Chapter 9

Contractual Savings for Housing

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This chapter explores the use of contractual saving schemes for housing (CSH) as a way to finance housing. CSH has been historically a central mechanism of raising capital for housing finance. With the broader use of capital markets in developed financial markets today, it has become primarily a complementary financing tool to bank-financed mortgage loans. Yet, CSH have enjoyed renewed growth in recent years, as the product has been exported to Eastern European countries, as well as farther afield, such as to China or India. CSH schemes are also popular in the Middle East and North Africa and parts of Latin America.

The concept is simple, relying on the potential borrower to save money over a number of years, thus building up some equity, while at the same time demonstrating their reliability and capacity to repay a debt. Once the saving period is over, a loan will be advanced to the saver, which will typically be equal or represent some low multiple of the amount already saved. Both loan and accumulated equity are jointly disbursed. In the most widely encountered variant, interest rates for savings are fixed below the market rate; the incentive to follow through on the scheme is provided by the promise of a similarly below-market, fixed-rate loan.

The simplicity of the product, however, comes with risks in terms of liquidity and interest rates, both for the financial institution and the saver or borrower. In many countries subsidies have been attached to CSHs in order to address these risks, and the net impact on housing finance systems has not always been positive. It is therefore advisable to study the benefits, risks, minimum institutional requirements, and subsidy dependency of the system carefully before implementing it.

The section starts by describing the features of today's CSHs, followed by a brief overview of their historical development.[1] It then discusses the main benefits and risks of CSH schemes, their suitability for housing-finance-system development purposes, the minimum institutional requirements for lenders, and questions of subsidization. The section ends by drawing conclusions for emerging markets.

Key Features of a Contractual Savings Scheme for Housing

General Character

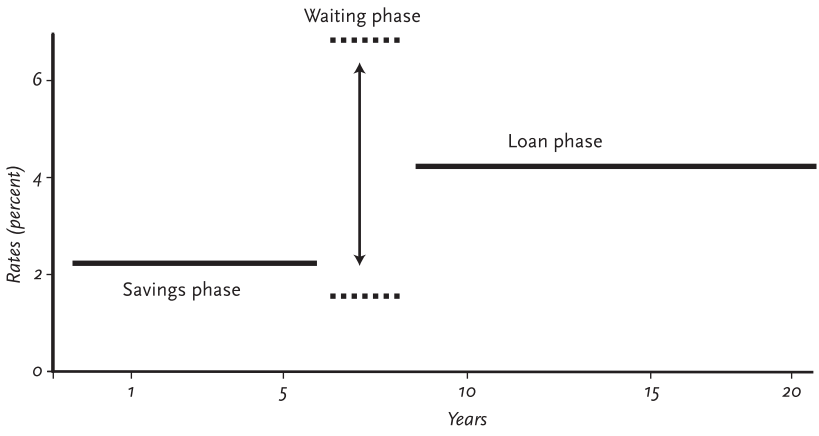
CSHs link the savings efforts of an individual to a collective fund with the entitlement to receive a loan from this fund at a future date. CSHs, in their simplest form, therefore, make funding from other sources unnecessary. Since CSH does not require a developed market for savings capital, it is one of the oldest and simplest collective funding mechanisms in housing finance.

Basic Structure of a CSH Contract

In a CSH contract, the individual agrees with the lender to receive a loan in the future after the successful completion of a savings phase. At this point, accumulated savings and loan amount are disbursed together toward a housing finance purpose.

1. For an earlier analysis of the French and German systems, see Lea and Renaud 1993.

Figure 9.1. Basic Structure of a CSH Contract



Source: Dübel 2003.

The typical CSH contract life has three phases: the savings phase, a waiting phase between the dates of formal loan eligibility and actual loan allocation, and the loan phase. CSH contracts are long term, as mortgage loans; they will be closed over 10 and 20 years, and longer. The savings phase typically takes between one-fourth and one-third of the contract maturity; for example, five 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 9.1 shows the basic structure.

Open and Closed CSH Schemes

Open CSH schemes use capital market funds for loan allocation, if a shortfall in liquidity from a lack of new savers 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

Table 9.1. Main Differences between Open and Closed CSH Schemes

Product feature	*Open CSH (l'Épargne Logement)*	*Closed CSH (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 2003.

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, that is, a credit option. An example of an open scheme is the French Ėpargne-logement (table 9.1).

Closed CSH schemes, in contrast, rely solely on the resources provided by the saver collective. Apart from loan amortizations, new liquidity is derived exclusively from the deposits made by new saver generations. This entirely intergenerational financing structure enables closed CSH to offer fixed-interest rates on both the savings and loans sides. Still, some interest rate risk emerges in closed schemes through the risk of liquidity gaps that is traditionally managed by letting contracts ripe for allocation wait for loan disbursement until liquidity is reestablished (figure 9.1). The waiting phase, however, can be minimized through proper liquidity management techniques, and in advanced systems today is very short. Essentially, thus, the closed CSH contract with its fixed-rate loan promise adds an interest rate option product to the savings- and credit-option products of the open form. An example for a closed CSH system is the German Bausparen (table 9.1).

As will be shown further below, closed schemes have frequently run into liquidity problems, especially when operating in high-inflation environments. Therefore, semi-open schemes have evolved that combine aspects of open schemes—for example, inflation indexation—with aspects of closed schemes—fixed real deposit and lending rates.

Financing Function of CSH

CSH schemes are designed to provide long-term funds for housing; however, because they rely either mostly (open schemes) or exclusively (closed schemes) on collective resources, the financing function of an individual savings contract is economically limited relative to the scale of a larger housing finance investment, for example, a new house.

For example, taken together, the disbursements for new lending in closed-schemes can by definition not exceed the sum of new savings and loan amortizations in any given period. Unless there are many savers who decide to not take up a loan (good brothers), this limits the loan amounts that can be promised to an individual saver in relation to his or her savings. A typical closed CSH contract will thus fund loan volumes only moderately greater than savings amounts (see below). Open CSH schemes can provide higher multiples, albeit only at variable interest rates.

Because of the limited financing amounts per contract, CSH loans from closed schemes need to be co-financed by other loans in the case of larger investments. This may require the subordination of CSH loans to mortgage loans. In the German Bausparen system shown in table 9.1, for example, CSH loans are typically second mortgages to a first mortgage loan from a mortgage or savings bank.

