The structure of credit to the non-government sector and the transmission mechanism of monetary policy: a cross-country comparison[1]

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I. INTRODUCTION

Credit has long been recognised as an important variable in the transmission mechanism of monetary policy. Admittedly, the attention given to it has varied markedly, not only over time and across countries, but also as between policy-makers and academic economists. It seems fair to say that central bankers, accustomed to tracing the effects of their actions through the financial system, have probably laid more emphasis on credit than academics, who are more used to thinking in terms of simple paradigms where credit may not even appear explicitly. Similarly, credit has traditionally been more prominent in policy discussions in several continental European countries than in some Anglo-Saxon ones, especially the United States, partly because of a less pervasive monetarist tradition and the active use of direct controls on lending in the implementation of policy. At the same time, these differences have tended to narrow in recent years: monetary authorities have abandoned direct controls; in the wake of the broader deregulation process, financial structures have moved closer together; under the impetus of new analytical tools, the economics profession has revalued the role of credit in the context of asymmetric information between providers and users of funds; and the balance-sheet adjustments following the pronounced asset price cycles of the 1980s and early 1990s in several countries, not least the United States, have led to concerns about a "credit crunch".

The aim of this paper is to provide a comparative overview of the structure of credit to the non-government sector in the fourteen countries covered by the project on the transmission mechanism. Several aspects of potential interest are considered: who provides the credit; who receives it; its currency composition; whether it takes the form of loans or securities; its maturity breakdown; the adjustability of the contractual interest rates charged; terms and conditions that may limit the suppliers' ability to control the amounts extended in the short term; and collateral. The main focus is on the amounts outstanding at the most recent comparable date available. Where possible, the situation in the early 1980s is also considered so as to identify any major changes over time.

An analysis of this kind can be of significant interest. On a priori grounds, there are good reasons for believing that the aforementioned aspects contribute to shaping the pattern of responses of spending decisions to monetary conditions. They affect the incidence of policy as between different sectors, such as households and businesses. They help to determine the relative significance of the channels of transmission, such as those operating through changes in the cash flow and balance-sheet positions of agents and those taking effect via changes in interest rates at the margin. They can affect the intensity of the response of private agents to a given policy impulse.

Indeed, several recent episodes have highlighted the relevance of these aspects of financial structure for the transmission of policy. The experience of those countries that have witnessed large credit/asset price cycles has hammered home the message that the conjunction of the overstretching of agents' balance sheets with falling asset prices and hence collateral values can blunt the effectiveness of cuts in policy rates. More generally, it has brought to light the significance of non-interest rate restrictions on the availability of credit. Similarly, the autumn 1992 ERM crisis

1 I would like to thank Philippe Hainaut and also Gerd Schnabel for invaluable statistical assistance.

uncovered hitherto largely unnoticed differences in the speed and intensity of the response of interest rates on new and, above all, existing debt contracts to short-run increases in policy rates geared to defending external parities. Together with differences in the health of the balance sheets of financial and non-financial agents, these implied a marked divergence in the ability of monetary authorities to sustain exchange rate commitments.

And yet, despite such compelling theoretical arguments and empirical evidence, we still know very little about international differences in financial structure impinging on the transmission mechanism. While a very useful step, the work done in the context of last year's BIS meeting of central bank economists could not cover all the relevant aspects systematically. Admittedly, the structure of credit to the non-government sector, while important, is but one element of the whole story. The findings of this study should therefore be considered in conjunction with the accompanying papers on the complete balance sheets of non-financial agents and on the responsiveness of lending rates to policy rates (Kneeshaw (1995) and Borio and Fritz (1995)).

This inquiry is largely based on the central banks' responses to the questionnaire on financial structure and on subsequent contacts. It also relies on BIS estimates based on other sources of information. Boxes in the text and Annex I contain information about the data used and the main assumptions underlying the figures in the tables. This should facilitate the assessment of the reliability of the estimates made as well as the identification of potential pitfalls and possible improvements.

The structure of the paper is straightforward. The first section provides an overview of the main arguments and findings. It is written so as to be relatively self-contained. In the second section the empirical findings relating to the various characteristics of credit are discussed sequentially in more detail. Each of them is preceded by conjectures about their potential relevance for the transmission mechanism.

II. OVERVIEW AND SUMMARY

Some of the main findings of this inquiry may be more easily summarised with the help of Table 1. The table highlights certain key characteristics of credit to the non-government sector. For any given characteristic, it assigns to each country a score ranging from 1 ("comparatively very low") to 4 ("comparatively very high");[2] details on the measures and percentage brackets are shown in Box 1. As a heuristic device, Anglo-Saxon countries are grouped together: one interesting question is the extent to which this popular classification can be useful in identifying similarities and differences across countries.

The distinction does seem to perform rather well in a number of respects. This is not so much true for the ratio of total credit to GDP:[3] Anglo-Saxon economies do all fall in the mid-range, but by implication other countries are either ranked above (notably Japan, Switzerland, Sweden and Germany) or below. It applies, however, to three ratios, all comparatively high in Anglo-Saxon countries, viz. the shares of credit to households, in the form of securities and granted by non-banks. The United Kingdom is the member of the group that fits least well, mainly because of the ambiguity in the definition of a "bank".[4] Similar definitional problems cloud the position of Sweden and Japan, otherwise more akin to that of countries in the non-Anglo-Saxon group.

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2 The terms "comparatively high/low" should be interpreted loosely. The ranges were not chosen so as to necessarily split the set of countries in the sample into two groupings of equal size.

3 Total credit is defined to exclude any direct credit from non-residents (unless in the form of securities) as well as trade credit and direct lending from the government sector.

4 It would have been true also for the share of securities in total credit (score = 2) had it not been for the very large recent upward revision. See below.

As regards changes over time, a preliminary inspection hardly reveals a tendency towards convergence with respect to the aforementioned characteristics. The ratio of total credit to GDP has tended to grow comparatively fast in both Anglo-Saxon and other high-ratio countries. The polarisation of the share of credit going to the household sector has, if anything, increased. The share of securities in total credit has tended to rise in Anglo-Saxon countries;[5] with the exception of Japan, France and Germany, little growth can be detected elsewhere. That of "banks" has either remained broadly stable or fallen in the Anglo-Saxon group, and has risen or changed little in a majority of other countries; a sharp increase, though, can be observed in Australia, partly as a result of changes in the legal status of certain institutions.

The findings concerning convergence, in particular, should be treated with caution. The use of estimates at only two points in time may be misleading, not least because of the different cyclical positions of the economies. Similarly, comparing stock figures at ten-year intervals tends to understate the impact of more recent changes, which would be reflected primarily in flows. Nevertheless, the findings do suggest that convergence has primarily occurred in other dimensions. One example is the development of commercial paper markets, generally of older vintage in Anglo-Saxon countries[6] and opened mainly in the second half of the 1980s elsewhere. Not only have they come to represent in several cases a considerable proportion of total securities outstanding and a significant factor contributing to competitive pressures in the banking sector; their structure and organisation, while retaining many country-specific features, have come to resemble more closely those of seasoned markets. More generally and importantly, the main aspect in which financial systems have converged is the relaxation of direct controls and constraints on the balance sheets of financial institutions. This dimension, of great significance for the transmission of monetary policy, cannot be captured by the above statistics.

In fact, from the perspective of the transmission mechanism, most of the above findings, taken in isolation, are of only moderate significance. The comparatively high share of credit to households in Anglo-Saxon and a few other countries suggests that the analysis of the impact of monetary policy should pay particular attention to this sector. At least for the Anglo-Saxon countries, this conclusion is reinforced by considering household sector debt in relation to income and assets (Kneeshaw (1995)). A high share of disintermediated finance indicates that the relative characteristics of the supply of credit are likely to play a significant role. Although precise generalisations are difficult, on balance in securities markets interest rates typically adjust faster and investors are less willing to temporarily insulate borrowers from adverse changes in economic conditions.

Of more immediate interest is the maturity breakdown and, complementary to it, the degree of adjustability of interest rates on debt contracts. For present purposes, "variable" or "adjustable" rate debt has been defined to comprise debt on which interest rates are reviewable within one year (including, therefore, all short-term credit) *and* move primarily in relation to short-term rates. The second criterion is important because in a number of countries rates may be adjustable at any time or at short intervals but, mainly because of the sources of financing of institutions, they tend to behave more like long-term rates. This is the case, for example, in Switzerland, Spain, Japan and, to a lesser extent, Germany, especially in the mortgage market. On a priori grounds, one would expect that, the larger the share of variable rate financing, the stronger will be the cash-flow and income effects associated with monetary impulses. Moreover, as highlighted by the ERM crisis of 1992, the widespread use of variable rate financing can complicate the pursuit of exchange rate targets in the short run: it can speed up and amplify the transmission of higher short-term rates geared to defending the external value of the currency, a rather uncomfortable situation, especially in the presence of weaknesses in the balance sheets of both non-financial and financial sectors.

The available estimates are still rather tentative, at least with regard to adjustable rate financing. They suggest that the basic criterion chosen for classifying countries performs rather well

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5 The short sample period makes it difficult to compare Australia, where it has fallen, with the rest.

6 The United Kingdom is the exception; the market opened there in 1987.

Table 1

Summary of findings[1]

(scores on cardinal scale)

	AU	CA	UK	US	AT	BE	FR	DE	IT	JP	NL	ES	SE	CH
Total credit	2	2	3	3	1	1	1	3	1	4	3	1	4	4
Credit to households[2]	3	4	4	4	2	3	2	2	1	1	3	2	2	3
Securitised credit	3	4	4	4	1	2	3	2	1	2	1	2	1	1
Non-bank credit	3	4	4/2[3]	4	1	1	3/2[4]	1	1	4	2	1	4	2
OFI loans	4	4	4/1[3]	4	1	1	3/1[4]	1	1	4	3	1	4	2
Short-term credit	4	1	3	1	2	2	1	1	4	3	1	4	2	2
Adjustable rate credit[5].....	4	3	4	1	1	2	2	1	4	1	1	2	1	1
households	4	3	4	2	..	1	1	2	2-3	1	1	..[6]	..	2
businesses	2	4	3	1	..	4	4	2	4	2	2	..[6]	..	1
Real estate collateral[7]	2	4	4	4	2	2	3	2	2	..	2	2	4	4
Credit lines[7]	2	2	1	2	4	1	1	1-2	3	1	2	2	..	2
Foreign currency credit[7]	1-2	3	1-2	..	1	2	1	1	4	2	1	1	3	1

[1] Scores on a cardinal scale ranging from 1 ("comparatively very low") to 4 ("comparatively very high"). The key shares together with the corresponding ranges are shown in Box 1. [2] Narrowly defined; where not available, based on likely size of the unincorporated sector. [3] Excluding/including building societies from/in the definition of banks. [4] Excluding/including specialised financial institutions from/in the definition of banks. [5] Related to short-term rates. [6] Probably similar to France and Belgium. [7] Where no precise figures are available, the classification is only approximate.

Box 1: Background information to Table 1*		
Total credit:	measure: ranges:	percentage of GDP. ≤ 90; 91-110; 111-130; > 130.
Credit to households:	measure: ranges:	share of credit to households (narrowly defined) in total credit. ≤ 25; 26-40; 41-50; > 50.
Securitised credit:	measure: ranges:	share of securities in total credit. ≤ 5; 6-10; 11-15; > 15.
Non-bank credit:	measure: ranges:	share of OFI loans plus securities in total credit. ≤ 20; 21-34; 35-49; > 49.
OFI loans:	measure: ranges:	share of OFI loans in total loans. ≤ 15; 16-25; 26-35; > 35.
Short-term credit:	measure: ranges:	share of short-term credit in total credit. ≤ 20; 21-29; 30-39; > 39.
Adjustable rate credit:	measure: ranges:	share of adjustable rate credit related to short-term rates (up to and including one-year maturity) in total credit. ≤ 40; 41-50; 51-60; > 60.
Households:	measure: ranges:	share of that type of credit in total credit to households. ≤ 20; 21-40; 41-60; > 60.
Businesses:	measure: ranges:	share of that type of credit in total credit to businesses. ≤ 35; 36-45; 46-55; > 55.
Real estate collateral:	measure: ranges:	share of loans backed by real estate collateral in total lending. ≤ 30; 31-40; 41-50; > 50.
Credit lines:	measure: ranges:	share of credit line financing in total lending. ≤ 10; 11-19; 20-29; > 29.
Foreign currency credit:	measure: ranges:	share of foreign currency financing in total credit. ≤ 6; 7-9; 10-12; > 12.

* The ranges have partly been chosen with a view to avoiding bunching around thresholds.

in this case too, although subject to important qualifications. Anglo-Saxon countries appear on average to exhibit comparatively high shares of short-term and variable rate credit. This is especially true for households. Indeed, in sharp contrast to most other countries, in all of them the share of household credit at variable rates appears to be at least roughly as high as that of the business sector, and considerably higher in the United Kingdom and Canada. The specificities of housing finance and the comparatively high share of fixed rate long-term securities are primarily responsible for this result.

A major exception to the aforementioned pattern is the United States. In terms of the share of both short-term and adjustable rate financing the country ranks very low, its characteristics apparently being considerably closer to those of, say, Germany and Switzerland. One important qualification is the ease with which agents can switch between variable and fixed rate debt. In contrast to most other countries, the *marginal* cost of switching is very low. Although agents may and often do pay up front for this flexibility, no pecuniary penalties attach to the early repayment of much of the debt at the time of the switch. This is true at least in the mortgage sector and for a sizable fraction of corporate bond financing, which is usually in the form of callable securities. The evidence indicates that early repayment is indeed quite common. A second qualification is that the use of off-balance-sheet instruments, notably swaps, for the management of interest rate risk exposures appears to be considerably more widespread than elsewhere. The quantitative significance of this factor, however, is much harder to assess.

