Housing Finance Flagship Book

Section: Contractual Savings for Housing

Final Version

Hans-Joachim Dübel

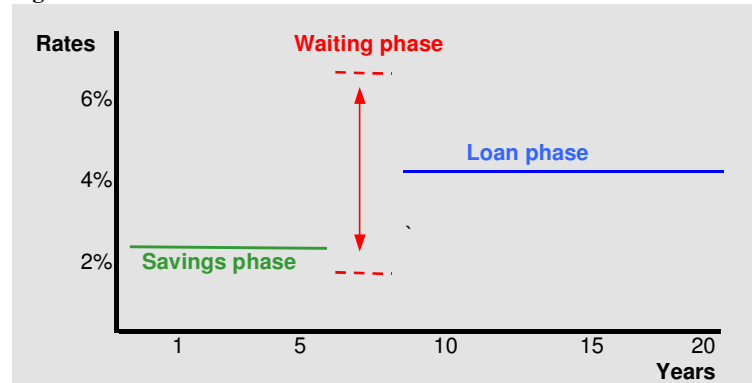**General Concept of Contractual Savings for Housing**

General character. Contractual savings schemes for housing (CSH) link the savings effort of an individual made to a collective fund to the entitlement of receiving a loan from this fund in the future. CSH therefore renders funding from other than collective sources of funds less relevant or irrelevant. Since CSH does not require a developed market for savings capital, it is one of the oldest and simplest collective funding mechanism in housing finance.

Basic structure of a CSH contract. In its most simple form, the individual agrees with the manager of the collective fund, usually a financial institution, to receive a loan in the future after the successful completion of a savings phase. This defines three distinct phases of a CSH contract life: a savings phase, a waiting phase between the dates of formal loan eligibility and actual loan allottment, and a loan phase. A typical CSH contract is long-term, as mortgage loans; it will be closed over a period of between 10 and 20 years. The savings phase typically takes between a fourth and a third of the contract duration, for example 5 years followed by a loan amortizing over 10 years. The length of the waiting phase in a CSH contract may vary, depending on the availability of funds from the saver collective or the capital market. Figure 1 shows the basic structure.

Figure 1 Structure of a CSH Contract

Source: Dübel.

Open and closed CSH schemes. Open CSH schemes use capital market funds for loan allocation, if a shortfall in new savings arises. In this way, a waiting phase can be excluded or minimized. However, because capital market funds are mixed with collective funds, it is impossible to guarantee a fixed loan interest rate in advance. Open schemes therefore generally carry variable deposit and lending rates. Their main value lies in providing a savings product and a simplified access to a loan. An example for an open scheme is the French Epargne Logement (see Table 1).

Closed CSH schemes, in contrast, rely solely on the resources provided by the saver collective. Next to loan amortizations, new liquidity is derived exclusively from the deposits made by new saver generations. This roll-over structure enables closed CSH to guarantee fixed interest rates for loans. Some interest rate risk is introduced through the possibility of a waiting phase, which the lender cannot waive without risking liquidity gaps that might arise due to shortfalls in new savings (see Figure 1).[1] This risk can be addressed through a special focus of the intermediary on liquidity management. Essentially, the closed CSH contract thus adds an interest rate option product to the savings and credit option product of the open form. An example for a closed CSH system is the German Bausparen (see Table 1).

Table 1 Main Differences between Open and Closed CSH Schemes		
	Open CSH	**Closed CSH**
	Epargne Logement	**Bausparen**
Rate determination	Variable deposit and loan rates	Fixed deposit and loan rates
Deposit interest rate	Competitive after-tax yield	Below market after-tax yield
Loan interest rate	Deposit rate plus fixed servicing fee	Deposit rate plus fixed spread, rate usually below market
Loan volume	Loan interest paid cannot exceed 2.5 times deposit interest received	Loan-to-savings multiple of 1 - 1.5 times accumulated savings
Waiting phase	None	Lender cannot waive waiting phase, minimized through special reserve

Source: Dübel

Function of CSH. CSH schemes are designed in order to provide long-term funds for housing. However, because they rely either mostly or exclusively on collective resources, the financing function is constrained in the case of a larger housing finance investment, e.g. a new house.

In the aggregate, new lending cannot exceed new savings and loan amortizations in the closed scheme. Unless many savers do not take up a loan, this limits the loan amounts formulated as a multiple of savings that can be promised to a saver. A typical closed CSH contract will fund multiples up to 1.5 times savings. Open CSH schemes can provide higher multiples, albeit only at variable interest rates.

Because of the limited funding amounts, CSH loans from closed schemes need to be cofinanced by other loans in the case of larger investments. This may require the subordination of CSH loans to mortgage loans. In the Bauspar system of Table 1, for example, CSH loans are typically second mortgages, i.e. 'piggy-back' the first mortgage loan of a mortgage or savings bank.

