Mortgage Innovation To Facilitate Investment In Housing: The Case in Sweden

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I. INTRODUCTION

The Swedish system for financing housing is but one of many mechanisms reflecting the high priority placed on housing. Monetary policy seeks to assure a steady flow of funds to housing, and the government is active as a direct supplier of housing. Mortgage terms are liberal, relative to most countries, both in terms of maturity and of allowable loan-to-value ratios, and the mortgage "package" incorporates a rising schedule of payments which further increases the amount of housing that households can afford.

II. DESCRIPTION OF MORTGAGE INSTRUMENTS

A. *The Mortgage Package*

In general, up to 70 percent of the appraised value of a new residence may be borrowed from private credit institutions. Most prominent are mortgage banks, credit companies, savings banks and insurance companies.

Until 1965 a primary mortgage and a smaller secondary mortgage were included in this 70 percent. Since 1965, most new mortgages involve a single "unity loan" for the full 70 percent.

In approximately 90 percent of all new dwelling purchases the unity loan is supplemented by a government mortgage. The extent of governmental financing assistance varies with the category of the building owner:

— municipalities and semi-public housing organizations obtain government loans corresponding to 30 percent of the appraised value
— housing cooperatives up to 28 percent
— owner-occupiers up to 20 percent
— private investors up to 15 percent (under certain circumstances 20 percent)

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In addition, some households add a "top loan" which further increases the proportion of value which can be financed. These are provided by savings banks and the postal saving system, and generally are for maturities of 15-20 years.

B. *Mortgage Terms According to Lender*

Different institutions specialize in terms of the part of the mortgage package they provide, the type of mortgage instrument they employ, and the type of housing they finance, and there are substantial interdependencies between these characteristics of their lending behavior and the sources and instruments they use to obtain funds. Because of this specialization, the description that follows is organized by institution, rather than by the various aspects of the mortgage instrument.

Bond-Financed Institutions — mortgage banks and credit companies — are Sweden's largest providers of housing credit. They acquire funds by issuing bonds, generally with a 20-year maturity, whose interest rates are adjusted to the prevailing market level after ten years. The maturity of loans made by mortgage institutions is also 20 years. As with their bonds, interest rates are fixed for ten years with a provision for adjustment at that time. The loans are repaid in equal annual installments based upon an amortization period of 60 years for multi-dwelling houses and of 40 to 50 years for one- and two-family homes.

Thus, after 20 years, the mortgage falls due for repayment with the major part of the loan still outstanding. Generally, the borrower is offered conversion of his matured loan into a new loan on terms prevailing at the time. In effect, then, the mortgages are 40- to 60-year fixed annuities with rates adjusted at ten-year intervals.

The terms for repaying a loan before maturity are specified in the mortgage contract. If the interest rate on new loans at the time is lower than the rate charged on the outstanding loan, the borrower must pay a penalty charge equal to the capitalized value of the interest margin during the remainder of the ten-year period for which the interest rate is fixed.

Insurance companies provide mortgages on the same fixed-rate basis as mortgage banks. Again interest rates are fixed for ten-year intervals.

Most insurance company mortgage lending is for multi-dwelling houses.

Savings banks primarily offer variable-rate mortgages on which they are free to alter the rate at any time. Although no external reference rate is specified in the contracts, the central bank discount rate is typically used. The mortgages are generally of a variable payment (as opposed to variable maturity) nature, with rate changes altering monthly payments. Maturities typically range from 40 to 50 years.

Savings banks concentrate their mortgage lending on one- and two-dwelling homes (as opposed to mortgage banks which also provide significant advances for multi-unit dwelling) and provide most of the "top-loans" employed by purchasers of single-family homes.

Commercial bank activity in the housing field is oriented toward short-term construction credits which are replaced by long-term financing from other sources upon house purchase. To the extent that they do provide long-term mortgages, these are generally on the same variable-rate basis as those of savings banks.

Government loans figure in the financing of almost 90 percent of all housing units. They typically are amortized over 30 years and carry a rate of interest which corresponds to that paid by the government on its long-term borrowing plus an administrative charge (0.25 percent in 1973).

Prior to 1968, the government subsidized these mortgages by charging borrowers a lower rate than that on government bond issues. At the same time, repayment took the form of equal annual amortization payments (1/30 of the loan) plus interest on the outstanding debt. Consequently money payments were highest in the early years and declined over time. In addition, the government provided interest grants to reduce the rate paid on primary and secondary mortgages.