CSH and Other Housing Finance Products

The following discussion is focused on regulated, permanent, voluntary, closed, and bank-managed CSH schemes. At this point, reference to other housing finance products is useful.

While CSH schemes originated in the mutual building society movement (figure 9.2), almost all present-day building societies operate with open funding mechanisms, using deposits and partly issuing securities. Building societies have generally abandoned the direct link between prior savings and loan eligibility.

CSH-type mechanisms are also applied by many public-housing finance schemes in emerging markets that collect contributions from salaried employees against promising to make loans to them. The link between prior

savings and loan entitlements in such schemes, however, is usually weak. Moreover, mandatory contributions create a completely different incentive structure for savers.

As a collective mechanism doing lending based on the prior creation of a payment history, CSH schemes contain strong elements of microfinance. Because of the binding loan promise they make, however, institutions that manage CSH schemes are typically more tightly regulated than microfinance lenders. Their closest analogs are insurance companies, which also manage collective funds earmarked to specific payouts.

As a source of second-tier debt and evidence of repayment commitment, CSHs compete with a number of access products to mortgage finance, most notably, mortgage products addressing insufficient equity (for example, piggyback second mortgages) and mortgage loan insurance.

Historical Development of CSH Schemes

Developed Mortgage Markets

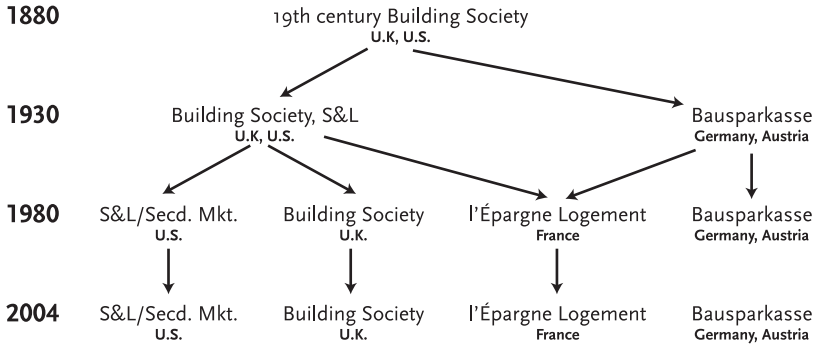
CSH schemes and their managing institutions grew out of the Anglo-Saxon building society movement of the late 18th and early 19th century. The first such society was created in Britain (Birmingham) in 1775; the United States followed in 1831 (Frankford, Pennsylvania). All British colonies adopted them 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 successfully launched (Heilbronn).

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 association in the 1920s, for example, required a contractual savings period of typically five years.[2]

It is instructive to compare further developments in the United States and Germany. In the United States, the S&L system was fundamentally changed in the 1930s, when the federal government had to address a national mortgage market crisis. A 1934 act introduced federal insurance for fixed-rate loans

2. See Vittas 1995.

Figure 9.2. Origins of Building Societies, Savings & Loans, and Bausparkassen



Source: Dübel 2003.

with up to 20 years maturity and LTV ratios up to 80 percent. Moreover, deposits invested into an S&L became explicitly insured, which facilitated the attraction of deposits made by savers not interested in receiving a loan.[3] Taken together, these steps considerably weakened the mutual character of the S&Ls, eliminated the need to prior collection of savings from prospective borrowers. The U.S. system further changed in the aftermath of the 1980s S&L industry collapse which saw the transfer of much the financing function to the semi-public institutions Fannie Mae and Freddie Mac as well as a swift development of the securitization and insurance markets allowing for lower borrower equity. In the United Kingdom, many building societies converted to a bank charter in the 1980s and 1990s after the building societies lost their preferences as housing finance providers.

Germany in the 1930s moved in the opposite direction. Regulations for Bausparkassen were passed in 1934 that defined a closed (that is, exclusively collectively funded) system producing fixed-rate loans—on a pure private basis without government intervention. In 1938, government regulation designated Bausparen to the role of second mortgage provision. Also, after the war, the German housing finance system remained mainly private and split between first and second mortgage lenders; mortgage securitization

3. See Colton 2002.

and insurance developed only recently. Austria in 1939 adopted the German regulations, but after World War II, with government intervention in the form of large-volume preferential second mortgage lending, assigned to Bausparen the role of first mortgage lending.[4] France initially created the l'Epargne Logement scheme as a closed scheme with fixed rates in 1965, but modified it in 1970 due to high inflation to combine elements of British building societies (variable interest rates, open funding) and German Bausparkassen (fixed spreads between the variable lending and savings rates, public savings premiums).[5]

CSH in Emerging Markets

CSH schemes have developed spontaneously in many economies with developing financial systems, or financial systems in distress. An example is 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 spontaneous schemes graduate into permanence. The CSHs that are currently in existence in emerging markets are typically derived from successful European schemes with a developed regulatory structure. Examples are Nicaraguan, Peruvian, Tunisian, and Moroccan schemes, which were designed along the lines of the French l'Epargne Logement, or the Bauspar schemes in the Czech Republic, Slovakia, Hungary, and Slovenia that follow the German or Austrian models. More recently, closed CSHs have been launched in India and the province of Tianjin, China with the support of German Bausparkassen. There are plans to introduce CSH in Russia.

Apart from mandatory schemes not covered in this section, public housing institutions have also ventured into CSH as a means to attract low-cost

4. In Austria, after World War 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, and Zehnder 1994.

Box 9.1. CSH—an Islamic Finance Product in Iran

Loan promises linked to deposit schemes are an everyday 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 as *gharz-el hasaneh*, that is, deposits compatible with Islamic finance principles, which enjoy a preference in the bankruptcy code. The Law on Usury-Free Banking makes it impossible for banks to pay returns on deposits of a "predetermined figure," for example, 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 cooperatives.

deposits. Several institutions in Asia, Latin America, and Africa run them, often with the intention of formalizing informal market practices that have widespread cultural support. An example detailed further in box 9.1 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 play a special role as one of the few admissible shariah-compliant deposit products.