CSH and other housing finance products. We focus the discussion on regulated, permanent, voluntary, closed, and bank-managed CSH schemes. These are close to, but not identical with, other housing finance concepts:
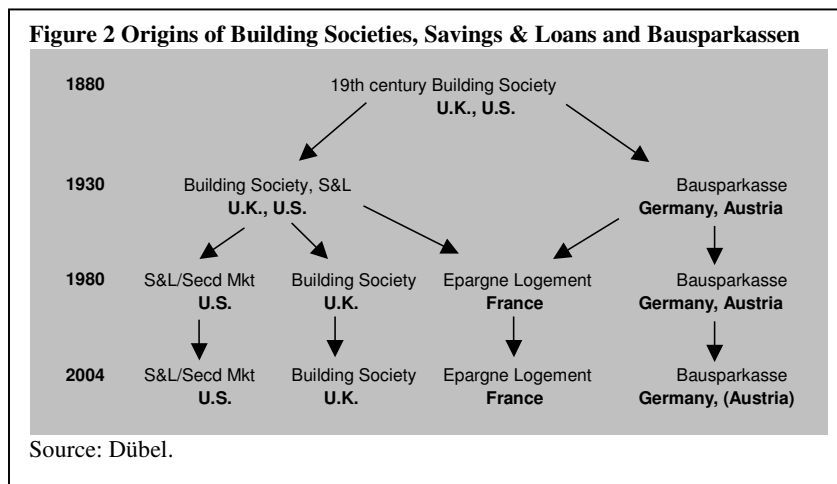
- While CSH schemes originated in the mutual building society movement (see below), present-day building societies operate with open funding mechanisms,

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[1] Some closed schemes operating under high inflation also mix variable 'currencies' – e.g. an inflation index – with fixed real deposit and lending rates. See discussion below.

using deposits and partly also mortgage securities, so that there is usually no link between prior saving and loan entitlement.

- CSH-type mechanisms are also applied by many public housing institutions that collect contributions from salaried employees against promising loans. However, the link between prior savings and loan entitlement in such schemes is weak, and collections are generally mandatory.

- As a collective financing mechanism CSH schemes contain elements of microfinance. However, regulated CSH schemes loose the group self-management character and become permanent financial institutions. They are closer to insurance companies, where also collective funds are managed by a financial institution.

- As a source of second-tier debt and evidence of repayment commitment, CSH finally competes with a number of access products to mortgage finance, most notably mortgage products addressing insufficient equity (e.g. shared appreciation mortgages) and mortgage loan insurance.

Where do CSH exist?

Developed mortgage markets. CSH schemes and their managing institutions grew out of the anglo-saxon building society movement of the late 18th and early 19th century. The first such society was created in Britain (Birmingham) in 1775; the U.S. followed already in 1831 (Frankford/PA). All British colonies adopted them until the 1850s. In 1869, German sponsors made the first attempts to found building societies (Breslau), however, it took until 1924 until the first society was succesfully launched (Heilbronn).

Figure 2 Origins of Building Societies, Savings & Loans and Bausparkassen

1880	19th century Building Society **U.K., U.S.**			
1930	Building Society, S&L **U.K., U.S.**			Bausparkasse **Germany, Austria**
1980	S&L/Secd Mkt **U.S.**	Building Society **U.K.**	Epargne Logement **France**	Bausparkasse **Germany, Austria**
2004	S&L/Secd Mkt **U.S.**	Building Society **U.K.**	Epargne Logement **France**	Bausparkasse **Germany, (Austria)**

Source: Dübel.

Given the nascent stage of capital markets, until the 1920s, building societies anywhere were operating under contract savings principles: obtaining a 10 year mortgage loan from a U.S. S&L in the 1920's, for example, required a contractual savings period of typically 5 years.[2]

It is instructive to compare developments in the U.S. and Germany. In the U.S., fundamental change came in the 1930s, when the U.S. government under the New Deal

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[2]   See Vittas (1995) for a detailed discussion. Nationalization of S&Ls (U.S. only) and the introduction of variable-rate financing (U.S. and U.K.) had started to change the business model by that time, but still not fundamentally.

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addressed the mortgage market crisis. The 1934 FHA Act rendered prior savings with S&Ls obsolete, as long-term loans with fixed rates up to 20 years and loan-to-value ratios up to 80% became eligible for the public loan insurance program. Moreover, deposits with the S&Ls became explicitly insured, enabling lenders to enhance the attraction of deposits from non-collective sources.[3]

As U.S. S&Ls were transformed into capital market mechanisms, with considerable support by government, Germany in the 1930s moved into the opposite direction. Regulations for Bausparkassen were passed that defined a closed, i.e. exclusively collectively funded, system producing fixed-rate loans on a pure private basis. In 1938, government regulation designated the system to provide only second mortgages. Austria in 1939 adopted the German regulations, but after WW II developed Bausparkassen into providers of first mortgages.[4] France initially created the Epargne-Logement scheme as a closed scheme in 1965, but modified it in 1970 to combine elements of British building societies (variable savings and loans returns, open funding) and German Bausparkassen (fixed spreads, public savings premiums).[5] More recently, after a market crisis in 1999 (see Box 2), Austrian Bausparkassen are starting to adopted open funding mechanisms.

CSH in emerging markets. CSH schemes have developed spontaneously in many economies with emerging financial systems, or financial systems in distress. An example are the Mexican Autofinanciamentos of the 1980s that responded to insufficient capital supply for housing finance.[6] The origin of the German Bauspar system in the 1920s is related to a dearth of capital market funds for housing during a period of high financial sector stress.[7]

However, only few autochtonous schemes graduate into permanence. Currently existing formal CSH in emerging markets were thus most frequently adapted from successful European schemes with a developed regulatory structure.

Box 1 CSH - an Islamic Finance Product in Iran

Loan promises linked to deposit schemes are an every-day life feature in Iran and widely socially, religiously and legally accepted.

Contract savings deposits, including for housing finance purposes, were officially recognized by the 1987 Law on Usury Free Banking (LUFB) as Gharz-el Hasaneh, i.e. deposits compatible with Islamic Finance principles which enjoy a preference in the bankruptcy code. The LUFB makes it impossible for banks to pay returns on deposits of a 'predetermined figure', e.g. fixed interest. In addition to lotteries and random 'profit' allocations, loan promises are only one of three allocation mechanisms allowed to generate a return on deposits.

