortgage loans must meet the enterprises underwriting guidelines before they are eligible for purchase.

Other secondary mortgage market institutions support the segments of the market where the enterprises do not or can not purchase mortgage loans. The Government National Mortgage Association (Ginnie Mae) supports the government-insured mortgage loan market.

<sup>28</sup> Summaries are provided in Kolari et al. (1998) and USCBO (2001b).

<sup>29</sup> There have been efforts to identify the specific effects that the presence of Fannie Mae and Freddie Mac have on the interest rates of the residential mortgages that conform to their underwriting standards and to the mortgage amount ceiling (\$300,700 in 2002) to which they must adhere. Recent estimates (USCBO 2001a, 2001b) estimate the reduction at about 25 basis points. The differential tends to vary over time as conditions in the credit markets have varied. Estimates in the mid-1990s placed the differential in the range of 25-35 basis points. See Hendershott and Shilling (1989) and Cotterman and Pearce (1996). But, again, these studies do not isolate the pure effects of MBS on mortgage rates and do not provide an overall quantitative assessment.

*(b) Risks taken by the institution on the granting of the loan*

Bearing the growth and the scale of the GSE mortgage portfolios, the Federal Reserve is today concerned about the implied interest rate and prepayment risks at these two institutions. Unlike many well-capitalized savings and loans and commercial banks, Fannie Mae and Freddie Mac have decided not to manage that risk by holding greater capital. Instead, they have chosen heightened leverage, which raises interest rate risk but enables them to multiply the profitability of subsidized debt in direct proportion to their degree of leverage. Without the expectation of Government support in a crisis, such leverage would not be possible without significantly higher cost of funds.

For investors (that is, bond holders) the following risks are of concern:

- Credit risk, that is, the risk that the borrower does not repay the loan. This concern is paramount in the case of MBS, where the borrowers are households unknown to the investors who purchase the MBS.<sup>30</sup> A number of steps have been introduced to reassure investors that they will receive timely payment of interest and principal. These measures are, for example, maximum LTV ratios (80 per cent), credit enhancements arranged by the bond issuer, demographic and geographical diversification of borrowers, and additional assurances from the originator.
- Interest rate risk associated with fixed-rate mortgages, unless supported by substantial capital, may be of even greater concern than credit risk. Interest rate volatility combined with the ability of homeowners to prepay their mortgages without penalty means that the cash flows associated with the holding of mortgage debt directly or through MBS are highly uncertain, even if the probability of default is low. In general, GSE manage interest rate risk by adjusting maturities of assets and liabilities.
- Prepayment risk: The fixed-rate characteristics of the mortgages, combined with the absence of prepayment penalties, imply that the holders of such mortgages, or the MBS based on such mortgages, are exposed to substantial risks of prepayment because the fixed-rate element provides an incentive for borrowers to refinance their mortgages when interest rates decrease below their original contractual rate by an amount sufficient to cover the transaction costs of the refinancing.
- More important, for fixed-rate MBS, since refinancing-motivated prepayments are likely to swell when interest rates decline, such prepayments will mean that the investor will be forced “prematurely” to reinvest at a lower interest rate than was embodied in the MBS that is being prepaid.<sup>31</sup> Conversely, prepayments are likely to decrease when market interest rates rise above the original contract rate of the mortgage, at just the time when the investor wishes that the borrower would prepay, so that the investor could reinvest at the higher market rates.

In addition, hedging prepayment risk is a complex issue and requires a conceptually sophisticated hedging framework, in particular with little capital. Measures to mitigate prepayment risk include, for example, the structuring of the MBS issue or using models which provide predictions of the proclivities of specific MBS pools.

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<sup>30</sup> This approach contrasts with the bank-focused method of housing finance, where the bank as originator, servicer and funder of the mortgage loan acquires extensive knowledge about the borrower; and the depositors (the ultimate funders) rely on the solvency of the bank, its reputation, and safety-and-soundness governmental regulation for the safety of their investment.

<sup>31</sup> The repayment (call) option which is embedded in a residential mortgage thus adds considerably to the interest rate risk that normally accompanies any fixed-rate long-term debt instrument.

## ***6. The role of the State in connection with the technique***

The United States secondary intermediation has relied heavily on government and quasi-governmental entities for MBS issuance. It is no accident that the government and quasi-governmental entities have been important in the MBS process. As was noted earlier, MBS involve securities which are backed by mortgages issued to homeowners that the securities holders do not know. A concern about the credit risk underlying such securities is understandable. The credible guarantees of governmental and quasi-governmental issuers provide an instant solution to that problem. However, such guarantees do not come free. The Ginnie Mae, Fannie Mae and Freddie Mac MBS programmes represent a contingent liability of the United States Government. The gross value of this subsidy is estimated to be between US\$ 119 billion and US\$ 164 billion. Calculations suggest that about 42 per cent to 81 per cent of the GSE market value is due to their implicit subsidy.<sup>32</sup>

The introduction of a secondary intermediation into a system of housing finance already bank-oriented will, inevitably, result in some political and economic friction with the incumbent finance providers. Though this type of friction is inevitable whenever any new technology brings new entrants into an industry, the banking sector is especially prone to this because of its high degree of leverage, its extensive regulation and the special nature of banks' balance sheets. Deposits are the core liabilities that are likely to have an explicit or implicit government guarantee in the event of a bank's insolvency.<sup>33</sup> Such potential frictions are not an argument against the introduction of a secondary intermediation that would otherwise be sensible, but they do argue for extra regulatory care with respect to the safety-and-soundness of the banks during any transition phase.

## ***7. Tendencies for the further development of the technique***

The implementation of secondary mortgage markets has helped overcome geographical risk because risk could be diversified through the regions. In addition, these markets have helped overcome a fragmented banking sector with the consequence of better access to credit since the borrower is no longer dependent on the local bank for a loan.

The growth of the GSE loan portfolio has raised the concern of the regulators, especially the Federal Reserve, which is due to a perceived special advantage which keeps normal restraints from being fully effective. Despite the explicit statement on the prospectus to GSE debentures that they are not backed by the full faith and credit of the United States Government, most investors have apparently concluded that during a crisis the federal Government will prevent the GSE from defaulting on their debt. Thus, this implicit guarantee has not been created by Congress but by the willingness of the investors (to accept a lower rate of interest on GSE debt than they would otherwise require in the absence of federal sponsorship).

Since Fannie Mae and Freddie Mac can borrow at subsidized rates, they have been able to pay higher prices to originators for their mortgages than can potential competitors. As a result, they have gradually taken over the market for conforming mortgages. This process has provided both institutions with a powerful vehicle and incentive for achieving extremely rapid growth of their balance sheets.

Surveys indicate that the value of this implicit guarantee accounts for more than half of the stock market capitalization of these institutions. In addition, they seem to pass little of their advantage on to homeowners in the form of lower mortgage rates. The GSE subsidy has not appeared to have substantially increased homeownership because the estimated effect of the GSE mortgage rates is small.<sup>34</sup>

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<sup>32</sup> For further details, refer to Passmore (2004).

<sup>33</sup> See, for example, White (1991, 2002).

<sup>34</sup> A survey by Feldman (2001) finds that mortgage rates would have to change by at least 200 BP before they would have more than a trivial effect on homeownership. Additionally, in terms of underwriting the risk of providing the funding for mortgages to low- and moderate-income households, the GSE have often been shown to lag behind the FHA and other types of lenders (Bunce, 2002; Bunce and Scheessele, 1996).

Recently, the Federal Reserve has proposed some amendments in order to better monitor and regulate GSE activity; on the one hand it requests the creation of an authority on a par with that of banking regulators, with a free hand to set appropriate capital standards, and with a clear process sanctioned by Congress for placing a GSE in receivership. On the other hand, the Federal Reserve calls for a limit in the issuance of GSE debt and the purchase of assets, both mortgages and other claims they hold.

# *Chapter V*

## *EVALUATION OF PRIVATE HOUSING FINANCE SYSTEMS*

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### **A. Introduction**

In order to be competitive, national housing finance systems must mobilize and allocate capital efficiently.<sup>35</sup> If financial systems raise funds – sometimes using several intermediation levels – through voluntary savings, one should mention at least three parties participating in the process of financial intermediation: the borrowers, the lenders and the Government. On the other hand the group of lenders comprises the shareholders as well as the investors in the financial institutions, who buy their bonds or hold savings in them.

The analysis that follows is based on the assumption that the value of every housing finance system should be concentrated on its potential to improve the existing financial system for private investment in new housing as well as for investment in renovation and major maintenance for existing housing. Without sustainable private demand for investment and credit products, no private financial intermediary will opt for long-lasting investment in institution building. In this context, national Governments can only facilitate and stimulate the process of financial intermediation, not replace it.

A steady supply of credit, far-reaching credit availability and credit affordability is at the centre of interest of the borrower (see section C). If this activity is simultaneously profitable, its attractiveness for investors and shareholders in the financial institution will also increase. For capital lenders, investment attractiveness must be combined with a high security of (mobilized) funds as well as sufficient profitability for shareholders in the financial intermediaries (see section D).

Concerning implementation of the housing finance systems, a Government should find a viable way to allow financial institutions to do business while the Government can develop the housing sector and consequently have its impact on the economy. These factors determine the implementation costs of a housing finance system (see section E).

Based on the Government's housing policy goals and the need for housing investment for private households, the Government has to evaluate different housing finance systems and decide which system or combination of systems it should promote.

In order to assist in choosing between different financing systems, it is recommended that an evaluation of the different options is conducted, highlighting the arguments for and against each system. An outline of such an evaluation is presented in this section of the study.

### **B. An analytical framework for evaluation**

An evaluation of different financing systems should cover consequences for the major parties involved, the borrowers, the lenders and the Government. All parties have their own goals, often contradictory, and it is therefore necessary to collect and systematize the arguments for and against the alternative systems and present them in a transparent and comprehensive way to the decision makers in order to simplify their decision-making. A comprehensive evaluation of the financial systems comprises two steps. The first step aims to define the goals of the three participating parties in the financial

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<sup>35</sup> A comparison of financial systems – especially bank-dominated versus market-dominated systems – is a central research question in countless empirical studies such as Allen and Gale, 2000 or Levine, 2002. A global comparison of private housing finance institutions can be found in Nadler, 2001.

intermediation process. In the second, a number of indicators are defined to measure the performance of the financial institutions in relation to their stated goals.

As far as possible, indicators have been expressed in quantitative form, as examples of how they can be measured. In some cases, however, quantitative measurements are not possible; in these cases, descriptions in qualitative terms are used.

The end result of the evaluation exercise consists of three checklists which identify all aspects of the financing systems under discussion of importance to the three participating parties involved in the financial process. The decision maker could use this comprehensive evaluation in making its final decision.

If decision makers want to use a single decision criterion (a 'total benefit') for each of the housing finance system alternatives, two more evaluation steps have to be taken, transformation and weighting of goal values. In order to illustrate the practical application of this method, the case studies in chapter IV have undergone an evaluation along these lines (please see annex IV).

However, for political decision makers it is most important to get an understanding of the pros and cons of different housing finance systems. The additional steps, the transformation into a uniform scale, and especially the weighting of different interests against each other, involve subjective elements and should therefore traditionally be left to the decision makers as part of their political decision-making process. It is up to them to choose.

Central to the following evaluation of private housing finance systems, therefore, will be definition of the goals for the three participating parties in the financial process and measurement of the goal performance through certain indicators and checklists (sections C-E).

This approach has been applied to the systems presented in chapter IV as examples. However other existing finance systems, as presented in chapter III and widely applied throughout the ECE region, can be evaluated in the same way.

The section which follows describes the different steps to be taken in the proposed evaluation approach through three case studies<sup>36</sup>.

### **C. Borrowers**

Considering private households as the borrowers, three main aspects of private housing finance have been identified: the supply of credit products to finance their investment in housing, the availability of loans, and their affordability.

#### ***1. Supply of credit***

Indicators for evaluating credit supply to borrowers are the existing housing credit portfolio of lenders, the continuity of new lending, the market shares in the financial sector and the loan amounts with their periods of redemption.

##### ***(a) Housing credit portfolio***

The amounts of individual loans to borrowers are ultimately dependent on the volume of individual housing investments and therefore dependent on whether, for example, the financing is related to renovation/modernization or new construction. All three financial techniques described in chapter IV are presented in relation to privately owned and specialized lenders. In this context, 'housing credit portfolio' measures the outstanding housing loans as a percentage of the outstanding loan portfolio (or the total assets of the financial institution).