These subsidies were abolished in 1968. In order to avoid a sharp increase in the carrying costs on new mortgages, however, the new government loans featured a graduated stream of payments with initial payments on the mortgage package no higher than they would have been under the previously subsidized arrangement. Subsequent increases in the payments of the so-called "parity loans" were linked to a construction cost index.

An illustration of the stream of payments associated with an Skr 1000 mortgage package incorporating a 70 percent "unity loan" and a 30 percent "parity loan" is presented in Table 1. The following assumptions are made: 1) the unity loan has a 40-year maturity and a 6 percent rate of interest, implying an annuity of 6.16 percent of the original loan balance (6.16 percent x 700 = 43.12); 2) the government loan carries a 6 percent rate of interest and a planned (although not necessarily actual) maturity of 30 years; 3) the total payment is calculated as the original payment times the "parity number," (assumed to increase at 3 percent per year in this illustration); and 4) the initial payment, Skr 51, is based on the 5.1 percent annuity figure established by the government to apply to such loans, presumably reflecting the initial payment on a package including a unity loan (along with a government interest grant) and a low-interest government loan.

It is interesting to note that, given these assumptions, the outstanding principal on the government loan rises until year eight and does not fall to the original level until year 15. This arrangement thus involves additional government loans in place of subsidies. It is geared to the assumption that the borrower's income and thus his capacity to repay will rise over time.

Owner-occupiers of one- and two-dwelling houses are still given the option of repaying their government loan at 1/30 each year. When the new loans were first introduced, approximately 25 percent chose this level pattern, with the remainder opting for the upward sloping "parity" payments schedule.

Table 1

PAYMENTS, INTEREST ACCRUALS, AND OUTSTANDING PRINCIPAL WITH "UNITY LOAN"/"PARITY LOAN" MORTGAGE PACKAGE

Year	Parity-number	Total payment	Nominal annuity of the unity loan	Remains for the government loan	Interest on government loan	Amortization of government loan	Governmental loan outstanding	Total loan debt outstanding
	1	2	3	4	5	6	7	8
1	1.0	51.00	43.12	7.88	18.00	- 10.12	310.12	1008.65
2	1.00	52.53	43.12	9.41	18.61	- 9.20	319.32	1016.30
3	1.0609	54.11	43.12	10.99	19.16	- 8.17	327.49	1022.83
4	1.0027	55.73	43.12	12.61	19.65	- 7.04	334.53	1027.53
5	1.1255	57.40	43.12	14.28	20.07	- 5.79	340.32	1032.08
6	1.1593	59.12	43.12	16.00	20.42	- 4.42	344.74	1034.56
7	1.1941	60.89	43.12	17.77	20.68	- 2.91	347.65	1035.41
8	1.2299	62.72	43.12	19.60	20.86	- 1.26	348.91	1034.50
9	1.2668	64.60	43.12	21.48	20.93	+ 0.55	348.36	1031.65
10	1.3048	66.54	43.12	23.42	20.90	+ 2.52	345.84	1026.70
11	1.3439	68.54	43.12	25.42	20.75	+ 4.67	341.17	1019.46
12	1.3842	70.60	43.12	27.48	20.47	+ 7.01	334.16	1009.73
13	1.4258	72.72	43.12	29.60	20.05	+ 9.55	324.61	997.31
14	1.4685	74.90	43.12	31.78	19.48	+12.30	312.31	981.97
15	1.5126	77.15	43.12	34.03	18.74	+15.29	297.02	963.47
16	1.5580	79.46	43.12	36.34	17.82	+13.52	278.50	941.55
17	1.6047	81.84	43.12	38.72	16.71	+22.01	256.49	915.95
18	1.6528	84.30	43.12	41.18	15.39	+25.79	230.70	886.36
19	1.7024	86.83	43.12	43.71	13.84	+29.87	200.83	852.47
20	1.7535	89.43	43.12	46.31	12.05	+34.26	166.57	813.96
21	1.8061	92.11	43.12	48.99	9.99	+39.00	127.57	770.46
22	1.8603	94.87	43.12	51.75	7.65	+44.10	83.47	721.61
23	1.9161	97.72	43.12	54.60	5.01	+49.59	33.88	666.99
24	1.9736	100.65	43.12	57.53	2.03	+55.50	—	627.79

III. INSTITUTIONAL STRUCTURE OF SYSTEM OF FINANCING HOUSING

A. *Housing in Sweden: An Overview*

Multi-family housing is dominant in Sweden, both in terms of the existing stock and additions to the stock. However, one- and two-family housing is on the increase, accounting for almost 45 percent of all new units produced in 1972, up from 36 percent in 1967.