Among non-Anglo-Saxon countries, one significant exception to the general pattern is Italy: its financial system exhibits the highest share of variable rate credit, possibly as high as around three-quarters. Admittedly, the definition of short-term credit for Italy extends to eighteen months. But the main reasons for this finding appear to be the exceptionally high share of current account, reviewable rate credit from banks and the size of the adjustable rate sector in the mortgage market.

Information on changes in the share of variable rate financing over time is extremely limited. Countries were able to provide estimates only for the present situation, and even then only very rough ones. Better data are available, however, on the maturity breakdown, a key element for calculating total adjustable rate debt. The share of short-term credit appears to have remained remarkably stable compared with the early 1980s, generally falling only slightly, by around 2-5 percentage points. The only two countries where a marked fall has been observed are Sweden and the United Kingdom; even so, this fall may be overstated by the assumptions underlying the breakdown. Far less is known about the evolution of the share of medium and long-term debt at adjustable rates. There are some indications that it has risen in certain segments, notably in the mortgage sector in those countries where variable rate lending was introduced only during the 1980s, typically as a result of deregulation. Sweden and Belgium are two such examples. By contrast, it appears to have fallen in the same sector in other countries, especially the United Kingdom and the United States. These few pointers, taken in isolation, would suggest a certain degree of convergence. They are not, however, sufficient to form an overall view of developments.

Interest rates, the "price" of credit, are but one, albeit the most important, factor influencing the response of agents to changing supply and demand conditions. A second dimension concerns those elements that affect, broadly speaking, the "availability" of credit. Collateral is one of them. A second is rationing, i.e. the refusal to grant as much credit as is demanded on the observed interest and non-interest terms.

Changes in the value of collateral can affect the availability of credit for two reasons. Ex ante, they change the expected pay-off to lenders in the event that the borrower defaults. Ex post, they affect lenders' actual loss experience, influencing the terms on which they can in turn obtain funds and their perceptions of risk. The positive relationship between the value of collateral and credit availability can generate a self-reinforcing process, in both the upward and downward direction. Clear signs of this process were evident in several countries during the 1980s and early 1990s, especially in some Anglo-Saxon and Nordic countries and also in Japan: asset prices, notably real estate prices, went through a boom-bust cycle; easy access to credit gave way to concerns about a potential credit crunch. Ample credit availability was due in no small measure to structural developments, namely

deregulation and heightening competitive pressures. But at least in those countries experiencing the largest asset price movements, it was also connected in part with comparatively easy monetary conditions. In general, the collateral channel would tend to reinforce monetary impulses: a tightening/easing of policy would be associated with downward/upward pressure on the value of collateral. The quantitative significance of this channel increases with the sensitivity of collateral values to interest rates and with the use of collateral in debt contracts.

Information on collateral is very limited. Fortunately, some data are available for the real estate component, a key one in the present context. Barring definitional problems, the evidence suggests that even here the distinction between Anglo-Saxon and other countries performs rather well. More importantly, it points to a considerable overlap between the set of countries where the interaction between asset prices and credit has been most pronounced and those where the share of real estate collateralised loans is highest or has risen most sharply. Three out of the four Anglo-Saxon countries exhibit comparatively high shares of total loans backed by real estate collateral; Australia appears to be an exception, being broadly in line with the rest. Outside this group, the share is very high in Switzerland and Sweden. No precise figures are available for Japan, but there are indications that the country may rank relatively high. Data for the early 1980s suggest that these countries and Australia are also the ones that have experienced the largest increase in the share over time,[7] whereas it has mostly remained broadly stable or fallen elsewhere. On the whole, the evidence lends some support to the view that the interaction between credit availability and collateral may have had a significant role in the aforementioned developments during the recent business cycle.

Direct evidence on rationing is difficult to obtain. Regulation-induced rationing is not likely to play a significant role nowadays given the general relaxation of restrictions on credit institutions' balance sheets and interest rates. It is most likely to have survived in the housing sector in some countries; even so, the general expansion of an unconstrained finance segment limits further its macroeconomic relevance. On the other hand, rationing may also arise in the absence of regulation. Rather than attempting to identify where it applies, this survey has less ambitiously looked for indicators of its absence.

Credit extended under standing facilities, giving borrowers discretion over the timing of drawdowns, is one easily observable, albeit imperfect, example. This information is also one element that may help to explain differences in the timing of the response of credit to monetary policy impulses. Available evidence indicates that in this area the basic criterion for country classification appears to be of little use: it is not possible to detect systematic differences in the share of credit drawn under standing facilities in the two groups. The share is exceptionally high in Austria. It is also quite high in Italy, where as much as half of total lending by short-term credit banks falls within this category. Somewhat surprisingly, it appears to be quite low in the United Kingdom, once known as an "overdraft economy". The rapidly rising share of housing credits is part of the explanation. It has not as yet been possible to establish the extent to which issues of definition or coverage may also be responsible.

Explicit consideration of the currency composition of credit discloses an additional dimension of the transmission mechanism. Changes in domestic interest rates do not have a *direct* effect on the part of the indebtedness of residents denominated in foreign currency, which depends on foreign monetary conditions. On the other hand, the relevance of the exchange rate in the transmission mechanism is heightened, through its effect on the domestic currency value of outstanding debt. Proper assessment of the significance of this channel would call for a consideration of both assets and liabilities together with on and off-balance-sheet exposures. The data collected here look at only one, though important, side of the story but exclude credit received directly from non-residents unless it is in the form of securities (where available). Here again, the basic criterion for classifying countries is of little help. Foreign currency denominated credit is typically of the order of 5% or less of total credit in most countries. It is considerably higher only in Italy and, to a lesser extent, Sweden and Canada.

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7 The exception is Switzerland, where the share has remained broadly stable.

Turning next to more general conclusions, this inquiry has revealed a significant gap in existing information about the characteristics of debt contracts. Some of these characteristics, such as the degree of adjustability of interest rates, are probably at the heart of the transmission mechanism of monetary policy. No doubt some improvements in the estimates presented under the various headings can be made relatively easily; others will most likely remain beyond reach. This has two implications. For the narrow purposes of this study, it complicates an assessment of the margin of error surrounding the findings, especially as regards international comparisons. From a longer-term perspective, it raises the question of whether some effort on the part of central banks to upgrade information in this area may not be justified.

The study makes little attempt to *explain* the reasons for the specific configuration of debt contracts observed. An understanding of what lies behind them would clearly be of interest. It would cast light on the extent to which certain characteristics are likely to persist over time as well as on their probable future evolution. Above all, it would help to identify the extent to which certain features are, directly or indirectly, shaped by the course of monetary policy itself, most notably the average maturity and degree of interest rate variability of debt contracts. This may not matter so much in the short run. It is, however, of considerable relevance in the long run to the extent that the monetary authorities have some preference for one type of system over another.

III. CREDIT CHARACTERISTICS: WHAT THEY ARE AND WHY THEY MATTER

1. Total credit to the non-government sector

The basic credit aggregate examined in this study covers the credit obtained by domestic households and businesses from domestic financial institutions plus any securities outstanding (not held by those institutions). It thus generally excludes trade credit and loans from abroad and from the government.[8] For simplicity, it will be henceforth be referred to as "total credit to the non-government sector" or "total credit" for short.

The ratio of total credit to the non-government sector to GDP typically ranges from around 80% to 130% in the countries considered (Table 2). It is by far the highest in Japan, at around 200%, and the lowest in Italy, at less than 70%. The ratio is also comparatively high in Switzerland, Sweden and Germany; in Anglo-Saxon countries it is somewhat higher than in several continental European economies.

Generally speaking, the countries with relatively higher ratios and in the Anglo-Saxon group have experienced the faster increases during the past decade.[9,10] The United States does not seem to fit this pattern clearly; the size of the rise, however, is somewhat underestimated, as by end-1993 a considerable downward adjustment in indebtedness had already taken place.

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8 In some cases the aggregate may not fully meet these criteria. The discrepancies would in any case be small. For the treatment of public sector enterprises, see Table 3. The accompanying paper on balance sheets uses a more comprehensive definition of credit and debt.

9 Unfortunately, the figures for Australia cannot illustrate the increase as the earliest observation relates to 1988.

10 The large increase in Germany is partly due to reunification.

Table 2

Credit to the non-government sector[1]

(as a percentage of GDP)

	1993[2]	1983[3]		1993[2]	1983[3]
Australia	98	102	Japan	202	158
Austria	88	73	Netherlands	115	93
Belgium	86	77	Spain	79	80
Canada	108	87	Sweden	143	94
France	90	71	Switzerland[4]	179	139[5]
Germany	125	97	United Kingdom	117	58
Italy	64	57	United States	114	96

[1] Loans from banks and other financial institutions as well as securities outstanding; excluding trade credit. [2] Sweden and Switzerland: 1992. [3] Australia: 1988; Belgium and Sweden: 1982; Italy: 1989. [4] Pension fund and life assurance company loans partly estimated. [5] Excluding securities.

2. Breakdown by recipients: households and businesses

The breakdown of total credit into the amounts received by households and businesses may help to cast light on the relative incidence of monetary policy on the two sectors. Both the level and, above all, the structure of indebtedness of the two categories of borrower are generally quite different, not least in terms of contract characteristics such as maturity, adjustability of interest rates, marketability of the claims, collateral and control over the timing and size of disbursements.[11] Several factors underlie such differences: the use of the funds (primarily housing expenditure and consumer credit for households vs. short-term and long-term capital needs for businesses), the size of the borrowing units, the sources of repayment, the information available about reimbursement capabilities, the ease of access to alternative funding sources, the sophistication of cash-flow management and targeted government policy in the pursuit of economic and social objectives. The differences in contract terms can affect the responsiveness of spending decisions to changes in monetary conditions as well as the specific channels of transmission.[12] Housing expenditure, for instance, is typically a component of aggregate demand found to be comparatively sensitive to interest rate changes; mortgage debt accounts for the bulk of credit to the household sector in all countries.

A breakdown of credit between households and businesses is available for all countries. International comparisons, however, should take into account the lack of uniformity in the definition of the sectors. The main problem relates to the treatment of unincorporated businesses (Table 3). Owing to lack of information, in seven countries (Australia, Belgium, Japan, Spain, Sweden,[13] Switzerland and the United Kingdom) this sector is considered together with households; only in some of these cases are some very rough estimates as to its size possible.[14] For five other countries

11 What follows focuses exclusively on the characteristics of contract terms. Other factors are of course relevant to the assessment of the responsiveness of the two sectors to monetary policy impulses. Gearing ratios and the assets side of balance sheets are considered in Kneeshaw (1995).

12 A rapidly expanding literature on the relevance of liquidity constraints to expenditure and production decisions, for instance, is beginning to document these.

13 For Sweden, separate data appear to exist at least for loans granted.

14 Obtained residually by estimating credit to the household sector narrowly defined. The sector comprising households narrowly defined and unincorporated businesses is sometimes referred to as the "personal" sector.

Table 3

Treatment of unincorporated and public sector enterprises

	Unincorporated businesses			Public sector enterprises
	Sectorisation[1]	Official statistics[2]	Estimate	Inclusion
Australia	H			*
Austria	B	5		*
Belgium	H			*
Canada	B[3]		*	*
France	H	*		*
Germany	H[4]	5	*	*
Italy	H	*		*
Japan	H		*	
Netherlands	B			*
Spain	H		*	*
Sweden	H	5		*
Switzerland	B/H			*
United Kingdom	H		*	
United States	B	*		

H = households; B = business; * = yes.

[1] Standard official sectorisation. In some countries where the sector is mainly included under households, units of sufficient size are included in the business sector. [2] Indicates the availability of official estimates at least for the amount of credit received by the sector; the precise statistical definition of the sector appears to differ across countries. [3] Answers to the questionnaire; included with households in the flow of funds. [4] Answers to the questionnaire. [5] Banking statistics only.

(Canada, France, Italy, the United States and, recently, Germany),[15] separate estimates for credit to the unincorporated business sector are available, even though precise definitions or criteria for classification appear to differ[16] and there may be comparatively limited data about credit terms. The narrow definition of the household sector is used in Austria and the Netherlands. In Switzerland small unincorporated units are likely to be included at least in part in the household sector.[17]

The unincorporated sector will generally include a wide spectrum of borrowers, ranging from self-employed individuals to possibly comparatively sizable business units.[18] Given the heterogeneity of the grouping, the terms on which credit is obtained will differ considerably, in some cases being relatively close to households regarded as consumer units, in others to those of larger production units. In order to facilitate comparisons, in the following paragraphs separate figures for alternative definitions of the household and business sectors will be provided whenever possible.

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15 Strictly speaking, in Germany this is so only for the banking statistics; their coverage, however, is very broad.

16 For example, at least in the case of Italy sole proprietorships and partnerships without an independent identity would be grouped with the business sector if larger than a threshold size (twenty employees). This may be typical of several continental European countries. The US classification does not appear to make any such distinction, an approach that seems common in Anglo-Saxon countries. The reason may be that comparatively large unincorporated businesses are rare.

17 The criterion is whether the personal and business accounts are kept separate or not.

18 Moreover, the size and composition of this sector will vary significantly across countries depending on the structure of production, legal, regulatory and tax factors impinging on the decision to incorporate, the precise statistical criteria adopted and the accuracy of reporting systems.

The available information indicates that, narrowly defined ("consumers"), the household sector accounts for less than half of total credit outstanding in almost all countries (Table 4). The main exceptions are the United Kingdom (well over 50%), the United States and Canada (not much over 50%).[19] At the other end of the spectrum, the share of credit to the household sector is lowest in Italy and Japan, the two countries with the highest saving ratios, in the region of 15%. On average, the share appears to be higher in Anglo-Saxon countries than elsewhere.