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<sup>36</sup> It should be noted that the benefit analysis is only one among a number of evaluation tools



Bausparkassen offer credit for all kinds of private housing investment and therefore have a housing credit portfolio of nearly 100 per cent. The orientation of United States secondary intermediaries is unique; in 2002, 93 per cent of the portfolio were credits for owner-occupied housing, and not for multi-family mortgages or housing credits for second homes and condominiums. Danish mortgage banks have granted credits not only for owner-occupied housing (in 2001: 58 per cent), but also for business properties (in 2001: 22.6 per cent).

*(b) Continuity of new lending*

Although diversification of Bausparkassen as well as secondary intermediaries business is low, there is an implicit benefit for borrowers. For private housing finance, new lending to borrowers continues even under difficult macroeconomic circumstances. From the perspective of the borrower, lending policies have always to be examined with regard to 'fair weather' (note) lending. Borrower confidence and acceptance is strengthened only if lenders voluntarily and steadily grant loans even in times of recession.

Bausparkassen are enforced to lend their collected savings steadily to private households. Therefore, empirical analysis shows that their financing volume between 1997 and 2001 remained between 35 and 36 billion euros, leading to very low variation in net new lending (about 1.5 per cent). On the other hand, the financing volume of German savings and mortgage and commercial banks declined from 122 billion euros (1997/1998) to 84.7 billion euros in 2001.

This supports the economic rule that lenders dependent on economic trends raise prices in prosperity by enhancing capital offer, leading to increase demand for property. With falling prices for property or rising capital market rates, decrease in new lending goes alongside growing default rates for existing borrowers. In this respect, financial systems can endanger long-term stability of property markets<sup>37</sup>. Fairly independent systems such as the Bausparkassen system may reduce price risk in times of economic upturn as well as credit availability risk in times of recession.

This applies also to the new lending activity in Denmark and the United States, both displaying higher variations (for the Danish market leader, for example, 69.42 per cent between 1997 and 2001 due to heavy dependence on the development of interest and economic trends).

*(c) Market shares*

From the point of view of borrowers, high market shares can under certain circumstances be an indicator of limited offer and competition. The larger the credit offer, the larger could be the financial flexibility for borrowers.

As a consequence of steady credit allocation, the market share of German Bausparkassen in housing finance rose significantly between 1997 and 2001, from 22.8 per cent to 28.8 per cent.

In Denmark, seven mortgage banks provide 90 per cent of all housing finance. The two biggest institutions have a market share of 78 per cent, which seems, however, not to have reduced the intensity of competition, with regard both to price and to new products.

Fannie Mae and Freddie Mac purchased mortgage portfolio, as well as their outstanding MBS, accounted for 39 per cent of residential mortgages and for 40 per cent of all single-family - one-to-four unit - mortgages by the end of 2000.

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<sup>37</sup> Llewellyn, D. The financial system and economic development: efficiency and stability. Bangkok, 1997.

*(d) Loan amounts and periods of redemption*

The loan amount and the requested redemption period has a decisive impact on the interest rate and further charges to be paid because they entail a leverage effect for the borrower; the higher the loan amount and the longer the redemption period, the more the interest rate weighs on the affordability of the loan.

The average loan under a Bauspar contract is between €19,600 and €20,300, which corresponds to the costs of renovation and modernization of an average single-family dwelling. According to available figures, nearly 70 per cent of all Bausparkassen financial contracts are created for this purpose. However, a considerable amount of Bauspar funds is also used as a contribution towards the financing of the purchase or new construction of a home because German banks usually lend up to 60 per cent. If the loan thus obtained is not sufficient to cover the whole financing need, then the missing sum is provided through Bauspar funds.

The average loan amount from Fannie Mae exceeds US\$ 100,000. In 2002, the average volume of newly granted credits rose to over US\$ 145,000, which corresponds to the average price of a single-family home in the United States.

Danish mortgage banks show even higher figures; at the end of 2002, 43 per cent of all mortgages granted by the market leader amounted on average to € 270,000.

Higher loan amounts usually lead to longer redemption periods. In Denmark and the United States, they oscillate between 25 and 30 years. On the contrary, Bauspar loans are redeemed within 6 to 11 years.

**1. Credit availability**

Underwriting standards, such as collateral requirements or income ratios, and the distribution and sales policy determine access to funds (credit availability).

*(a) Collateral requirements*

The credit rating process differs among the three housing finance systems; for capital market lenders, creditworthiness traditionally depends on the asset to be secured. Usually, they subtract a certain percentage from the market value of the security in order to have a security margin. Both capital market systems require that a first mortgage is registered with the individual loan amount in the national land and title registration system.

Up to 1981, Danish borrowers were jointly liable for all obligations of their bond series. In addition, Danish mortgage banks have a lending limit (LTV) which amounts to 80 per cent of the loan value. When lending for commercial and agricultural purposes, the maximum LTV is 60 per cent. In 2002, 80 per cent of the total mortgage loan portfolio in Denmark showed LTV values of lower than 50 per cent.

Although no such collateral requirements exist in the United States, about three quarters of all mortgages from Fannie Mae showed LTVs in 2002 of less than 80 per cent. The average LTV has fluctuated between 60 and 62 per cent during the last ten years. For loans exceeding an LTV of 80 per cent, borrowers must present a credit enhancement in the form of a mortgage default insurance. From 2000 to 2002, Fannie Mae and Freddie Mac have lowered these 'credit enhancement' loans from 38 per cent to 27 per cent.

Bausparkassen pursue different lending policies. They do not require credit enhancements. Instead, the potential borrower has to fulfil his obligation of pre-saving, that is, up to 40-50 per cent of the contract amount, before being eligible for the Bauspar loan. Usually, Bauspar loans are secured through a second ranked mortgage. In this context, the obligatory savings phase may replace the lack of credit history or ill-functioning income reporting. This feature may be valuable in markets where credit bureaux do not exist or where the legal framework is incomplete.

(b) *Income ratios: payment to income (PTI) and loan to income (LTI)*

In the United States, detailed and standardized credit documentation consists in proving the quality of the collateral as well as the creditworthiness of the borrower.<sup>38</sup> Lenders require credit reports for their mortgage loans, which are produced with the help of credit bureaux. These agencies develop credit scores, which indicate the borrowers' capacity to repay a loan. Mortgage loan providers use this information in addition to their own calculations. Their underwriting standards normally require a PTI ratio of about 30:70, that is, the repayment rate should not exceed 30 per cent of the net monthly income.

As a result of these high standards, the number of borrowers declined sharply (by 40 per cent) between 1993 (Fannie Mae 2.82 million loans/Freddie Mac 2.23 million loans) and 2000 (Fannie Mae 1.73 million loans/Freddie Mac 1.37 million loans) in spite of the rising total volume of their mortgage portfolios.

Although both secondary intermediaries are obliged to purchase mortgages with a maximum size linked to an annual index of house prices ('conforming loans'), this rule does not limit their lending activity, because prices have constantly increased during recent years. Consequently, LTI ratios have also risen. LTI ratios indicate to what extent the total loan amount exceeds the yearly income. In 2000, about 60 per cent of their mortgages were granted to borrowers with an income equal to the nationally estimated metropolitan area median income or higher, leading to an average LTI ratio of 2:7.

LTI ratios for German Bausparkassen customers can be indirectly calculated; for 37-38 per cent of all outstanding contracts a savings bonus was requested, which is only granted to private households with a net income below €51,200. Given the average contract amount (€20,000) and average pre-savings of 50 per cent, LTI ratios are less than 0.2 for these customers.

(c) *Number of customers*

For private households, a mortgage loan is often the biggest investment in their lives. Therefore, they are in need of advice. Large branch networks do not only improve access to funds, but they also broaden the scope of advisory services. In this context, the quality and the outreach of financing techniques can be measured by the number of customers (borrowers).

In 2000, Fannie Mae and Freddie Mac together reached one per cent of the national population. Furthermore, 87 per cent of their purchased mortgages were granted to borrowers in metropolitan areas with higher income levels.

Danish mortgage banks as well as Bausparkassen succeeded in entering a wider market. In Denmark, mortgage banks reached 35 per cent in 2002. In 2001, more than 30 per cent of the German population concluded a Bauspar contract. Due to an extensive sales network, Bausparkassen achieved widespread regional distribution.

(d) *Third-party lending*

The distribution and sales channels are also of major importance for potential borrowers. Their quality can be deduced from the rate of lending through third-party institutions (partners).

Fannie Mae and Freddie Mac are not allowed to originate mortgages; they depend entirely on primary lenders such as mortgage companies and brokers, thrifts as well as commercial banks. Mortgage banks in Denmark and Germany also primarily use the branch network of their parent bank. Whereas German mortgage banks tend to choose their own distribution channels and offices, some of the Danish mortgage banks try to build up their own distribution network using cooperation or even by acquisitions of banks and especially estate agents, second to distribution via the Internet or phone banking.

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<sup>38</sup> Mahoney, P.E. and Zorn, P.M. The promise of automated underwriting: Freddie Mac's loan prospector, 1997.

This two-way distribution takes place for Bausparkassen in a similar way. The financing contracts are either achieved by partner institutions (commercial banks or thrifts) within the financial group or by their own sales staff and customer centres.

### *3. Credit affordability*

The costs of borrowing determine credit affordability. They include nominal mortgage rates, commissions and administration fees, valuation and insurance. Nominal rates must be compared to prime rates (spreads) and inflation rates (real interest rates) and should be evaluated in view of possible (liquidity and interest rate) risks which may occur after borrowers have received their loans.

#### *(a) Mortgage rates and fees*

Although a clear domination of fixed-rate mortgages (FRM) exists within every housing finance system, nominal mortgage rates show substantial differences. Bausparkassen have reported nominal interest rates of approximately 6 per cent per annum in the last 40 years. In addition, they charge administration and service fees (about 1.5 per cent of the loan amount).

Borrowing costs in the United States have remained at a higher level within the last 20 years. Since United States secondary intermediaries cannot originate mortgage loans, primary lenders determine the interest rates of such loans. Secondary intermediaries only increase the demand for mortgages and therefore cause the price of mortgage loans in the secondary market to rise. The resulting lower yield on MBS can cause falling yields for the underlying mortgage loans in the primary market. In this way, mortgage interest rates for borrowers in the primary market are lowered about 25 BP<sup>39</sup> by the additional demand for mortgages and MBS. The average interest rates for FRM in the United States housing market started in high double figures in the 1980s and have reached about 6 per cent per annum (see also annex V).

In addition, borrowers have to bear additional costs for mortgage default insurance. According to the governmental default insurance (FHA), borrowers have to make a prepayment of 2.25 per cent of the loan. Additionally, they are charged an annual 0.5 per cent fee calculated on the outstanding loan (Sirota, 1998). Lower fees are offered for private mortgage default insurance (PMI). As long as the borrower has not repaid the loan to an LTV of 80 per cent, he will be charged 0.8 per cent for a 90 per cent LTV loan for the first year. For the subsequent redemption years, this will be reduced to 0.35 per cent of the outstanding loan amount. Gross borrowing costs are therefore substantially higher than the nominal interest rate (for the last 30 years: 10.46 per cent; see annex V for a detailed calculation).

In Denmark (similar to the United States capital market), interest rates have fallen to 6 per cent per annum. In addition to interest rate payments, the borrower has to pay a risk and administration fee to the mortgage bank. This fee covers administration costs, losses, tax payments and a contribution to reserves for the lender. At 0.5 per cent of the outstanding debt, it is relatively low compared to the loan amount. In addition, an acquisition fee is charged which amounts to one per cent of the principal. Mortgage banks also charge commission for special services, such as debt transfer to a different bank.

#### *(b) Spreads and real interest rates*

To evaluate the nominal interest rate level, the actual inflation rate can be subtracted to calculate the mortgage interest rate in real terms. Furthermore, a comparison of nominal mortgage rates with the prime rate, which is only granted to first-class rated borrowers, can be applied. Both capital market systems are dependent on economic trends as well as on inflation's always leading to positive real interest rates (about three per cent) and positive spreads (just recently of about 1.5 per cent in the United States) in comparison to the prime rate.

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<sup>39</sup> USCBO. Federal subsidies and the housing GSEs. Washington, 2001.

Since in the Bauspar technique the share of FRM accounts for 100 per cent with the average credit rate not dependent on capital market development or inflation rates, it can be concluded that in this system the variation in real credit rates as well as the spreads to prime rates has to be substantially high. Whereas the actual situation is similar for both the Bausparkassen and the capital market systems due to nearly the same nominal conditions, in the 1980s and partly in the 1990s negative real credit interest levels and negative spreads had to be stated for the Bausparkassen. This is not a result of legal interest rate limits but due to the fact that in this system interest rate risks are fully removed from the borrowers.

*(c) Liquidity risk*

In the lending business, three risk categories are of major importance (see also chapter II): default/credit risk, interest rate risk and liquidity risk. In the financial markets, these risks are allocated to those market participants who are able and willing to absorb them. Whereas in all three systems default risk has to be undertaken by the capital lenders, risk allocation for the two remaining categories is different.