This pattern reflects substantial government involvement in the production of housing. Government units and semi-public housing corporations regularly account for over 40 percent of all housing units produced and, together with housing cooperatives, for virtually all multi-family units.

The discussion which follows concentrates on the financing of one- and two-family housing in which the private sector plays a larger role.

B. *Position of Mortgage Lenders*

The four major lenders for housing are the Urban Mortgage Bank, the credit companies, the savings banks, and the government through the National Housing Board. Table 2 summarizes their relative importance in terms of net changes in outstanding loans in recent years.

TABLE 2

RELATIVE IMPORTANCE OF MAJOR MORTGAGE LENDERS

Percentage of net change of total outstanding loans

Lender	1967	1968	1969	1970	1971	1972	1973
Stadshypotekskassan (the Urban Mortgage Bank)	24	28	35	32	38	23	23
Credit companies	29	26	36	27	29	29	32
Insurance companies	2	1	1	2	3	1	3
Commercial banks	14	18	-5	7	3	14	6
Other banks	22	19	16	9	6	13	16
The National Housing Board	9	8	17	23	21	20	20

Source: Annual Reports of Sveriges Riksbank and accounts from the National Housing Board.

Mortgage Institutions. Of the four groups, the bond-issuing institutions traditionally have been the largest providers of mortgage loans. These include the Urban Mortgage Bank and the credit companies. The oldest and largest of the mortgage institutions is the Urban Mortgage Bank. It is in principle an association owned by the borrowers themselves. A central institution raises funds while 21 local societies grant mortgage loans.

The credit companies are generally owned by commercial banks or savings banks, but are in other respects structurally similar to mortgage banks. Two credit companies dominate the field.

The purchasers of bonds issued by these institutions include commercial banks, savings banks, insurance companies, and most importantly, the National Pension Insurance Fund. The Fund handles the rapidly growing contributions paid by employers to finance the National Supplementary Pension. By 1972, it accounted for over one-third of the supply of funds to Sweden's organized capital markets. The fund held 18 billion Skr or 48 percent of its assets in housing bonds in 1970.

Savings banks are run on a non-profit basis and are supervised by the state authorities. They have their own private central bank, the Sparbankernas, Bank for Savings Banks, which provides advances to its members.

The government's role is described in the following section.

C. *Government Intervention in the Mortgage Market*

Direct and Indirect Government Financing of Housing

As noted above, the government provides supplementary loans on a large scale. At the same time, through the National Pension Insurance Fund, it provides indirect financing as well. In addition, it provides direct housing subsidies for various special groups.

Intervention in the Capital Market. In its general conduct of economic policy, the Swedish government has typically opted for deficit spending coupled with tight money. In a free market economy this would normally lead to high interest rates. The monetary authorities, however, have developed an elaborate system of credit allocation which channels funds into preferred uses. They utilize a number of tools to insure that housing, typically high on the list of social priorities, is provided with sufficient credit by the capital market:

(i) The "Bond Queue" — According to legislation passed in 1952, the Riksbank (Central Bank) must approve the timing, interest rate and repayment schedule of all prospective bond issues. Mortgage banks, however, are granted access to the bond market without having to gain permission from the Riksbank and are thus in a favored position; but the Riksbank still controls the terms of issue.

(ii) Credit "Agreements" and Credit Ceiling — The Riksbank exercises moral suasion to insure that commercial banks provide sufficient construction credit for the annual residential building target established by the government. Although nominally "voluntary agreements," the banks know that the Riksbank can make them legally binding if cooperation is not forthcoming.

Occasionally, a formal ceiling on bank credit is established, with housebuilding loans exempted. In August 1969, commercial banks were instructed to reduce outstanding credit (other than home building loans) to the January 1969 level. Again in April 1970, with the Swedish economy under strain, a ceiling of 106 percent of the December 1969 level was imposed.

(iii) Liquidity Ratio — To help insure that purchasers are found for mortgage bank bonds, the Riksbank allows the bonds to qualify as liquid assets in satisfaction of banks' liquidity ratio requirement. Currently, the largest commercial banks are obliged to maintain a liquidity ratio of 30 percent; for savings banks, the figure is 20 percent. After government bonds, mortgage bonds are their most important liquid asset.