The amount of credit absorbed by the unincorporated sector varies considerably across countries. It ranges from less than 10% in the United Kingdom, France and, probably, Sweden to almost 20% in the United States.

A second source of lack of uniformity in the breakdown of credit between households and businesses arises from the treatment of public sector enterprises. The available information appears to indicate that they are included in the business sector in most countries (Table 3); the United Kingdom and Japan are two notable exceptions. Given the share of credit absorbed by these companies, the main impact is likely to be on the relative size of the stock of debt securities outstanding (see below).

As regards movements over time in the share of the various sectors, credit to households appears to have grown faster than that to the business sector in a majority of countries. Its share has tended to rise in those belonging to the Anglo-Saxon group; no clear pattern emerges elsewhere. The increase has been especially pronounced in Australia (broad definition).[20] By contrast, marked declines have taken place only in Germany and Sweden. A sharp fall in the share of credit to the unincorporated sector is apparent in the United States.

3. Breakdown by suppliers: credit intermediaries versus markets

A stylised distinction is often made between credit provided through credit intermediaries, such as banks and other financial institutions, and through the money and capital markets. This distinction would be of no relevance to the transmission mechanism if borrowers were indifferent between the two sources of funds. Several factors, however, limit the substitutability between them. Some of these are of a legal and regulatory nature. For example, at least until recently, several countries have tended to impose restrictions on the development of firms' access to money and capital market financing. One reason is that it was felt that their expansion could either undermine the "effectiveness" of monetary policy, especially if exercised through direct controls on credit intermediaries, or interfere with credit allocation objectives.[21] Other factors are of a more fundamental character. In particular, the greater the need for ex ante screening and ex post monitoring on the part of the lender because of the nature of the borrower or the use of the funds, the greater is the likelihood that the finance will be provided by a credit intermediary and take the form of a non-marketable loan rather than tradable security. The main reason is that it is difficult credibly to transfer the information on which the transaction is based to other potential lenders, which limits the marketability and liquidity of the claim.

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19 The very high Swiss figure may in part reflect the extensive use of housing credit at relatively attractive amortisation conditions: capital is never repaid while the borrower retains the benefits of the capital gain. Nevertheless, in relation to household income, indebtedness remains suspiciously high. See Kneeshaw (1995).

20 It also appears to have been very large in Spain (narrow definition), but the underlying estimates are very rough.

21 The former argument applies mainly to the development of money markets such as the commercial paper market, and the latter to that of longer-term capital markets.

Table 4

Breakdown by recipients: households and businesses

	AU	AT	BE	CA	FR	DE	IT	JP	NL	ES	SE	CH	UK	US
	1993													
Households[1]	53	32	48	52	38	53	29	28	43	41	37	51[2]	59	53
Consumers	..	32	..	52	29	38	16	16[2]	43	31[2]	..	51[2]	54[2]	53
Unincorporated	..	–	..	–	9	15[2]	13	12[2]	–	10[2]	..[3]	..	5[2]	–
Businesses	47	68	52	48	62	47	71	72	57	59	63	49[2]	41	47
Unincorporated	–	..	–	10	–	–	–	–	..	–	–	..	–	18
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
	1983													
Households	42	27	40	44	41	60	30	23	44	32	49	56[2]	65	48
Consumers	..	27	..	44	..	47	..	13	44	15[2]	..	56[2]	54[2]	48
Unincorporated	..	–	..	–	..	13[2]	..	10	–	17[2]	..	–	11[2]	–
Businesses	58	73	60	56	59	40	70	77	56	68	51	44[2]	35	52
Unincorporated	–	..	–	13	–	–	–	–	..	–	–	..	–	26
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

– = not applicable (given definition used in reply to the questionnaire); .. = not available.

[1] Generally including non-profit-making institutions. [2] Estimate. [3] Some 7% of bank lending to households and businesses.

Given these possible limitations on substitutability, regardless of their origin, supply conditions impinging on the provision of the two basic forms of finance cannot be disregarded. And to the extent that monetary policy instruments have a differential impact on the two, they will also be of relevance to the transmission mechanism. For example, ceteris paribus, the poor state of banks' balance sheets in the United States is widely believed to have blunted the expansionary impact of cuts in policy rates; but the problem would presumably have been more severe in the absence of well-developed securities markets, through which other, less constrained lenders could directly meet the higher demand for funds.

It is not straightforward to make propositions of general validity regarding the relationship between the degree of development of disintermediated finance across countries and the likely strength of the response of the economy to monetary policy impulses. Much will depend on the factors explaining the comparative size of the markets in specific cases. Nevertheless, on balance, compared with loan ("customer") markets, in securities ("auction") markets interest rates typically adjust faster[22] and investors are less willing to temporarily insulate borrowers from adverse changes in economic conditions. This is especially so when loan markets are characterised by close relationships between lenders and borrowers.

Confirming widely held views, the available data indicate that securities generally make up a larger share of overall credit in Anglo-Saxon countries than elsewhere (Table 5). The quantitative significance of securities is highest in the United States and, surprisingly, the United Kingdom,[23] where they account for close to one-fifth of overall credit.[24] It is lowest in Austria, where less than 2% of overall credit takes this form. In addition, the above statistics probably underestimate the gap between the two groups of countries, since in several non-Anglo-Saxon economies the main issuers tend to be public sector enterprises, whose behaviour is likely to be less responsive to economic incentives and constraints.

As regards changes over time, the picture is mixed. In some countries there has been a considerable rise in the share of securities, most notably in the United Kingdom, Japan, France, Germany and the United States. Elsewhere, the share has mostly remained broadly unchanged or has even declined. At this level of aggregation at least, the figures suggest that often-heard claims of a pronounced *generalised* trend towards disintermediation of credit institutions do not appear to be justified.[25] They also fail to identify any marked tendency towards convergence between Anglo-Saxon and other countries.

Certain caveats should be borne in mind when interpreting the above data. There is a grey area surrounding the stylised distinction between intermediated credit/loans, on the one hand, and market financing/securities, on the other. This in some instances affects the comparability of national statistics and may have a bearing on the transmission mechanism more generally. Two significant examples relate, respectively, to the long and short-term ends of the maturity spectrum.

The markets for *private placements of long-term securities* represent a half-way house between those for public offerings and for loans: in general, there is less publicly available information about would-be borrowers than in public markets, independent screening is more important and the securities are far less liquid. Whether the markets behave more like those for loans or securities is an empirical question; the answer will depend, inter alia, on the legal and regulatory environment supporting the development of the markets, the types of investor involved and broader institutional factors. In national statistics, in fact, these markets are not treated uniformly. In the

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22 On these issues, see Borio and Fritz (1995).

23 In the United Kingdom, this results from a recent sizable upward revision in total securities, accompanied by a more moderate downward revision in bank lending. Before the revision, the share of securities was less than 10%.

24 Securitised mortgages are not included in the above figures.

25 The picture may of course be somewhat different if specific sub-sectors, maturity brackets or periods are considered.

Table 5

Breakdown by instruments: loans and securities[1]

(in percentages of total)

	AU	AT	BE	CA	FR	DE	IT	JP	NL	ES	SE	CH	UK	US
	1993[2]													
Loans	88	98	93	83	85	94	95	90	97	91	96	95	81	80
Securities.....	12[3]	2	7	17	15	6	5	10	3	9	4	5	19	20
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
	1983[4]													
Loans	84	97	88	83	92	98	93	96	96	90	95	..	97	83
Securities.....	16	3	12	17	8	2	7	4	4	10	5	..	3	17
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**..**	**100**	**100**

[1] Excluding trade credit. [2] Sweden and Switzerland: 1992. [3] Including short-term securities (bank bills) held by OFIs (17%); including also those held by banks (21%). [4] Italy: 1989; Australia: 1988; Belgium and Sweden: 1982.

Table 6

Backup liquidity and credit support for commercial paper

	AU	BE	CA	FR	DE	JP	NL	ES	SE	UK	US	FI	NO	ECP
Formal liquidity backup	*	*	*	*	*	*	*		*	*	*		*	*
% issues/outstanding	high	very small	high	some	small	small	very small		small	some	very high		small	sizeable
% coverage (typical)	high	low	high	variable	variable	low	low		low	variable	very high		high	variable
Formal credit enhancement	*	*	*	*	*		*		*	*	*	*	*[1]	*
Parent guarantee[2]	*	*	*	*	*		*		*	*	*	*	*[3]	*
Letter of credit/bank guarantee	*										*[4]	*	1	*
% issues/outstanding.....	sizeable	sizeable	some	small	some		some		some	very small	15[5]	very small	some	sizeable

FI = Finland; NO = Norway; ECP = Euro-commercial paper market.

[1] Financial institutions are not allowed to issue backup guarantees for certificates. [2] Including government guarantees for public sector issuers, where applicable. [3] Issues by certain specialised long-term credit institutions ("State banks") are government-guaranteed. [4] Including indemnity bonds issued by insurance companies. At mid-1992 some 6% of commercial paper outstanding was 100% backed by third-party credit enhancements. [5] As a percentage of commercial paper outstanding, mid-1990.

Source: Alworth and Borio (1993).

United States, and probably most other countries, the private placement market is included under securities; in the United States it accounts for around one-fifth of the amounts outstanding. In certain continental European countries with a universal banking tradition, where these markets are quite large and may dwarf public offerings, such as Germany, Switzerland, the Netherlands and Austria, they are classified as loans. In contrast to the United States, in these countries banks are also active investors, which partly explains the choice of classification.

Several markets for *short-term securities* rely at least in part for their existence on the ability of traditional credit intermediaries to extend credit. This is even true of commercial paper markets, which in most countries account for the bulk of short-term securities issued by non-financial companies (Table 6). The support typically consists of bank backup liquidity lines but may also include bank credit guarantees, both more or less formal depending on country-specific factors.[26] Under these conditions, whatever affects the supply of such backups will also have an impact on the terms on which borrowers can obtain funds through short-term securities; a certain degree of complementarity between the two sources of funds is introduced. More generally, just as with long-term debt, the line between securities and loans may be a fine one indeed and create some ambiguities in the classification. For example, in Canada bankers' acceptances, because of their specific characteristics, are essentially indistinguishable from commercial paper backed by bank standby letters of credit but are grouped with loans if held in the portfolio of the bank issuing the guarantee. In Australia an essentially similar instrument, which accounts for the bulk of short-term securities, is also classified as a loan whenever it is held in the portfolio of a financial institution on the reasoning that it performs an analogous function.

4. Breakdown by suppliers: banks versus other intermediaries

As regards the implications of the structure of credit for the transmission mechanism, it is not clear whether the distinction between banks and other financial intermediaries is of much interest. Conceptually, the specificity of "banks" has traditionally been regarded as deriving mainly from the liabilities side of the balance sheet, i.e. their ability to issue means of payment or short-term deposits. By contrast, the characteristics of credit contracts that may be relevant are captured only to a limited and varying extent by the dividing line between banks and other institutions. This is true, for example, for maturity, the adjustability of interest rates, the degree of reliance on private information and the illiquidity of the instruments. Nor can the incidence of direct controls be regarded any longer as a significant discriminating factor. And with the broader process of financial liberalisation, legal and regulatory differences between several types of loan-granting institution have been eroded, although long-standing distinctions are still easily traceable in the composition of their balance sheets, especially for those involved in the housing credit market. In fact, probably the main reason why the bank/non-bank division is of interest from the present perspective is essentially practical: the authorities often have more detailed information about whatever institutions they define as "banks", not least because of the special attention paid to them is the context of prudential regulation and supervision.

These ambiguities are clearly reflected in Table 7, which reports the breakdown of total loans between banks and other institutions found in the replies to the questionnaire. In countries with a long-standing universal banking tradition (Germany, Switzerland, Austria and the Netherlands), or in those that have recently enacted the EC legislation setting out the contours of the single market in financial services, "banks" account for the bulk of lending; the main institutions excluded are either

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26 Formal backup is especially significant in the United States and the Euro-markets; elsewhere, particularly in Europe, less formal arrangements are more common but have been growing as markets become better established and ratings spread. The strength of the support, however, does not necessarily depend on how formal it is: informal mechanisms may in fact provide substantial protection in the presence of strong relationships between banks and borrowers.

Table 7

Loans from banks and other financial intermediaries

	Panel A - as % of total loans				Panel B - as % of total credit			
	1993[1]		1983[2]		1993[1]		1983[2]	
	Banks	OFIs	Banks	OFIs	Banks	OFIs	Banks	OFIs
AU	65	35	48	52	57	31	41	43
AT	99	1	97	3	97	1	94	3
BE	90	10	84	16	84	10	74	14
CA	60	40	58	42	50	33	49	35
FR	74/85[3]	26/15[3]	70/88[3]	30/12[3]	63/72[3]	22/13[3]	64/80[3]	27/11[3]
DE	89	11	84	16	84	10	82	16
IT	89	11	89	11	85	10	83	10
JP	54	46	45	55	49	42	44	53
NL	73	27	66	34	71	26	64	32
ES	91	9	98	2	82	8	88	2
SE	39	61	57	43	37	58	54	41
CH	81	19	81	19	77	18	81	19
UK	56/92[4]	44/8[4]	56/95[4]	44/5[4]	45/75[4]	36/6[4]	54/93[4]	43/5[4]
US	50	50	66	34	40	40	54	28

[1] Sweden and Switzerland: 1992. [2] Australia: 1988; Belgium and Sweden: 1982; Italy: 1989. [3] If specialised credit institutions are classified as banks. [4] If building societies are classified as banks.

