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FINANCIAL FRAGILITY IN THE EARLY 1990s - WHAT CAN BE LEARNT FROM INTERNATIONAL EXPERIENCE?¹

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Abstract

One of the distinctive features of the recent recession in a large number of OECD countries was financial fragility, whereby the pattern of economic activity was considered to be severely affected by the efforts of households and firms to correct disequilibria in their balance sheet positions so as to avoid financial distress. Whereas a number of papers have been prepared focussing on patterns of fragility in individual countries, there have been relatively few analyses of the phenomenon at a global level, and in particular of the features that distinguished countries experiencing financial fragility from those that did not. This paper seeks to fill this gap by assessing experience of financial fragility for the G-7 countries, Scandinavia and Australia over 1988-93, using as material key indicators at a macroeconomic level. A general pattern of financial fragility is outlined and traced in the data for a variety of countries, and the distinctive features of countries where fragility did not arise is also considered. In this context, particular focus is laid on the interrelation between asset prices and credit, as well as the potential importance of moral hazard and adverse selection. The second section complements this analysis by assessing the results of a number of more detailed studies of issues in financial fragility that have been made at a national level, and which are nonetheless considered to have a broader applicability, notably the role of distributional factors within sectors. The implications and likelihood of recurrence of these patterns is considered in a concluding section.

Introduction

One of the distinctive features of the recent recession in a large number of OECD countries was financial fragility, whereby the pattern of macroeconomic activity was considered to be severely affected by the efforts of households and firms to correct disequilibria in their balance sheet positions so as to avoid financial distress, and by the related decline of property prices. This “credit cycle” generated one of the most acute periods of financial instability in recent times. Indeed, Goodhart (1995) suggests that of the five principal financial disturbances since 1987 (Stock Market Crash, 1992-3 ERM crisis, the property cycle analysed here, 1993-4 bond market, 1995 forex market) “only the property bubble and bust left much of an adverse mark on real economies”. Whereas a number of papers have been prepared focussing on patterns of fragility in individual countries, there have been relatively few analyses of the phenomenon at a global level, and in particular of the features that distinguished countries experiencing financial fragility from those that did not. This paper seeks to fill this gap by assessing experience of financial fragility for the G-7 countries, Scandinavia and Australia over 1988-93, using as material key indicators at a macroeconomic level. It does not address directly the issue of the genesis of bank failures and systemic risk (see Davis 1995a).

The paper is structured as follows: A general pattern of financial fragility is outlined and traced in the data for a variety of countries, and the distinctive features of countries where fragility did not arise is also considered. In this context, particular focus is laid on the interrelation between asset prices and credit, as well as the potential importance of moral hazard and adverse selection. The second section complements this analysis by assessing the results of a number of more detailed studies of issues in financial fragility that have been made at a national level, and which are nonetheless considered to have a broader applicability. The implications and likelihood of recurrence of these patterns is considered in a concluding section.

(1) Financial fragility over 1988-93

The period from 1988-93, of boom followed by recession, has been a crucible for assessment of the validity of concerns regarding the macroeconomic implications of financial fragility. To summarise, one is seeking evidence for "allocative effects of imperfections in capital markets which can imply spillover effects between disruptions in financial markets and subsequent economic activity"², and which may entail substantial changes in expenditure without the interest rate changing. It should be borne in mind that in conventional "IS/LM" macroeconomic theory, which assumes perfect capital markets, such real/financial interactions would be limited to effects of the money supply on prices, and interest rates on real expenditure, see Davis (1994). In real business cycle models, economic fluctuations are

² Sibjen (1994).

generated solely by exogenous shocks to the real side of the economy, such as changes in consumer preferences and production technology.

The *upturn* in the business cycle in the 1980s was widely accompanied by rising debt and evidence of increased vulnerability to bankruptcy on the part of households and companies (notably increased capital and income gearing). Various reasons for this, both on the supply and demand side, may be suggested, notably financial liberalisation, increased competition among financial institutions and increased expectations of long term income growth. Moreover, a link could be postulated between borrowing itself and the amplitude of the 1980s upturn. However, it is also worth bearing in mind that the so-called “debt deflation” theory suggest there is an *inherent* link between financial excesses and the cycle, with a form of initial stimulus to borrowing leading to steady increases in vulnerability over the upturn, which is intensified by further borrowing. Their theories are, however, disputed by those wishing to retain the postulate of rationality of economic agents.

In the light of the theories of debt, corporate and personal financial fragility, a number of mechanisms may be conceived whereby financial fragility on the part of households and companies may have macroeconomic consequences in a *downturn*. The most important of these are falls in demand for credit due to fear of bankruptcy on the part of heavily-indebted households and companies, which may accentuate cyclical fluctuations in saving and investment; limits to the supply of credit caused by capital adequacy problems of banks or increased risk aversion of lending officers following loan losses; interactions between lending, balance sheets and asset prices; contagious failures in the corporate sector; and insolvency of individual banks³. It may also weaken the resolve of the authorities to pursue a counter-inflationary monetary policy, thus risking 'validation' of increased gearing levels, as well as diminishing incentives to control fiscal deficits. Note that several of these mechanisms would be less important in the theoretical case of free access by all borrowers to all forms of finance envisaged by Modigliani-Miller and conventional macroeconomics. Equally, different types of bank-client relationships may dampen or amplify these effects. For example relationship banking, by reducing information asymmetries, may help protect firms from credit rationing and bankruptcy.