Managing Risk under a CSH Scheme

Risk Profile of CSH Contracts

CSH contracts in the open form generate two and in the closed form three linked financial products, with the associated implications for lender risk profiles. All contracts combine a savings and a credit option product:

- *Savings product.* CSH savings deposits are legally daily callable by the saver, as ordinary bank demand deposits. However, the entitlement to receive a loan or a savings premium subsidy, which both enhance

the deposit yield, will typically be linked to a minimum length of the savings phase. Moreover, lenders are often entitled to delay or even block savings withdrawals, especially if reserves are low.[8] This incentive structure turns a *de jure* short-term deposit into a de facto long-term deposit, mitigating liquidity and interest rate risk for lenders.[9]

- *Credit option product.* The saver is contractually entitled to a loan broadly proportional in size to his or her savings amount, with usually only unrestrictive additional underwriting. In properly regulated schemes, however, the lender can still turn down a prospective borrower or housing object in order to limit credit risk. In addition, CSH rarely uses price discrimination by credit risk: loan pricing will generally be identical for all savers. The reason is the strength of the creditworthiness signal that a successful savings effort over an extended period provides for the ability to service a loan.[10]

The main risk management advantage of open CSH schemes is minimal, or diversified, 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 open schemes are effectively building societies. In the closed CSH system, in contrast, the interest rate volatility is minimized by providing the saver with an interest rate option product.

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

8. For example, German lender Schwäbisch Hall reserves the right to delay payout of withdrawals for 6 months. Further delays are possible if aggregate withdrawal requests exceed 25 percent of the sum earmarked for loan allotment.
9. As a result, CSH deposits are usually classified as term deposits in banking statistics.
10. 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.

at the time when his or her investment need occurs. To finance the interest rate option, deposit interest-rate levels will usually be below market.

An indirect advantage of closed schemes is therefore a reduction in credit risk through greater interest-rate stability. The downside, to be explored in detail below, is that closed CSHs may be exposed to significantly higher liquidity risk compared to open CSHs, should their conditions become unattractive for new saver generations.

The subsequent discussion focuses on some key risk-management issues in closed CSH systems.

Demand Fluctuations

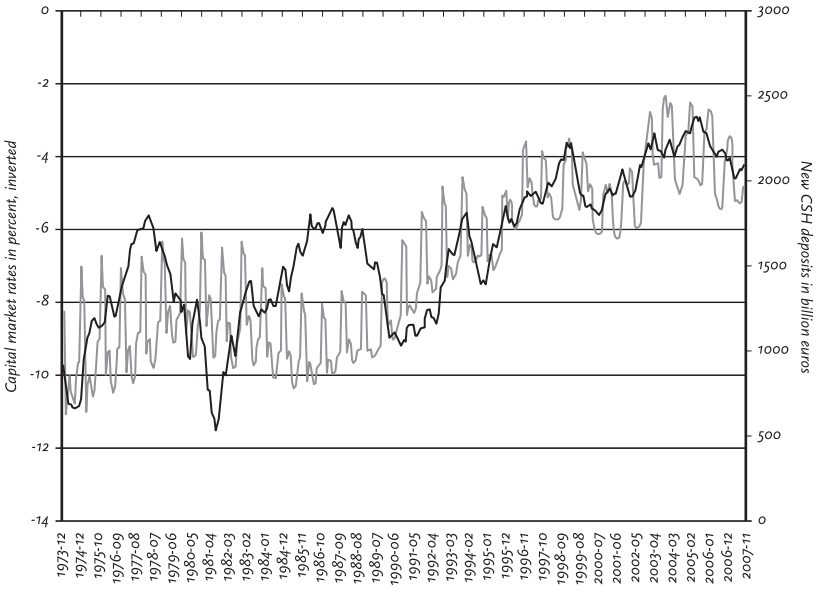
The saver will value the CSH contract by simultaneously determining the value of the loan interest-rate option embedded in the fixed-rate loan promise and any loss in savings income relative to the market rate that he or she may incur in the first period as a price for receiving the option.

In particular, the option to receive a future loan for a fixed interest rate will rise in value, if the saver expects interest rates to rise. Moreover, the more the value of the interest rate option rises, the higher the volatility of interest rates is. The CSH contract may in fact become extremely valuable as a protection against interest rate risk from the saver's perspective. This is a characteristic situation for countries with high levels of monetary instability or banking sector fragility, in which fixed-rate housing finance products are often not available at all.

In a macroeconomic stabilization scenario with declining interest rates and decreasing interest rate volatility, however, the reverse will be true: the option value and therefore the contract value and savings incentives may drop to very low levels. The contract value may even become negative if the opportunity costs of higher remunerated savings today exceed the value of the interest rate option.

Because of these interest rate dynamics, demand for new savings contracts with specified fixed terms will vary with the current interest rate environment as well as saver's perceptions of future interest rate trends. Figure 9.3

Figure 9.3. Closed System CSH Contract Demand and Capital Market Rates, Germany, 1973–2007



Source: Deutsche Bundesbank and author's computations.
Note: Capital market rate approximated through 10-year Bund rate. Both variables smoothed.

shows how in the past 20 years in Germany the inverse of capital market rates and demand for CSH loans closely correlated with each other—that is, when capital market rates declined the demand for CSH rose, and vice versa. Such fluctuations require liquidity management at the financial-institution level in the form of technical reserves ('bauspartechnische Sicherung') in order to avoid potentially long waiting periods.[11]

11. Distortions in the high inflation phase—a liquidity crisis in the 1980s had lead to long waiting periods—disrupt the correlation for earlier years. As a consequence of the events of the 1980s, a new technical reserve was introduced in Germany with the purpose to minimize waiting periods.

Inflation Risk

In an inflationary context, the low and fixed savings returns of closed CSHs—usually between 0 and 5 percent—lead to an erosion of the value of deposits and therefore inability to provide a sufficient house financing contribution. This problem can be addressed with two strategies: savings subsidies that lift deposit rates closer to market levels, or a conversion of the closed scheme into a semi-open scheme retaining only fixed real interest rates while using

Box 9.2. Prepayment Risk in the Austrian Market

Austria's Bauspar system traditionally operated with a relatively high 6 percent fixed loan rate (as opposed to about 4 percent in Germany). In 1999, Austrian mortgage rates dropped by for the first time in decades below 6 percent. 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 pre-payable—consistent with the logic of a 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 percent, the mismatched Kassen experienced severe spread compression and even some negative spreads.