Bausparkassen borrowers have to bear liquidity risk because they do not know in advance when the loan will be paid out. They have to take into consideration a waiting period before receiving the loan.

The process of credit allocation is more transparent in the United States and Denmark, where customers can calculate their loan amount directly on the Internet. Customers of Danish mortgage banks and United States capital lenders do not bear the liquidity risk which is characteristic of the Bauspar system.

*(d) Interest rate risk*

Whereas interest rate risk in the Bauspar system is limited by contract design, borrowers in Denmark and the United States bear interest rate risk, especially in the case of floating-rate mortgages. In both countries, floating-rate mortgages have become more significant in the past few years.

In 2001, new lending through floating-rate mortgages from Danish mortgage banks exceeded fixed-rate loans for the first time. In the United States, Fannie Mae has already bought more than 10 per cent adjustable rate mortgages in 2002.

Danish mortgage banks accept prepayments without any penalties because the customer has the right to repay his mortgage loan at any time by purchasing his bonds in the market, or repay a mortgage loan by paying the par value in cash if a callable bond has been used to finance the mortgage loan. In the United States, optional prepayment costs are already included in the spread calculations of the primary lenders and are therefore paid by the borrowers.

*(e) Summary of checklist; sub-goals, criteria and assessment*

Table 5 shows a summary of the sub-goals and assessment for borrowers of the three finance systems. Numbered headings are sub-goals and headings with a letter are different suggested indices. For the indices there are also suggested measurements as well as information on values or other types of relevant information. Some of the assessments are missing, due to missing data or information.

**Table 5. Checklist for borrowers**

BORROWERS	Contractual savings systems for housing 'Bausparkassen' (Germany)	Secondary intermediation (USA)	Mortgage bonds (Denmark)
<b>1. Supply of credit</b>			
a) Housing credit portfolio; outstanding housing loans/outstanding loan portfolio, %	100	96	58
b) Continuity of new lending; variation in new lending	1.5 (-97 to -01) 1997-2001		69.42 (-97 to -01) 1997-2001
c) Market shares, %	28.8	39	90
d1) Loan amounts; LTV %	10,000/Max 80	100,000/No requirement	270,000/Max 80
d2) Periods of redemption, years	6-11	25-30	25-30
<b>2. Credit availability</b>			
a) Collateral requirements; LTV %	pre-saving; second ranked mortgage (no collateral possible)	first mortgage; 60-62 (last 10 years) (+ credit enhancement loans; 27)	first mortgage; 80% of total mortgage loan portfolio < 50
b1) PTI %		30	
b2) LTI %	< 0.2	2.7	
d) Number of customers: % of population	30	1	35
e) Third party lending; rate of lending through third party institution (partners), %	45	100	
<b>3. Credit affordability</b>			
a) Mortgage rates and fees, %	6 (admin. and fees +1.5)	10.46 (including insurances)	6 (risk and admin. +0.5)
b) Spreads (i) and real interest rates (ii)	high variances (i); negative (ii) (1973 to 1995)	1.5 (i); positive 3.0 (ii)	positive 3.0 (ii)
c) Liquidity risks	Yes	No	No
d) Interest rate risks	Limited by contract design	Yes, for floating rate	Yes, for floating rate

#### **D. Lenders**

Three main aspects are identified for capital lenders: investment attractiveness, security of funds and profitability of the lending business for the shareholders of the financial institution.

##### **1. Investment attractiveness**

For refinancing investors of financial intermediaries, which can be divided into private and institutional investors, maturities, yields, spreads and real interest rates (compared to existing inflation) are of importance for an assessment of investment attractiveness.

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(a) *Maturity of investments*

In order to assess the savings and investment products offered by the financial institutions, maturity has to be evaluated.

Danish mortgage banks as well as United States secondary intermediaries do not accept any deposits. They refinance their loans through covered and non-covered bonds (over 90 per cent). In 2002, financing of Fannie Mae was 45 per cent composed of short-term senior debt (due within one year). The corresponding rate for Danish mortgage banks is much lower, but has been rising in the past few years, as can be seen in the annual report for 2002 of the market leader (2001: 22 per cent, 2002: 32 per cent). Bausparkassen, however, refinance more than 70 per cent of their loans by means of savings deposits.

(b) *Share of institutional investors*

The main investors in United States MBS (about 85 per cent) are insurance companies, pension funds, investment funds and central banks. Foreign investors are of major importance since they hold about 34 per cent of all mortgage bonds issued by Fannie Mae and Freddie Mac. United States banks also hold considerable shares in these bonds (17.4 per cent in 2002). As investors, private households play only a minor role (under 10 per cent).

Holding bonds from Fannie Mae and Freddie Mac is advantageous for United States banks and thrifts because the capital requirements for these bonds are 1.6 per cent compared to the normal capital requirement of four per cent in the case of ordinary bank bonds. This beneficial regulation for Fannie Mae and Freddie Mac debt contains an incentive for commercial banks to originate mortgages and to buy them back as MBS since they can generate more liquid mortgage assets with lower capital requirements.

In Denmark, the number of foreign bond holders has also risen. Their share amounts to 12 per cent (all institutional investors: 92 per cent). The reason for this development is that mortgage bonds enjoy special legislative advantages which are laid down in EU regulations. Recognized as securities of high quality (tier 1), insurance companies (in Denmark 30 per cent of all bond investors) may place up to 40 per cent of their assets in bonds issued by one single mortgage bank.

Although allowed to do so, Bausparkassen rarely issue bonds. Their main funding bases are savings from private households (about 80 per cent of all available funds).

(c) *Yields*

Yields on bonds and MBS fluctuate with market development. During recent years, yields of Danish and United States bonds have decreased from double figures to 5 per cent p.a.

Bauspar savings offer low yields to their depositors (2.8 per cent on average for the past 20 years). However, the option of receiving a loan with low interest rates balances the lower interest rate on savings.

(d) *Spreads and real interest rates*

Since government debt usually enjoys good ratings, its yields are considered as a benchmark for all other debt. Due to the fact that mortgage bonds are considered riskier than government debt, their spreads should be positive. The option-adjusted spread for Danish mortgage bonds compared to government bonds is about 0.35 per cent.

Spreads between MBS of Fannie Mae/Freddie Mac and United States treasury bonds are very low because investors in MBS take into consideration the implicit federal guarantee. Thus, they have lower yield expectations. Recent estimates show a funding advantage of this 'agency status' of 40 BP on their

debt issues and 30 BP on their MBS<sup>40</sup>. Currently, the spreads amount to 30-120 BP above comparable United States treasury.

Real interest rates on Bauspar savings fluctuate according to inflation rates. Empirical evidence shows that the deposit rates of the Bausparkassen led to a negative real deposit rate of -0.5 per cent for German investors between 1970 and 1997<sup>41</sup>. Since inflation has been low in Germany during the past five years, savers have earned a positive real return. In this context, the bonus further improves real interest rates.

In contrast to this, investments in mortgage bonds as well as MBS both display a positive return in real terms of about 3 per cent (related to the national rates of inflation).

## **2. Security of funds**

Another key factor of sustainable capital mobilization is the security of funds. In this context, investors take into consideration the inflation and reinvestment risk, the solvency and credit risk and the capital adequacy of the selected housing finance technique.

### *(a) Inflation and reinvestment risk*

Due to fixed-interest products, either terminable bonds or deposits, in each of the three systems inflation risk (referring to the interest rates in real terms) is transferred to investors.

In a situation of rising interest rates, investors holding mortgage bonds and MBS have to bear directly the risk of falling bond prices. Customers of Bausparkassen are affected only if the rise in interest rates is caused by inflation. Then inflation will eat up the value of their savings. As a consequence, a gap will emerge between the amount saved and the housing investment planned.

This problem could be solved only by introducing price indexation<sup>42</sup>; in the meantime, this solution is applied by Danish mortgage banks only to a limited extent. Fannie Mae is planning the issue of price-level indexed bonds in mid-2004.

In a situation of falling interest rates, which nowadays is true for almost every country in the world, a specific reinvestment risk arises for investors of mortgage bonds and MBS, which can be measured by the rate of callable debentures in each system.

Especially for Danish investors, this risk value is always high, because borrowers can prepay a mortgage loan at any time by purchasing the bonds in the market, or prepay a mortgage loan by paying the par value in cash. Due to the growing number of floating-rate loans with borrowers – not investors – bearing the interest rate risk, the rate of callable annuity loans of Danish mortgage banks declined to approximately 70 per cent in 2001 (former rates having been above 85 per cent).

In contrast, MBS investors in the United States face significantly lower risks concerning falling interest rates. Their capital mobilization is typically derived only from callable debt (at the earliest three years after the issue) up to 30 per cent. Forty per cent is financed by fixed-rate non-callable debt and the remaining 30 per cent by variable-rate debt.

### *(b) Solvency*

Since some customers of the Bausparkassen do not take up a loan, Bausparkassen have some liquidity reserves which are used to meet loan demands. In the last 25 years, liquidity reserves have amounted to 10 per cent of the loan portfolio (or 8 per cent of total assets).

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<sup>40</sup> USCBO. Federal subsidies and the housing GSEs. Washington, 2001.

<sup>41</sup> Nadler, M. Internationale Wohnungsfinanzierung. Muenchen, Wien, 2001.

<sup>42</sup> Nadler, M. Internationale Wohnungsfinanzierung, Munechen, Wien, 2001.



Whereas liquidity reserves are considerably lower for Fannie Mae, with approximately 0.2 per cent of total assets, the Danish mortgage banks have on average 7-8 per cent reserves in their balance sheet (total assets).

In the United States system and the Danish system, the bond market determines overall liquidity for the investor. It can be quantified by the volume of bonds in circulation or by the turnover in bonds based on their nominal or market value.

The United States and the Danish bond market have appeared highly liquid. For example, the outstanding nominal value of Danish mortgage bonds amounted in 2001 to €199 billion. However, the nominal trading volume reached about €400 billion.

#### *(c) Credit risks*

From the perspective of investors, default or credit risk plays a dominant role. Arrears and delinquency rates serve as an indicator of rising credit risk. Bausparkassen show very low default rates, varying between 0.02-0.05 per cent of total lending business. Without pre- and intermediate financing, this figure falls to 0.01 per cent of outstanding Bauspar loans. The Bauspar system may thus be considered a tool for lowering credit risk for the bank.

The latest figures for defaulting housing loans from Danish mortgage banks also show a ratio of 0.01 per cent of outstanding loans. The figure rises to 0.2 per cent when commercial lending is included.

The United States system reports similar figures for loans with a maximum LTV of 80 per cent. On the contrary, the delinquency rate in the sector of loans with credit enhancement increases to 1.3 per cent of all outstanding loans. As a result, United States secondary intermediaries have withdrawn from this kind of lending activity during the past two years.

Not only the delinquency rate is important for investors, but also the regular publication of information necessary to assess the quality of the underlying mortgages. In this context, both capital market systems help to distribute information about the quality of their bond issues (LTV rates, default rates, type of underlying assets, credit scorings of borrowers and so on). Especially in the United States system, this information is crucial since secondary intermediaries neither grant nor administer loans for housing finance. Therefore rating agencies are a crucial element of the system because they assess the underlying quality of every MBS issue.

#### *(d) Capital adequacy*

Stability of the financial intermediaries is crucial for investors. Therefore, ratings on these institutions also take into account equity or capital adequacy figures.

Danish mortgage banks show high equity percentages. The equity rates of up to 6 per cent of total assets or 10 per cent of risk-weighted total capital are also the result of legal requirements. Regulations stipulate that the capital base of mortgage banks shall amount to at least 8 per cent of its risk-weighted assets.

During the last 30 years, Bausparkassen have reported equity rates of 4.8 per cent.

The equity rates of United States secondary intermediaries have fallen from 3.3 per cent in 1998 to 2.1 per cent in 2002. Since default guarantees for MBS are frequently issued off-balance sheet, this figure is low but is still sufficient according to regulations.<sup>43</sup> These stipulate that secondary intermediaries are obliged to hold a minimum equity of 2.5 per cent referred to on-balance sheet assets, 0.45 per cent of outstanding guaranteed MBS and 0.45 per cent of other off-balance sheet obligations.

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<sup>43</sup> The Government Sponsored Enterprises Act (GSE Act of 1992) is issued as part of the Housing and Community Development Act of 1992, which contains the main rules for United States secondary intermediaries.

In spite of low equity rates, investors consider the default risk of Fannie Mae and Freddie Mac debt to be low for two reasons. First, both institutions have succeeded in keeping their default rates low because they have constantly shifted default risk to primary lenders or private mortgage default insurers. As a result, these companies report rising delinquency figures in recent years. Second, investors count on the implicit federal guarantee of Fannie Mae and Freddie Mac debt.