In extreme cases, such fragility may link directly to financial instability, via the mechanisms of the *debt deflation*, as outlined by Fisher (1933)⁴. A shock to a highly-indebted economy, implying significant default on interest and repayment obligations, can generate 'distress' sales of assets, declining asset prices, a fall in the money supply as loans are repaid, consequent falls in general wages and prices, rising real debt burdens, calling of loans, contagious bank failures and a collapse of economic activity. In effect, excessive debt and deflation reinforce each other and drive the economy into a downward

³ Note that none of these mechanisms would be important in the theoretical case of free access by all borrowers to all forms of finance envisaged by Modigliani-Miller and conventional macroeconomics.

⁴ The reader is also referred to Minsky's (1977) financial instability hypothesis.

spiral. Due to the banking crisis, the process may be reinforced by severe credit rationing for wide groups of borrowers dependent on banks (Bernanke 1983). The Great Depression, is an example.

To provide material and help further to develop the analysis of the 1988-93 period, Tables 1-13 provide comparative data for key macroeconomic and fragility indicators over this period for the G-7 countries, together with Norway, Australia, Sweden and Finland. Note that the data in the tables are purely macroeconomic and cannot *prove* which particular mechanisms were at work in any particular country at a micro level. However, in combination with contemporary accounts, and recent analyses (Sect. 2), we would suggest they enable a clear picture of the nature of fragility at a macroeconomic level to be drawn. The contrast to be considered in the tables is between countries that experienced financial fragility in some degree (Norway, Sweden, Finland, Japan, United Kingdom, United States, Australia), those with less severe difficulties (France) and those with very little (Germany, Italy).

A general pattern of fragility can straightforwardly be outlined (see also OECD 1993, Borio et al 1994), and traced in the data in Tables 1-13 (titles are shown in bold type). **GDP growth** (Table 1) was rapid in many countries during the mid-to-late 1980s, aided by factors such as the stance of monetary policy, with low **interest rates** (Table 2) after the Stock Market Crash, as well as the oil counter shock's effects on real incomes. Given tax relief on interest payments at high marginal rates, post tax real interest rates for households and companies would often be negative, encouraging borrowing. But there is also the familiar pattern of financial liberalisation, which led initially to an adjustment in balance sheets, as consumers and (in some cases) companies adjusted to their desired levels of debt, from which they had often previously been restrained by credit rationing. This adjustment is shown by growth in indicators such as **corporate debt/GDP** (Table 3) and **personal debt/GDP** (Table 4). Rises in interest obligations would typically ensue. Note, however, that levels of these ratios vary strongly in a way not related to fragility; changes are arguably most relevant to fragility, with equilibrium levels being determined by structural features of the financial system. Given the rapid growth of nominal GDP, growth of credit per se was exceptionally fast.

Partly owing to the boom and the stance of monetary policy, but also due to willingness of banks to offer housing loans and finance commercial property and mergers, **house prices**⁵ (Table 5) and **commercial property prices** (Table 6), as well as share prices, also rose rapidly. According to contemporary accounts, in countries where there was rapid credit growth they often reached levels exceeding those justified by any reasonable expectations of economic growth and sectoral demand - in other words, having many characteristics of a bubble. Note, however, that there was also a more generalised rise in commercial property prices (in metropolitan areas) in all the countries examined.

⁵ As noted by Hargraves et al (1993), deregulation of loans for house purchase would lead in any case to a relative price adjustment, as it entails an effective reduction in the cost of housing finance. But in many countries, intense competition to lend on the part of banks may have exacerbated the increase.

Both the adjustment in balance sheets itself and the property boom intensified GDP growth, as for example expenditures (consumption, investment, merger financing) were driven up relative to income, as indicated by the *corporate financial balance*⁶/*GDP* ratio (Table 7) and the personal *saving ratio* (Table 8). It has rightly been pointed out that liberalisation is itself a loosening of monetary policy, which necessitates higher interest rates than would otherwise be the case. Note also that property lending, property prices and economic growth can interact with each other, given that, first, credit tends to boost asset prices; second, property at or near current market prices is used as collateral for further loans; third, there is typically an effect of property investment on output (notably for construction); and, fourth the effect of improved expectations of economic growth on the future profits discounted in property prices, which gives a further incentive to invest in this area⁷ (for an analysis of the lending-commercial property prices link in the 1970s and 1980s, and its relation to macroeconomic developments see Borio et al. 1994). Particularly in conditions of optimism regarding future income growth that such economic conditions may engender, this pattern in turn could lead households and firms to accept further growth in *corporate debt/GDP* and *personal debt/GDP*, and hence interest burdens, beyond that initially sought when rationing constraints were eased. This may be helped by the fact that in boom conditions *business failures* (Table 9) and *personal bankruptcies* (Table 10) remain at relatively low levels. Also leverage itself was relatively constant during the debt build-up, which may have given a false sense of security.

Tightening of monetary policy, with increases in *interest rates* due to fears of rising inflation would often trigger the end of the boom, although idiosyncratic shocks such as effects of the collapse of trade with the Soviet Union (Finland) or effect of tax reform (Sweden), desire to peg the exchange rate (Sweden, Finland and the UK) as well as a natural decline in borrowing as agents reached their desired balance sheet patterns often also played a role. *GDP growth* and inflation would slow, thus together with higher interest rates triggering a fall in *house prices* and *commercial property prices*, as well as equity prices, a decline in corporate cash flow and personal income. Under pressure from such developments, which reduce net worth and raise the interest burden, the personal and corporate sectors would cut expenditures sharply, not merely to ensure current obligations could be covered, but also to adjust balance sheets to reduce such obligations. Obviously, they would otherwise fear cut-off of credit and financial distress.