The reaction was a change in the predominant loan product from a 6 percent fixed-rate loan to an adjustable-rate loan with a 6 percent 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 opened their financing structure. At least one institution—S-Bausparkasse—today offers mortgage loans up to €300,000 (for a couple) without a contractual savings requirement, and acquires funding from both contract savings and capital market sources (including MBS).

inflation indices to adjust outstanding balances or nominal components of interest rates.

As an example of the former strategy, after introducing the scheme in 1992 the Czech Republic and Slovakia used savings subsidies that fully compensated for the difference between contract and market savings rates. The predictable result was high initial profits of the CSH institutions, who invested their excess liquidity while contracts had not yet become ripe for loan allocation at market interest rates into securities.[12]

The alternative to indexing CSH contracts on both the savings and loans sides at the time was practiced in Slovenia, where the National Housing Savings Scheme operates with fixed real S&L rates over a base rate that is published by the Central Bank. The resulting interest rate is variable, but still offers some risk protection through constant spreads.

Box 9.2 shows with the Austrian experience that the reverse problem, disinflation risk, also may be problematic for closed CSH systems. Since, for liquidity management reasons CSH loans are usually pre-payable, if contract rates are set too high, a drop in market rates to levels below the CSH lending rate may force the managing institution to reinvest large sums prepaid at low or negative spreads. In the aftermath of the crisis, Austrian Bausparen was moved from a fixed-rate to a variable-rate system with caps.

Contract Design Flaws

Even under stable macro conditions and absent demand fluctuations, closed CSH systems remain exposed to latent illiquidity risk through badly designed contracts. On this micro level, liquidity risk 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. The fourth factor is behavioral and needs to be estimated by the CSH lender: the number of "good brothers" (savers who do not take loans) relative to the totality of the saver collective.

The key contract design variable is the loan-to-savings multiplier, which in its simplest specification is the ratio of the value of the loan claimed divided

12. See Dübel 2003.

by savings accumulated at the point of calculation. An individual contract will be ready for loan allocation, if a certain threshold value of this multiplier, or equivalent "effort ratios" of the saver vis-à-vis the collective, has been reached.[13] Typical actuarial values for admissible loan-to-savings multipliers range between 1.2 and 1.5, depending among other things on the assumptions about the share of good brothers in the portfolio.

CSHs that violate actuarial contract design rules will generate extended waiting periods for savers willing to take up a loan, and possibly even lose credibility. Nevertheless, they can be frequently found in inflationary environments in emerging markets, especially in cases where no measures have been taken to preserve the real value of savings, as described before, and thus high loan-to-savings multipliers are conceded.

Box 9.3 describes the Iranian case, in which excessive loan-to-savings multipliers resulted in the illiquidity of the scheme run by the national housing bank.

Box 9.3. Illiquidity of the Iranian Housing Savings Scheme

The Iranian national housing bank, Bank Maskan, according to an analysis done by the author in 2004, managed a collective CSH fund with individual contract parameters as follows: length of minimum savings period relative to loan term: 1/30 (minimum length: six to 12 months, depending on loan amounts); loan-to-savings multiplier: 7-10 (maximum levels); 0% savings rate and 15% loan rates. The choice of short savings periods and large multipliers responds to the erosion of savings through inflation—between 15 and 20 percent in recent years—and in particular, house price inflation.

Based on the chosen calibration, however, and despite the high spread, 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.

(continued)

13. The threshold values vary by type of product; for example, in the German Bauspar system there are "fast" and "slow" saver products.

Box 9.3. Illiquidity of the Iranian Housing Savings Scheme *(continued)*

The liquidity gap arises even though the good brother ratio of the scheme stands at 65 percent. Many of these good brothers are reportedly willing loan takers, that is, potential bad brothers, but are rationed by the housing bank because of insufficient funds. This rationing occurs also through low maximum loan sizes (underadjustment to inflation) since legally the housing bank is not allowed to impose a waiting period after loan eligibility has been reached. As a result of unattractive conditions, the scheme faces the danger of losing credibility as a housing finance solution among the population.

Once created, resolving such situations is difficult: if the saver has a legal right to obtain a loan without waiting period,[14] significant bailout efforts that usually involve public subsidies may be needed. The equally problematic alternative is the ad hoc conversion of the closed scheme into an open scheme; that is, the funding of the loan claims with a mix of capital market funds and collective funds, which implies changing the interest rate conditions on existing contracts.

Misallocation of Excess Liquidity

The reverse problem, an excess liquidity with resulting problems in properly allocating funds to housing investment, may arise in the case of schemes that have attracted deposits too quickly, for example, because of high subsidies or deposit rate controls elsewhere in the financial system.

The problem is exacerbated if CSH loan investment conditions are handled too rigidly, or there is substantial scope for credit risk. In the Czech Republic, because of the exorbitant deposit growth rates pushed by large subsidies and initially restrictive investment conditions, it took 12 years after the inception of the system, until 2005, for the aggregate loan-to-deposit ratio of the system to surpass 30%. As a way to invest the excess funds, the institu-

14. 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.

tions acquired large bond portfolios, including mortgage bonds which helped to reduce general mortgage market interest rates to one of the lowest levels in Europe.[15] Since a massive cutback of subsidies in 2004, loan growth has surpassed deposit growth and in 2007 the loan-to-deposit ratio has reached 47%, still a low ratio for a S&L system. The share of CSH deposits actually invested in low-interest rate CSH loans remains at only 10%.

Box 9.4 describes another case of how in Tunisia a combination of deposit rate regulation elsewhere in the financial system and restrictive loan investment conditions in the 1970s led to similar problems of excess CSH deposit accumulation. The perceived inability to finance housing and the interest rate liberalization of 1983 triggered a withdrawal wave of savers that made a restructuring of the scheme unavoidable.