In addition to the only regulated CSH deposits offered by the public housing bank, Bank Maskan, it is estimated that there are hundreds of unregulated schemes in Iran offered by banks and savings co-operatives.

Examples are Nicaraguan, Peruvian, Tunisian and Moroccan schemes, which were designed after the French Epargne Logement, and the Bauspar schemes in the Czech Republic, Slovakia, Hungary and Slovenia that follow their German or Austrian models.

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[3] See Colton (2002). S&Ls were also forced to offer fixed maximum interest rates over the entire duration of the loan, eliminating a central advantage of closed CSH systems, as will be shown below.

[4] In Austria, after WW II public loans became the main second mortgage funding mechanism allowing Bauspar loans to be ranked first. In Germany, in contrast, savings banks and mortgage banks insisted on being secured by first mortgages, which led to the subordination of Bausparen.

[5] See Lea and Renaud (1995) for a detailed comparison of the French and German schemes.

[6] See Bernstein (1996)

[7] See Berndt, Degner, Hamm & Zehnder (1994)

More recently, supported by German Bausparkassen, closed CSH schemes have been launched in India and China.

Apart from mandatory schemes not covered in this section, public housing institutions have also ventured into CSH as a means to attract low-cost deposits. Several institutions in Asia, Latin America and Africa run them, often with the intention to formalize informal market practices that have widespread cultural support. An example detailed further in Box 1 is the Iranian housing bank, which relies for most of its funding on CSH. In Islamic finance with its prohibition of interest, loan-linked deposits plays a special role as one of few admissible deposit products.

CSH Risk Profile, Pricing and Management

Risk profile of CSH contracts. CSH schemes in the open form generate two, in the closed form three, linked financial products. All CSH combine a savings and a credit option product, with the associated liquidity and credit risks.

- *Savings product.* CSH savings deposits are typically daily callable, as ordinary sight deposits. However, the entitlement to receive a loan or public premiums (see below), which both enhance the deposit yield, will typically be linked to a minimum length of the savings phase. This incentive structure turns a de-jure short-term deposit into de-facto long-term deposit, mitigating liquidity risk.

- *Credit option product.* The saver is contractually entitled a loan proportional to his savings amount, with only unrestrictive additional underwriting. However, in properly regulated schemes, the lender can still turn down a prospective borrower or investment project to limit credit risk for the collective. On the other hand, CSH rarely uses price districimination: loan pricing will generally be identical for all savers, because of the overwhelming signalling effect of the savings effort for the ability to service a loan.[8]

The main risk advantage of open schemes is minimal liquidity risk through the option to attract additional capital market funds. The main disadvantage is a higher vulnerability to credit risk, as interest rate risk is higher under variable rate contracts. Proponents of closed CSH systems argue therefore that the central value of the CSH, the isolation of a collective from interest rate volatility, is diluted, and that strictly spoken open schemes are building societies. In the closed CSH system, in contrast, such volatility is minimized by providing the saver with an interest rate option product.

- *Interest rate option product.* Closed CSH systems have the ability to fix both deposit interest rates and future loan interest rates. Since there is no obligation for loan takeup in a CSH scheme, this is tantamount to acquiring an interest rate option, which the saver may, or may not exercise, depending on interest rate

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[8] This is particularly important in the context of the current widespread introduction of risk-based capital requirements in mortgage finance through the Basel II banking regulations, which have brought along an increasing differentiation of pricing between different credit risks.

situation at the time of loan takeup. To finance the interest rate option, deposit interest rate levels will usually be below market.
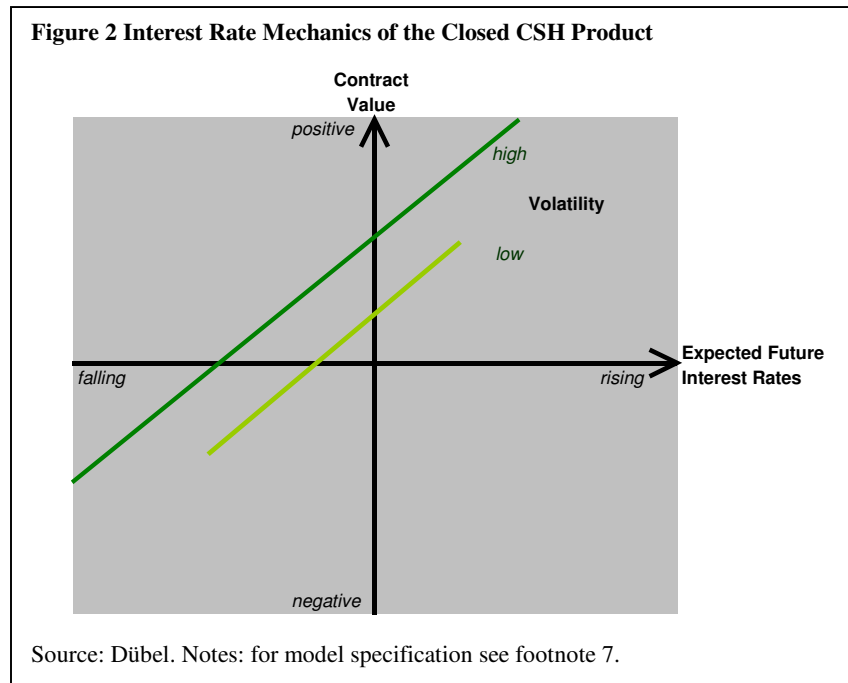
The advantage of closed schemes is therefore reduced credit risk through interest rate stability. The downside is that closed schemes generate significant liquidity risk, if CSH conditions become unattractive for new saver generations.