Table 8

Sectorisation of loan-granting financial institutions

	Commercial banks	Savings banks/ building societies	Credit coop./ unions	Specialised medium and long-term lenders[1]	Other credit institutions[2]	Life assurance/ pension funds
AU	B	O	O	–	O	O
AT	B	B	B	B	B	O
BE	B	B	B	B	B	O
CA	B	–	O[3]	O	O	O
FR	B	B	B	O	O	O
DE	B	B/O[4]	B	B	B	O
IT	B	B	B	B[5]	O	O
JP[6]	B[7]	–	O	B[8]/O	O	O
NL	B	B	B	–	B	O
ES	B	B	B	B	O	O
SE	B	B	B	O	O	O
CH	B	B	B	B	..	O
UK	B	O	–	–	O	O
US	B	B	B	–	O	O

B = banks; O = other financial intermediaries.

[1] Mainly including institutions that have historically belonged to the public sector or with special status. [2] Including private specialised lenders (e.g. mortgage and finance companies) and, where appropriate, securities firms. [3] Including Caisses populaires. [4] Bausparkassen. [5] Special credit institutions ("long-term banks"). [6] The definitions change considerably from table to table. [7] Including trust banks. [8] Long-term credit banks.

certain specialised lenders (e.g. "Bausparkassen" in Germany), life assurance companies and pension funds. These are particularly important in Switzerland, where they account for one-fifth of total credit. In the Anglo-Saxon countries, Japan and Sweden the banks' share is considerably smaller, but even then there is a degree of arbitrariness in the classification, as indicated by the list of institutions included (Table 8). In the case of the United Kingdom, for example, the share would be not much different from that in continental European countries if building societies were classified as "banks".

5. Breakdown by maturity: short-term versus medium and long-term

The term to maturity is one of the key characteristics of a debt contract. Ceteris paribus, the shorter the maturity of an instrument, the greater is the scope for lenders and borrowers to alter the terms on which they transact funds, ranging from pricing to availability: at maturity new contracts must be entered into. As a result, ceteris paribus, the shorter the maturity of the contract, the higher is the speed with which the terms on which credit is granted can respond to monetary policy impulses. This is especially significant when policy changes have not been anticipated and hence have not been taken into account when entering into the transactions.

Two important qualifications, however, are in order. First, strictly speaking the term to maturity determines the *maximum* interval between the setting of contract terms: contracts may be renegotiated and often contain clauses that allow for the revision of certain terms either at the discretion of one of the parties or according to predefined rules. Early repayment and interest rate adjustment clauses are obvious examples. A correct picture of the room for response to monetary policy must also take such aspects into account (see below). Second, at any given point in time it is the *residual* rather than the *original* maturity of debt contracts that best captures the longest re-setting interval. Except for ad hoc surveys, the available information relates to original maturity.

Table 9 shows the breakdown of credit into short-term and medium and long-term. In almost all cases short-term is defined as credit with an original maturity of up to and including one year; the exceptions are Italy (eighteen months) and the Netherlands (two years). With the partial exception of Canada, it also includes various forms of revolving credit, such as advances on credit accounts and overdraft facilities. The breakdown is generally more accurate for continental European countries;[27] estimates play a greater role elsewhere, especially for non-bank financial intermediaries.

The figures suggest that medium and long-term credit accounts for well over half of total credit almost everywhere. The only exception is Italy, where it is about half. The share is especially high in most of the countries with a long-standing universal banking tradition (typically around 80% or higher), which are also those that have enjoyed historically lower inflation rates. Elsewhere, it is also relatively high in France, Canada and the United States, although in Canada the medium-term component appears to be comparatively large, partly owing to the treatment of revolving credits. In no small measure the relatively high US figure reflects the breadth and depth of the corporate bond market.

Medium and long-term securities in fact account for the bulk of debt securities in virtually all countries. The only exceptions are Australia (if bank bills are included) and Spain, where the commercial paper market is quite developed (Table 10).

Household debt is predominantly medium and long-term everywhere: mortgage debt is by far the largest component and consumer debt, with the exception of credit card and other personal credit line borrowing, is typically medium-term (Table 11). The maturity of business credit is comparatively shorter. Italy again stands out as the country with the highest share of short-term credit for both households and businesses. The United Kingdom follows close behind.

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27 Except for Sweden and Switzerland.

Table 9

Breakdown by maturity: short-term versus medium and long-term[1]

(as a percentage of total credit)

	1993[2]			1983[3]		
	Short-term	**Medium and long-term**	**Total**	**Short-term**	**Medium and long-term**	**Total**
Australia[4]	40	60	100	38	62	100
Austria	27	73	100	25	75	100
Belgium	23	77	100	..	..	..
Canada	19	81	100	24	76	100
France	17	83	100	20	80	100
Germany	16	84	100	19	81	100
Italy	51	49	100	53	47	100
Japan	30	70	100	39	61	100
Netherlands	17	83	100	21	79	100
Spain[5]	40	60	100	..	..	..
Sweden	29	71	100	38	62	100
Switzerland[4]	22	78	100	24	76	100
United Kingdom	31	69	100	46	54	100
United States	15	85	100	18	82	100

[1] Short-term: up to one year (Italy: up to 18 months; Netherlands: up to two years). [2] Sweden and Switzerland: 1992. [3] Australia: 1988; Sweden: 1982; Italy: 1989. [4] Excluding certain non-bank financial institutions (Australia: 11% of total credit in 1993). [5] Excluding foreign currency loans.

Since the early 1980s the share of medium and long-term debt has generally either remained broadly stable or risen slightly (Table 9). The increase appears to have been pronounced only in the United Kingdom and Sweden. In both cases, however, shortcomings in the assumptions underlying the estimates may be partly responsible. The broad, albeit mild, trend is probably associated with lower inflation and, in several cases, higher shares for real estate and household credit.

Available information on early repayment clauses and conditions is limited (Box 2). On the whole, however, it suggests that the above picture needs to be modified only slightly. In most countries advance repayment of fixed-term loans is possible but not common. Although this may partly result from the range of interest rate movements observed and repricing clauses (see below), it would appear that penalties and other administrative costs associated with early repayment typically make it uneconomical. In Austria advance repayment of fixed rate debt is very difficult or virtually impossible in practice. The main exception to this general pattern is the United States. Most business and consumer loans as well as home mortgages can be repaid early at par without incurring any penalty at the time of the switch;[28] refinancing of mortgages has been very common. This suggests that the relatively high share of long-term financing in the United States overstates the effective maturity of the contracts and understates the freedom to adjust terms. Comparatively high room for manoeuvre also appears to exist in Australia and Canada, where penalties apply only in some cases.[29]

28 In addition, most corporate bonds are callable.

29 A more complete picture should also take into account additional refinancing costs in all countries.

Table 10

Breakdown by maturity according to type of instrument[1]

(as a percentage of each category of instrument)

	AU	AT	BE	CA	FR	DE	IT	JP	NL	ES	SE	CH	UK	US
	1993[2]													
Loans:														
Short-term	38	27	23	16	17	16	54	32	17	41	29	23	38	17
Medium and long-term	62	73	77	84	83	84	46	68	83	59	71	77	62	83
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Securities:														
Short-term	52	–	12	32	16	5	–	11	5	40	22	–	3	8
Medium and long-term	48	100	88	68	84	95	100	89	95	60	78	100	97	92
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
	1983[3]													
Loans:														
Short-term	36	26	..	22	21	20	57	41	22	..	40	24	47	20
Medium and long-term	64	74	..	78	79	80	43	59	78	..	60	76	53	80
Total	**100**	**100**	**..**	**100**	**100**	**100**	**100**	**100**	**100**	**..**	**100**	**100**	**100**	**100**
Securities:														
Short-term	47	–	–	29	–	–	–	–	..	14	4	..	–	6
Medium and long-term	53	100	100	71	100	100	100	100	..	86	96	..	100	94
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**..**	**100**	**100**	**..**	**100**	**100**

[1] Short-term: up to one year (Italy: up to 18 months; Netherlands: up to two years). See also the footnotes to Table 9. [2] Sweden and Switzerland: 1992. [3] Italy: 1989; Australia: 1988; Belgium and Sweden: 1982.

Table 11

Breakdown by maturity according to borrowing sector[1]

(as a percentage of each sector's borrowing)

	AU	AT	BE	CA	FR	DE	IT	JP	NL	ES	SE	CH	UK	US
	1993[2]													
Households:[3]														
Short-term	..	..	7	4	4/8	6/10	22/41	3	8	...	..	21	18	9
Medium and long-term	..	..	93	96	96/92	94/90	78/59	97	92	..	..	79	82	91
Total	**..**	**..**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**..**	**..**	**100**	**100**	**100**
Businesses:														
Short-term	..	..	37	35	22/27	21/22	57/56	35	23	..	..	24	50	19
Medium and long-term	..	..	63	65	78/73	79/78	43/44	65	77	..	..	76	50	81
Total	**..**	**..**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**..**	**..**	**100**	**100**	**100**

[1] Short-term: up to one year (Italy: up to 18 months; Netherlands: up to two years). See also the footnotes to Table 9. [2] Switzerland: 1992. [3] Belgium and United Kingdom: broadly defined; France, Germany and Italy: narrowly/broadly defined respectively.

Box 2: Summary of replies on early repayment of medium and long-term loans	
Australia:	Possible; penalties in some cases.
Austria:	Possible, but very difficult.
Belgium:	Possible but discouraged; penalties (e.g. 3-6 months' interest).
Canada:	Most business loans under credit lines repayable at no cost; residential mortgages at significant cost except at repricing intervals. Corporate bonds usually callable.
France:	..
Germany:	Generally possible; plays little role; expensive penalties.
Italy:	Mortgage loans: possible; penalties.
	Consumer credit: possible; no penalties.
Japan:	Possible but not significant; penalties.
Netherlands:	..
Spain:	Possible; fixed rate loans generally subject to penalties.
Sweden:	Possible; penalties.
Switzerland:	Generally possible; not common; penalties.
United Kingdom:	Possible; penalties (e.g. 6 months' interest for fixed rate mortgages).
United States:	Generally possible without penalty (home mortgage, consumer and bank business loans). No information about non-bank business loans. Corporate bonds usually callable.

6. Adjustability of interest rates

The extent to which interest rates are free to adjust to changing economic conditions is probably the most important dimension of the transmission mechanism. These movements translate into changes not only in the *marginal* cost of funding, but also, and perhaps more significantly, in the *cash flow and income* of agents. At least three aspects of credit contracts have a bearing on this issue: the (residual) maturity; explicit or implicit clauses allowing for the revision of interest charges; and the basis on which those revisions take place, notably any reference rates. A fourth aspect, viz. the actual frequency, intensity and speed of the adjustment of rates on new and existing contracts is of course of interest but less amenable to descriptive analysis; these aspects are discussed in Borio and Fritz (1995) with reference to short-term bank loan rates.

Conceptually, two polar cases may be distinguished. At one extreme, maturities are very short or, if long, interest rates are revisable at very frequent intervals and tend to move together with other short-term rates. At the other extreme, maturities are long and interest rates are fixed until maturity. Ceteris paribus, in the flexible, short-term interest rate economy the response of interest

rates to changes in policy controlled rates is likely to be faster and more intense; the variations in the short-run marginal cost of funding, income and cash flows would be correspondingly larger. This tends to front-load or accelerate the impact of monetary policy. Admittedly, the response to the change in the *marginal* cost of funds may arguably not be very different in the two economies to the extent that it depends on views about the *persistence* of the change. Nevertheless, cash flows would respond more quickly and intensely, reacting directly to the interest rate change rather than indirectly to any induced effect of policy on output and prices. The difference in the pattern of responses between the two stylised cases increases with the size of outstanding indebtedness and, at least for a policy tightening, with the skewness in its distribution: owing to the risk of default, the effect on highly indebted agents may be disproportionate. It may also depend on the extent to which indebtedness is concentrated among agents who, by their nature, are likely to face greater limitations on their access to external funding. Households and small firms are typical examples.

Building on the previous information on maturities and given other data limitations, it seems reasonable to adopt two complementary measures of the adjustability of interest rates on outstanding contracts. The first defines as adjustable rate all those debt instruments that are short-term or medium and long-term with rates *adjustable at no longer than one-year intervals*. The second adds to short-term instruments those which are medium and long-term with rates which tend to behave like *short-term rates*. In general, the interval of adjustment is likely to be a good guide to the flexibility of the interest rate charged: if, say, the interest rate is reviewed at yearly intervals, the setter need not take into account expected changes in reference rates over longer horizons. In some cases, however, this is not true: interest rates may be revisable at any time at the discretion of the lender but be de facto set in relation to rates or combinations of rates that themselves behave like longer-term ones.[30]

Despite the comparatively broad categories chosen, the available information on the adjustability of interest rates is extremely limited. What follows is largely based on estimates made on the basis of the nature of the business and samples of institutions. Care should therefore be taken when comparing the results: even if point estimates are given, in most cases there is significant uncertainty surrounding them.[31] The possibility of making comparisons over time is extremely limited.

A useful starting-point is the mortgage market: it accounts for a sizable share of medium and long-term lending, especially for the household sector; available information is somewhat greater; and it is there that the distinction between the two measures of adjustable rate contracts is most important. Several points emerge from a brief overview of the characteristics of mortgage contracts summarised in Table 12.

First, rates fixed *for the whole duration of the contract* are generally not common. The exceptions are Austria, France, Sweden and the United States, where the share ranges from 75 to over 90%. The option of refinancing without incurring penalties in the United States, however, qualifies the extent to which debt charges are truly fixed, i.e. unresponsive to broader interest rate changes. Elsewhere, the provision of fixed rate financing appears to derive from a combination of state involvement (subsidies), stable long-term funding sources and penalties for early repayment.

Second, there exist three types of variable rate loan depending on the nature of the contract.[32] With *reviewable rate* loans the lender retains the discretion to adjust the rate at any time and is not tied to any particular formula. Such loans are the norm in Australia, the United Kingdom

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30 Similarly, and regardless of loan maturity, rates may be revisable but very unresponsive to other rates generally. This appears to be the case, for example, with rates on credit card lending in the United States and also elsewhere. No such adjustment, however, has been made in the estimates shown below.