This effort would be most apparent in sharp rises in the *corporate financial balance/GDP* ratio and the personal *saving ratio*, as well as issue of corporate equity. The degree to which balance sheets actually adjusted (given changes in the denominator) would be indicated by *corporate debt/GDP* and *personal debt/GDP* ratios. Despite efforts at adjustment, a rise in *business failures* and *personal bankruptcies*

⁶ That is, companies' net acquisition of financial assets - the difference between income and expenditure.

⁷ Recall that according to the present value formula, the price of an asset depends on the discounted present value of expected future income streams to be derived from it, which hence varies with expected economic growth and interest rates.

would tend to accompany such patterns. In some circumstances, notably where owing to default by borrowers banks face heavy *provisioning* needs (Table 11) and low *profits*, (Table 12), this demand-side effect could be aggravated by supply side constraints on bank loans, apparent for example in rising *interest rate margins* (Table 13) or spreads and credit rationing, often to an extent that goes beyond that which would be warranted by the increase in credit risk (or at least, entailing a sharp rise in spreads as previously excessively narrow spreads were returned to normal levels). Supply side credit constraints would mean expenditures would be further restrained. Quantity rationing by banks of customers solely dependent on them for credit would have a particularly strong leverage. But note also that the deterioration in borrowers' net worth that would accompany falling asset prices would make *all* lenders, including securities markets, less willing to extend credit owing to fear of moral hazard and adverse selection (Bernanke and Gertler 1989). For all these reasons, a marked credit slowdown would be a key feature of the prolonged recession. In the wake of the onset of recession, *interest rates* might be reduced, to prevent fragility turning to debt deflation.

Few of these patterns would be present in an economy not subject to financial fragility, i.e. with no build-up of debt or asset-price bubble. In particular, one would anticipate a lower degree of fluctuation in financial balances and saving, and for a lesser increase in defaults for a given change in GDP. The banking sector would be relatively unaffected by the recession, and without an overhang of debt to unwind, recovery from recession would be rapid - as indeed was the case in countries such as Germany in 1994.

Various comparative points regarding country experience may be made from examination of the individual tables. As regards *GDP growth*, it is apparent that the deepest recessions in the early 1990s were in the United Kingdom, Sweden and Finland⁸. Smaller declines in activity occurred in the United States, Canada and Australia; recession came much earlier in Norway, due to the fall in oil prices in 1986, and later in Germany, Italy and France than elsewhere. However, performance should also be judged relative to trend growth, on which basis Japanese growth in 1993, for example, was exceptionally low. In fragile economies, recessions also tended to be longer, reflecting the time taken to reduce the burden of debt by cutting expenditure and raising saving.

Easing followed by tightening of monetary policy is apparent from the pattern of *interest rates* in a number of countries during the boom and shortly before the recession, notably the United Kingdom, United States, Japan, Sweden and Finland. In several cases, such patterns were admitted in retrospect to entail policy errors, for example the low rates in the mid-1980s in Japan, which were held to generate the asset price boom. In the case of the United States and Japan, a further relaxation occurred quickly after fragility emerged, to ease difficulties for borrowers and lenders, whereas in the United Kingdom,

⁸ King (1993) shows that in each case falls in consumption were the main determinant of these patterns.

Sweden and Finland it occurred much later - in fact, when the currencies' links to the ERM were broken in 1992. The recession was corresponding deeper in those countries.

As regards *corporate debt/GDP*, long run trends in the major countries are commented on in Davis (1995a); Finland, Japan and Sweden showed exceptionally high, and rapidly growing ratios over the boom. Growth was also apparent over 1988-90 in the United Kingdom, United States, Canada, France and Germany. Given the extremely rapid growth of real GDP over this period, the growth of nominal credit was clearly quite exceptional. And with debt growing faster than production, a rising burden of interest payments would be implied. Over the recession, downward adjustment of debt ratios was apparent in the United States, while debt ratios fell throughout 1988-93 in Australia. Declines in the United Kingdom were slight, while ratios fell in France and Finland in 1993 only. Given the sharp recessions in Scandinavia, flat debt ratios are often consistent with falls in nominal debt (indeed this is a symptom of debt deflation, as discussed below). Note that German data after 1992 include eastern Germany; the data are consistent with relatively constant leverage in western Germany.

Personal debt/GDP ratios rose sharply in 1988-90 in the United Kingdom and Japan, and to a lesser extent in the United States and Canada. Note that unincorporated businesses are included in the personal sectors in the United Kingdom and Japan, so part of the rise may relate to lending to such small businesses, although the bulk was in each case loans for house purchase. In none of the G-7 countries did the personal sector as a whole reduce gearing over the recession; Norway and Sweden, where financial distress was widespread and banks became insolvent, are the main examples of declining debt ratios; in Finland, as for companies, falling nominal GDP ensured debt ratios were maintained despite falling debt; elsewhere ratios remained on a plateau.

House prices rose by at least 20% over 1988-9 alone in the United Kingdom, Japan, Canada, Sweden, Finland and Australia, having also risen sharply earlier in the decade. As noted above, this pattern accompanied rises in personal debt/GDP ratios, although debt/wealth ratios were often flat. Falls in house prices over the early 1990s, implying a risk of "negative equity" positions for highly-leveraged households, were most marked in the United Kingdom, Japan, France, Norway, Sweden and Finland. Prices in the United States, Canada, Australia and Germany did not experience such major declines. Note, however that the nation-wide indices quoted may mask larger falls in particular regions, notably in the United Kingdom and the United States.