### ***3. Profitability for shareholders***

Profitability for shareholders of the financial institutions can be achieved by high cost efficiency as well as high net incomes and margins of the institution. They can both lead to an appropriate return on equity/assets and cost-income ratios.

#### *(a) Cost efficiency*

Usually, efficiency is measured through the operating costs in relation to the loan portfolio or total assets of the financial institution.

For Danish mortgage banks, the typical margin for housing loans is about 0.5 per cent. This figure covers all costs from origination to administration of mortgage loans. In 2001, operating costs for the different Danish mortgage banks were between 0.1 and 0.4 per cent of total assets.

Fannie Mae reports nearly unchanged operative costs, which account for 0.2 per cent of total assets (on balance). Due to lack of mortgage origination and servicing, administrative expenses have declined to 11.5 per cent of operating income.

The average expenses of the Bausparkassen have amounted to 2 per cent of their total assets over the last 30 years. Higher administrative expenses are caused by considerable personnel costs, since the selling of Bauspar contracts requires large numbers of staff. Further costs are caused by the administration of many small accounts.

#### *(b) Net income and margins*

Net interest margins of Danish mortgage banks have oscillated between 0.3 and 0.6 per cent. For United States secondary intermediaries, this figure varies from 1.0 to 1.2 per cent. Both Danish mortgage banks and United States secondary intermediaries have accomplished an average net income from commissions of about 0.5 per cent.

During the past 30 years, Bausparkassen have received an average net interest margin of 3 per cent and a net fee and commission income of about 1.5 per cent of the outstanding loan amount.

#### *(c) Return on equity and assets*

During the past 30 years the Bausparkassen have generated a ROE (return on equity) of 7.3 per cent and a ROA (return on assets) of 0.3 per cent. In 2001, ROE for Danish mortgage banks fluctuated between 5.6 and 8.3 per cent and ROA oscillated between 0.2 and 0.38 per cent.

At 26 – 29 per cent, the ROE of Fannie Mae has been higher than that of the other two housing finance systems. ROA has been 0.7 per cent during the past 10 years.

The return for shareholders in United States secondary intermediaries is more than twice the returns of Danish mortgage banks and German Bausparkassen. One reason for this difference is that capital and liquidity reserve requirements are lower in the United States. In addition, United States secondary intermediaries are exempted from State and local taxes and Security Exchange Commission fees.<sup>44</sup>

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<sup>44</sup> Fannie Mae is listed on the New York Stock Exchange and therefore has to pay commission and fees to the SEC.

*(d) Cost-income ratios*

Bausparkassen have shown operating expenses of nearly 95 per cent in the past 30 years. Danish mortgage banks report cost-income ratios which fluctuate between 47 per cent and 66 per cent. United States secondary intermediaries have even lower cost ratios, of only 17-21 per cent of income.

*(e) Summary of checklist; sub-goals, criteria and assessment*

Table 6 shows a summary of the sub-goals and assessments for the three finance systems for the lenders. Some of the assessments are missing, due to missing data or information.

**Table 6. Checklist for lenders**

LENDERS	Contractual savings systems for housing Bausparkassen (Germany)	Secondary intermediation (USA)	Mortgage bonds (Denmark)
1) Investment attractiveness			
(a) Maturity of investments: short term / callable debt, %	70 (saving deposits; 3 month period of notice)	45 (senior debt, due < 1 year)	32 (senior debt, due < 1 year)
(b) Share of institutional investors; %	0; (80 share of private households)	85; (34 foreign investors)	92; (12 foreign investors)
(c) Yields, %	2.8 (1970 to 1997)	5 (2001)	5 (2001)
(d1) Spread; Basic points, %		30-120 BP	0.35 %
(d2) Real interest rates, %	-0.5 (1973 to 1997)	3	3
2) Security of funds			
(a) Inflation and reinvestment risk;	precondition = price stability; no reinvestment risk	falling interest rates lead to borrowers' prepaying their mortgage loans	falling interest rates lead to borrowers' prepaying their mortgage loans
(b) Solvency: liquidity reserves/total assets, %; bond volume/turnover	10	0.2; highly liquid	7-8; highly liquid €199 billion/ €400 billion
(c) Credit risk: delinquency ratios, %	0.02 – 0.05 (0.01 if pre- and intermediate financing is excluded)	0.01 (non credit enhanced); 1.3 (credit enhanced loans)	0.01 (private housing) 0.2 (commercial)
(d) Capital adequacy: equity ratio, %	4.8	2.1	6 (of total assets) 10 (of risk-weighted total capital)
3) Profitability for shareholders			
(a) Cost efficiency: operating costs/total assets, %	2.6	0.2	0.1-0.4
(b) Net income and margins; net interest margin; net commission/fee income, %	3; 1.5	1.0-1.2; 0.5	0.3-0.6; 0.5
(c) Return on equity (RoE); Return on assets (RoA), %	7.3/0.3	26-29/0.7	5.6-8.3/0.2-0.38
(d) Cost as percentage of income	95	17-21	47-66

## E. Government

### 1. Government assessment of private housing financing systems

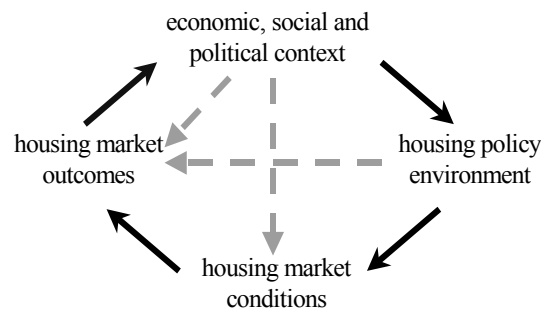
A Government has to assess and decide on housing finance policies, which in conjunction with the evolution of private sector housing finance, will most effectively and efficiently support housing demand and stimulate supply and rehabilitation, that is, improve the national housing situation. In sections C and D, checklists and measurements of sub-goals have been presented which can be used to show the pros and cons of different finance systems for borrowers and lenders. The checklists have been applied to the three systems as examples.

In addition to this type of systematized, comprehensive information, the Government needs to know the direct and indirect effects of the different finance systems on the housing market in general, on the housing situation for different household groups, and on the national economy, in order to have a good basis for decisions about the evolution of private housing finance.

Finally a decision has to be based on economic, institutional, financial sector-specific and housing sector-specific prerequisites as well as the Government's costs and other consequences for the Government.

Political decision-makers should ensure that the obvious direct benefits from a viable and sustainable private housing finance system for private borrowers and lenders also include achievable direct and indirect benefits for the national Government. Following the model of Angel<sup>45</sup>, an efficient housing finance system – as part of the 'housing market conditions' and the 'housing policy environment' – can improve the housing market outcomes of a national economy.

**Figure VI. Achievable benefits for the Government**



Angel subsumes under housing market outcomes house prices and rents as well as the quantity and quality of housing. Well-known international indicators<sup>46</sup> are able to measure the consequences of an efficient housing finance system. Furthermore, the empirical work of Oswald, Janßen-Timmen et. al.<sup>47</sup> and many more economists<sup>48</sup> indicates a positive relationship between these housing outcomes and the 'economic, social and political context' of a country (see above figure) such as national income and employment or the financial depth of national economies.

<sup>45</sup> Angel, S. *Housing Policy Matters – a Global Analysis*. Oxford, 2000.

<sup>46</sup> A global survey of results concerning these indicators (such as housing production, households per occupied dwelling, floor area per person, median house size, housing stock growth or homeownership figures) can be found in the 'city and urban indicators' of the UNCHS (see e.g. Angel, 2000 or Flood, 1997).

<sup>47</sup> Janßen-Timmen, R. and Loeffelholz, H.D. and Moss, W. *Gesamtwirtschaftliche und sektorale Auswirkungen des Eigenheimbaus*. Essen, 2001; Oswald, A. *A Conjecture on an Explanation for High Unemployment in the Industrialized Nations*. Warwick, 1996

<sup>48</sup> Input-output analysis has already proved the effects of housing investment on GDP/GNP for many countries. At the same time, urban housing wealth is growing, since the individual value of each dwelling rises due to housing investment even if the overall number of dwellings remains the same. Consequently, housing investors are usually able to raise their rents, which leads to a higher return on investment. If this is the case, Governments are able to privatize (more) public housing stock, lowering public maintenance expenses.

Although the causality between the benefits and the housing finance system is not easy to prove, there are empirical studies<sup>49</sup> which show a positive correlation between criteria such as the housing credit portfolio' and the 'GNP per capita' or the 'financial depth' (= M2/GDP).

Nevertheless, housing finance techniques are only one part of the 'economic, social and political context' (in the financial and monetary regime) of the 'housing policy environment' and of the 'housing market conditions' (see above figure). Therefore, the results for the achievable direct and indirect benefits depend on the prevailing conditions in specific countries. A different environment can change the achievable benefits for all stakeholder groups of the financial intermediation process.

Two consequences may arise from this statement: on the one hand, political decision makers need to know which economic, institutional and sector-specific conditions are required for the derived benefits. It might then be necessary to include the resulting costs in implementation of a financial system.<sup>50</sup>

## ***2. Resulting steps and costs of implementation***

### *(a) Economic prerequisites*

On the macroeconomic level, all housing finance systems require free pricing of interest rates, rents, house prices, construction costs and so on. Moreover, macroeconomic stability is a necessary prerequisite for stable flows of mortgage loan rates and predictability of interest rates. Features of this stability are strong public finances (low budget deficits and debts) and inflation rates of below 10 to 15 per cent.

On the microeconomic level, the financial situation of the potential housing investor has to be evaluated. In this context, important criteria are savings ability (measured by disposable household income) and savings willingness (measured by the gross or net personal savings rate). Housing finance through bonds or MBS demands a disposable income high enough to cover repayments. Furthermore, liquid financial assets of at least 20 per cent of property values as well as low household debt levels (compared to disposable income) are called for.

### *(b) Institutional prerequisites*

Stable institutions are a necessary prerequisite for all financial systems. Institution building should therefore cover legislation and supervision.

A functioning legislation which guarantees property rights, contractual freedom, rapid foreclosure of debts and so on will improve confidence among borrowers and lenders. Long foreclosure procedures and incomplete land registration systems and credit registers may increase credit risk for lenders. Their national quality can be measured by indices or by individual quality indicators (e.g. foreclosure delays), or derived from enquiries (transformed into an ordinal score system).

Working financial systems also require stable institutions which supervise banking activities and guarantee free and fair competition. As the transition process in central and eastern Europe has shown, an independent central bank is a powerful instrument for promoting a sound banking sector. Supervision is possible only if an accounting and external auditing system (IAS or US-GAAP), special banking legislation, clearly defined bankruptcy laws and codes and proactive and protective requirements and rules of supervision authorities (such as, for example, capital and liquidity demands according to Basle requirements) are introduced.

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<sup>49</sup> Empirical studies of the indirect benefits are described by Demirgüç-Kunt and Levine (2001, 81-140), Angel (2000, 220-231), Arimah (2000), Buckley and Tsenkova (2001), and forthcoming Schirmeister and Nadler (2004). They use the available data on the global city and urban indicators of the UNCHS.

<sup>50</sup> This is a possible result of empirical studies (see e.g. Stephens, 2003). They show that in transition economies Governments have rather more control over the housing finance system than convergence theory (Mabett and Bolderson, 1999) suggests because of their responsibility for the implementation of housing finance systems.

*(c) Financial sector-specific prerequisites*

The establishment of mortgage banks and secondary intermediaries requires advanced and sophisticated legal conditions and highly developed institutions. These include adequate appraisal experts, credit registers, certified public accountants, credit bureaux, rating agencies with financial analysts, automated underwriting and risk management systems, mortgage default insurers, pension funds and life insurance companies. In addition, capital market systems call for stock and money markets, security brokers, electronic trading systems, mutual funds, unit trusts, distribution channels, commercial primary lenders or mortgage brokers with standardized scored credit portfolios.

*(d) Housing sector-specific prerequisites*

Any housing finance system requires an adequate urban infrastructure, that is, sufficient provision of water, electricity, telecommunications, public transport, schools, moderate distances to the workplace and so on. In this context, municipalities should provide land ready to build on.

Since national housing prices to incomes with values above 5 limit credit affordability for private households, high construction costs should be avoided, as well as industrial concentrations in the developers' market and a dependency on imports of residential construction materials. Due to rent controls and the quantity of public housing stocks, renting is often cheaper than buying a house. In addition, construction of rental housing often benefits from tax advantages which keep rents low (in relation to house prices). Therefore, the removal of rent controls and tax advantages and the promotion of active land supply and land development policy will enhance market liquidity and lower indifference of household decisions between renting and buying.