31 See Annex I for details on the methodology adopted in the various countries.

32 These definitions follow those adopted by the European Community Mortgage Federation.

Table 12

Adjustability of interest rates in the mortgage market[1]

(approximate percentage shares/existence)

	AU	AT	BE	CA	FR	DE	IT	JP	NL	ES	SE	CH	UK	US
Adjustable[2]	> 90	25	maj. of free	100	5[3]	90	75	60	> 90	80	10	70	90	15
Indexed[4]	–	..	–	–	5[3]	–	75	⎫	–	80	–	–	small	15
Reviewable[5]	> 90	..	–	–	–	> 45[6]	–	⎭ 60	..	–	10	70	> 80	–
Renegotiable[7]	–	..	maj. of free	100	–	< 45	–	–	..	–	–	–	small	–
Fully fixed	< 10	75[8]	rest[9]	0	95	10[10]	25	40[11]	< 10	20[12]	90	30	10	85
Memorandum items:														
% adjustable within one year	*> 90*	*≤ 25*	*0*	*60*	*95*	*> 45*	*75*	*60*	..	*80*	*10*	*70*	*90*	*15*
% short-term rate related	*> 90*	*0*	*0*	*60*	*0*	*< 30*	*≤ 75*	*0*	*≈ 0*	*< 10*	*10*	*0*	*90*	*15*
Main short-term rate	*3-mth*	–	–	*1-year*	–	..	*6-mth*	–	–	..	*6-mth*	–	*3-mth*	*1-year*

[1] Rough estimates based on various sources of information. [2] In contrast with the remaining tables, adjustable rate debt is here defined as debt with rates that are not *fully* fixed, regardless of the length of the adjustment intervals. [3] Only loans granted by some specialised private lenders (since 1988) and certain subsidised loans. [4] The contract specifies the rate for the adjustments. [5] The lender retains discretion over the timing and size of the adjustments (possibly between certain limits). [6] "Commercial", savings and cooperative banks only. [7] Adjustment of rates at fixed intervals specified in the contract. [8] The whole of the subsidised sector. [9] Including all the subsidised sector. [10] Bausparkassen; mortgage banks also have some small amounts outstanding. [11] A fraction of the lending by the House Loan Corporation. [12] Almost all the subsidised sector, including the Banco Hipotecario de España and a fraction of the lending by deposit-taking institutions.

Sources: Central banks and European Community Mortgage Federation.

and Switzerland, and seem to be common in Germany.[33] With *renegotiable rate* loans, standard in Canada and actively used in Belgium and Germany, rates are subject to renegotiation at contractually fixed intervals.[34] With *reference rate* or *index-linked* loans, widespread in Italy and Spain, the rate varies in relation to some other rate according to an explicit formula specified in the contract.

Third, the share of loans whose rate is adjustable *at no longer than one-year intervals* (the first measure) is very high (at least 70% but even 90% or more) in countries where reviewable rate loans are standard (Australia, the United Kingdom and Switzerland) and only somewhat lower (70-80%) where index-linked ones are the norm (Spain and Italy). It is also comparatively high in Canada (around 60% of residential mortgages), the only country where the periodicity of the adjustment for renegotiable rate loans is short, and in Japan.

Fourth, in a number of countries the share of loans at a rate that moves in line mainly with short-term rates (the second measure) is considerably lower than might be inferred from the periodicity of adjustments. This is especially true of Switzerland, Spain and Japan; it also applies to a lesser extent to Germany and Austria. In Switzerland and Germany this reflects the stable long-term sources of funding. In Spain it results from the choice of reference rate, typically itself the rate on medium-term mortgages applied by a group of institutions. This suggests that the purpose of indexation in Spain is not primarily protecting lenders against adverse movements in funding costs. The situation is similar in Japan, where a large proportion of total mortgages have rates which are adjusted generally twice a year, but are linked to long-term rates.[35]

Finally, the short-term interest rate to which the adjustments in mortgage rates are predominantly related varies across countries. Its maturity is especially short in the United Kingdom and Australia (three-month); it appears to be considerably longer-term in the majority of other countries (often a one-year rate).

Turning next to total credit, Table 13 provides some very rough estimates of its breakdown between adjustable and fixed rates. The table provides estimates for the two definitions of variable rate debt; for simplicity, however, what follows focuses only on variable rate debt at short-term rates, i.e. short-term maturity plus medium and long-term at short-term rates (i.e. short-term plus adjustable medium and long-term on definition (b) in the table).

Subject to the qualifications outlined above, the share of variable rate credit appears to be especially high in the United Kingdom and Italy, at close to 75%. It is also relatively high in Australia (about two-thirds). At the other end of the spectrum, variable rate debt related to short-term rates appears to be lowest in the Netherlands (around one-quarter), Switzerland and Germany (around one-third). It is of a similar order of magnitude in the United States and, possibly, Sweden and Japan.

A rough, still very preliminary breakdown between households and businesses is available for fewer countries. Given the assumptions required to obtain it, it should be treated with even greater caution than the estimates relating to total credit.

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33 The freedom to adjust rates may, however, be constrained. For example, in Germany, legal provisions require that any change be objectively fair in accordance with commercial practice, pursuant to the relevant case law.

34 In Germany, where it is widespread, this type of loan is assimilated to a fixed rate loan.

35 The rate on adjustable rate loans of the Housing Loan Corporation is based on the funding rate set by the Government, in turn moving in line with the coupon rate on new issues of ten-year government bonds. These rates have a cap of 5.5%. The adjustable rate on bank housing loans is set in relation to the long-term prime rate, itself linked to the five-year interest-bearing debenture issued by three long-term credit banks. Since early 1994 a new type of bank housing loan, related to the short-term prime, appears to have been allowed.

Table 13

Breakdown by type of interest rate: adjustable and fixed[1]

(as a percentage of total amounts outstanding)

	AU	AT	BE	CA	FR	DE	IT	JP	NL	ES	SE	CH	UK	US
	1993[2]													
Short-term	40	27	23	19	17	16	51	..	17	40	29	22		14
Adjustable medium and long-term:								..						
(a) ≤ one year	26	47	21	40	27	> 23	22	> 35[3]	> 8	24	6	52	> 73	20
(b) at s-t rates	26	> 0	21	40	27	23	≤ 22	35[3]	8	3	6	8		20
Predominantly fixed:														
(a) > one year	34	26	56	41	57	< 62	26	< 65	< 75	36	65	25	27	66
(b) at medium and long-term rates	34	< 73	56	41	57	62	≥ 26	65	75	57	65	69	27	66
Total[4]	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

[1] See Table 9 for maturity definitions and sectoral coverage. [2] Sweden and Switzerland: 1992. [3] Short-term plus corresponding adjustable rate medium and long-term component. Since the source of information is different from that of the maturity table, maturity is shown as not available. [4] Short-term plus adjustable and predominantly fixed in categories (a) and (b) respectively.

In Anglo-Saxon economies the share of predominantly fixed rate debt of the household sector appears to be of a similar order of magnitude (United States and Canada), or even lower (Australia and the United Kingdom) than for the business sector (Table 14). This results mainly from the conjunction of the characteristics of the mortgage market and a sizable stock of outstanding fixed rate long-term securities. By contrast, and for much the same reasons, in continental European countries the household share of predominantly fixed rate debt is typically considerably larger than for the business sector. Germany and Switzerland seem to be two exceptions, in that the orders of magnitude appear to be similar. This may partly be due to the inaccuracy of the estimates made.[36]

Despite the considerable variation across countries, the share of medium and long-term debt at predominantly fixed rates of the household sector is generally around 50% or higher. It is significantly lower only in the United Kingdom and Australia.

The equivalent share for the business sector generally ranges between one and two-thirds. As might be expected, the share tends to be comparatively high where it is so also in the aggregate. Some exceptions exist, however, mirror-imaging the polarisation of the composition of household debt. The share is quite low in Belgium and, to a lesser extent, in France; it appears to be relatively high in Australia.[37,38]

A rough estimate of the breakdown of total loans between banks and other lending institutions according to the flexibility of interest rates charged is presented in Table 15. Confirming a priori stylised views, it indicates that the share of predominantly fixed rate medium and long-term lending is comparatively high (around 50% or more) in several countries with a long-standing tradition of universal banking, such as Germany, the Netherlands and Switzerland.[39] It is also of a similar order of magnitude in Belgium and, interestingly, the United States. Elsewhere, it is generally lower.

The breakdown of credit between fixed and adjustable rate may give an incomplete picture of the sensitivity of borrowers' cash flow to interest rate changes in at least three cases. First, as already discussed, where agents have the option to repay early without incurring penalties. Secondly, when lenders offer mechanisms to help insulate their customers from "excessive" interest rate movements, a typical example being maturity adjustments aimed at smoothing total servicing payments. The information available suggests that these are especially common in Australia, of some quantitative significance in Canada but of less relevance elsewhere, including the United Kingdom;[40] in general, where present, they tend to apply mainly to housing loans (Box 3). Finally, borrowers may actively use derivatives to alter the characteristics of their interest rate risk profile. Derivatives are primarily employed by large companies, routinely by those with access to the international markets. They have long been a significant risk-management tool especially in the United States and other

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36 In the case of Germany, the result is driven by the assumption that three-quarters of consumer credit is at variable rates.

37 The share also appears to be comparatively high in the United Kingdom upon the upward revision in the stock of debt securities.

38 There are indications that the overall pattern in Spain may be quite similar to those in France and Belgium.

39 No comparable results are available for France. However, some indications can be drawn from a 1992 central bank survey of nine large banks, accounting, respectively, for half and around one-third of bank and total loans to households and businesses. The survey indicated that 52% of total French franc denominated loans to these sectors were at predominantly fixed rates. The definition of variable rate used covered two sets of contracts: (i) those with a residual maturity of at most three months; (ii) those at rates adjusted with a periodicity not exceeding one year. Class (ii) corresponds to one of the definitions used in the text.

40 In the United Kingdom, however, it has been estimated that around 40% of all mortgage borrowers are on an annual review scheme, whereby the interest charges are changed only once a year. Any underpayment arising from differences in the timing of the review of interest rates and interest charges is capitalised and added to the interest payments in the following periods.

Table 14

Breakdown by type of interest rate according to borrowing sector[1]

(as a percentage of total borrowing of each sector)

	AU	AT	BE	CA	FR	DE	IT	JP	NL	ES[2]	SE	CH	UK	US
	1993[3]													
Households:[4]														
Short-term		..	7	4	4	6	22/41	..	8	..	..	21		9
Adjustable medium and long-term:														
(a) ≤ one year	77	..	11	49	9	> 30	37/28	69[5]	> 0	..	..	56	90	25
(b) at short-term rates		..	11	49	9	30	≤ 37/28	17[5]	0	..	..	8		25
Predominantly fixed:														
(a) > one year	23	..	82	48	87	< 64	41/31	31	< 92	..	..	23	10	66
(b) at medium and long-term rates	23	..	82	48	87	64	≥ 41/31	83	92	..	..	71	10	66
Total[6]	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Business:														
Short-term		..	37	35	22	21	57/56	..	23	..	..	24		19
Adjustable medium and long-term:														
(a) ≤ one year	40	..	30	31	34	> 19	20/20	> 38[5]	> 14	..	..	48	48	15
(b) at short-term rates		..	30	31	34	19	≤ 20/20	38[5]	14	..	..	8		15
Predominantly fixed:														
(a) > one year	60	..	33	34	44	< 60	23/24	< 62	< 62	..	..	28	52	66
(b) at medium and long-term rates	60	..	33	34	44	60	≥ 23/24	62	62	..	..	68	52	66
Total[6]	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

[1] See Table 9 for maturity definitions and coverage. [2] There are indications that the pattern in Spain is probably similar to those in France and Belgium. [3] Switzerland: 1992. [4] Australia, Belgium and the United Kingdom: broadly defined. Italy: households narrowly and broadly defined respectively. [5] Short-term plus corresponding adjustable rate medium and long-term component. Since the source of information is different from that of the maturity table, maturity is shown as not available. [6] Short-term plus adjustable and predominantly fixed in categories (a) and (b) respectively.

Table 15

Breakdown by type of interest rate according to loan-granting institutions[1]

(as a percentage of total lending by each sector)

	AU	AT	BE	CA	FR	DE	IT	JP	NL	ES	SE	CH	UK	US
	1993[2]													
Banks:														
Short-term	43	28	26	26	..	18	57	..	24	42	70	29		20
Adjustable medium and long-term:														
(a) ≤ one year	28	48	25	44	..	27	22	> 57[3]	> 11	28	0	51	85	15
(b) at short-term rates	28	> 0	25	44	..	27	≤ 22	57[3]	11	5	0	11		15
Predominantly fixed:														
(a) > one year	29	24	49	30	..	55	21	< 43	< 65	29	30	20	15	64
(b) at medium and long-term rates	29	< 72	49	30	..	55	≥ 21	43	65	53	30	60	15	64
Total[4]	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
OFIs:														
Short-term	24	0	0	0	..	0	27	..	0	24	3	0		14
Adjustable medium and long-term:														
(a) ≤ one year	37	0	0	56	..	> 0	40	> 14[3]	> 0	0	10	70	≥ 90	30
(b) at short-term rates	37	0	0	56	..	0	≤ 40	14[3]	0	0	10	0		30
Predominantly fixed:														
(a) > one year	39	100	100	44	..	< 100	33	< 86	< 100	76	87	30	≤ 10	56
(b) at medium and long-term rates	39	100	100	44	..	100	≥ 33	86	100	76	87	100	10	56
Total[4]	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

[1] See Table 9 for maturity definitions and coverage. [2] Sweden and Switzerland: 1992. [3] Short-term plus corresponding adjustable rate medium and long-term component. Since the source of information is different from that of the maturity table, maturity is shown as not available. [4] Short-term plus adjustable and predominantly fixed in categories (a) and (b) respectively.