Patterns of *commercial property prices*, which cover major metropolitan areas, are even more common across countries; there was virtually an OECD-wide pattern of boom⁹ and bust in this market over the

⁹ Aglietta (1994) notes that there was a strong relation between the ratio of asset price growth over the 1980s (a weighted average of house prices, equity prices and commercial property prices) to GDP growth over the same period on the one hand, and the scope of deregulation and/or private credit/GDP on the other. Hence

period shown, which paralleled patterns of credit expansion. That said, prices were already falling in Norway in 1988, and growth had already slowed markedly in the United States and Japan, in the case of the former because the withdrawal of special tax provisions in 1986 had made commercial property investment less attractive. The disposal of real estate assets held by the Resolution Trust (the body set up to restructure the thrift industry) may have accelerated price falls in the United States (Davidson 1993). Prices fell in all countries except Germany in 1991 and in all countries in 1992. Only in the previously worst-hit countries, the United Kingdom and Norway, was some recovery apparent in 1993.

The corporate financial balance/GDP ratio indicates the degree to which companies adjusted their financing and expenditure in the recession, in response, inter alia, to declines in cash flow and the level of gearing, and possibly credit rationing. Taking the difference between the largest deficit observed and the outturn for 1993 as a measure of adjustment, some quite exceptional turnarounds occurred, such as 4.5% of GDP in the United Kingdom, 6% in Japan, 8% in Sweden, 7% in Norway and Finland, and 10% in Australia. To the extent financial factors forced such changes, fragility would help to explain the sharpness of the recession.

Similar comments apply to the personal *saving ratio*. The pattern of rising saving in recession to avoid financial distress was intensified in some countries by widespread negative housing equity, which meant sales of assets rather than reducing expenditure was virtually ruled out as a means of avoiding financial distress. In effect, illiquidity of assets was sharply increased. In the United Kingdom, increases in saving equivalent to 7% of personal income occurred, in Sweden 12%, Norway 7% and Finland 9%, and a large part of this may be attributed to financial fragility (desire for precautionary saving owing to fear of unemployment may also have played a role, of course). Particularly since in most cases personal disposable income was weak, this implied marked falls in consumption, the largest component of GDP; and as noted, these countries experienced the sharpest recessions. A lesser increase in the saving ratio was apparent in the United States and France, but elsewhere the saving ratio was flat or declining in recession, notably in Germany and Italy. Of course, the 'permanent income' theory of consumer behaviour *anticipates that saving will fall* in a recession, as consumers run down assets or borrow to make up shortfalls in transitory income, thus stabilising the economy; but this typically occurred in the absence of fragility. Given the importance of consumption to aggregate demand, this effect of increasing saving is an important destabilising effect of fragility at a macroeconomic level.

In any recession, *business failures* will tend to rise, but the scale of the increase in 1990-3 was exceptional in countries such as the United Kingdom, Sweden and Finland; that is, the countries where increases in corporate gearing, volatility in commercial property prices and declines in GDP itself were most marked. Major rises in business failures also occurred in the United States, Canada, France and Australia. Failures in Norway picked up once a recovery began, after the banks were nationalised,

growth of asset prices was nearly seven times that of GDP in Sweden, and only twice in Germany (on the other hand the ratio in the USA was only 1.5).

suggesting a tightening of credit terms. Comparing the data with Table 1, it is apparent that in both Germany and Japan failures in the boom of 1988 were comparable with the recession itself, while in recession, the rate of failure tended not to rise till the slowdown was well advanced. This may relate to the benefits of relationship banking in helping support borrowers, although note that there are also major contrasts between these two cases, in that Japan experienced acute financial fragility (Sect. 2), while Germany did not. A marked feature of the pattern in the United Kingdom compared with other recessions was that business failures soared as soon as the recession began, as banks seemingly sought to realise losses rapidly (Joyce and Lomax 1991). Elsewhere crystallisation of losses was a slower process.

Personal bankruptcies rose sharply in the United Kingdom and Canada, and to a lesser extent in Japan and Scandinavia. In most countries, this suggests a lesser vulnerability of persons than companies, although it should be borne in mind that mortgage foreclosure does not entail bankruptcy in most countries. Problems in the housing market were often severe; in the United Kingdom, for example, the proportion of mortgages over six months in arrears rose from 1% of the stock in 1988 to 3.5% in 1992. In the United States, by contrast, foreclosures rose only from 0.27% in 1988 to 0.34% in 1991.

As regards the experience of banks, the major losses experienced by banks in Norway and Finland, together with sharp declines in *profits* in the United Kingdom, Japan, Australia, the United States (till monetary policy was eased in 1991), and France are apparent. Data for Sweden are distorted by government subsidies; in their absence the outturn would resemble that for Norway and Finland. Bank profits in Germany and Italy, which were unaffected by fragility, experienced no decline. As regards underlying factors, it is apparent that *provisioning* needs were a major cause of the fall in profits in the United Kingdom, Norway and Australia. In Sweden and Finland loans were written-off without any provisions being made. Meanwhile marked declines in the *interest margin* put pressure on French banks¹⁰. Widening of overall margins, to rebuild capital and/or in response to higher risk is most apparent in the United States, Japan and Norway. As discussed below, such data may mask forms of *quantity* rationing of credit.