The importance of these criteria varies according to the financing technique; whereas Bausparkassen depend primarily on a high density of privatized dwellings (for financing of renovation and modernization), mortgage bonds and MBS demand serviced land available for new building. In central and eastern Europe, for example, growing privatization in the housing sector has led to rising homeownership figures (up to 80-85 per cent). Therefore, citizens ask for housing finance products which offer small loan amounts to cover the costs of renovation and modernization.

In addition, capital market financing has been limited in this region because many of the instruments necessary for its development are still missing. Under these circumstances, Bauspar systems require fewer housing sector preconditions and may also allow for a gradual implementation of other housing finance techniques.

*(e) Housing subsidies*

To what extent housing subsidies are required as a prerequisite has to be examined, if this is crucial for the financing technique. If subsidies are necessary to support (not to replace) a housing finance system, they have to be – like the above derived criteria for measuring the performance of the private housing finance system – cost-efficient, well targeted and transparent. In addition, they should improve fund access and should be simple for the Government to administer.

While in the last decade Governments in western Europe have reduced subsidies alongside the global decline in mortgage interest rates, each of the three selected systems has still received specific promotion.<sup>51</sup>

Customers of German Bausparkassen enjoy a savings bonus, linked to their income level. Additionally, the German Government grants a one-time lump sum down payment at the moment of the

<sup>51</sup> A savings bonus, tax deduction, tax exemption, tax relief, interest subsidy, low-interest loan and down-payment subsidy are called 'customer-tied promotions', whereas (implicit and explicit) government subsidies and guarantees for the financial intermediary are not customer-tied but 'institution-tied'. The difference between these two types of subsidy is that the institution-tied promotions can be, but don't have to be, passed on to customers (as can be seen in the United States, see chapters II and III).

housing investment by the private household distributed over eight years. This housing subsidy is not linked to a particular housing finance technique.

Since actual borrowing costs in Denmark and especially in the United States are higher than those of German Bausparkassen (see section C and annex V), Governments in both countries provide tax benefits in order to avoid high income tax burdens for many borrowers affecting credit availability in the form of maximum given PTI (see section C.2.b). In both countries mortgage interest can be deducted to an almost unlimited degree (up to a loan amount of US\$ 1 million in the United States) from taxable income savings taxes on a large scale. Furthermore, in the United States default insurance premiums may soon also become tax-deductible expenses. Assuming a nominal interest rate of 9.82 per cent (the historical average between 1973-2002 in the United States housing market) and a personal tax rate of 30 per cent, net borrowing costs of 7.25 per cent remain (see annex V), which are still higher than the non-subsidized average mortgage rate of the Bausparkassen in Germany over the past 25 years (even when the fees of credit distribution are added).

In addition, United States secondary intermediaries are the only ones to receive a specific institutional subsidy, consisting of the already-mentioned lower capital requirements, the low-cost line of credit with the United States Treasury, the exemption from State and local taxes, listing fees and the implicit governmental guarantee. The costs of these housing subsidies are rather high, which can be deduced from, for example, the estimated costs of the implicit governmental guarantee for covering the default risk of MBS. An upper limit to the annualized costs of the contingent liability is the previously-mentioned 40 BP spread of their outstanding debt (US\$ 1.081 billion in 2000) as well as the 30 BP spread on their outstanding MBS (US\$ 1.283 billion in 2000), which would result in implicit costs of US\$ 8 billion for the year 2000<sup>52</sup>.

Furthermore, by adding the tax expenditures (defined as revenue losses attributable to provisions of the federal tax laws) for the mortgage interest deductibility only, US\$ 64.29 billion more have to be considered for the year 2002. This amount corresponds to 3.12 per cent of the overall federal outlay of the United States Government. The outcome would be even higher when considering the tax expenditures for deductible State and local tax on owner-occupied homes (US\$ 22.68 billion in 2002) as well as the tax expenditures for capital gains exclusions on home sales (US\$ 19.67 billion in 2002).

Subsidies for Danish mortgage banks are lower. Here the estimated tax value of the deductible interest amounted to 2.7-3.4 billion euros in 1998<sup>53</sup>.

However, significantly lower outcomes result for the savings bonus within the system of Bausparkassen: governmental expenditures for the year 2000 amounted to 0.5 billion euros, which can be considered as cost efficient, especially in relation to national GDP (0.025 per cent). If the granting of the one-time lump-sum down payment (*'Eigenheimzulage'*) is added, then the amount of housing subsidies in Germany rises to 10.5 billion euros. In contrast to the indirect subsidies for Danish mortgage banks and United States secondary intermediaries, German housing subsidies for homeownership are transparent, since the amount of subsidy is fully stated and explicitly reported in the public budget.

Although the evaluation of the housing subsidy involved has in principal to be separated from the possible benefits of the housing finance technique<sup>54</sup>, all techniques can be combined with different subsidy designs. The existing evaluation approach of this chapter allows different combinations; a combination of, for example, the mortgage bank system with a one-time granted lump sum down payment<sup>55</sup> can be integrated into the evaluation as a new alternative for a housing finance system.

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<sup>52</sup> White, Lawrence, J. Focusing on Fannie and Freddie: The Dilemmas of reforming Housing Finance. Journal of Financial Services Research, forthcoming. 2003

<sup>53</sup> According to information of the Ministry of Housing and Urban Affairs in Denmark, 1999

<sup>54</sup> See also Duebel. Separating home ownership from finance. Traditional mortgage market polices. Recent reform experiences and lessons for subsidy reform. Washington, 2000.

<sup>55</sup> Comparing available housing subsidies (see Struyk, 2000, or Nadler, 2001) such as a one-time down payment grant, savings bonus, interest subsidy, low interest loan, tax benefit, government (implicit or explicit) subsidy or guarantee for

### 3. Concluding remarks

If the prevailing conditions in a particular economy differ clearly from the necessary prerequisites described above, national Governments have a responsibility to facilitate and stimulate business activities between private lenders and borrowers.<sup>56</sup>

If appropriate means of technical development assistance from other countries or supranational organizations are not available, then possible implementation costs for national Governments should be included in the evaluation of a particular housing finance system. This would lead to an overall checklist as presented in table 7.

**Table 7. Checklist for sub-goals and criteria in the evaluation of housing finance systems**

<b>Efficient Housing Finance System</b>	<b>BORROWERS</b>	<b>Supply of credit</b>	Housing credit portfolio
			Continuity of new lending
			Market shares
			Loan amounts + periods of redemption
		<b>Credit availability</b>	Collateral requirements
			Income ratios (PTI and LTI)
			Number of customers
			Third party lending
		<b>Credit affordability</b>	Mortgage rates and fees
	Spreads and real interest rates		
	Liquidity		
	Interest rate risks		
	<b>LENDERS</b>	<b>Investment attractiveness</b>	Maturity of investment
			Share of institutional investors
			Yields
			Spreads and real interest rates
		<b>Security of funds</b>	Inflation and reinvestment risk
Solvency			
Credit risks			
Capital adequacy			
<b>Profitability for shareholders</b>	Cost efficiency		
	Net income and margins		
	Return on equity assets		
	Cost-income ratios		
	<b>Achievable indirect benefits</b>	Housing outcomes and national income	
		Financial depth	

the housing finance intermediary, the one-time granted lump sum down payment offers one of the best possible solutions for borrowers.

<sup>56</sup> For a widespread 'enabling' strategy for national housing policies, see also UN-HABITAT. Cities in a globalizing world. Global Report on Human Settlements, 2001.



	<b>GOVERNMENT</b>	<b>(Costs of) economic prerequisites</b>	Macro-economic stability
			Savings ability and willingness
		<b>(Costs of) institutional prerequisites</b>	Legislation
			Regulation and supervision
		<b>(Costs of) sector – specific prerequisites</b>	Degree of financial development
			Quality of residential infrastructure, construction sector and rent level
		Home-ownership promotions	

It becomes clear that a housing finance technique with fewer implementation steps and low implementation costs achieves a higher partial benefit value from the point of view of national Governments. Whereas this is basically true for all levels of economic, institutional and sector-specific prerequisites to be established, the evaluation approach becomes most evident when taking into account the resulting costs of introducing different types of ‘homeownership promotions’ through subsidies, if that will be an option. The higher the costs, the lower is the governmental partial benefit value for the particular system.



# CONCLUSIONS

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The goal of this study is to assist Governments in transition countries in the modeling of housing finance systems for their citizens. In this context, the study refers to the experience which advanced economies have had with special housing finance techniques, instruments and systems.

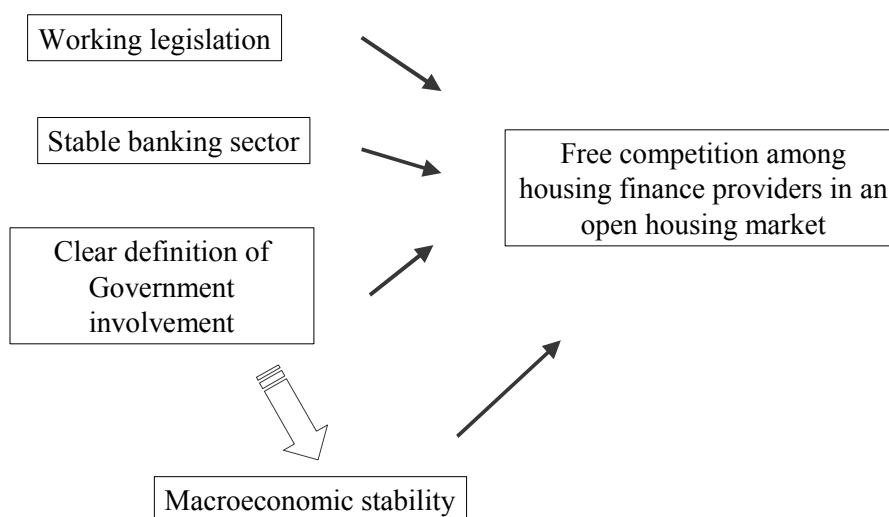
The analysis in the preceding chapters shows that there is no universally applicable model of a housing finance system. Every national housing finance system is a result of specific circumstances, such as the macroeconomic conditions, banking regulations, the size of the banking system, taxation, subsidy programmes and the structure of the housing market. These factors shape the path between bank-based and capital market-based mortgage loan delivery channels.

As experience in the EU shows, the introduction of functioning housing finance markets provides large external benefits to the national economy: a surge in employment in the construction industry and related sectors, more efficient property development, easier labour mobility, progress in capital market development, more efficient resources allocation and lower macroeconomic volatility.

In order to benefit from these positive effects for the whole economy, emphasis on the legal, institutional and macroeconomic framework is the decisive factor; as soon as functioning and reliable framework conditions are in place, financing techniques will emerge since borrowers and lenders are able to take informed decisions on risks in long-term obligations.

**Figure VII.**

## The framework of housing finance



As the above diagram demonstrates, a functioning housing finance framework depends on the following factors:

- Macroeconomic stability remains the unconditional and absolute prerequisite because a volatile environment disproportionately affects long-term oriented housing finance systems. High and volatile inflation rates imply high real interest rates, which confine market-based mortgage finance to high-income households. Furthermore, Governments are likely to take a dominant role in housing finance because of the widespread inability to afford mortgage finance and serious income inequalities. As a result, housing finance systems will most likely remain small and become fragmented into uncoordinated and subsidized administrative programmes; moreover, low levels

of domestic savings lead to a dependence of housing finance systems on central bank refinancing and/or international borrowing.

- In this context, it seems to be necessary to understand how local housing markets operate and to monitor closely three distinct policy dimensions affecting access to housing: the price of the housing units relative to the purchasing power of the households, the total cost of mortgage borrowing (including all costs of funding the mortgage loan as well as taxes and fees to be paid by borrowers) and the structure of subsidies, that is, the financial, tax, regulatory and production channels through which a Government may subsidize some types of housing (explicitly or implicitly).
- An essential prerequisite for macroeconomic stability is the existence of working legislation, which also provides the basis for sound institutions, lending activities (of banks and other housing finance entities) and an efficient housing finance market. A legal system should protect property rights and allow clear registered title to land and the registration of a mortgage in the land register. Moreover, it should also allow rapid foreclosure. If, for example, a land register system does not exist or is only fragmented, banks have to reckon with long delays in the case of foreclosure, which will deter them from lending. A developed housing finance sector also requires strong institutions (central bank, judiciary, administration and other government entities) which guarantee embedded rights to the title and the mortgage and enforcement of rights.
- Only a stable banking sector is capable of providing long-term capital for long-term investments. Low deposit flows into the banks indicate a weak banking sector because people have no confidence in the banks. To build up a well-functioning banking sector, the establishment of a two-tier banking system – a clear division between the central bank and financial institutions – is required as a first step. In a second step, State-owned banks will be privatized, usually followed by consolidation and internationalization of the domestic banks, that is, foreign banks acquire major stakes in the domestic institutions.
- The development of viable housing markets (as well as housing finance techniques) require a clear definition of the Government's role within this sector. It should be clarified as to how the Government is capable of supporting housing finance and which measures it should apply. These questions are frequently linked to the deployment of subsidies. In principle, subsidy schemes should be designed both to support the development of the private market and to seek to improve the nation's social goals. The debate should not be focused solely on the amount of the subsidy but also on its effectiveness in meeting Government's goals for housing. Hence, subsidy policies should be efficient, gaining as much as possible from every coin spent, and should be well targeted and supportive of private sector funds for housing.