(iv) Investment Ratios — For the insurance companies and the National Pension Insurance Fund, investment guidelines are applied, based on agreements between the institutions and the Riksbank. The insurance companies must invest two-thirds of their net increase of funds in priority assets, i.e., government securities, *housing bonds* and *mortgage loans* for dwellings and other objects receiving government loans. Similar rules apply to the Fund.

The net effect of these various actions has been to reduce interest rates for housing relative to the general level, as shown in the summary at the start of this chapter, and to increase the flow of funds to housing.

Tax Benefits to Mortgagors — Swedish tax laws are not as geared toward promoting home ownership as are American laws. Although interest on debt can be deducted from income, a certain proportion of the taxable value of property is reckoned as income. However, this taxable value is smaller than the tax shield of the debt, so there is thus some net tax advantage for the mortgaged home owner.

IV. EXPERIENCE

A. *The Government "Parity" Mortgage*

In practice, the payment stream mechanism introduced in 1968 did not function as anticipated. During the first several years of the new scheme, interest rates rose very rapidly, and construction costs rose at a relatively slow rate. As a result, there was an unexpected buildup of principal on outstanding parity loans. Since 1972, interest rates have continued to rise and construction costs have risen at a relatively high rate. If fully reflected in mortgage payments, this combination of rising costs of new construction and high interest rates would have led to rapid increases in carrying costs for new and existing housing through the parity mechanism. Because of this, the government did not increase the parity number in direct relation to construction costs, but allowed it to lag considerably which led to an even greater buildup of government mortgage financing.

As of this writing, the Swedish Government is planning to abandon the parity loan and replace it with a "low-start" interest subsidy program linked to family incomes. A low interest rate will be applied at the outset and annually increased up to the market rate. Under this policy, the government will subsidize the difference between the stated interest rate and the market rate.

B. *The Flow of Funds to Housing*

Even during periods of monetary restraint, the Swedish mortgage market has enjoyed a steady flow of capital. It has been the other sectors of the economy that have contracted (as opposed to the United States where business has generally captured the largest share and housing has been most severely hit in times of credit stringency).

This experience has been due in large part to the Riksbank's policies described above that actively channel funds into the housing sector via mortgage bank bonds. Also helpful has been the National Pension Insurance Fund with its sizable bond purchases.

The relatively smooth growth in the flow of credit to housing compared to the business sector was illustrated in the summary. In the years 1965 through 1969, for example, the proportion of Swedish GNP devoted to gross investment was 23-24 percent. The portion of this investment claimed by housing (including maintenance) remained remarkably stable between 26 percent and 29 percent. This was despite the fact that restrictive monetary measures were in effect in 1965, 1966 and 1968-9.

The mechanism through which short-term construction credits are transformed into long-term mortgages was strained in 1972-73. Partly because of increased state borrowing operations, housing finance institutions were unable to place their bonds in sufficient amounts to meet loan demand. As a result, many commercial bank construction credits could not be replaced by long-term financing. An agreement was finally reached with the government whereby commercial banks would cooperate by providing Kr 2.5 billion toward final housing financing. This took the form of increased housing bond purchases of Kr 1.5 billion plus the conversion of Kr 1 billion in outstanding construction credit to temporary loans with interest rates corresponding to those on new mortgages granted by mortgage banks.

C. *Level and Volatility of Housing Construction*

As can be expected from the set of measures described above, Sweden has succeeded in increasing the total flow of new housing as well as moderating swings in that flow. The total number of dwellings produced has risen for nine years with only one deviation from the upward trend. Further, while the average annual growth rate of capital outlays for housing has been almost as high as that for all gross domestic fixed capital formation (a compound rate of 5.6 percent versus 6.5 percent), fluctuations in the annual rate of change have been lower for housing (a standard deviation of 2.6 percent versus 3.8 percent).

V. SUMMARY AND CONCLUSIONS

The Swedish system demonstrates the wide range of instruments which can be brought to bear to stimulate and stabilize housing production. Monetary policy and financial market controls have assured a steady flow of funds to the housing sector. A mortgage package has been devised which provides a high financing ratio for new housing. Most interesting for this study, however, is the development of schemes to provide a rising time pattern of payments, the parity loan and the proposed low-start subsidy program. The fact that the parity loan scheme is being abandoned does not reflect a rejection of graduated payment mechanisms, rather a decision to provide even greater relief in early years.

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