To conclude, the data seem to show broadly similar patterns, consistent with the predictions of the theory of financial fragility and the early stages of debt deflation, in most of the countries studied except Italy and Germany. Nevertheless, it is apparent that in terms of macroeconomic data such as balance sheet adjustment, defaults, asset price declines and depth of the recession per se, fragility was most severe in the United Kingdom, Norway, Sweden and Finland; however, in Japan the full extent of the recession may still not be apparent.

(2) Studies of National Experience of Financial Fragility

¹⁰ This was partly associated with shifts of deposits to money market mutual funds (SICAVs monétaires).

There follows a summary of selected studies of national experience, which supplement the largely descriptive analysis above, and are considered to cast further light on the general macroeconomic causes and consequences of fragility. Several of them address the question of the balance of supply and demand factors in the reduction in credit growth. Experiences of the banking sectors in Finland, Norway, Sweden and Japan, where the consequence of fragility in the non financial sectors was clearly systemic risk in terms of wholesale actual or threatened insolvency of banks, are discussed in Davis (1995a).

In the **United States**, a distinctive feature of the 1980s increase in credit was that it was asset based (commercial property, LBOs, take-overs) and not focused on increased fixed investment (Friedman 1993). Akhtar (1993), summarising a detailed set of studies of the 1989-92 credit slowdown, acknowledged that credit rationing probably influenced the recession, but was only one of a number of such causal factors, such as tight fiscal policy, the defence rundown, adjustment of construction to previous overbuilding and declining private-sector confidence. He noted that overall credit growth for the non-corporate business sector fell most sharply¹¹, followed by the corporate sector, then the household sector. A similar ranking applied for bank credit growth. Thus small businesses were hardest hit (Hamdani et al (1993) provide evidence of credit tightening for small US firms¹².) Home mortgage lending continued to grow over 1989-92, while business property lending collapsed. The decline in credit extension by depository institutions was greater than that by non depository sources, largely due to the collapse of lending by Savings and Loan institutions¹³. Bank credit per se expanded modestly, and among non depository sources, finance company, commercial paper and life insurance lending growth was very slow, while junk bond issuance collapsed, although bond and equity issuance proceeded at a brisk pace.. The weakness of non depository lending implied firms unable to issue bonds or shares were unable - or unwilling - to substitute out of bank credit.

Akhtar suggested that reductions in *demand* for private-sector credit - both in terms of the recession itself and the correction of balance sheet weakness - probably dominated overall credit movements, but that supply problems, related to tighter capital standards, bank capital difficulties (owing to the need to provision against loan losses caused by default and falling asset prices), balance sheet difficulties of lenders and perceptions of lower credit quality of borrowers¹⁴, contributed importantly to the slowdown (see also Cantor and Wenninger (1993) and Hancock and Wilcox (1992)). Supply factors were felt to be particularly important for the corporate sector, where Akhtar calculated that the effect of the recession together with the previous overshooting of equilibrium balance sheet positions was insufficient to account for the slowdown in credit which did occur. However, for households, recession plus balance

¹¹ For recent US analyses of the vulnerability of the small business sector see Gertler and Gilchrist (1991, 1992) and Bernanke, Gertler and Gilchrist (1994).

¹² See Bank of England (1993) for similar evidence for the UK.

¹³ Their lending fell 45% over 1989-92.

¹⁴ We would not view this last point as a shift of the supply curve of credit, but merely lenders adapting their existing willingness to supply credit so as to ensure profit maximisation.

sheet correction more than accounted for the observed decline in credit expansion. Further evidence of supply constraints was that banks with weak capital positions and which had engaged in high risk lending in the mid-1980s reduced lending over 1989-92 much more than other banks. Supply constraints were particularly important in certain regions, such as New England, Mid-Atlantic and West South Central. Supply constraints were considered to be verified by prolonged increases in both price¹⁵ and non price rationing of credit, together with increased collateral requirements. However, note that besides reflecting a desire to rebuild capital and tighten previously-loose lending standards, these might occur as borrower quality decreased without any change of attitude on the part of banks.

The Federal Reserve considered these effects sufficiently serious by 1991 to feel the need to ease monetary policy. They stated that policy easing was being carried out "to foster a turnaround in the economy....continued weakness in the monetary aggregates and further restraint on credit availability, especially at banks, also were important indicators of the need for additional policy easing". Indeed, it is acknowledged that the low interest rate policy pursued over the next three years was aimed partly at enabling banks to recapitalise themselves by profiting from holding bonds, in the context of a steeply upward-sloping yield curve. The importance of credit-supply factors, in addition to the need to correct balance sheets, may help to explain why the easing of monetary policy seemed to have relatively little effect on output per se or credit growth for some considerable time¹⁶. A notable feature of the recession is that not only did credit growth take some years to pick up, but also company financing was focused on securities issuance.

In **Japan**, the Ministry of Finance (1993), assessing the causes of the 'bubble economy' in the late 1980s, noted the way that exchange rate considerations - in effect, desire to prevent the yen becoming overvalued - after the Louvre Accord led the central bank to maintain interest rates at levels too low for domestic balance, which in turn helped to generate a bubble. They also identified a so-called "land myth", namely that land was an unbeatable investment whose price could not fall, and which helped generate an asset-price bubble.