We focus the subsequent discussion on risk pricing and management in closed CSH systems.

Pricing the interest rate option in a closed CSH contract. A simplified pricing model conveys the basic idea of the interest rate option embedded in the closed CSH contract. Consider two periods, a savings and a loan phase.[9] In the first period, the CSH product buyer receives a savings return, in the second period, he pays interest on a loan carrying an interest rate that has been fixed in advance. Market interest rates for savings and loans in the first period are known, while the saver has to form a belief for both in the second period. The saver will value the CSH contract by simultaneously determining the value of the loan interest rate option embedded in the fixed interest rate loan promise and any loss in savings income relative to market rates that he may occur in the first period as a price to pay for receiving the option.

These mechanics are visualized in Figure 2. The horizontal axis reflects the range of interest rate expectations, which may vary from strongly falling (if a credible disinflation policy exists) to strongly rising (if an acceleration of inflation is expected). The vertical axis measures the contract value, i.e. the sum of interest rate option, given the belief about future interest rates, minus lost savings income today.

The option to receive a loan for a fixed interest rate will rise in value, if the

Figure 2 Interest Rate Mechanics of the Closed CSH Product

Source: Dübel. Notes: for model specification see footnote 7.

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[9] Consider a stochastic interest rate process $i(t)$ over time and a first period savings return S. Then the value of the Bauspar contract $V := V(s_t(i), E_{t+1}(i), \sigma^2_{t+1}(i))$, with $s_t(i) = i_t - S$ and $V_1' < 0$ (opportunity costs of saving), $V_2' > 0$ (expected interest rate trend) and $V_3' > 0$ (expected interest rate risk). The model deviates from standard option theoretic formulations by allowing a trend interest rate expectation component. It inter alia disregards possible waiting periods between loan eligibility and allocation, closing and other fees, spreads and government premia. Furthermore, the credit risk option value is not explictly considered.

buyer expects interest rates to rise (upper right quadrant); it will drop in value in the reverse case (lower left quadrant). The contract value may become negative if the opportunity costs of higher remunerated savings today exceed the value of the interest rate option.[10]

The interest rate option value rises more, the higher the volatilility of interest rates is. The CSH contract may in fact become extremely valuable as a protection against interest rate risk from the buyer's perspective (dark green line). This is a characteristic situation for countries with high levels of monetary instability or banking sector fragility, in which often fixed-rate housing finance products are not available at all. However, in a stabilization scenario with declining interest volatility, the reverse is true: the option value and therefore the contract value and savings incentives may drop to very low levels (light green line).

CSH and inflation risk. In an inflationary context, the low fixed savings returns of closed systems – usually between 2 and 5% - lead to erosion of the value of deposits and therefore lack of savings incentives and inability to provide a sufficiently large loan. This problem can be addressed with two strategies: interest rate subsidies, or conversion into a semi-open scheme retaining only fixed *real* interest rates while using inflation indices to adjust outstandings or nominal components of interest rates.

Box 2 The Pitfalls of CSH Risk Management I – Prepayment Risk in the Austrian Market

Austria's Bauspar system traditionally operated with a relatively high 6% fixed loan rate (as opposed to 4% in Germany). In 1999, Austrian mortgage rates dropped by for the first time in decades below 6%. The banks not only aggressively competed among themselves for greater market share, they also did so with Bausparkassen with whom they had formal co-financing arrangements.

Since Bauspar loans were prepayable – consistent with the logic of closed savings system aimed at minimizing use of loanable funds –the Bausparkassen were hit by an unprecedented prepayment wave. As the returns on government bonds, the main alternative asset for Bausparkassen, had dropped already to 4%, the mismatched Kassen experienced severe spread compression and some even negative spreads.

The reaction was a change in the predominant loan product from a 6% *fixed-rate* loan to an *adjustable rate* loan with a 6% *interest cap*; initially, even a wholly adjustable-rate system had been considered, but the government had refused to continue to pay savings premiums for a system without any interest rate risk protection. The Bausparkassen started an institutional transformation, and with the change in the loan instrument also opened their financing structure. At least one institution – S-Bausparkasse – today offers mortgage loans up to €300,000 (couple) without a contractual savings requirements, seeking funding from both contract savings and capital market sources, the latter including MBS.

After their introduction in 1992, both the Czech Republic and Slovakia used high CSH deposit premia, a form of interest subsidies, that compensated for the difference between low contract and market savings rates. The predictable result were high initial profits of the CSH institutions, who invested their excess liquidity at market rates in the securities market while loan claims had not yet fallen due.

To limit the fiscal costs at elevated levels of inflation, CSH contract can be indexed on both savings and loan side. This is practiced in Slovenia, where the National Housing Savings

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[10]   Note that while option values may become zero, they never become negative.

Scheme operates with fixed *real* savings and loan rates over a base rate that is published by the Central Bank. Since the resulting interest rate is variable, the system becomes partly open, comparable in spirit to the Epargne Logement. A second option is to capitalize the nominal portion of interest and charge real rates over the adjusted outstandings, again on both savings and loan sides.