Box 9.4. Liquidity Fluctuations and Disconnect from the Housing Finance System in Tunisia

The Tunisian Caisse Nationale d'Epargne Logement was created in 1974 as a public lender that developed a closed CSH with fixed S&L rates to fund its operations. Contract parameters were sufficiently conservative (four-year minimum savings; loan multiplier of 2) to avoid illiquidity. As interest rate controls prevailed in Tunisia—real interest rates dropped from 3 percent in 1974 to minus 9 percent 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, yet low loan-savings multipliers only allowed for small loans, and complementary first mortgage loans were unavailable or unaffordable to the target group of the system. A latent confidence crisis in the ability of the scheme to finance housing solutions became manifest in 1983–4, when the government removed interest rate controls and withdrawals of CSH deposits rose.

(continued)

15. According to computations by the Czech Academy of Social Sciences, mortgage bond to mid-swap spreads averaged -51bp throughout 2001–2004; spreads to government bonds averaged 17bp over the same period.

Box 9.4. Liquidity Fluctuations and Disconnect from the Housing Finance System in Tunisia *(continued)*

In 1986, Caisse Nationale d'Épargne Logement was transformed into a housing bank, Banque de l'Habitat. At that point, all lending rates were adjusted to market rates and tenors were lengthened. The closed CSH became replaced by a semi-open CSH, with S&L rates now determined through fixed spreads over the financial market index TMM. In the 1990s, private lenders also entered the market for CSHs, and Banque de l'Habitat became only one of their suppliers. Under the semi-open schemes, loan multipliers have doubled (from 2 to 4), raising the available financing volumes. Most lenders now also offer complementary mortgage loans.

Excess liquidity risk can be limited through reduced savings subsidies, removal of deposit rate distortions, and more flexible loan-eligibility criteria.

CSHs as a Policy Choice in Emerging Markets

The introduction of CSHs in emerging markets has been advocated based on three financial sector arguments:

- The lack of long-term funding instruments, hindering specifically the development of fixed-rate mortgage products;
- Problems of access to mortgage finance for young and low-income households because of high down-payment requirements and low credit-risk information availability - in that regard it is claimed that CSH can contribute to greater financial stability;
- 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 property-transaction loans.

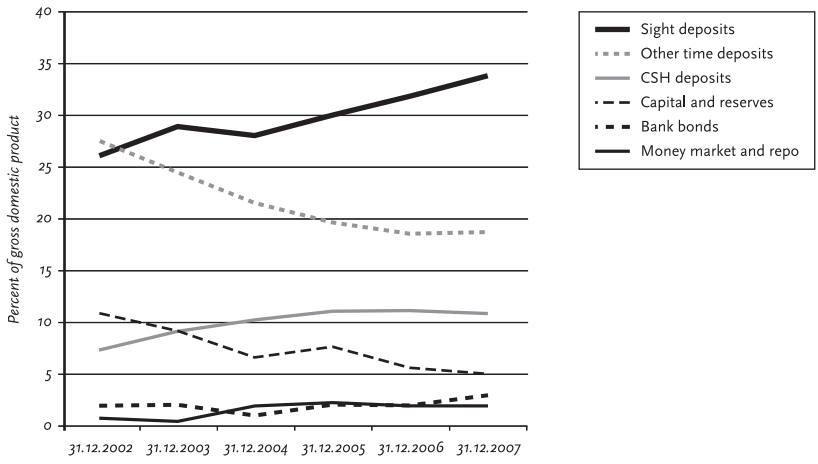
A fourth, macroeconomic argument has been that CSHs contribute to a greater mobilization of savings for housing and therefore general economic development.

Careful analysis should be applied when determining whether these problems exist, what their magnitude is, and what alternative solutions exist that address them at minimal costs to society.

Mobilization of Savings

Although CSH clearly adds to the menu of term deposits and thus will stimulate savings, there is only weak evidence supporting the introduction of CSH, primarily from the savings mobilization perspective. The monetization of emerging economies depends primarily on macroeconomic stability and the soundness and distribution power of the banking system. Lack of access to bank deposits, or weakly managed banks, are serious problems in many

Figure 9.4. Role of CSH Deposits for the Financing Structure of Monetary Financial Institutions, Czech Republic, 2002–07



Sources: Czech National Bank and author's computations.
Note: Low bank bond volumes reflect cross-holdings between MFI.

emerging markets, but these problems should be overcome by a broad-based banking-sector development strategy. Shortly after CSH were introduced in the Czech Republic, a national banking crisis related to non-performing old debts assisted CSH deposit growth as CSH institutions were exclusively foreign. Later the entire banking system was sold to foreign owners, and consumers ceased to make a distinction. We have seen in the cases of Iran (box 9.3) and Tunisia (box 9.4) that regulations may limit the development of alternative deposit instruments, but here the appropriate answer should be deregulation. It has also been argued that CSHs specifically contribute to a larger overall savings ratio,[16] but such claims seem rather dubious if not tested against the alternatives of developing other contractual savings instruments, such as life insurance, pension funds, and mutual funds, or simply savings arising from paying down a mortgage loan. In contrast, a too aggressive strategy to introduce CSH may crowd out of other classes of deposits. Figure 9.4 demonstrates the inverse relation between CSH deposits and other time deposits in recent years in the Czech Republic, where high historic subsidy levels lead to CSH deposits absorbing up to 37 percent of time deposits in 2006.

Lack of Long-Term Funding

Similarly, the case for CSH as a long-term funding instrument necessary to support housing finance in emerging markets is weaker than it was historically for developed markets. 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. As organized mortgage securities markets and their institutional investors develop globally, however, these advantages fade. Where such institutional finance is available and stable, fixed-rate lending can be supplied on a truly matched-funded basis and thus will impose less interest rate risk for the lender than CSH deposit funding.[17] Absent loan mul-

16. See Börsch-Supan and Stahl 1991 for an analysis of the Bauspar system in Germany.
17. CSH deposits are a hybrid between term and demand deposits: they are formally callable daily, 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 the likelihood of exercise of the call option and the shorter the duration of CSH deposits.

tiplier restrictions, mortgage finance can also provide larger individual loan volumes than CSH.

The choice will depend on relative costs of and stability of access to bond finance versus CSH finance, which is determined by the macroeconomic risk situation, relative regulatory costs and relative public subsidies, and investor risk appetite, among other things. Figure 9.4 shows that as the CSH deposit funding share declines in the Czech Republic due do declining subsidies, the bank bond market catches up in financing function. For systems with higher bond market instability, however, CSH can be a useful additional long-term funding source. In Russia, for example, due to a repeated history of banking failures, mid-sized banks have great problems to tap the bond markets and seek for CSH as a diversification source for long-term funding. Similarly, there is potential in India and other cases, where bond market development has been slow.