An interesting interpretation of the Japanese bubble economy has been provided by Hargraves et al (1993). They maintain that a flow-of-funds explanation, focusing on the interaction of households', companies' and banks' demand and supply of funds, can provide important clues as to why real estate and share markets in Japan overheated much more than most of their overseas counterparts. From the beginning of the 1980s, Japan faced a growing pool of investable funds relative to traditional domestic investment opportunities, as corporate fixed investment slowed to a rate which was commensurate with internal fund generation. Companies initially switched deposits from banks to gensaki deposits and the

¹⁵ Banks often took advantage of falling interest rates to raise spreads.

¹⁶ While acknowledging that balance sheet restructuring by firms was the principal reason for this slow recovery of lending, Matta (1994) suggests that this pattern was accompanied by credit rationing, as banks adjusted their loan conditions much more gradually than companies expanded demand for bank credit

euromarkets. Meanwhile, households shifted funds from bank deposits to insurance and pensions, in search of higher returns and to provide for old age, which the latter invested in securities, including corporate securities, government bonds and overseas securities. Banks were thus already under pressure on the liabilities side early in the decade.

But after 1985, several of the existing outlets for saving were closed, as overseas securities were seen as excessively risky after the appreciation of the yen began after the Louvre Accord, and government deficits declined. The excess supply of securities was exacerbated by lax monetary policy, which made bank deposits even less attractive to households. Excess supply boosted the price of domestic shares and increased the attractiveness of securities issuance by companies (especially in the form of bonds with attached equity warrants). The funds accumulated by companies as a result of equity issuance were invested to a considerable extent in financial assets¹⁷, mainly large bank time deposits - protected by government guarantee, and on which terms had now been deregulated - as well as real estate investments and financial assets. Banks, given the inflow of deposits and low interest rates, together with continuing lack of corporate loan demand and low issuance of government bonds, channelled assets into real estate loans, directly and via non bank banks. Given a relatively fixed supply of land, prices rose sharply. However, because the increased lending did not flow to the economy more generally (in contrast to other countries such as the United Kingdom and United States), general inflation did not ensue.

The authors suggest that this pattern¹⁸ entailed a failure of corporate control mechanisms, in that households indirectly financed the bank deposits and real estate investments that they had sought to avoid. Traditionally companies' use of funds was overseen by banks, but the shift of companies to other forms of finance, and increasing reliance on internal funds, had weakened this control mechanism (Hoshi et al 1990). Take-overs were absent as a control mechanism in Japan, given the cross share holdings in the Keitetsu groupings, while the other firms in the group did not pressure firms for higher dividend payments, which could have aided market discipline by ensuring a market test for investment.

However, Nakajima and Taguchi (1993) dissented from the implicit suggestion in the flow of funds approach, that there was any inevitability to lending to real estate. They note that many banks in Japan and elsewhere adopted more selective strategies for credit granting and remained sound. Rather, they suggest that mismanagement occurred in troubled banks, largely as a consequence of moral hazard arising from the safety net.

¹⁷ 42% between 1986 and 1989.

¹⁸ The authors suggest that a similar explanation can be adduced for patterns of asset price inflation in the United Kingdom and United States, in particular the shift of UK banks to the mortgage and real estate market while deposits continued to flow in and corporate loan demand was low; and the relatively subdued real estate cycle in the United States, given the decline of the balance sheet of the banking sector in that country.

In the downturn of the early 1990s, there were severe falls in profitability for all types of non financial firms, accompanying a rise in the interest burden from 53% in 1988 to 72% in 1992 (Aglietta 1994). An additional difficulty for firms was the need for refinancing with conventional debt of maturing bonds with equity warrants attached. These had been issued at the peak of the boom, but where due to falling equity prices, the warrants had not been exercised. As regards the issue of credit rationing in the downturn, according to Ministry of Finance (1993), the imposition by the authorities of quantitative limits on real estate lending in 1990 to cool the boom clearly induced forms of disequilibrium quantity rationing of credit. Also banks' lending attitudes became more cautious, with much lesser emphasis on collateral and more on cash flow. By 1994 there was considerable evidence of willingness to let customers go bankrupt. As noted by Dawkins (1994), the largest of these was Muramoto Construction, which failed in 1993 with debts of Y590 billion. But a year earlier it was not shown as a bad debt on banks' annual accounts.

In the **United Kingdom**, Smith and Sterne (1994), using micro data, noted that there was a wide *dispersion* in debt levels across different individuals and companies prior to and during the recession, which mean the aggregate data for the personal and corporate sectors presented above may underestimate the problem of financial fragility. Indeed, in the United Kingdom, the relative lack of adjustment of debt ratios over the recession was felt to show that the personal sector *in aggregate* found current ratios sustainable. But a significant proportion of the personal sector, which were heavily indebted and which suffered disproportionate falls in house prices, experienced so-called "negative equity", meaning the value of their mortgages exceeded that of their houses (Paisley 1992). Such borrowers, even if they did not default, would be unable to access further credit and made a major contribution to the decline in consumption over the recession¹⁹.

For companies, the level of the average debt ratio per se was again considered at most a partial indicator of potential financial distress. More relevant was felt to be the fact that its growth over the 1980s also entailed major and growing variations in leverage between firms; analysis showed an increase in diversity of leverage in the 1980s, with many small firms in the upper tail of the distribution, an extremely rapid rise in leverage for such firms, and particularly severe falls in profitability for them over the recession. Such firms with extreme levels of gearing were much more likely than average to cut investment and employment, or indeed to fail, thus in each case leading to potential spillover effects on other firms. These firms would often be either young or in sectors such as construction and services that had been relatively unscathed by the recession of the early 1980s, and hence in each case had no previous or recent experience of financial difficulties.