Box 2 demonstrates the reverse case of *dis*inflation risk hitting the non-indexed scheme of Austria. Since, for liquidity management reasons CSH loans are usually prepayable, if contract savings and loan rates are set too high, a drop in market rates may force the managing bank to reinvest large sums at low or negative spreads. In the aftermath of the crisis, Austrian Bausparen is moving towards an open system.

Liquidity management issues. Even at constant and low inflation levels, closed CSH systems are exposed to latent illiquidity risk. Liquidity is a function of four factors, three of which are contractual: the minimum amount of savings required, the length of the minimum savings period relative to the loan term and the loan-to-savings multiplier. A central factor is behavioural: the number of 'good brothers' (savers who do not take loans) relative to the totality of the saver collective.[11]

The key contract steering variable is the individual 'saver-fund effort ratio', which in its simplest specification is the ratio of savings made to a point of assessment relative to the loan claim. A contract is ready for loan allocation, if a certain threshold value of the effort ratio has been reached.[12]

The aggregate liquidity management depends crucially on whether products are individually viable and how credible the scheme is as a generator of loans. The latter implies ensuring a sufficient ratio of loan allocations within the collective ('bad brothers'). As a result, contractual loan-to-savings multipliers cannot exceed certain prudential values, typically 1.2 or 1.5. This restriction is fundamental, nevertheless it is often violated in inflationary

> **Box 3 The Pitfalls of CSH Risk Management II – Illiquidity of the Iranian Housing Savings Scheme**
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> The Iranian national housing bank, Bank Maskan, manages a collective CSH fund with individual contract parameters as follows: length of minimum savings period relative to loan term: 1/30 (minimum length: 6-12 months, depending on loan amounts), loan-to-savings multiplier: 7. The choice of short savings periods and large multipliers responds to the erosion of savings through inflation – currently approx. 15%, and in particular house price inflation.
>
> However, with the chosen parameter constellation, the fund cannot reach a steady state situation in which cash inflows equal outflows. As a result, the housing bank uses additional, market priced, funds to fill the cash flow deficit. Since it cannot raise loan rates under its contract savings commitment, the housing bank's margin is squeezed by the higher marginal cost of non-collective funds.
>
> The liquidity gap arises even though the good brother ratio of the scheme stands at 65%. Many of these good brothers are reportedly willing loan takers, i.e. potential bad brothers, but are rationed by the housing bank due to insufficient funds. This rationing occurs even though legally the housing bank is not allowed to impose a waiting period after loan eligibility has been reached. As a result, the scheme faces danger of losing credibility as a housing finance solution to the population.

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[11]   In a mathematical formula, $L: = L (S_{min}, L/S_{min}, St/Lt, G/(G+B))$ with S_{min}: = minimum savings amount, L:=contractual loan amount, St:= Savings term, Lt:=Loan term, G:=number of good brothers, B:=number of bad brothers, L1'>0 (min savings period), L2'<0 (loan multiplier), L3'>0 (relative length of savings period), L4'>0(good-brother ratio).

[12]   The threshold values vary by type of product, e.g. in the German Bauspar system there are 'fast' and 'slow' saver products.

environments when no additional measures have been taken to preserve the real value of savings The consequence is a severe rationing of willing loan takers through the imposition of waiting phases or, in the cases where this is legally impossible[13], to the conversion into an open system with interest rate risk.

In the extreme form, the scheme accumulates a large number of fixed-rate loan claims and becomes insolvent and/or illiquid. In such stress situations, closed schemes are forced to convert to open status, attracting non-collective resources while changing their interest rate policies on existing contracts. Promises to provide loans for low fixed rates will have to be broken under these circumstances, unless large subsidies are available. Box 3 describes the Iranian case.

Excess liquidity risk/leakage. The reverse problem, excess liquidity, may arise easily, too. It is typical for a scheme whose deposits grow too fast, for example because of high subsidies or interest rate controls elsewhere in the financial system. The problem is exacerbated if loan investment conditions are too handled too rigidly, or there is substantial scope for credit risk. In the Czech Republic, due to the exorbitant deposit growth rates and restrictive investment conditions, in 2003, 10 years after the inception of the system, the aggregate loan-to-deposit only reached 28%. As a result, CSH institutions, rather than being retail lenders, turned into large investors in the mortgage bond market, driving down mortgage rates. Box 4 describes how in Tunisia, a combination of financial repression and restrictive loan investment conditions in the 1970s led to similar problems of excess deposit accumulation. The interest rate liberalization in 1983 then triggered a confidence crisis into CSH deposits, that ultimately resulted in the restructuring of the scheme. Excess liquidity risk can be avoided by prudent management of savings subsidies and flexible loan eligibility criteria.

Box 4 The Pitfalls of CSH Risk Management III – Liquidity Fluctuations and Disconnect from the Housing Finance System in Tunisia

The Tunisian Caisse Nationale d'Epargne Logement (CNEL) was created in 1974 as a public depositary that mainly issued closed CSH contracts with fixed savings and loan rates. Contract parameters were sufficiently conservative (4 year minimum savings, loan multiplier of 2) to avoid illiquidity. As interest rate controls prevailed in Tunisia – real interest rates dropped from 3% in 1974 to –9% in 1983 – and government subsidized the system, demand for CSH deposits became very dynamic.

Problems arose in the early 1980s, because the system had generated too few loans relative to its high liquidity levels: loan eligibility was limited to new construction, low loan-savings multipliers only allowed for small loans, and first mortgage loans were unavailable or unaffordable to the target group of the system. A latent confidence crisis evolved that became manifest in 1983/4 when the government removed interest rate controls and withdrawals of CSH deposits rose.