Box 3: Procedures to alleviate the burden of interest rate adjustments[1]	
Australia:	Maturity adjustment for housing loans common. No information on other loans.
Austria:	Floors and caps for loans related to money market rates.
Belgium:	* Generally none; some cases of interest ceilings.
Canada:	Maturity adjustment in the case of some mortgages.
France:	* Duration adjustment in some cases (e.g. new formulae by specialised mortgage companies).
Germany:	* Some smoothing possible; recently loans with interest rate caps on offer.
Italy:	* Maturity adjusted only exceptionally.
Japan:	Not significant.
Netherlands:	* Maturity adjusted only in some cases.
Spain:	Maturity adjustments not normal practice.
Sweden:	Maturity adjustments used very sparingly.
Switzerland:	..
United Kingdom:	Building societies may adjust maturity if the borrower is in difficulty.
United States:	..

[1] Responses to the questionnaire and additional information on the mortgage market obtained from the EC Mortgage Federation (denoted by an asterisk).

Anglo-Saxon countries. Because of the dearth of data, however, it is difficult to determine their impact on the aforementioned stylised findings.

7. Non-price restrictions on credit extension

The extent to which lenders can influence the timing and amount of credit extensions other than through the interest rate (and related fees) is another dimension of the transmission mechanism of monetary policy. One possibility is setting non-price terms in the contracts; the most common of these is collateral. A second, complementary one is simply to retain discretion over the timing and amount of credit supplied on any given interest and non-interest terms. This is the case, for instance, with loans not provided under committed credit lines, since the lender may simply refuse to grant as much credit as is demanded, i.e. he may decide to ration it. Rationing can easily result from regulatory controls on interest rates or quantities,[41] but it can also occur in their absence: given limited information about the characteristics of individual borrowers and insufficient control over

41 Or, indeed, other non-interest terms such as collateral requirements.

their behaviour, restricting the amount supplied may be necessary to provide the lender with an adequate ex ante return on the funds granted.

(a) Collateral

Collateral may matter in the context of the transmission mechanism for at least two reasons. First, for a *given set of characteristics of the borrowers*, changes in monetary policy may have an impact on the collateral terms required by lenders at any given interest rate. Tougher/easier collateral requirements can be one way of helping to restrict/encourage credit growth. Second, and more importantly, for any *given set of terms called for by lenders*, monetary policy may have an effect on the characteristics of borrowers. Directly, via changes in the interest rates, and indirectly, via induced changes in output and prices, it can have a significant influence not only on the likelihood of default of borrowers but also on the value of the collateral at their disposal. In general, the collateral channel would tend to reinforce the impact of policy. Higher policy rates, for instance, would lead ceteris paribus to a deterioration in the creditworthiness of lenders and a decline in the value of collateral taking the form of financial and real assets. This in turn would reduce the availability of credit at any given interest rate.

On a priori grounds, the first channel, felt through altered conditions in the supply of credit, may be expected to be effective primarily when banks' freedom to adjust interest rates is constrained or when monetary policy results in changes in banks' balance sheets that alter their incentive or ability to take on risks. A possible example would be the interaction of a policy tightening with a weak capital position of the institutions and a competitive or political environment hostile to sizable increases in interest rates. Elements of such a scenario have clearly been present in those countries where there have been concerns about a credit crunch, notably Anglo-Saxon ones. More generally, however, unless the balance sheet of lenders is especially vulnerable or policy is implemented through direct controls, this channel is unlikely to be important. The replies to the questionnaire, couched more broadly in terms of non-interest conditions, are not inconsistent with this view. They do acknowledge, however, a widespread lack of information, in part due to problems in identifying the direct impact of policy (Box 4).

By contrast, the second channel, that operating via induced changes in the characteristics of borrowers, is likely to be more important. Ceteris paribus, those features of the financial structure that raise the sensitivity of the borrowers' probability of default to changing monetary conditions should also tend to heighten the quantitative significance of this channel; the level and skewness of indebtedness is but one example of this (see above and Kneeshaw (1995)). The same is true of those features that magnify the valuation effect of monetary policy on collateral; an obvious candidate is the share of total credit backed by assets whose price is in principle quite responsive to interest rate changes, most notably real estate.

That this channel may indeed be quantitatively significant seems to be confirmed by the experience of several countries since the early 1980s. Major increases in asset prices, especially real estate prices (Graph 1), have typically gone hand in hand with a rapid expansion in credit, especially in several Anglo-Saxon and Nordic countries and also in Japan. This has at times appeared to generate a vicious circle. Higher asset prices relax credit conditions, which in turn pushes up prices further, an analogous process occurring in the downward direction but possibly amplified by defaults and bankruptcies.[42] Admittedly, collateral is only part of the story. Asset prices may simply be correlated with expectations regarding the prospects of the economy and contribute to the formation of views regarding returns on investments, factors which would normally affect lending decisions. Similarly, changes in the stance of monetary policy are only one possible reason for the observed credit expansion; deregulation has had a major independent effect. Nevertheless, it is equally difficult to argue that the valuation of collateral has played a minor role or that monetary policy has not been in

42 The process can of course interact with the supply factors discussed in the context of the first channel.

Box 4: Summary of replies on the response of non-interest terms to monetary policy	
Australia:	Survey evidence suggests that the availability of finance moves inversely with interest rates; not clear if this reflects supply or demand factors.
Austria:	No noticeable response to monetary tightening; common when credit risk increases.
Belgium:	Normally no response.
Canada:	Econometric evidence indicates that, if present, availability is negatively correlated with loan rates; ample anecdotal evidence of relevance (e.g. for small businesses). Not possible to measure correlation with monetary conditions, however.
France:	Anecdotal evidence that non-interest terms vary in the course of the cycle. No concerns about credit crunch.
Italy:	Not considered in econometric model.
Japan:	Evidence of response of non-interest terms.
Netherlands:	Majority of banks claim to ration the riskiest borrowers as a reaction to tight monetary policy.*
Spain:	..
Sweden:	..
Switzerland:	..
United Kingdom:	Non-interest terms likely to respond to monetary tightening. Common perception supported by survey evidence that non-interest terms for small businesses were tightened significantly during last recession.
United States:	Survey evidence indicates that non-price terms reinforce price terms.

* For details, see Swank (1993).

part responsible for these developments, at least in those countries experiencing the largest movements.[43]

The very limited and preliminary information available on collateral is summarised in Table 16. Again, the figures should be treated with caution. In particular, it has as yet not been possible to establish the extent to which the information is comparable across countries owing to possible differences in definition and coverage.

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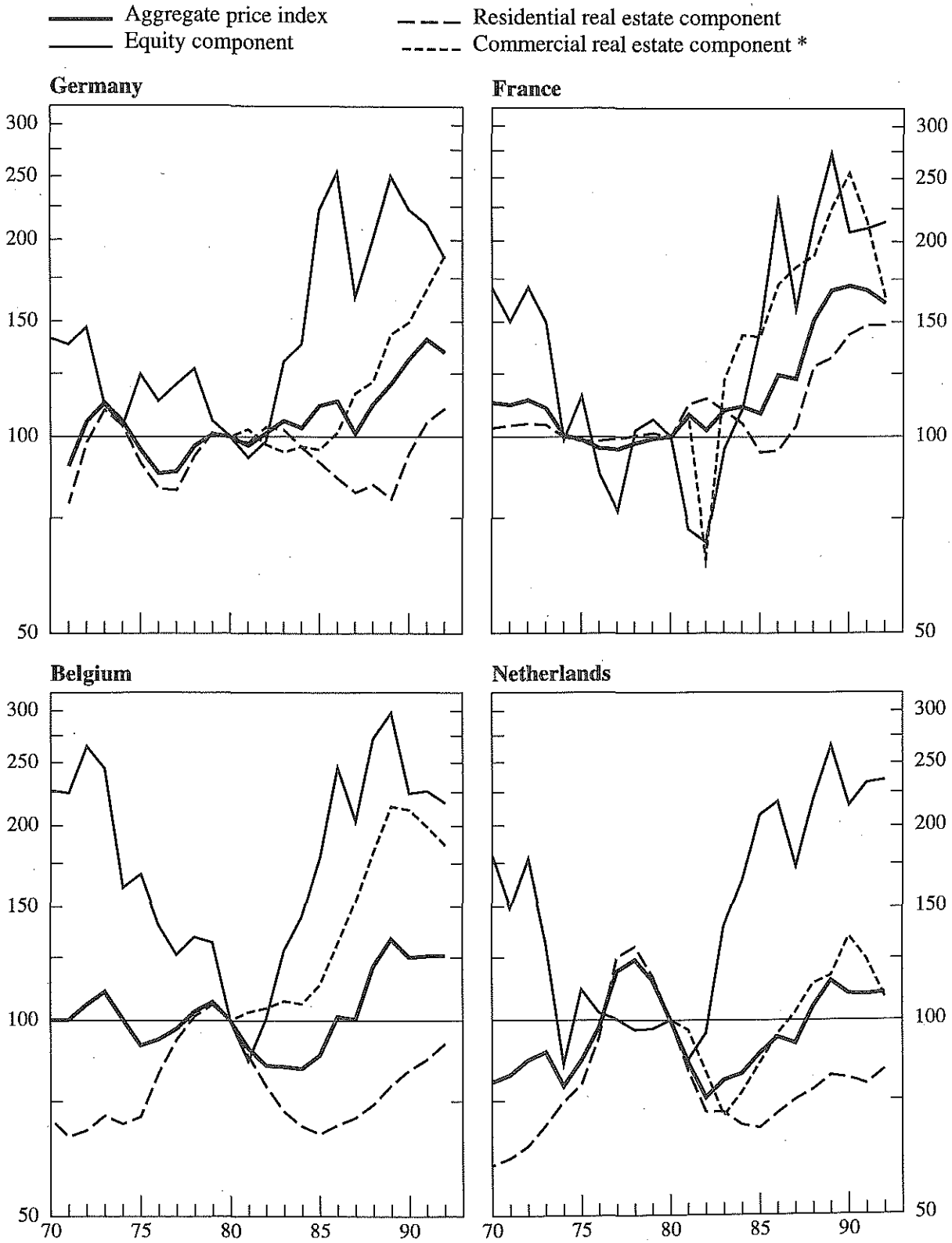
43 For a detailed cross-country analysis of these issues, see Borio et al. (1994).

Graph 1

Real asset prices: aggregate and components

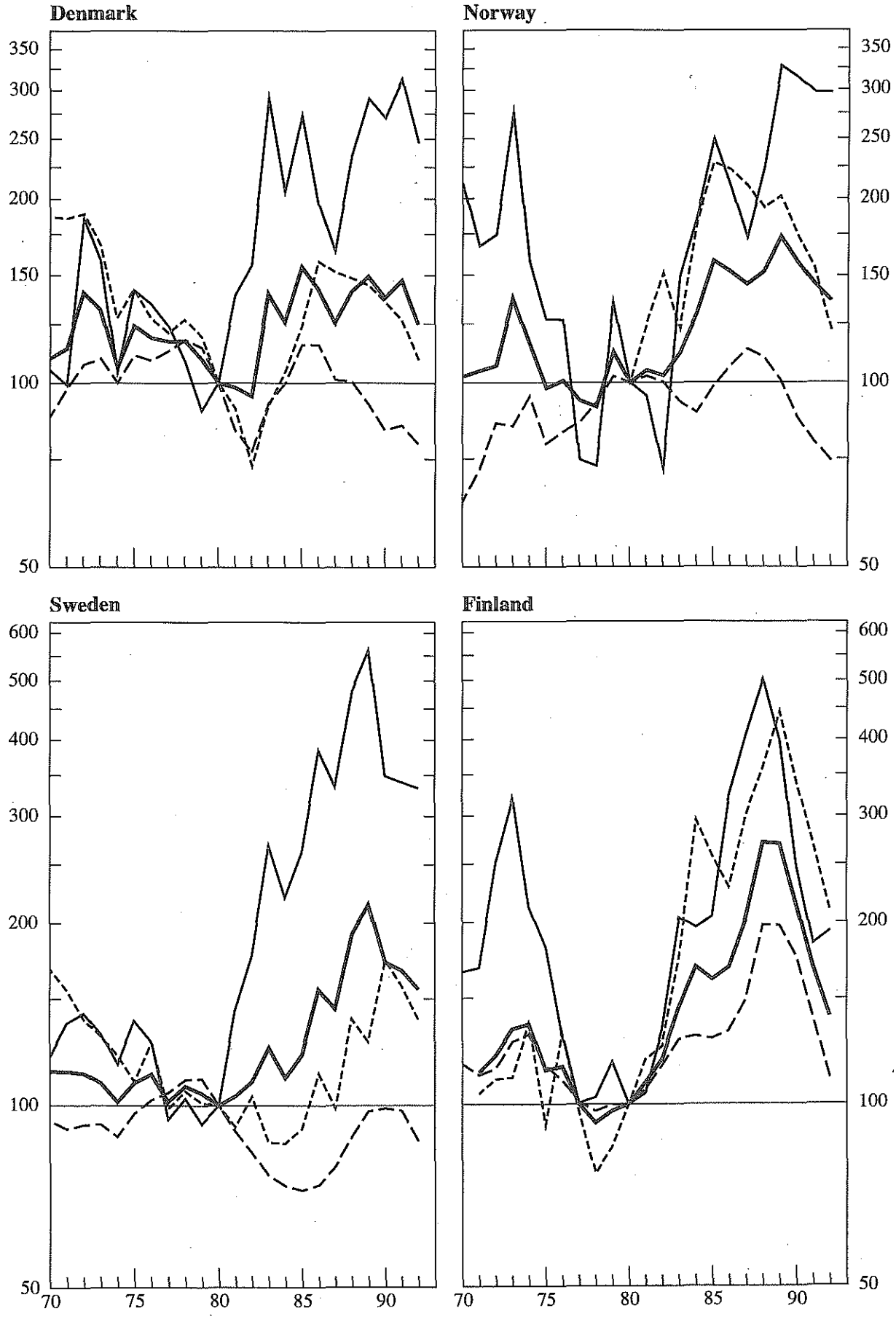
(1980 = 100; semi-logarithmic scales)



Note: The real aggregate asset price index is a weighted average of equity and residential and commercial real estate price indices deflated by consumer prices. The weights are based on the composition of private sector wealth.