Credit Risk Mitigation and Financial Stability

CSH has even more obvious advantages in an environment of high credit risks of mortgage lending, which in emerging markets is created by income uncertainty, high credit-information opacity, and high inflation-risk levels. High inflation levels, in particular house price inflation, may even jeopardize financial stability in developed markets.

In such environments, risk mitigation through the provision of sufficient equity is often superior to a pure risk management or transfer approach (for example, through a mortgage-loan insurance product enabling higher LTVs). There are two main mechanisms:

- *Reduced leverage:* CSH increase the equity buffer available for first mortgage lenders in case of a default—the equity portion contained in a CSH disbursement generally accumulates with other downpayments to a larger equity position. Higher equity of the borrower at stake helps to rationalize both housing purchase and loan underwriting decisions, especially with regard to controlling inflated house prices.

Box 9.5. 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 choice has been highly controversial.

- The Czech Republic and Slovakia were the first countries to adopt a closed CSH system run by special bank Bausparkassen in 1992/3 . Both countries subsidized CSH initially very highly with the aim of deposit rates matching high market levels during the initial transition phase. This rendered the schemes very popular but also cannibalized the housing policy budgets.
- Against this backdrop, Poland cancelled a 1997 law proposal introducing Bausparkassen (Chiquier et al. 1998). A system managed through special accounts by universal banks similar to l'Epargne Logement, Kasy Mieszkaniowe, remained. Kasy Mieszkaniowe 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 1999 introduced a housing savings scheme managed by the National Housing Fund with the goal of increasing competition between banks and bringing spreads down. The scheme is semi-open, operates with a loan-to-savings multiplier of 2, a transferable right to receive a housing loan from the bank and has thus brought high liquidity into the housing market. It is only moderately subsidized.
- Specialized CSH institutions also in the meantime exist in Hungary, Croatia, and Romania. The system is being discussed in a number of countries, including Russia and Armenia.

- *Signalling of creditworthiness through pre-savings:* Borrowers with low ability to pay are filtered out before they reach the loan stage, and vice versa borrowers discriminated by the market receive a chance to demonstrate their ability to pay.

There is little emerging market evidence available as yet to test those hypotheses. In the Slovenian case, a high loan-to-savings multiplier has been held to have lead to increasing house prices in the presence of inelastic land supply, which has prompted government to address the latter problem. In both the Czech and Slovakian cases to make CSH work in practice as a risk mitigant for first mortgage lending, legal problems still need to be overcome. The Austrian CSH crisis of 1999 (box 9.2) also suggests that the risk sharing between different lenders may be unstable for competition reasons.

Similar problems, however, are shared by competing instruments, such as mortgage insurance. Also, there appears to be support to the signaling argument for pre-savings. Czech lenders charge ca 50bp higher mortgage interest rates to borrowers without a CSH contract, due to higher credit risk. In developed markets, the recent U.S. mortgage market crisis can be seen as evidence to support both equity and signaling functions that CSH can deliver. It is less convincing, as has been argued, to cite German or Austrian house price stability as linked to the use of CSH, as both cases feature high rental housing shares in the total housing stops. This not only pre-empts a subprime market, but also early homeownership and allows for longer pre-savings periods.

The downside is that where access to credit is available accumulating large savings volumes may generate excessive costs for borrowers, due to foregone capital gains and extended rental tenure, which is why CSH got marginalized in historical perspective. Also, as shown with the German case the system itself is not shock-proof—especially under high and volatile inflation. Finally, the U.S. crisis suggests that in a system with a strong focus on providing second mortgages even small adjustments of the legally admissible LTVs may lead to far higher credit risk levels than historically incurred by the Bausparkassen.

Stimulation of Modernization and Small Transactions Lending Market

The case for CSH is strongest, when considering its use outside the "standard" mortgage finance market for new construction or purchases. CSH offers not only small-volume loans, its closeness to microfinance techniques means that frequently costly or unavailable mortgage registration can be avoided.[18] This means also that the system is self-targeting towards lower-income households. The cases of Slovakia and India show that paramount importance of the distribution approach for such target groups: Slovakia's P.S.S. was able to distribute tens of thousands of small loans very fast, while BHW initially failed in the more challenging Indian environment. Even as financial sys-

Box 9.6. Attempts to Introduce CSH in India

The BHW Home Finance in India is a subsidiary German Beamtenheimstättenwerk (BHW) Bausparkasse, now part of Deutsche Postbank. The Easy Home Loan Deposit scheme was created in 2002 as a closed fixed-rate system, regulated as other fixed-rate deposit schemes applicable under the Indian mortgage company charter. The scheme entailed a savings phase at 5 % p.a. over 3 years and a loan phase at 7 % p.a. at 5 years. The loan-to-savings multiplier was limited to 1. The scheme was not specifically subsidized beyond the general tax preferences for mortgage borrowers; in exchange for the absence of savings premia, contract conditions prohibited savings from being withdrawn prematurely.

The scheme was initially well received by consumers. In the Indian context characterized by high levels of informality, the target groups were lower-income and lower-middle-income households for whom the available funding could mean an option to buy low-cost housing or land; however, many of those households have no bank accounts and BHW over time ran into difficulties to organize distribution and collection. After a series of problems with collection agents, the scheme was discontinued by BHW in 2006 and accumulated savings were reimbursed. BHW as of 2008 plans launching a new scheme whose details have yet to be disclosed.

18. In the Czech Republic and Slovakia, for instance, between 2/3 and 4/5 of CSH loans are not collateralized by mortgages. Reconstruction and modernization loans make up for roughly half of the portfolio.

tems develop and access to bank accounts becomes universal, viable alternative small-loan offers from universal banks may not appear because of high origination and servicing costs. CSH lenders can overcome this through specialization and a large numbers of loans. CSH also has advantages over unsecured consumer loans, whose rates charged are generally very high because of higher credit risk.