Given the above-described components necessary for a functioning housing finance framework, a hierarchy of complementary actions is desirable in order to improve housing conditions for the majority of households; the first step includes the development or restructuring of institutions and policies in order to facilitate the role of private and non-profit lenders and developers in expanding the low and middle income housing supply, and the provision of education and training to consumers and producers in order to improve the operation of the housing finance industry. The second step should put emphasis on the provision of subsidies for well-defined purposes and simultaneous improvement of the regulatory system in different supply markets (land, finance, infrastructure) to allow more households to acquire authorized and sustainable housing. If the Government does not introduce the necessary steps to encourage the housing construction and finance industries to function efficiently, housing supply cannot respond to price signals, and higher income subsidies will not lead to better housing.

For any particular country, it is advisable to have more than just one housing finance scheme in place; in order to mobilize a maximum amount of funds dedicated to housing, a combination of systems is preferred. Each system assumes a certain function within the market so that systems complement one another; whereas in a mortgage bond system or MBS system, mortgage loans are refinanced by institutional investors (such as insurance companies or banks), deposits usually refinance ordinary or special loans granted through CSH. The introduction of an individual technique should take into

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consideration the stage of the transition process a particular country is in. If capital markets do not work, savings models may be the first step in promoting long-term commitments by borrowers and lenders.

Three selected types of housing finance systems and their benefits and deficiencies have been discussed. CSH often appear in an early stage of transition when lending to the private sector is still restricted because of poor income reporting, an ill-functioning legislation and a lack of long-term funds in the capital markets. They improve access to credit, especially for low and middle income groups, because these groups prove to the lender their ability to budget and to set aside a certain portion of their income. In this context, CSH often complement a “bigger” mortgage loan since they are secured through a second lien mortgage. Since most of the transition economies in central and eastern Europe already show high homeownership rates (through privatization of State property), a high demand for renovation or modernization of the existing housing stock will be expected, which usually requires smaller amounts to be financed. A mortgage bank would usually be less prepared to take up such “small” loans.

One precondition for CSH are stabilizing or stable inflation rates in order to meet the contractual obligations embedded in the CSH contract. Otherwise, people will decline to commit themselves to long-term savings contracts, preferring short-term deposits. A possible lack of savers is likely to make liquidity management more difficult for a CSH bank. Therefore, a continued attractiveness to new savers is important, which is a function of both the savings return and the availability of loans.

Mortgage bond systems (such as the Danish mortgage bond system) provide borrowers with long-term loans at fixed interest rates, which allow for a better calculation of the interest burden. The loan is usually funded by a bond issue with the same maturity. Referring to this instrument, mortgage banks can attract considerable volumes of funds and channel them to the property markets. Buyers of mortgage bonds regard these bonds as a safe investment because of their underlying collateral. In addition, bonds are fungible and can be quickly sold in the market.

Besides clear legislation on title, bonds issuance requires a primary market which sets prices and allocates the fund flows. This function is of importance in the case where the system allows for prepayments of the loans, as people often tend to prepay their loans in a situation of changing interest rates.

In developed economies (as in the United States), secondary markets appear as a tool in further reducing credit risk and transaction costs for both the borrower and the lender. Loans can be bundled according to their underlying risk structure and sold in the market to those investors who are prepared to bear these risks in return for a higher yield on their investments. By selling loans through the secondary markets, banks are able to relieve their balance sheets and attract financing volumes for housing.

Secondary mortgage markets, however, will not work as long as the primary mortgage market is not able to produce a sufficient volume of high-quality mortgages which meet the requirements of institutional investors. If, for example, corporate governance structures were not respected or companies did not pay attention to transparent reporting of their activities, mortgage banks would face serious difficulties in refinancing their loan through bond issues.

After the first steps in the transition process have been accomplished, the question of how to increase affordability of housing gains is of importance for policy makers and it is the task of Governments to decide whether and to what degree different housing finance instruments should enjoy State support. Often Governments apply a mix of different forms of support: a bonus to promote savings activities, debt interest reductions in the tax declaration to lower the interest burden or implicit or explicit government guarantees to stabilize secondary markets.

Since a national housing policy is aimed at maximizing mobilization of funds for housing, the individual finance techniques work only as a tool to achieve this goal. A variety of different systems and instruments are therefore desirable, which should result in healthy competition among lenders to the benefit of the borrower and the economy.



*Annex I. Mortgage lenders, funding methods, market shares*

**Table 8. Lender types**

Country	Lender types							
	Commercial Banks	Building Societies	Mortgage banks	Mutual and co-operative banks	Saving banks/Public banks	Other public sector	Insurance companies	Other financial institutions
Austria	15%	20%	19%	10%	26%			10%
Belgium	70%						10%	20%
Denmark	4%		91%				1%	4%
Finland	88%					10%	1%	2%
France	36%		11%	32%				21%
Germany	13%		18%	13%	38%		7%	
Greece			46%		54%			
Ireland	33%	59%						8%
Italy	100%							
Luxembourg	50%				50%			
Netherlands	72%		9%				19%	
Norway	31%					21%	14%	
Portugal	100%							
Spain	41%		1%		58%		10%	
Sweden	10%		80%					
United Kingdom	37%	59%						4%

*Source: European Mortgage Federation, national sources, authors' assessments. Note: Austria and Sweden residential and commercial combined (Austria 1994, Italy 1994, Sweden, Finland 1996); Authors: Lea, Welter and Dübel, November 1997*

## ***Annex II. The Norwegian State Housing Bank***

The Norwegian State Housing Bank is the main implementing agency for the Norwegian Government's housing policy. Its primary goal is to ensure that all people live in satisfactory homes in good housing environments. Five objectives contribute to the achievement of this primary goal:

- Good housing coverage and a well-functioning housing and building market
- Good housing distribution
- High-quality housing in a good residential environment
- Housing security
- A functional and just organization of ownership and tenancy.

The Housing Bank provides loans, grants and housing allowances. The bank works closely with local authorities and private builders to improve housing distribution and housing quality in the general housing market, which is dominated by self-ownership.

### ***1. Basic construction loans***

In principle, basic construction loans are available to all for the financing of new homes at the same rates. However, an increasing share of these loans is allocated to providing small, sustainable dwellings, mainly in cities and suburban areas. To a greater extent the Norwegian State Housing Bank will form a supplement to private banks in financing new homes. Thus the Housing Bank still allocates basic construction loans for detached single homes in rural areas with lower mortgage security and where private lenders are not so willing to participate in the provision of new housing.

A basic loan will, starting from 2003, cover up to 60 per cent of construction costs for new dwellings. However, this percentage will often be lower for dwellings of medium or somewhat larger size. In addition the household can apply for a start loan. For low-income households, among whom the homeless and refugees are prioritized, the Housing Bank and the municipalities provide housing grants covering up to 30 per cent of total costs. The Housing Bank has both minimum and maximum standards in terms of size, costs and certain architectural requirements. Physical adaptations for the handicapped are strongly encouraged.

In recent years the Government has paid much attention to building new kindergartens, and such projects will have a high priority in the allocation of basic loans. Moreover, housing projects for the homeless are prioritised.

Loans are available with either fixed or floating interest rates. In 2003, loans are offered with fixed interest rates for a five-year period. Interest rates correspond to the average interest rate for Government bonds with fixed interest (for the same period) with a margin of 0.5 per cent. Loans are also offered with floating interest rates corresponding to the average interest rates for short-term Government bills of exchange (0-3 months) plus a 0.5 per cent margin. The fixed interest rate during the second half of 2003 is expected to fall to approximately 4.5-4.0 per cent, while the floating rate in the fourth quarter is 5.4 per cent. A new fixed interest rate is calculated every month. Floating interest rates can be adjusted quarterly. The Housing Bank's main repayment system consists of a repayment period of 25 years, including the first five years when interest only is paid.

### ***2. Start loans***

Start loans were introduced in 2003 and replace the earlier 'first home loans' and 'loans for purchase of a home for the disadvantaged'. Start loans represent both an additional financing, where both the Housing Bank and private credit institutions provide basic loans, or a full financing scheme. These loans make it easier for medium- and low-income households and those with special needs to establish themselves in homes of a moderate standard. Loans are given to municipalities which in turn distribute the finance to individuals with a documented need for a more inexpensive loan than the private sector offers, and whose credit risk is considered to be relatively high. The municipalities and the Government share the credit risk



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on start loans, with 25 and 75 per cent respectively of the residual loan. Interest rates and repayment terms on funds from the Housing Bank correspond to those for basic loans. However, in principle each single municipality can determine terms of payment on loans which the municipalities themselves offer.

### ***3. Renovation loans***

These loans contribute to the rehabilitation of existing housing and housing environments. Renovation loans are given to socially disadvantaged groups, to elderly or disabled persons and to households in dwellings with historic or special cultural value. This type of loan is also given for the renovation of housing including in urban renewal projects, for housing and environment rehabilitation in densely-populated post-war housing and for renovation for energy conservation. For interest rates and other terms of payment see basic construction loans.

### ***4. Grants and subsidies***

Housing allowances may be granted to reduce housing expenses for households with a low income and/or high housing costs. Both the household and the home must meet certain requirements. First-home grants, especially, aid disadvantaged households in establishing themselves in, and maintaining, an acceptable home, mainly in rental housing. Grants are used in combination with loans to enhance special qualities that have particular priority with regard to social, environmental and aesthetic values. The Housing Bank also distributes grants for nursing homes and other housing projects for people in need of special care. There are also funds for the improvement of homes for the elderly, the disabled and low-income families. Such renovation grants enable the elderly or the recently handicapped to retain their homes with appropriate adaptations. Since 2002 the Housing Bank has disbursed grants in order to rehabilitate school buildings. These grants will compensate for the capital costs of such projects.

### ***5. Funding of the housing bank***

The annual budgets for the Housing Bank are approved by Parliament. Budget appropriations include grants and administrative costs (losses included). The loans are funded by the Treasury. No budget appropriations are connected to Housing Bank loans given after 1996.

## ***Annex III. The Finnish State Housing Fund***

### ***1. Housing Fund of Finland***

The Housing Fund of Finland (ARA) is a governmental agency of the Republic of Finland operating under the supervision of the Ministry of the Environment. The main task of the ARA is to provide financing for ARAVA (State-subsidized) rental housing production. The ARA also has other obligations, such as to approve interest subsidies for social housing and to pay interest subsidies for interest subsidy loans, to make grants for housing repairs and to supervise the granting of State guarantees on loans for owner-occupied housing. Furthermore, the ARA is an agency for implementing social housing policy, for example through the operation of ARAVA lending.

The off-budget goal of the ARA is to promote well-planned housing of quality and at a reasonable cost. Properties to be constructed must be located in comfortable and safe areas in municipalities with housing demand.

### ***2. Funding***

The ARA has four sources of funding. These are all through income from outstanding ARAVA housing loans, securitization and external borrowing, charges from State guarantees and appropriations from the State budget, though the last appropriations were received in 1993 because of limitations within the State budget.

Since 1995, securitization has been an important source of funding for the ARA and an alternative to direct borrowing on the capital market. To date, the ARA has raised a sum equivalent to €2.7 billion via six Fennica transactions through the Fennica Programme. Funding through securitization is not counted as being part of government debt.

As part of the securitization procedure, ARAVA loans are transferred to a special-purpose vehicle which finances the purchase by issuing promissory notes to the amount of the transferred loans. The notes are secured by the ARAVA loan receivables assigned and transferred and the respective collateral. The notes are the sole obligations of the special-purpose vehicle and are not obligations of, guaranteed by, or the responsibility of, any other entities or individuals. In particular, the notes issued are not obligations of the Republic of Finland or of any of its departments or agencies (including the ARA, which has no liability for the notes). Through securitization, the ARA has been able to utilize ARAVA loans with long maturities and to generate cash-flows at an early stage of maturity-securitized loans to be allocated to new ARAVA lending.