* Index not shown for the above countries and Norway in the 1970s as it is proprietary information.

Graph 1 (cont.)


Denmark
Norway
Sweden
Finland
350
300
250
200
150
100
50
600
500
400
300
200
100
50
70
75
80
85
90

Graph 1 (cont.)

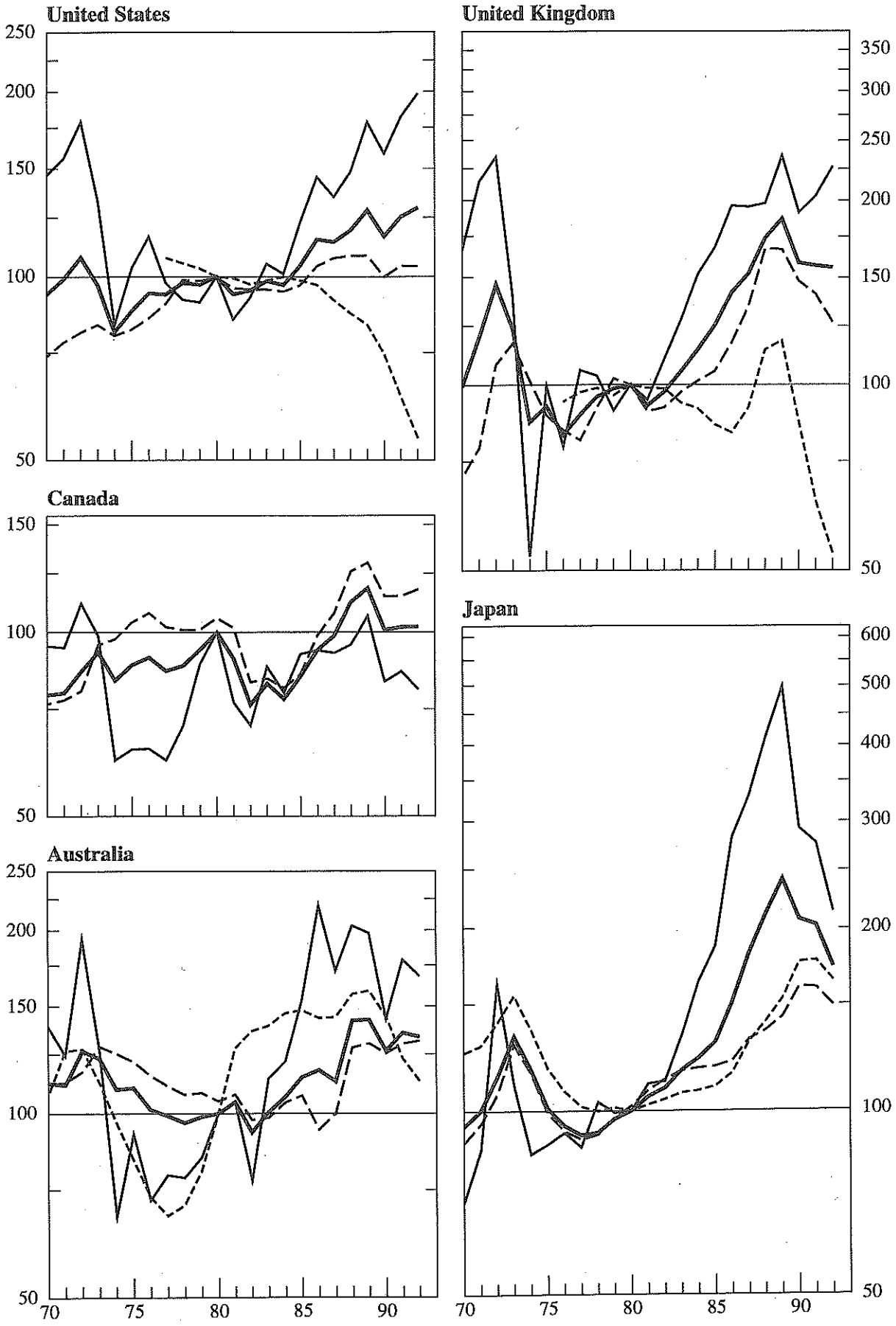

United States
250
200
150
100
50
United Kingdom
350
300
250
200
150
100
50
Canada
150
100
50
Japan
600
500
400
300
200
100
50
Australia
250
200
150
100
50
70
75
80
85
90

Table 16

Collateralisation of loans

(as a percentage of each sector's lending)

	AU	AT	BE	CA	FR	DE	IT	JP	NL	ES	SE	CH	UK	US
	1993[1]													
Banks	..	70	..	90	..	v. high	66	68[3]	..	33[4]	..	86	..	63
Real estate	48	31	26	43	44	30	45[2]	28[3]	36	32[4]	..	81	32	56
Other	..	39	..	47	..	..	21[2]	40[3]	..	1[4]	..	6	..	7
OFIs	..	..	..	90	..	v. high	..	..	..	37	100	42	..	92
Real estate	9	..	100	75	33	90	..	..	37	37	100	41	92	76
Other	..	..	..	15	..	..	..	..	..	..	..	1	..	16
Total	..	69	..	90	..	v. high	..	..	..	34	..	78	..	78
Real estate	34	31	34	56	41	36	40	..	36	33	> 61	73	59	66
Memorandum item: *Real estate backing bank loans to businesses (%)*	..	*28*	..	*4*[5]	..	*27*	..	*25*	*4*	*25*	..	*73*	..	*43*
	1983[6]													
Banks	..	73	..	..	..	v. high	61	61	..	16[4]	..	88	..	60
Real estate	14	34	28	20	41	37	..	24	38	..[4]	..	81	15	54
Other	..	39	..	..	..	..	..	37	..	..[4]	..	7	..	6
OFIs	..	..	..	..	..	v. high	..	..	..	48	100	44	..	86
Real estate	9	..	100	77	42	90	..	..	30	48	100	42	93	66
Other	..	..	..	..	..	..	..	..	..	..	..	2	..	20
Total	..	71	..	..	..	v. high	..	..	..	21	..	79	..	69
Real estate	12	33	39	44	42	45	..	..	35	..	> 43	73	50	58
Memorandum item: *Real estate backing bank loans to businesses (%)*	..	*26*	..	*1*	..	..	..	*18*	..	..	..	*73*	..	*37*

[1] Sweden and Switzerland: 1992. [2] For short-term credit banks (66% of total bank loans in 1993), for which accurate figures exist, the shares of real estate and other collateralised loans are 19% and 31% respectively. Rough estimate for long-term credit banks. [3] Excluding trust accounts. [4] Excluding official credit institutions, included among OFIs for present purposes (6% and 11% of total bank loans in 1993 and 1986 respectively). [5] For all financial institutions, 10% and 7% in 1993 and 1983 respectively. [6] Australia: 1988; Belgium and Sweden: 1982; Italy: 1989; Spain: 1986.

Box 5: Series used to approximate real estate collateral	
Australia:	Housing credit, for owner-occupied and investment purposes.
Austria:	Mortgages (includes also some loans to local authorities).
Belgium:	Mortgages (commercial and residential) (EC Mortgage Federation, ABCI).
Canada:	Mortgages (commercial and residential).
France:	Housing credit (crédit à l'habitat).
Germany:	Mortgages (commercial and residential).
Italy:	Loans collateralised with real estate.
Japan:	Bank loans collateralised with real estate and housing credit.
Netherlands:	Mortgages on dwellings.
Spain:	Loans with real guarantees.
Sweden:	Loans from housing credit institutions only (excludes banks; lower bound).
Switzerland:	Mortgages and other lending collateralised with real estate.
United Kingdom:	Loans collateralised with dwellings.
United States:	Commercial and residential mortgages.

For the countries for which information is available, the share of total loans backed by collateral is in the region of 70% or over. The only exception appears to be Spain, for which it is only one-third. The difference is such that it raises doubts about the comparability of the figures. As regards banks, the share is especially high in countries with a long-standing universal banking tradition and also in Japan and Canada; it is considerably lower in Italy and Spain.

Loans collateralised with *real estate* make up a least one-third of total loans in all countries. The share is exceptionally high in Switzerland, at around three-quarters; it is around 60% or over in most Anglo-Saxon countries and Sweden. Indications suggest that it may also be quite high in Japan. The pattern is similar as regards the banking sector. The extent to which these results owe to limitations in the coverage of the underlying statistics and methodology of estimation is unclear (Box 5 and Annex I).

Over time, the share of real estate backed loans has tended to rise, at times markedly, precisely in those countries where it is now comparatively high; it has remained broadly stable or fallen elsewhere. In most cases, these are also the countries where the interaction between asset prices and credit has caused greater concern. This finding lends some support to the hypothesis that collateral may have had a significant role to play in these developments.

(b) Regulation-induced rationing

There are at least three typical mechanisms through which regulation may induce rationing. First, the authorities may set direct limits to the quantities of credit granted and the lenders may find it unprofitable to set the interest rate (and other terms) that would clear the market; this may result, for instance, from valued customer relationships, fears of inducing defaults or broader competitive reasons. Second, the authorities may limit the flexibility of lending institutions in attracting funds, as through ceilings on the rates applied to funding instruments. Finally, they may constrain the flexibility of adjustment of lending rates; if the institutions' behaviour is profit-oriented, this may lead to margins which make it unattractive to extend credit.[44] More often, perhaps, it may cause rationing if the public funds or guarantees typically supporting the interest rate restrictions are limited.

These various types of restriction were quite common in the past but are now rare following the deregulation process which gathered momentum during the 1980s. Lending ceilings have disappeared. The remaining constraints on the remuneration of the liabilities of financial institutions generally affect only a small proportion of their funding sources. Loans at preferential rates appear to be quantitatively significant only in a few countries and to apply mainly to credit for housing.[45] Such constraints can no doubt help to insulate certain borrowers, at least in the short run, from changes in market rates; it is harder to speculate whether they also give rise to sizable rationing effects, a question which would call for more precise knowledge of the arrangements. Moreover, the expansion in all countries of a competitive housing loan sector whose lending rates are unconstrained limits further the macroeconomic significance of any credit rationing that may be present.

(c) Lenders' control over the timing and amount of disbursements

In general, the presence and quantitative significance of credit rationing, whether regulation-induced or not, is very difficult to assess, statistically or otherwise. On the other hand, it is more straightforward to identify indicators of its *absence*. Credit extended under standing facilities is a clear example. In this case, the borrower has discretion over the timing and the amounts drawn up to a predetermined limit, if any, set by the lender.[46] In addition, information about such facilities may cast some light on the time pattern of the transmission of policy. Arguably, by limiting the discretion of lenders, the facilities would tend to delay the slowdown of credit following a tightening and hence any contractionary effect on the economy.

Estimates of the stock of loans drawn under standing facilities are shown in Table 17. The figures should be treated with some caution: it is not clear whether the identified amounts, even for the set of institutions for which data are available, comprise all the borrowing in the relevant category (Box 6). They tend to suggest that credit line financing is especially high in Austria and, to a lesser extent, Italy, at around one-third of total loans; indeed, for Italian short-term banks close to half of their lending takes this form. By contrast, credit line financing appears to be far less significant in

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44 Unless, of course, the limits are compensated for by appropriate subsidies; in fact, the subsidies may be the reason why limits are introduced in the first place.

45 For instance, in France 28% of total lending outstanding in 1992 was at preferential rates; two-thirds of that amount was for housing. Similarly, almost three-quarters of bank housing credit in Austria is at subsidised rates. Preferential rates appear to be common also for public sector financial institutions in Japan; those institutions account for one-quarter of total lending.

46 Of course, the limit itself may be less than what the borrower would like to obtain on the terms specified by the lender. There are also some questions regarding the precise conditions under which the lines may be withdrawn.

Table 17

Credit outstanding under credit lines[1]

(as a percentage of loans of each category of institution)

	AU	AT	BE	CA	FR	DE	IT	JP	NL	ES	SE	CH	UK	US
	1993[2]													
Banks	21	32	9	30	7[3]	<17	46[4]	17	16	18	..	16	15	29[5]
OFIs	lower	–	–	lower	low	–	low	6[6]	–	low	..	–	low	low
Memorandum item:														
Identified as % of total loans	*14*	*31*	*8*	*18*	*7*[7]	*<15*	*27*	*10*	*12*	*16*	..	*13*	*8*	*14*
	1983[8]													
Banks	27	30	..	50	5[3]	<20	51[4]	3	..	18	..	18	31	30[5]
OFIs	lower	–	–	lower	low	–	low	1[6]	–	low	..	–	low	low
Memorandum item:														
Identified as % of total loans	*13*	*29*	..	*29*	..	*<17*	*30*	*1*	..	*18*	..	*15*	*17*	*19*

[1] Overdrafts, credit accounts, revolving credit facilities; see Box 6 for country details. [2] France and Switzerland: 1992. [3] "Universal" banks ("Banques AFB") only (close to 50% of total bank loans in 1992). [4] Short-term banks ("aziende di credito") only. [5] Based on survey evidence on gross extensions of commercial bank loans to businesses under commitments. [6] Only Shoko Chukin bank, Shinkin banks and credit cooperatives. [7] Total for all credit institutions. [8] Australia: 1988; Italy: 1989.