In 1986 CNEL became transformed into a housing bank, Banque de l'Habitat (BH), all lending rates were adjusted to market rates and tenors lengthened. The closed CSH became replaced by a hybrid CSH scheme, with savings and loan rates now determined through fixed spreads over the financial market index TMM. In the 1990s, private lenders entered the market for CSH schemes, and BH became only one supplier. Under the open scheme, loan multipliers have doubled (from 2 to 4), raising the availalble financing volumes. Most lenders also offer additional mortgage loans.

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[13]   In developed CSH systems, the managing institution is not allowed to promise immediate loan allocation after the eligibility threshold has been reached, in order to gain a degree of freedom of liquidity management.

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System Choice

Financial sector development aspects. Under which conditions should new formal CSH systems be introduced? Formal CSH schemes have been justified based on three central arguments:

- The lack of long-term funding instruments, hindering specifically the development of fixed-rate mortgage products; and
- Problems of access to mortgage finance for young and low-income households due to high downpayment requirements and high credit risk management costs.
- Related to the former problem, as a means to generate loan supply in areas not covered by standard mortgage finance and characterized by low loan volumes and high servicing costs, especially modernization and small transaction loans.

A secondary argument has been that CSH contribute to a greater mobilization of savings and therefore economic investment.

Careful analysis should be applied when determining whether these problems exist, what their magnitude is and what alternative financial mechanisms exist that address them at minimal costs for society. A summary of empirical findings concerning the role of CSH would suggest the following, ranked by the strength or weakness of the argument in favor of CSH:

Mobilization of savings. Given the large menu of alternatives, there is only a weak basis for creating CSH as a mobilization tool for savings. We have seen for the case of Iran (Box 1) that regulations may limit alternative deposit instruments, but here the appropriate answer should be deregulation. Lack of access to bank deposits may be a serious problem in developing countries, but it should be overcome by a general retail banking strategy including the creation of postal services, savings banks and savings co-operatives, and micro-finance institutions. The argument of the creation of a savings culture has been made[14], but seems dubious if not tested against the alternatives of contractual savings in institutions such as life insurers, pension funds and mutual funds, or paying down a mortgage loan. An unfavorable macroeconomic risk environment may also prohibit the creation of term deposits at reasonable fiscal costs. Finally, the creation of CSH may crowd out of other types of deposits excessively if subsidy arbitrage incentives are present.[15]

Lack of long-term funding. Similarly, the case for CSH as a necessary long-term funding instrument for housing finance is not particularly strong. As a class of deposits issued through retail banking mechanisms, CSH deposits are inexpensive to distribute, usually protected under existing deposit insurance mechanisms, and thus are relatively low-cost and liquid. However, as housing finance systems mature and organized mortgage

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[14]   See Börsch-Supan and Stahl (1991) for an analysis of the Bauspar system in Germany.
[15]   The experience of the Czech Republic, where the massively subsidized CSH deposits absorbed 20% of total time deposits by 2002 and CSH institutions channel a large part of their resources into the mortgage bond market, supports this point. See Dübel (2003).

securities markets and institutional securities investors develop, these advantages fade. Especially, fixed-rate lending on a matched-funded basis through bond finance imposes potentially less solvency risk on the intermediary than CSH deposit funding.[16] Absent loan multiplier restrictions, mortgage finance can also provide larger individual loan volumes than closed CSH. The choice will depend on relative costs of bond finance vs. CSH finance, both in terms of regulatory costs and public subsidies, including bond guarantees.

Box 5 CSH System Choice in Transition Countries in the 1990s

Over the past 15 years, most transition countries have developed housing finance institutions that are similar to Western European ones. The markets are dominated by universal banks, but include mortgage banks or universal banks issuing mortgage bonds and national housing funds. CSH scheme choice has been highly controversial.

- The Czech Republic and Slovakia were the first contries to adopt a special bank Bausparkassen system by 1992/3. Both countries subsidized CSH initially very high with deposit subsidies, which rendered the schemes very popular but also cannibalized the housing policy budgets. While the system has been underinvested in loans in the Czech Republic, it has had a significant lending function in Slovakia. See Dübel (2003) Specialized CSH institutions also exist in Hungary, Croatia and Romania.
- Against the backdrop of the Czech and Slovak experiences, Poland cancelled a 1997 law proposal introducing Bausparkassen. See Chiquier et al (1998). A system managed through special accounts by universal banks similar to Epargne Logement, Kasy Mieszkaniowe (KM), remained. KM became illiquid and ceased to write new business by 2001. A key reason was the support through tax credits rather than premium grants, which discouraged its use as a mass scheme.
- Lithuania, for similar reasons as Poland, and with the smaller mortgage market, in 2002 decided against introducing Bausparkassen.
- Slovenia in 1996 introduced a 'Money Savings' scheme managed by banks and steered by the National Housing Fund. Due to very low fixed spreads and a legal requirement for banks to provide loans, the scheme is expected to become illiquid.
- The introduction of Bausparkassen is currently under discussion in Russia.

Risk mitigation. CSH has less strong competition when it comes to addressing the risks of standardized mortgage finance products, which are especially high in emerging markets characterized by high credit and inflation risk levels. In a high-risk environment, risk mitigation through sufficient equity is superior to a pure risk management approach, e.g. through a mortgage loan insurance product enabling higher LTVs, since the screening effect of pre-saving and the loss protection effect of equity provide additional layers of security. The downside is that accumulating savings generates costs. The balance depends crucially on capital gains expectations – the stronger house prices rise, the less beneficial are prior savings for both borrower and lender. Also, in practice, legal and institutional problems have arisen with subordinating CSH products as second mortgages to first mortgage products. Finally, the Austrian CSH crisis of 1999 (see Box 2) provides an example of a possible breakdown of a co-financing arrangement between different lender groups.