The ARA diversified its funding sources in 2001 by negotiating and signing loan agreements with multilateral banks, the European Investment Bank (EIB) and the Council of Europe Development Bank (CEB). Through these two loan agreements, equivalent to €500 million in total, the ARA utilized its well-known position on the European capital market and the good reputation of Finnish social housing. For example, key issues which were important when reaching a positive settlement in the negotiations with the EIB were innovative projects – such as the Viikki area in Helsinki – and the progress of energy programmes and energy research in Finland, in addition to ARA quality and cost control.

### ***3. ARAVA loans***

ARAVA loans are granted by the ARA and loans are paid out of this off-budget fund. Interest on and amortization of loans are paid to the ARA. Generally speaking, loans can be granted only to non-profit corporations or local authorities and to property and housing companies owned by these. An essential part of the process of granting a loan is the approval by the ARA of building project plans and construction costs. The owners of dwellings financed through ARAVA loans are required to comply with statutes

governing tenant selection and are only allowed to charge rent corresponding to capital expenditure and maintenance costs (known as cost recovery rent).

The ARAVA loan covers a maximum of 90–95% of building costs and the price of the plot of land. The loan period is approximately 35 years. It is an indexed loan, where the annual payment (interest + amortization) increases annually by an amount equal to the year on year change in the Consumer Price Index plus a fixed margin. The fixed margin is one per cent, but may be changed by decree.

ARAVA loans are used mainly to finance the construction of rental and right-of-occupancy dwellings. Last year, ARAVA loans were used to start construction of 5,600 ARAVA rental dwellings, 3,500 of which were normal rental dwellings and 2,100 rental dwellings intended for students and elderly people. In all, a total of 117,000 ARAVA dwellings were financed in 1990–2001, with rental and right-of-occupancy dwellings accounting for 91,500 and 25,500 respectively.

#### ***4. Interest subsidy loans***

The interest subsidy loan is granted by a bank or other financial institution. The ARA accepts the loan, thereby giving the loan a State guarantee and paying the interest subsidies. The interest subsidy loan covers a maximum of 90 per cent (in the case of acquisition, 80 per cent) of building costs and the price of the plot of land. The loan must be based on competition, and the ARA makes a decision on approval of interest rate and margin. There are two alternatives for the type of repayment of the interest subsidy loan: a loan with fixed amortization schedule and an index loan (State housing loan). The loan period with fixed amortization schedule is 35 years; for the index loan the period works out to be about the same. The alternatives result in exactly similar financial costs, when the interest rate on the loan is 5.5 per cent and inflation 2 per cent. The interest subsidy is paid only on the portion of interest above 3.5 per cent. In the first year the subsidy rate is 95 per cent and it decreases gradually so that the interest subsidy ends after 19 years. Social rental housing built with interest subsidy loans has somewhat higher income limits in tenant selection than social rental housing built with a State housing loan.

#### ***5. Repair grants***

Within an approved authorisation in the State budget, repair grants can be made by the ARA for improvements to the condition and quality of individual apartments and apartment buildings.

#### ***6. Housing for old people and the disabled***

Grants can be made on social grounds for repairs to housing used by old people and the disabled, and can cover up to 40 per cent of the approved repair costs. In exceptional cases, grants can cover up to 70 per cent of the costs if an old or disabled person would otherwise have to move out permanently because of obstacles to mobility or because in the existing facilities he or she could not be provided with the social and health services he or she needed. Front-line veterans can in certain cases be given up to 30 per cent in extra grant. Grants are made by the municipality.

#### ***7. Housing companies in certain suburbs***

Repair grants can also be made to a housing company in certain suburbs designated by the ARA. An ARA grant can be made for certain purposes in a residential building, such as for improvements to heating and ventilation systems, or to build or improve plumbing and sewerage. The maximum grant is normally 10 per cent of the approved repair costs, but in certain cases can be as much as 20 per cent. Grants are made by the municipality.

#### ***8. Equity grants***

Grants can be made by the ARA within the limits of an authorization approved in the State budget to provide equity for student housing to cover the equity of housing to be allocated to the homeless and refugees.

### ***9. The homeless and refugees***

The ARA can make grants to cover the equity of a new rental building if construction of the building is being financed by means of an ARAVA loan in accordance with the ARAVA Act and if the recipient intends to allocate the rental housing to the homeless and refugees. A change in the law which came into effect on March 15, 2002 also makes it possible for a grant to be made when the purchase of a building or apartment in the existing housing stock is financed by a loan for purchase of a rental building or apartment. This is in accordance with the ARAVA Act and when the building or one or more of its rental apartments is to be allocated to the homeless or refugees. An apartment allocated to a refugee must be the refugee's first permanent home in Finland.

The condition for making an equity grant for housing for the homeless is that the recipient agrees to place an agreed number of its rental apartments in a specific municipality at the disposal of the homeless and refugees for 15 years.

### ***10. Students***

The ARA can also provide equity to rental buildings financed by ARAVA or interest subsidy which are to be used as student accommodation. The grant can be up to 5 per cent of the purchase price or approved costs. Equity input covered without any grant must account for at least 1 per cent of the costs, however.

The condition for an equity grant for student housing is that the recipient engages to use the facilities as student housing for 45 years in the case of an ARAVA rental building and for 20 years in the case of an interest-subsidized building.

### ***11. Guarantees***

Anyone who buys a home or builds a house can get a government guarantee for the required housing loan. This guarantee is meant for situations in which the borrower's own collateral (that is, the home) is insufficient as security for a bank loan.

When a government guarantee is applied for, the loan concerned cannot exceed 85 per cent of the purchase price of the home or the estimated costs of a self-built house. This means applicants must put up 15 per cent themselves.

The guarantee covers up to 20 per cent of the housing loan, with a fixed maximum of €25,250.

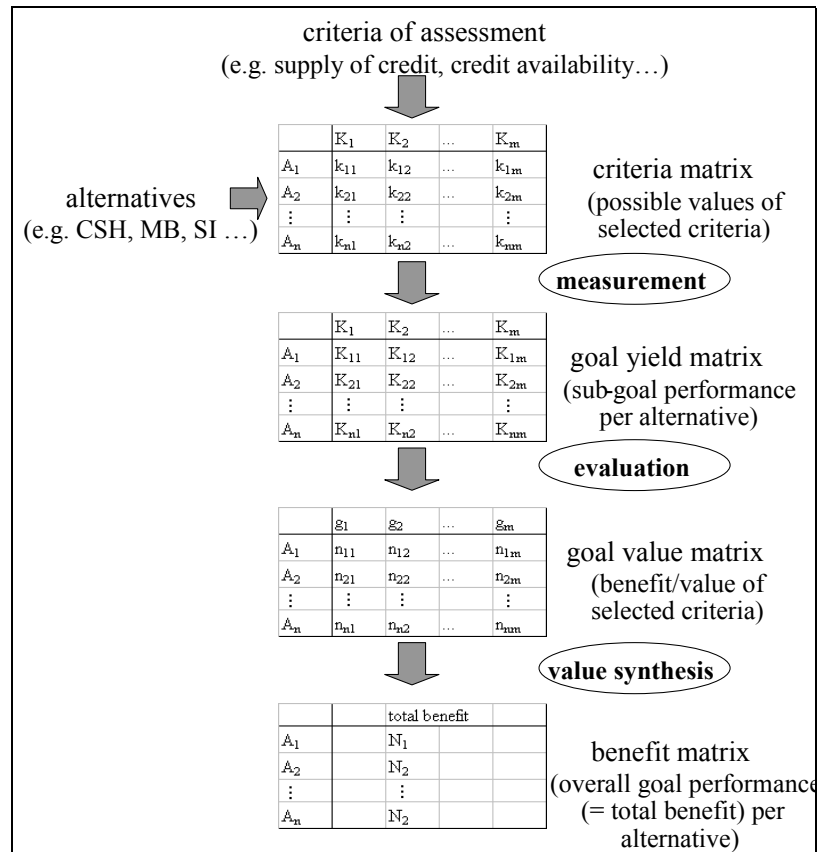
The primary collateral for the loan is the new home itself, that is, the shares in the housing company or the property, with the government guarantee acting as secondary collateral.

Generally speaking, 70 per cent of the purchase price is the acceptable collateral value of the home. Assuming there is no problem with the 15 per cent own funding, this primary collateral and the government guarantee together constitute adequate security for the loan.

### Annex IV. Benefit analysis (example for the methodology)

The operational sequence of a benefit analysis (BA) follows four steps (see figure).

Figure VIII. Steps in benefit analysis



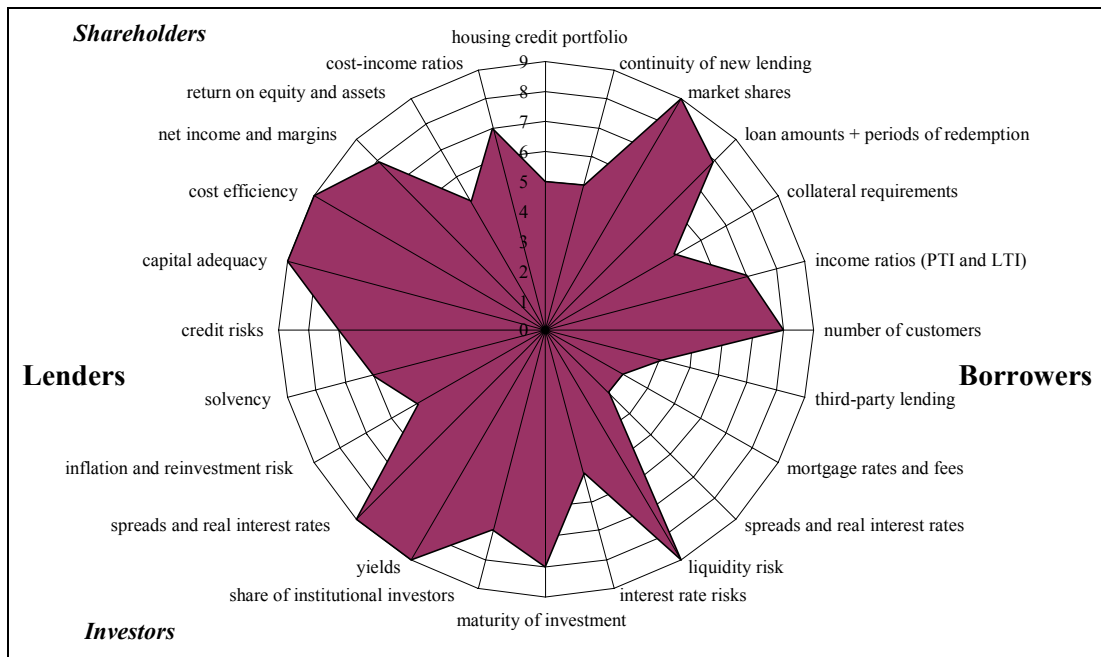
As already mentioned above, the BA expands the evaluation process by two more steps; after the definition and measurement of the different sub-goals in relation to the various stakeholders (shareholders, lenders, investors and borrowers), the individual goal values have to be transformed into a uniform pattern (step 3).

The simplest way to do this is by means of a scoring system wherein an alternative is evaluated as '1' if it delivers the attribute and '0' if it does not. Alternatively, for each indicator a spread (divided into rating-classes) can be predetermined, so that different measuring results can be transformed in standardized performance/rating scores (for example from zero to ten as in the following example). This transformation function is subjective and can therefore be adapted to the values of the particular political decision makers.

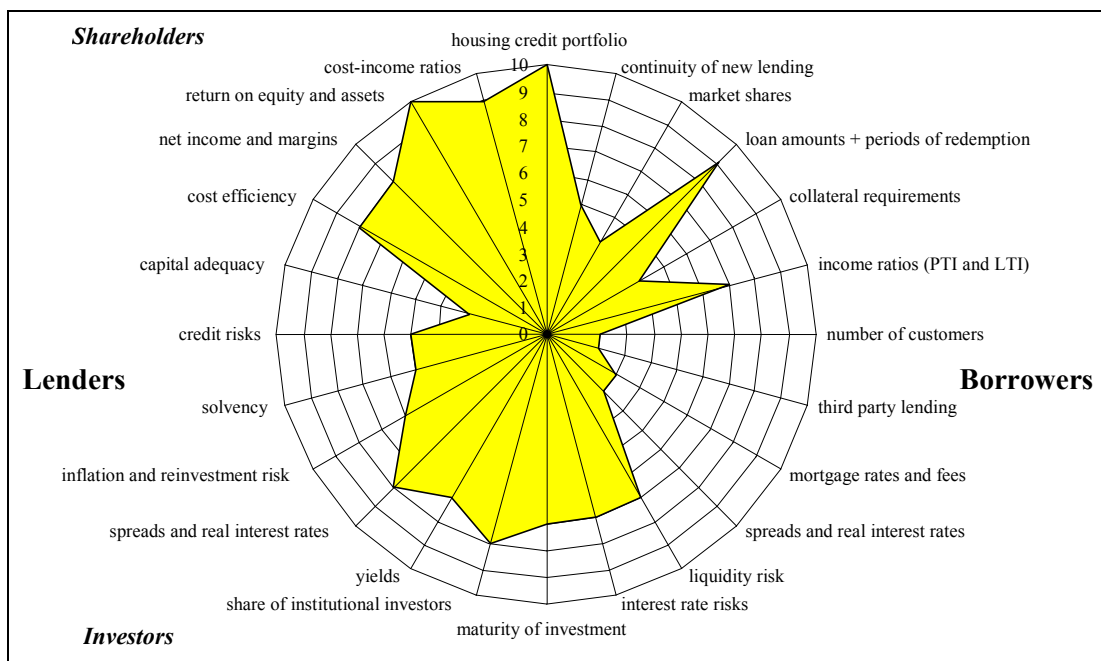
The transformation function for the empirical values, such as of the sub-goal 'housing credit portfolio' (percentage of outstanding loans) as part of the upper goal 'supply of credit' for the stakeholder group of borrowers, could be displayed as follows:



**Figure X. Direct benefits of Danish mortgage banks**



**Figure XI. Direct benefits of United States secondary intermediaries**



Because of the transformation and standardization step in the BA, this data consolidation is independent from the original marking scale of the individual sub-goals. Even the relinquishing of single sub-goals (because of missing data for example) does not reduce the meaning of the results since this situation leads to a weight adjustment for all alternatives. Absolute constraints (such as constraints on ‘capital adequacy’) can be considered if alternatives with exceeding goal-values are excluded ahead of the further process of the BA.