¹⁹ However, disappointed income expectations, i.e. a revision downwards of the high growth rates envisaged in the late 1980s, were also considered to be important to the decline of consumption (there are links between the debt and income expectations explanations, since increased expectations of income growth might lead a household to borrow more).

An interesting development, noted in Davis (1993), is that net external corporate financing over the early 1990s was almost wholly obtained from securities markets, with bank debt being repaid. As noted above, similar patterns were apparent in the United States. No doubt this partly reflected favourable market conditions for bond and equity issuance, and desire for balance sheet restructuring towards fixed rate debt and equity. But it appears contrary to finance theory (Diamond 1991), which suggests that banks' role as monitors becomes *more* important in recession. A possible reconciliation is that only large and creditworthy firms may access market finance, with restricted financing opportunities and financial distress among a subset of smaller or higher-risk firms, dependent on bank finance (see Bank of England 1993).

King (1993), analysing the experience of the United Kingdom in an international context, again took a disaggregated approach. He puts emphasis in his analysis of the recession on the role of rising household debt, concentrated on a subset of the population (typically young home buyers), backing illiquid assets (ie residential real estate). In such circumstances small shocks to the economy could lead to a phenomenon of cumulative redistribution of wealth from debtors to creditors, as indeed occurred during the disinflation and recession of the early 1990s. Given the higher saving propensities of creditors (older households) compared to debtors (younger households), major macroeconomic effects on consumption could ensue²⁰, as the indebted cut back sharply and creditors do not raise consumption sufficiently to make up, with further feedback effects ensuing. The situation would be aggravated if banks absorbed interest income by raising their margins so as to make provisions, although Table 13 gives little evidence of this in the United Kingdom at an aggregate level. A sharp and protracted recession was the consequence. King's analysis is in effect an extension of the Fisher (1933) debt-deflation story to allow for such distributional effects, and indeed he suggests that similar patterns were present in the Great Depression in the United States.

Note that gross sectoral debt ratios are more likely to capture distributional effects than net debt ratios, since they may more sensitively reflect the balance sheets of the subset of the sector that has mainly debt in its balance sheet.

As regards interest rate policy in the United Kingdom, it was acknowledged by the authorities that in retrospect that rates were too low in 1987-8 as the authorities sought to shadow the DM at a rate the markets considered too low, and the opposite occurred in the ERM period of 1990-2. The former aggravated the debt build-up, the latter the recession and financial fragility, and indeed forecasts prepared in August 1992 just before the ERM crisis showed a risk of a falling price *level* in 1993. In another parallel to Japan, there was clearly a naive faith among the population that house prices 'could not fall in nominal terms', since they had not done so since the war.

²⁰ Note that these points also apply to mature companies with restricted opportunities for profitable investment vis a vis high growth companies highly dependent on external finance.

Berg (1994) suggested that shifts in personal saving, related to changes in asset prices, debt and taxation, were decisive in determining patterns of economic activity in **Norway, Sweden and Finland** (as well as Denmark). He suggested that financial liberalisation, high tax rates and tax incentives to borrowing induced the collapse of saving observed in the Nordic countries in the mid 1980s, as balance sheets adjusted to desired levels. This was crucially linked to asset prices, which rose in response to higher demand for tangible assets (financed by borrowing) and created further collateral. This also meant that leverage itself was relatively constant during the debt build-up - as in the United Kingdom and United States - although the debt/income ratio²¹ and the interest burden soared. And with a frequently negative saving ratio, consumption often exceeded income, generating a boom (and current account problems). Koskenkylä (1993), meanwhile, also highlights a causal role for loose monetary policy.

Monetary tightening to protect the exchange rate, falling inflation, tax reform aimed at reducing both marginal rates and interest deductibility together sharply raised real interest rates. This occurred at a time when debt accumulation was in any case levelling off at desired levels, and coincided with a shift from investment in tangible to financial assets. Together these triggered the collapse in house and property prices, which was worsened by the recession. Widespread 'distress selling' of houses and flats, as well as of commercial property, aggravated declines in asset prices. Rises in spreads between loans and deposits and reductions in credit availability were widespread in the Nordic countries (Berg and Galvenius 1994), again worsening the situation. Indeed in Finland, Söderström (1993) suggests that a full-blown debt deflation began²², while in Denmark, a third of households had negative equity in 1993.

Conclusions

To summarise, experience over 1988-93 tends to confirm the validity of the mechanisms of financial fragility, notably the role of adjustments in saving and falls in asset prices, as means whereby the risk to individual solvency from financial fragility may spill over onto the broader economy. The interrelation between debt and asset prices has been suggested to be particularly important in the context both of the upturn and downturn of the cycle. The national studies highlight a number of additional factors that could be added to the overall picture, notably the shocks that may be generated by interest-tax reform,

²¹ It rose 50 percentage points in Norway from 1984-8, 23% in Sweden from 1986-9 and 15% in Finland over 1987-90.