Institutional Requirements for CSH Lenders

Regulation of CSH Schemes

Analogous to insurance schemes, CSHs come with significant control problems since a managing institution, the "lender," derives its profit from investing the resources on behalf of a saver collective. The saver collective does not only need protection against credit risk, but also against a misuse of funds saved below market rates for investment, generating market rates for the lender. A similar problem arises between collectives at different times, as CSHs have built-in incentives to prefer current over future saver generations that might be left without sufficient liquidity to receive loans. Since CSH schemes are of the greatest value when interest rates are fixed, and their funding instrument is callable, liquidity and asset-liability management risks require greater detail regulation than in the case of a traditional building society or mortgage bank, which are both matched funded. For these reasons, CSHs should be formally regulated.

At the core of CSH regulations should be the definition of balance sheet and cash flow principles for the legally and technically separate fund owned by the saver collective. The fund manager should be required at least to be a regulated financial institution that is specially licensed for managing CSHs. Especially in closed schemes, the licensing should require separate risk-management capacity within the institution and a specific set of rules that consider the mathematical limitations and risk profiles discussed above. Particularly important are proper contract design and in higher inflation contexts sufficient technical reserves for liquidity management. Regulators and onsite and offsite supervisors should have staff specially trained for analyzing and supervising CSHs.

Clearly, a system promising to offer non-mortgage and second mortgage loans needs also carefully defined underwriting criteria. Frequently encountered legal rights to a loan after the savings phase, let alone options to inherit such rights, are an impediment to sound underwriting. Incentives should be given to register mortgages wherever possible, for example, by addressing registration costs and legal issues. In addition to loan underwriting, liquidity investment criteria are central.

The existing approaches to regulation and supervision are not uniform. European CSHs are mostly enabled by special laws; however, with quite different solutions.[19] More worrisome, the recent schemes implemented in emerging markets seem to be more lightly regulated than their European counterparts (for example, India, proposal in Russia). This seems to be inadequate, given their risk content, especially if a fixed-rate loan promise is given in a volatile interest rate environment.

A more far-reaching institutional specialization of CSH lenders than licensing, that is, as specialist banks, has been criticized as leading to an undesirable fragmentation of the banking system in emerging markets.

In fact, universal banks offering CSH under licensing appears as the most efficient option for smaller financial systems. Peru, Nicaragua, and Slovenia have followed the French example in that regard.

The specialist bank solution has been adopted in Germany, Austria, the Czech Republic, Slovakia, and Hungary. The argument here has been for maximum risk-management quality and exclusive business focus. P.S.S. in Slovakia, for example, may be credited with having pioneered a new origination, servicing, and risk management infrastructure for the Slovakian housing finance market.[20]

A possible compromise model for emerging markets could be a building-society-type specialist bank offering CSH next to other housing finance products. An example is S-Bausparkasse in Austria. Its business model com-

19. The German banking act (Kreditwesengesetz), for example, goes as far as *outlawing all deposit-taking that 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 CSHs. Regulation takes place under a special unit of the treasury that also oversees other contract savings, such as insurance and pension schemes.
20. It should be noted that most specialist banks offering CSH in the mentioned countries are subsidiaries under holding structures that offer the complete range of banking or contractual savings products.

Table 9.2. CSH Subsidies in Central and Eastern Europe Compared

	Germany	*Russia*	*Hungary*	*Czech Republic*		*Slovakia*	
Status	Current	Proposed	Current	1992–2003	Current	1992–1997	Current
Minimum savings period*	7 years	5 years	4 years	5 years	6 years	no constraints	6 years
New savings premium in percent	8.8	20.0	30.0	25.0	15.0	40.0	15.0
Maximum premium amount in US$	117	499	360	195	156	186	112
Optimum new savings amount in US$	1330	2496	1200	780	1040	465	745
Income limit in US$**	33280	None	None	None	None	None	None
Annual subsidy yield in percent***	2.44	7.52	13.83	9.23	4.75	n.a.	4.75

Source: Author's research.
Notes: * shorter minimum savings periods exist if consumers take out housing loans early, ** for singles, value doubles for couples, *** assumptions: income tax exempt savings yield at 20% marginal income tax; no income tax deductibility of savings; interest paid on accumulated subsidies; annual subsidy payment; no closing costs of CSH institution.

bines scale and flexibility on the product and funding side with a sufficient risk management and regulation framework for CSH.

Subsidies for CSHs

CSH Subsidies in Emerging Markets

The question of whether CSHs deserve special savings subsidies as part of the overall housing policy menu is very controversial. The high and diverse subsidies proposed and implemented in Central and Eastern Europe CSH have put heat under that debate.[21] They allowed CSH institutions to fund themselves very cheaply as the government picked up the difference between CSH deposit rates and market rates. Those subsidy yields reached levels between 5% and 14% in Central Europe, much higher than in Germany. Large returns

21. See Diamond 1999 for an attack on CSH subsidies in Central and Eastern Europe.

Box 9.7. CSH Subsidies in Hungary

The Hungarian housing finance system has been traditionally deeply subsidized; the HUF mortgage subsidy schemes introduced under the Szechenyi plan in 2000 and abolished in 2005 had offered interest rates as low as 3-5% with market rates well above 15%. In the same spirit and in addition following the Austrian CSH subsidy dogma to always match bank deposit rates, the Hungarian CSH system offers deep savings subsidies; an extremely short minimum savings period of only 4 years in combination with a high state premium of 30 percent of the annual savings amount as well as comprehensive tax exemptions enhance the 2% paid by the Bausparkasse by another 14% to even above market deposit rate levels. Given the higher Forint and house price inflation, also more relaxed maximum eligible savings amounts are chosen than in neighbouring countries.

Still, due to the deep HUF loan subsidies until 2005 followed by a surge in foreign currency loans (2007 > 80%, mostly Swiss Francs) and amnesia about the associated risks, the success of CSH so far is only moderate. The current estimated 250,000 outstanding contracts represent only a twentieth of the level of the Czech Republic, with a comparable population size. During 2007, however both new savings contract enrollment and fiscal expenditures considerably picked up. HUF 18.6 billion of premiums were paid in 2007, up from 14 billion in 2006, and the current financial market turmoil that reduces foreign currency loan supply and creates volatile HUF financing conditions is likely to further enhance demand.