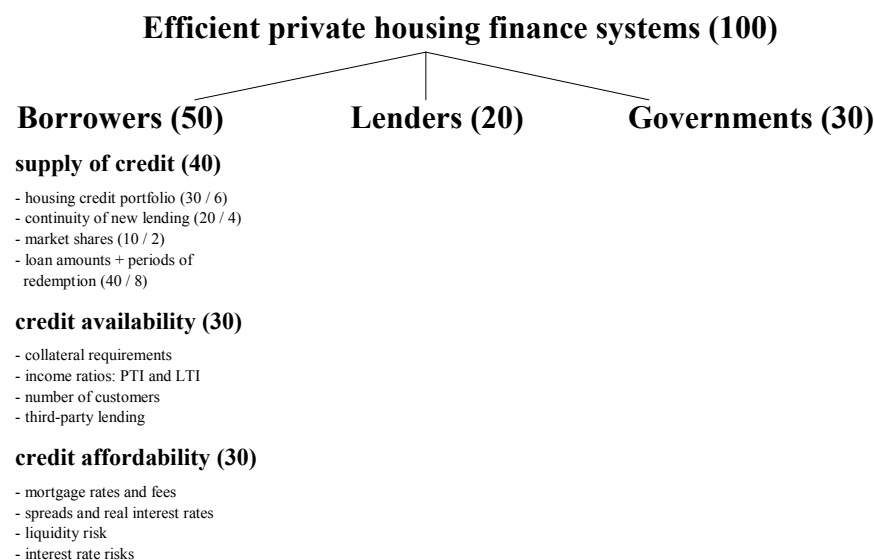
The visual synopsis in figures 9-11 outlines the strengths and weaknesses of the three financial techniques in a unified pattern. This approach also allows for a direct comparison of these housing finance systems. A Bauspar system may be favourable from the perspective of the borrowers. However, lenders would prefer different techniques. Investors are in favour of capital market systems, especially the United States model since this system seems to offer the highest returns on their investment.

The procedure described in chapter 5 could also be carried out to identify and measure the consequences for the Government (see chapter 5, section E), as a basis for assessment.

For the completion of BA, the individual sub-goals should be weighted according to their importance. The decision maker has to decide on the weight of the sub-goal (as a percentage) of the corresponding level (step 4).

At each goal-level, the value of 100 per cent must be reached. Since the several goal levels have to be unified by multiplication, the overall weight of the criterion 'housing credit portfolio' is derived as follows: weight  $n_{11}$  = housing finance system (100 per cent) \* borrowers (50 per cent) \* supply of credit (40 per cent) \* housing credit portfolio (30 per cent) = 6 per cent.

**Figure XII. Weights for the sub-goal 'housing credit portfolio' (example)**



The standardized measured 'goal values' can be summarized hierarchically from the lowest level to the upper level by applying individual weighting factors. In principal, the aforementioned operational sequence of a BA can be repeated for all chosen sub-goals, as can be seen, for example, for the sub-goal 'housing subsidies' for the stakeholder group 'Government' (see marked last line in table 10).

This weighting process is subjective since it assumes that a low partial benefit value, for example, for 'mortgage rates', can be offset by a high partial benefit, such as for 'capital adequacy'.

The result is a 'total benefit' (see N1-N3 in table 10), which finally provides the desired decision support by displaying an order of precedence for the alternatives evaluated.



Table 10. Benefit matrix for the main goal 'efficient housing finance' (two criteria)

Efficient private housing finance system			Bausparkassen				Mortgage banks			Secondary intermediaries		
Stakeholder	Goal	Criterion/ indicator	Weight	Goal value	Partial benefit	Weighted partial benefit	Goal value	Partial benefit	Weighted partial benefit	Goal value	Partial benefit	Weighted partial benefit
Borrowers	Supply of credit	Housing credit portfolio	6%	100%	10	0.6	58%	5	0.3	100%	10	0.6
		Continuity of new lending	4%	...								
		market shares	2%	...								
		Loan amounts + periods of redemption	8%	...								
Lenders	Credit availability	...										
Governments	Credit affordability	...										
	Costs for sector-specific prerequisite	... Homeownership promotions	10%	11 bn.	4	0.4	3.2 bn.	6	0.6	72.3bn.	0	0.0
<b>Total benefit value</b>						=N1			=N2			=N3

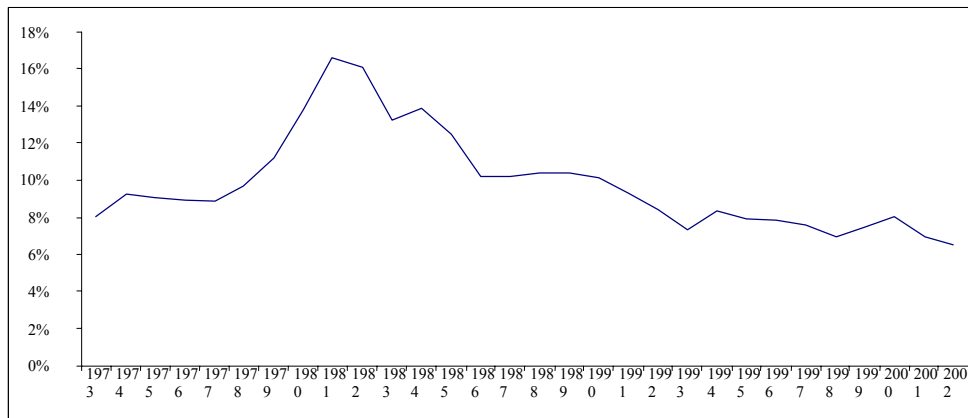
With the last step of the BA, additional insights can be achieved for political decision makers; because of the implemented standardization of multi-dimensional sub-goals, a consolidation and concentration on one value of the decision process is achieved.

National Governments can easily adapt the evaluation tool to the individual basic conditions of their country by adjusting the weighting factors. For example, in a country strongly affected by macroeconomic crisis, the prerequisite 'macroeconomic stability' can hardly be reached. Its weighting factor has therefore to be high. The same is true for Governments unable to offer 'homeownership subsidies'. The resulting high weighting factor ensures that systems less dependent on, for example, subsidies demonstrate a high benefit value for the Government concerned.

### ***Annex V. Calculation of gross and net borrowing costs (example)***

It is assumed that the borrower takes out a loan of US\$ 100,000 at a nominal mortgage interest rate of 9.82 per cent, which represents the historical average (1973-2002) in the United States housing market (see figure XIII). To explain the higher borrowing costs, it is furthermore assumed that the borrower has to have mortgage insurance for a lower down payment (chapter 5, section C.3.a). As can be seen in table 11, on the basis of the internal rate of return (IRR) the effective gross borrowing costs rise to 10.46 per cent. Assuming, furthermore, that the borrower receives a tax benefit consisting of the deduction of mortgage interest payments (as in the United States), the net borrowing costs will fall to 7.42 per cent. Moreover, the effective net borrowing costs fall to 7.25 per cent if the insurance fee is also deductible.

**Figure XIII. Nominal mortgage interest rates (FRM 30-year) in the United States housing market**



**Table 11. IRR calculation of the net borrowing costs for the United States housing market**

Year	Red-emption	Credit interests	Gross Payment s	Loan Amount	Insurance fee	Gross payments (fee)	Tax benefit (interests)	Net pay-ments	Tax benefit (fee)	Net payment s (fee)
0				100000.0						
1	628.9	9820.3	-10449.3	99371.1	-3800.0	-14249.3	2946.1	-11303.2	1140.0	-10163.2
2	690.7	9758.6	-10449.3	98680.4	347.8	-10797.1	2927.6	-7869.5	104.3	-7765.2
3	758.5	9690.7	-10449.3	97921.9	-345.4	-10.794.6	2907.2	-7887.4	103.6	-7783.8
4	833.0	9616.3	-10449.3	97088.8	-342.7	-10.792.0	2884.9	-7907.1	102.8	-7804.3
5	914.8	9534.4	-10449.3	96174.0	-339.8	-10.789.1	2860.3	-7928.7	101.9	-7826.8
6	1004.7	9444.6	-10.449.3	95169.4	-336.6	-10.785.9	2833.4	-7952.5	101.0	-7851.5
7	1103.3	9345.9	-10449.3	94066.1	-333.1	-10.782.4	2803.8	-7978.6	99.9	-7878.6
8	1211.7	9237.6	-10449.3	92854.4	-329.2	-10.778.5	2771.3	-8007.2	98.8	-7908.4
9	1330.7	9118.6	-10449.3	91523.7	-325.0	-10.774.3	2735.6	-8038.7	97.5	-7941.2
10	1461.3	8987.9	-10449.3	90062.4	-320.3	-10.769.6	2696.4	-8073.2	96.1	-7977.1
11	1604.8	8844.4	-10449.3	-88457.6		-10449.3	2653.3	-7795.9		-7795.9
12	1762.4	8686.8	-10449.3	86695.1		-10449.3	2606.0	-7843.2		-7843.2
13	1935.5	8513.8	-10449.3	84759.6		-10449.3	2554.1	-7895.1		-7895.1
14	2125.6	8223.7	-10449.3	82634.0		-10449.3	2497.1	-7952.2		-7952.2
15	2334.3	8114.9	-10449.3	80299.7		-10449.3	2434.5	-8014.8		-8014.8
16	2563.6	7885.7	-10449.3	77736.1		-10449.3	2365.7	-8083.6		-8083.6
17	2815.3	7633.9	-10449.3	74920.3		-10449.3	2290.2	-8159.1		-8159.1
18	3091.8	7357.5	-10449.3	71829.0		-10449.3	2207.2	-8242.0		-8242.0
19	3395.4	7053.9	-10449.3	68433.6		-10449.3	2116.2	-8333.1		-8333.1
20	3728.9	6720.4	-10449.3	64704.8		-10449.3	2016.1	-8433.1		-8433.1
21	4095.0	6354.2	-10449.3	6069.7		-10449.3	1906.3	-8543.0		-8543.0
22	4497.2	5952.1	-10449.3	56112.5		-10449.3	1785.6	-8663.6		-8663.6
23	4938.8	5510.4	-10449.3	51173.7		-10449.3	1653.1	-8796.1		-8796.1
24	5423.8	5025.4	-10449.3	45749.9		-10449.3	1507.6	-8941.6		-8941.6
25	5956.5	4492.8	-10449.3	39793.4		-10449.3	1347.8	-9101.4		-9101.4
26	6541.4	3907.8	-10449.3	33252.0		-10449.3	1172.4	-9276.9		-9276.9
27	7183.8	3265.5	-10449.3	26068.2		-10449.3	979.6	-9469.6		-9469.6
28	7889.3	2560.0	-10449.3	18178.9		-10449.3	768.0	-9681.3		-9681.3
29	8664.0	1785.2	-10449.3	9514.9		-10449.3	535.6	-9913.7		-9913.7
30	9514.9	934.4	-10449.3	0.0		-10449.3	280.3	-10168.9		-10168.9

Yearly mortgage payment	-10449.3	Loan origination fee	3.00
Nominal mortgage rate (US 1073-2002)	9.82%	Mortgage insurance fee	0.80%
Personal tax rate	30.00%	Mortgage insurance fee following years (until LTV<80%)	0.35%



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