Box 6: Basic series and estimates underlying the table on credit line financing	
Australia:	Revolving credit.
Austria:	Current account credits to domestic non-banks ("Kontokorrentkredite").
Belgium:	Current account credits.
Canada:	Demand loans and loans under revolving credit facilities. For banks, 30% of non-mortgage business credit (excluding leasing) and 20% of personal non-mortgage credit.
France:	Overdrafts ("avances en comptes débiteurs").
Germany:	Total short-term advances ("Buchkredite") and loans; no breakdown available.
Italy:	Current account credits.
Japan:	Overdrafts.
Netherlands:	Current account credits and call money.
Spain:	Current account credits and overdrafts.
Sweden:	..
Switzerland:	Current loans.
United Kingdom:	Overdrafts.
United States:	Credit drawn under credit commitments to businesses; gross extensions; survey of terms on bank lending. A survey on the stocks found that 70% of business loans were drawn under commitments in 1983; the figure for gross extensions for that year is over 60%. The figures shown in the table apply the percentage for gross extensions to all business loans by commercial banks and thrifts.

Japan, Belgium, France and the United Kingdom, at 10% or less of total loans. The figures for the United Kingdom are somewhat surprising; they hardly identify an "overdraft economy", as the UK system has sometimes been referred to. This may be due in part to limitations in the statistical definition of "overdraft" used, but it also reflects the high share of lending for housing.

Indeed, since 1983 in the United Kingdom the share of overdrafts in total lending has halved, most likely reflecting the concomitant growth in housing credit (see also Table 16). A similar development, and for much the same reasons, has taken place in Canada. A sharp rise, on the other hand, has occurred in Japan, mainly in order to avoid stamp duty on bill financing.

8. Credit denominated in foreign currency

When borrowers obtain funds in foreign currency, the domestic currency equivalent of their average funding costs and debt burdens will subsequently depend on the actual path of the exchange rate and, if the borrowing is at variable rates, of foreign interest rates. If these variables do not follow their anticipated paths, the ex post cash flow, income and balance-sheet positions could differ substantially from the anticipated ones, thereby exerting a significant influence on lending, borrowing and spending decisions.[47] Thus, changes in domestic interest rates no longer have a *direct* effect on part of the indebtedness of residents, which comes to depend on foreign monetary conditions.[48] On the other hand, the importance of the exchange rate in the transmission mechanism is heightened.

The quantitative significance of this channel will depend, inter alia, on the size and distribution of the net positions of agents in foreign currency. At the aggregate level, a rather crude indicator is the share of foreign currency denominated credit in the total.[49] Though incomplete, the available information suggests that this share was typically of the order of 5% or less at the end of 1993 (Table 18). It was considerably higher, however, in Italy, Sweden and Canada.[50] In the two European countries, a significant rise took place in the years preceding the ERM crisis of autumn 1992,[51] as companies borrowed abroad to avoid high nominal interest rates at home and the exchange rate was under persistent upward pressure.

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47 If the financial intermediaries themselves take open foreign currency positions, there may also be an independent effect on the supply of credit through unexpected deteriorations or improvements in the intermediaries' profit and loss accounts and balance sheets.

48 Of course, the *ability* to invest and borrow freely in foreign currencies raises also the usual questions about the autonomy of national monetary policies even if the *actual size* of the positions is not large.

49 Note that since the present aggregate excludes credit obtained abroad unless it is in the form of securities, it tends to *underestimate* overall foreign currency credit. For complementary indicators, see Kneeshaw (1995).

50 However, some other countries could fall within this category, depending on the share of foreign-denominated securities, for which figures are sometimes not available.

51 Because of the dates chosen, this is only partly reflected in the above figures.

Table 18

Loans denominated in foreign currencies

(as a percentage of total loans of each category of institution/borrowing)

	AU	AT	BE	CA	FR	DE	IT	JP	NL	ES	SE	CH	UK	US
	1993													
Banks	5	6	9	8	4	1	15	4	5	5	24	3	10	..
OFIs	..	0	0	..	2	..	0	3[1]	..	..	0	..	0	..
Securities	..	..	..	36	16	0	24	36	..	..	25	..	..	..
Memorandum items:														
Identified loans as % of:														
Total loans	*3*	*6*	*8*	*5*	*4*	*1*	*14*	*4*	*4*	*5*	*9*	*3*	*5*	..
Business loans	*8*	*8*	*17*	*13*	*7*	*1*	*19*	..	*6*	*8*	*15*	*6*	*19*	..
Identified total as % of:														
Total credit	*3*	*5*	*8*	*10*	*6*	*1*	*14*	*8*	*3*	*4*	*10*	*3*	*4*	..
Business credit	*6*	*8*	*14*	*21*	*9*	*1*	*20*	..	*6*	*7*	*16*	*5*	*11*	..
	1983[2]													
Banks	8	5	7	14	6	0	13	7	3	5[3]	20	3	15	..
OFIs	..	0	0	..	0	..	0	3	..	..	0	..	0	..
Securities	..	..	..	32	26	0	18	21	..	..	44	..	..	..
Memorandum items:														
Identified loans as % of:														
Total loans	*4*	..	*6*	*8*	*4*	*0*	*11*	*6*	*2*	..	*11*	*2*	*9*	..
Business loans	*7*	..	*11*	*17*	*7*	*1*	*17*	..	*4*	..	*23*	*5*	*26*	..
Identified total as % of:														
Total credit	*3*	..	*5*	*12*	*6*	*0*	*12*	..	*2*	..	*13*	*2*	*8*	..
Business credit	*5*	..	*9*	*22*	*10*	*1*	*17*	..	*4*	..	*25*	*5*	*24*	..

[1] Excluding certain institutions (the OFIs covered account for about one-quarter and one-third of total OFI loans in aggregate and maturity tables respectively; correspondingly, total loans covered here amount to over 60 and 80% of the total loans in those tables). [2] Australia: 1988; Austria: 1987; Belgium: 1982; Italy: 1989; Japan: 1988. [3] Deposit-taking institutions only.

ANNEX I

Main assumptions/estimates underlying the tables

In order to help form a better view of the margin of error surrounding the final figures included in the various tables and to facilitate any improvements, this annex lists the main assumptions/estimates that underlie them. When the same assumption is made in more than one table, it is mentioned only in the first case. Unless otherwise shown in brackets, the estimates have been made by the central banks.

Table 2: Credit to the non-government sector

Switzerland: total lending of pension funds in 1983 is estimated by assuming that the change in the ratio of loans backed by real estate collateral to total loans is the same as for insurance companies over the period 1983-92 (BIS).

Table 4: Breakdown by recipients: households and businesses

Canada: credit to the unincorporated sector is calculated as the difference between credit to the personal sector (flow-of-funds accounts) and to households narrowly defined (consumers, answers to the questionnaire) (BIS).

Japan: credit to consumers is calculated by adding housing credits and instalment consumer credit (Bank of Japan statistics). It therefore excludes at least non-instalment credit (BIS).

Switzerland: pension fund loans, all to the business sector; life assurance company loans, 70% to the business sector.

Table 5: Breakdown by instruments: loans and securities

Netherlands: bonds from the BIS database (1993).

Switzerland: bonds from the BIS database.

Table 9: Breakdown by maturity: short-term versus medium and long-term

Note: with the exception of Canada, where they are classified as medium and long-term, in all cases revolving credits repayable at any time are classified as short-term.

Australia: breakdown for non-bank deposit-taking institutions estimated on the basis of a variety of sources.

Canada: all loans, excluding credit card and business demand loans, are assumed to be medium and long-term.

Germany: OFI loans, all medium and long-term (BIS).

Japan: breakdown for the loans made by a variety of financial institutions (19% of total credit in 1993) has been estimated (BIS).

Sweden: bank loans, 70% short-term (very rough); OFI loans, 97% medium and long-term (BIS).

Switzerland: short-term bank loans equal to current account loans plus 50% of fixed-term loans and advances (rough). OFI loans all medium and long-term.

United Kingdom: bank loans, excluding mortgages and leases, all short-term; OFI loans, all medium and long-term (BIS).

United States: short-term: 5% of tax-exempt debt; 10% of commercial mortgages; all credit card debt; 35% of consumer credit; 40% of all bank loans not classified elsewhere.[52]

Table 13: Breakdown by type of interest rate: adjustable and fixed

Note: for short-term, see the annex notes to Table 9. In what follows, medium and long-term debt with a rate adjustable at intervals no longer than one year is referred to as "adjustable (a) ", and that whose rate moves broadly in line with short-term rates as "adjustable (b)". In the absence of specific information, (a) and (b) were assumed to coincide.

All countries: unless otherwise specified, all securities are regarded as fixed rate.

Australia: rough estimates based on a variety of sources (Reserve Bank of Australia). Some adjustments were needed for a consistent treatment of bank bills (BIS).

Austria: (a) = 78.5% of medium-term and 64.2% of long-term bank loans (66% of total medium and long-term loans). OFI loans, all medium and long-term at fixed rates (BIS). Some minor adjustments necessary to add to securities. 5% of securities at variable rates.

Belgium: no estimates appear to have been necessary. (a) = (b).

Canada: (a) = (b) includes 40 and 60% of non-residential and residential mortgages respectively; 20% of personal loans and 100% of the remaining medium and long-term loans (all rough).

France: (a) = (b) = 43 and 9% of lending to businesses and households (narrowly defined) respectively. Estimates based on the surveys on the cost of credit. The results are very similar to those that can be obtained on the basis of the survey on the sensitivity of banks' balance sheets to interest rate changes (see main text).

Germany: (b) = 1/3 of medium and long-term lending (rough). Because of the presence of other reviewable rate loans whose rate behaves more like a long-term rate, (a) is higher.

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52 See L.J. Radecki and V. Reinhart (1994).

Italy:	OFIs (a) = (b) assumed to be the same as for long-term credit banks (55.2%) (BIS).
Japan:	BIS estimates made from a variety of sources.
Netherlands:	(b) = 15% of bank medium and long-term lending; (a) > (b); OFI medium and long-term loans, all at predominantly fixed rates (all rough) (BIS).
Spain:	(a) = all variable rate loans in credit statistics (rough, upper limit). (b) assumes that all variable rate mortgages are not related to short-term rates. Variable rate mortgage loans are estimated as 100% of those from mortgage companies and 75% of those from deposit-taking institutions.
Sweden:	(a) = (b) = 10% of OFI loans; 0% of bank medium and long-term loans (BIS).
Switzerland:	(a) = 70% of mortgage lending (BIS) plus 80% of half of fixed-term loans and advances; (b) = 80% of half of fixed-term loans and advances (BIS).
United Kingdom:	80-90% of bank loans are short-term or variable rate (a) = (b) (figures based on survey of three large clearing banks.)[53] Some 90% of building society loans belong to the same category.
United States:	(a) = (b) = 5% of tax-exempt debt and corporate bonds; 30% of home mortgages; 10% of consumer credit; 40% of bank loans not classified elsewhere and of residual other loans category.

Table 14: Breakdown by type of interest rate according to borrowing sector

Australia:	estimates based on a variety of sources.
Germany:	households (narrowly defined): 90% of mortgage debt and 15% of consumer credit are at predominantly fixed rates (rough). (a) > (b) for reasons already outlined. Business sector: calculated residually given total.
Italy:	the share of adjustable rate loans in medium and long-term loans granted by short and long-term credit banks respectively is assumed to be the same for households and businesses.
Japan:	households: short-term plus (a) = 60% of housing loans plus all consumer instalment credit; short-term plus (b) = 0%; businesses: short-term plus (b) calculated residually; (a) > (b) (BIS).
Netherlands:	all variable rate medium and long-term debt assigned to businesses (BIS).
Switzerland:	for both households and businesses the breakdown for mortgages and fixed-term loans and advances is assumed to be the same as in the aggregate.
United Kingdom:	households: short-term plus (a) = short-term plus (b) = 90% of credit (rough). Businesses: 80-90% in the same category (mid-range estimate used to add to securities).
United States:	calculated by applying the aforementioned percentage estimates for the various categories of credit. This assumes that within each category (e.g. loans not classified elsewhere) the breakdown is similar for households and businesses (BIS).

53 It is not clear, however, whether original or actual maturity is used in calculating these figures.

Table 15: Breakdown by type of interest rate according to loan-granting institutions

Australia:	(a) = (b): percentage of variable rate medium and long-term loans is the same for banks and near-banks (BIS, rough).
Belgium:	OFI loans all predominantly fixed rate.
Canada:	application of previous estimates based on the nature of the instrument to the loan portfolio (BIS).
Germany:	all variable rate medium and long-term loans allocated to banks; none to OFIs (BIS).
Spain:	application of previous estimates on variable rate mortgage lending.
Switzerland:	mortgages granted by life assurance companies and pension funds treated like those granted by banks (BIS).
United States:	application of previous estimates based on the nature of the instrument to the loan portfolio (BIS).

Table 16: Collateralisation of loans

	Procedure for estimating the share of bank loans to businesses backed by real estate collateral (all by BIS):
Austria:	mortgages (including some loans to local authorities) minus housing credits ("für den Wohnbau").
Canada:	non-residential mortgages.
Germany:	mortgage loans minus residential mortgages to households ("consumers").
Japan:	bank loans backed by real estate collateral minus bank housing loans.
Netherlands:	mortgages on dwellings to businesses.
Spain:	mortgages of deposit-taking institutions minus housing loans to individuals.
Switzerland:	assumes that the ratio of current account credits and other non-mortgage loans backed by real estate collateral is the same for households and businesses.
United States:	commercial and multi-family residential mortgages granted by commercial banks and thrifts.

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