Box 9.8. Planned CSH Law and Subsidies in Russia

During 2008, in Russia concrete plans were discussed to introduce a Bauspar system. Russia's banks suffer from considerable funding mismatches. A number of mid-sized banks challenging the market leader Sberbank, the national savings bank, has limited access to deposits and heavily relies on the volatile Eurobond and interbank markets. Apart from the operations of the agency for home mortgage lending (AHML), which are limited by fiscal constraints, there is no long-term refinancing market for mortgages. Long-term savings could be a welcome diversification instrument.

(continued)

Box 9.8. Planned CSH Law and Subsidies in Russia *(continued)*

The Russian law has been proposed by German Bausparkasse Schwäbisch Hall. The proposed regulations soften the German law in a number of points. Examples are lower requirements to use mortgage collateral for housing loans, a higher ratio of interim financing to total lending, and a lower level of technical reserves designated to minimize waiting periods. Also, with a maximum state premium level of RUR 14,000 p.a. (USD 560), a minimum savings period of only 5 years and a state premium ratio of 20% of savings, the subsidy program promises to become expensive. Compared to the Czech Republic, the maximum state premium p.a. planned for Russia is 3 times as high, compared to Germany 4-8 times (differentiation by marital status). Also, Germany and the Czech Republic now feature minimum savings periods of 7 and 6 years and state premium ratios of 8.8% and 15%, respectively.

on equity of CSH institutions were the result, especially in the setup phase where funds are exclusively invested at market rates.[22] For fiscal reasons, some countries had to cut back later; however such cutbacks have come with long delays (Czech Republic).

The subsidy debate highlights the lack of certainty of CSH institutions over the intrinsic value of their product. However, subsidies—at least of the scale given in Central and Eastern Europe—are not an essential feature for the successful introduction of CSHs. See box 9.6 for the Indian case, where the access-to-credit motivation proved sufficient to attract demand; the scheme failed for technical reasons. Nor do specific risk aspects of CSH require permanent subsidies (see discussion above). The same can be said about mortgage loan and insurance products, however, which are nevertheless frequently subsidized as they benefit mainly the politically powerful middle class. CSHs have therefore not been an exception in attracting sometimes large amounts of economically hard-to-justify subsidies.

22. See Dübel 2003 analyzing the case of the largest Slovakian CSH institution P.S.S.

Guiding Principles

CSH subsidies can be justified only as part of a consistent overall housing finance subsidy framework.

The first guiding principle here should be neutrality of user costs of capital for different instruments, considering all subsidy sources.[23] 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.

Evaluation criteria of CSH subsidies should moreover consider the efficiency with which they are allocated, for example, by assessing the investment multiplier and substitution effects as compared to other housing finance instruments.

A central point here is to ensure a sufficiently high loan-to-deposit ratio: in the Czech Republic, CSH deposits became so strongly subsidized that the loan-to-deposit ratio stagnated until very recently at low levels and CSH effectively subsidized the broader mortgage sector. Starting from almost identical initial conditions, CSH had a more robust lending performance in Slovakia with close to 100% loan-to-deposit ratios since early after the system's inception. Alternatively, subsidies can be specifically tied to a loan takeout, a decision France took concerning l'Épargne Logement subsidies in 2003 and Germany implements from 2009 onwards.

Alternative forms of equity support for borrowers, such as grants or partial use of tax-preferred retirement savings accounts for downpayments, should also be considered. Finally, while CSH schemes are partly self-targeting through the small loan amounts they produce, income and other limits may considerably improve the targeting efficiency.

Conclusions for Emerging Markets

CSHs continue their existence despite the swift capital market development in housing finance. They conceptually fit into an early financial-sector devel-

23. Dübel 2003 compares mortgage-market subsidies in the Czech Republic and Slovakia and finds that the subsidy dependency of CSH loans is higher than of mortgage loans in the former case, and lower in the latter case.

opment 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 nonstandard housing finance loans.

The system offers a number of advantages, including its simplicity, a way to mobilize long-term liabilities, and, in the absence of credit scores or formal income, it can provide a lender with proof that the borrower is able to service a mortgage loan. The ability of the system to function within informal environments is particularly relevant for emerging markets. The commitment made during the savings phase and the deposit that is accumulated greatly reduce the credit risk of operating in environments without formal institutions providing credit scoring and credit histories. A final and important advantage of the system is that it can allow long-term fixed-rate loans to be offered, even in environments where long-term fixed-rate funding may be unavailable.

Despite some expansion to emerging markets the schemes have had difficulties in the presence of changing economic circumstances and macro instability. Falling interest rates in emerging markets in particular have meant that potential borrowers would have little incentive to start saving at below-market rates in a CSH system in order to lock in a future lending rate now. Falling rates, moreover, tend to interact with strong house price growth, which could mean that initially contracted loan amounts will be insufficient to buy a property and savers that have the option to borrow immediately rather than saving and borrowing later will forego capital gains.

The CSH mechanism is also heavily reliant on new savers coming onboard and providing liquidity for the continued disbursement of loans. In a stable inflation environment the system can work well attracting new savings, but inflation cycles may mean the system is exposed to corresponding demand fluctuations. A reacceleration of inflation in particular can result in loan rationing, which in a contractual scheme can damage confidence. Even in a benign inflation environment, contract design discipline is needed to avoid intergenerational snowball effects. CSH systems in emerging markets therefore need liquidity-stabilizing mechanisms such as a technical reserve fund and proper risk-management capacity.

A danger is, moreover, that policy makers in emerging markets take the savings disincentives in a falling interest rate environment, or the heavy reliance of the CSH on sufficient new savers in the steady state, as an excuse for

introducing large and permanent savings subsidies. Such subsidies are not a necessary condition for the long-term success of a CSH. Experience has shown that, when inappropriately applied, especially during the introductory phase, fiscal costs can be substantial and the amounts of savings generated can no longer reasonably be channeled into loans and housing investment.

Policy makers looking to CSH as a tool for developing their housing finance systems should assure themselves that the appropriate regulatory framework is in place that is able to deal with the specific type of risks arising from CSH. Any excessive dependency of these schemes on regressive and costly subsidies should be avoided. Policy makers are advised to compare the advantages and shortcomings of this model with alternative housing finance systems within their respective countries and market environments, in order to manage credit risks, facilitate access to housing finance, and to mobilize long-term funding.