Inactive modernization and small transaction lending market. While the empirical basis for judgements is weak, the case for CSH is likely to be strongest, if considering its use

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[16] Recall that CSH deposits are which are a hybrid between term and demand deposits: they are formally daily callable, with the likelihood of exercise of the call option being blocked by the embedded incentives (loan promise, public savings premia). The lower these incentives, the higher is the likelihood of exercise of the call option and the shorter the duration of CSH deposits.

outside the standard mortgage market. CSH offers generally small volume loans, which are often not collateralized by mortgages and are therefore costly to securitize.[17] Even as financial systems develop viable alternatives may not appear because of high servicing costs that can only be compensated through specialization and large volumes per lender. Home equity loans, which are main instrument now for modernizations in developed markets, need flexible funding conditions and are often tax-driven (U.S.). Pure consumer loans are frequently tied to specific collateral (e.g., cars); their market penetration to low-income households is slow and due to higher credit risk, rates charged are generally very high.

Housing policy aspects. The choice of CSH schemes as a housing policy instrument worth special fiscal support has been controversial.[18] Careful efficiency analysis should be undertaken that has to consider the investment multiplier generated through CSH resources invested in retail loans, distribution effects and the magnitude of substitution effects with other housing finance mechanisms. A central metric for the multiplier is a sufficiently high loan-to-deposit ratio, a metric for the distribution and substitution effect loan size and purpose. Reaching a sufficiently high loan-to-deposit ratio requires focus on the asset, not liability, side of the system: in the Czech Republic, CSH deposits became so strongly subsidized that the loan-to-deposit ratio stagnated after the initial build-up at below 30%, and even so rising credit risk started slowing down further advance. Actual investment purposes are frequently hard to substantiate with figures. The high numbers of loans made so far in Slovakia – three times as many as mortgage loans - are less impressive if considering that households may have several loans and there is frequent leakage to marginal housing uses (e.g, modernizations of baths or kitchens).

System Implementation

Regulation of CSH schemes. CSH schemes carry principal-agent problems since a private managing institution derives its profit from investing the resources on behalf of the saver collective. A similar problem may also occur inside the collective, as CSH has built-in incentives to create a snowball system that may leave the last saver generation without loans. Since CSH schemes are of the greatest value when interest rates are fixed, and their funding instrument is callable, asset-liability management requires greater detail regulation than in the

Box 6 New CSH Schemes in India and China
The Indian Birla Home Finance Limited is a joint venture between the BHW Bausparkasse and Chambal Fertilizers and Chemicals Ltd. The Easy Home Loan Deposit scheme is closed and fixes low savings and loan rates (5%/7% p.a.). The loan-to-savings multiplier is only 1. Savings terms are between 3 and 5 years. The scheme is not specifically subsidized beyond the general tax preferences for mortgage borrowers, nor is it subject to special regulation. A joint venture has also be created in Tienjin/China between Bausparkasse Schwaebisch Hall and Construction and Credit Bank of China. China practices mandatory CSH in public housing funds in parallel, but the scheme is thought to provide more reliable funding. It is unregulated. Savings interests rate vary between 0.5% and 1%. The provincial government of Tianjin enhances this yield by an interest subsidy of 0.5% The interest rate on the loan varies between 3.3% and 3.9%. China practices interest rate controls in the financial sector.

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[17] In the Czech Republic and Slovakia between 2/3 and 4/5 of loans are not collateralized and given on a personal guarantee basis.

[18] See Diamond (1999).

case of a traditional building society or mortgage bank, which are both matched-funded. For these reasons, CSH schemes should be formally regulated.

At the core of CSH regulations should be the definition of balance sheet and cash flows of a closed fund owned by the saver collective. The fund manager should be required to be a regulated financial institution which is specially licensed for managing CSH schemes. In closed schemes, the asset-liability management practice should be subjected to a specific set of rules that consider the specific mathematical limitations and risk profiles discussed above. Regulators, on-site and off-site supervisors should have staff specially trained for analyzing and supervising CSH schemes.

The existing approaches to regulation and supervision are not uniform. European CSH schemes are mostly enabled by special laws, however with quite different solutions.[19] Unregulated CSH schemes abound, including most recently in India and China (see Box 5). This seems to be inadequate, given the risk content of CSH.

Institutional choice. Institutional specialization of CSH managers has been criticized as leading to an undesireable fragmentation of the banking system. In fact, *universal banks* offering CSH are the least-cost implementation option especially for smaller financial systems. Peru, Nicaragua and Slovenia have followed the French example in that regard. CSH schemes in universal banks should still be subjected to special regulation, due to the risk profile of the product.

The *special bank* solutions in Germany, Austria, the Czech Republic, Slovakia and Hungary stand at the other extreme. The argument for specialization is maximum risk management quality and exclusive business focus. P.S.S. in Slovakia, for example, pionieered a new origination, servicing and risk management infrastructure for the Slovakian housing finance market. The downsides in a small market are insufficient competition and high cost levels.[20]

An intermediate model for emerging markets could be a building society type *open special bank* offering CSH as a core, but not exclusive, product. Such a specialized two-product institution (mortgages, CSH) is S-Bausparkasse in Austria. Her business model combines scale and flexibility on product and funding side with a sufficient risk management and regulation framework for CSH.

Savings premiums and other forms of support. Subsidies are not an essential feature of CSH schemes, as examples show (see Box 5 for the Indian scheme). However, the same can be said about the mortgage loan and insurance products, which are nevertheless

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[19] The German banking act (Kreditwesengesetz), for example, goes as far as *outlawing all deposit-taking which is linked to a loan promise*; the exception being tightly regulated CSH deposits under the special bank system of Bausparkassen. This system is supervised by a specialized department of the supervisory authority. The French legislation does not require a special bank for operating CSH schemes. Regulation takes place under a special unit of the treasury which also oversees other contract savsings, such as insurance and pension schemes.

[20] Due to cost pressure, German Bausparkassen today are specialized subsidiaries under holding structures that offer the complete range of banking and/or contractual savings products.

frequently subsidized as they benefit mainly the politically powerful middle class. CSH schemes have therefore not been an exception in attracting large amounts of economically hard-to-justify subsidies. Moreover, to the great chagrin of their proponents, CSH subsidies concentrate on politically highly visible savings premia, which are easier to attack in policy debate than the tax advantages and public guarantees typically used to subsidize mortgage loans and insurance. The guiding principle for policy makers should be neutrality of user costs of capital for different instruments, considering all subsidy sources, as well as a minimal overall subsidy dependency level.[21] Neutrality should be observed in particular in the market for high LTV loans or equivalent insurance products, which is highly sensitive to the subsidy and public guarantee structure.

It could be argued that supporting the creation of term deposits in a volatile monetary environment serves both stabilization and development purposes. Recall that CSH deposits are de-jure daily callable, with premiums being a central instrument of converting them de-facto into term deposits. Alternative approaches to incentivize the term deposit market, for example central bank minimum reserve or capital requirements staggered by liquidity proximity, should be the preferable strategy here.

A serious problem has been that closed CSH schemes became excessively subsidized due to the failure to respond adequately to inflation risk (see above). When the Czech and Slovak CSH schemes were set up, they enabled CSH lenders to secure large initial profits. Both countries also subsidized mortgage interest rates; however, the subsidies benefited borrowers directly, rather than lenders. Both CSH premium programs were strongly stimulated by the traditional Austrian subsidy strategy of minimizing the opportunity costs of savings - the price to be paid for the loan interest rate and credit risk options acquired (see Figure 2). Such misallocation can be minimized through linking both CSH deposits and loans to inflation indices. Subsidies can be focussed on the actual loan takeout and balance sheet loan-to-deposit goal can be set.[22]

Conclusions

CSH schemes continue their existence despite the swift capital market development in housing finance. They conceptually fit into an early financial sector development context as an initial mortgage product, and into a mature financial sector development context as a product generating access to credit for young and low-income households as well as non-standard housing finance loans. Due to their exceptional risk profile, CSH require sound regulation and supervision, which raises their costs for small markets. The scheme should be managed by a regulated financial institution, ideally a mortgage specialist. Subsidies are not a constitutional element of CSH and should be adopted only as an element of a means-tested and instrument-neutral housing policy.

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[21]   Dübel (2003) compares mortgage market subsidies Czech Republic and Slovakia and finds that the subsidy dependency of CSH is higher than of mortgage loans in the former, and lower in the latter case.
[22]   In 2003, the French government changed its strategy for Epargne-Logement by linking subsidies to loan take-out. This eliminated the product as a soft general funding source for housing lenders.

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Annex

Outline of the Housing Finance Flagship Report

Version as of April 22, 2004

Introduction: What Is Housing Finance and Why It Is Important 5 pages
        Rationale and objectives
        Importance and some international comparisons
        Key characteristics of an effective housing finance system
        Role of the government: Lessons for policy makers

I.   The Importance of Housing Finance 15 pages
        Macroeconomic significance
        Role in broader financial system
        Costs of under-developed or poorly designed housing finance systems
        Sequencing of financial sector liberalization and development
        Housing finance and real estate bubbles [box]

II.   Building Blocks for Housing Finance 35 pages
        Legal Infrastructure
        Primary market infrastructure (appraisal, credit information, property insurance, etc.)
        Construction finance
        Mortgage instruments
        Risk management and pricing
        Safety & soundness regulation
        Consumer information and protection

III.   Evolution of Market-Based Housing Finance 20 pages
        Structure and performance of housing finance systems
        Building societies: historical evolution and relevance to emerging economies
        Commercial banks: roles and limitations
        Mortgage companies and other lenders (insurance companies. etc.)
        Contractual credit and savings for housing programs
        Islamic housing finance

IV.   Evolution of Specialized Housing Finance Circuits 15 pages
        Housing Banks
        Housing Provident Funds

V.   Rental Housing Finance 15 pages
        The importance of and key obstacles to rental housing development
        The finance of rental housing: risks, instruments, funding
        European social housing – applicability to emerging markets

VI. **Capital Market Funding of Housing** 20 pages
      Instruments and actors
      Prerequisites
      Role of government
      Experience and lessons

VII. **Mortgage Guarantees and Insurance Schemes** 20 pages
      Mortgage Guarantees: Rationale, design, experience
      Primary Mortgage Insurance: Private, public, design and experience

VIII. **Affordability and Accessibility** 20 pages
      Rationale, Design, Instruments, Evaluation
      Micro Finance for Housing

IX. **Conclusions 5 pages**

    Appendices