²² "...the attempts to restore portfolio equilibrium by individual households and firms lead to macroeconomic processes that tend to upset equilibrium even more. Distress selling of assets leads to further declines in asset prices, which forces others to sell their assets. The decline in asset prices leads to bank failures and other disturbances to financial intermediation, which makes it even more difficult to maintain the debt side of the balance sheet. Attempts to reduce debt via higher net financial saving, on the one hand, will reduce domestic demand, and thereby output, employment, profit and household income. Individual attempts to reduce debt may therefore result in an even larger proportional debt burden via declines in asset prices and aggregate income".

the role of exchange rate/interest rate policy in aggravating a credit cycle, the role of income and asset-price expectations, and the relevance of the distribution of indebtedness within the non financial private sectors. However, the national studies also emphasise that there is no single pattern to fragility, with personal fragility predominating in some countries and corporate fragility in others. It is suggested that overall the data and studies presented suggest that there is a clear pattern of a cycle of fragility, consideration of the features of which should be of assistance in assessing the implications of future economic trends. It is suggested that a study of appropriate macroeconomic and financial data, supplemented by an understanding of the typical patterns of behaviour which have preceded crises in the past, may also be of assistance to regulators and markets in preventing fragility in the future. This recommendation implies a need to improve data collection and analysis in a number of countries, notably in the field of asset prices and disaggregated balance sheet data.

A key policy issue raised is clearly whether these patterns may be expected to recur. A number of commentators have suggested that the recent period was historically unique, given the degree of turbulence in the macroeconomy and financial markets, combined with the switch from a regulated to a liberalised financial system. A number of considerations can be adduced.

On the one hand, it is true that the recent period saw much higher inflation than the historic norm, as well as low real interest rates in the 1970s followed by rather high ones in the 1980s. Quite severe periods of global monetary rigour in pursuit of disinflation in the early 1980s and 1990s combined with laxity at other times. It is suggested in the text that these were all significant causes of fragility and instability, and that countries that did not suffer these shifts appear to have undergone a much lower degree of financial difficulty. The authorities may be expected to seek to avoid these difficulties in coming years, given recent experience of them. Indeed, at the time of writing (early-1995), inflation rates are below 3 per cent in many OECD countries, though real interest rates remain high.

Meanwhile, financial intermediaries and borrowers have suffered sizeable losses and failures owing to their willingness to extend and accept credit. Property lending is now understood to be of high risk, particularly when the whole banking sector engages in competition for market share, with little credit assessment. Financial innovations often showed unexpected behaviour in response to market disequilibria or recessions. Regulators, too, learnt a great deal about the behaviour of liberalised financial markets, whose operations differ radically -- and often diametrically -- from those of cartelised, segmented, and constrained sectors typical prior to the 1970s. They are also aware of potential for systemic risk arising from or via payments and settlements systems. Consequently, experience may be expected to imbue caution and greater understanding among players in financial markets, helping to impede a repetition of the excesses of the past two decades. Experience is buttressed by formal agreements to strengthen regulation, such as the Basle agreement on capital adequacy.

Third, a number of factors may divert financing towards equity and away from debt. Tax systems in a number of countries, such as the UK and France, are becoming a great deal more neutral in their treatment of financing methods. The likely further development of pension funds in countries currently reliant on social security (Davis 1995b) may offer a significant fillip to the demand for equity. The development of an EU-wide securities market in the aftermath of the Single Market may increase the access of European firms to equity finance.

On the other hand, a degree of vigilance against financial fragility remains appropriate. Historical experience suggests that memories of financial instability can rapidly fade, a process intensified by rapid turnover of staff and/or intense competition. Examples are the repeated pattern of overlending to Idcs in the 1930s and 1970s, and UK banks exposures to property in the early 1970s and late 1980s. Some of the underlying conditions for financial fragility continue to obtain. The level of competition among institutions and markets remains intense, with one of the root causes being continuing excess

growth of securities and derivatives markets began, the conclusion that the system is stable cannot yet be safely drawn.

While the trend to securities markets may be helpful in promoting equity financing, such markets also open new sources of debt to firms (and households via loan packaging), which US experience of the 1980s shows can lead borrowers into difficulties. Monitoring of securitised debt may be inadequate and/or risks mispriced.

A fundamental question posed by a number of the considerations adduced above, and which has yet to be answered, is whether the levels of financial instability reached in the 1980s and early 1990s, and its consequences for macroeconomic stability, are a permanent feature of liberalised financial markets or largely a consequence of the initial adjustment to liberalised markets. On our view, there are sufficient secular factors - notably competition, institutionalisation, securitisation and the evolving role of banks, to give grounds for expecting a permanent increase in instability. If correct, such a judgement makes development of a better understanding of the causes and consequences of financial fragility and instability all the more important, so as to provide indicators of the risk of a future period of instability to governments, markets and regulators.

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Table 10: Personal Bankruptcies (1988=1)		1988	1989	1990	1991	1992	1993
United Kingdom		1.0	1.1	1.6	3.0	4.3	4.3
United States		1.0	1.1	1.3	1.6	1.6	1.5
Japan		1.0	0.7	0.7	1.2	1.4	1.3
Canada		1.0	1.1	1.7	2.4	2.4	na
France		na	na	na	na	na	na
Germany		1.0	0.9	0.8	0.8	0.8	0.9
Italy		na	na	na	na	na	na
Sweden		1.0	1.0	1.1	1.2	1.5	na
Norway		1.0	1.3	1.1	1.4	1.5	na
Finland		1.0	1.0	1.0	1.3	1.4	1.3
Australia		na	na	na	na	na	na
Table 11: Bank Provisions		1988	1989	1990	1991	1992	
(percent of assets)							
United Kingdom		0.3	1.6	1.0	1.3	1.5	
United States		0.6	1.0	1.0	1.0	0.8	
Japan		0.1	0.0	0.0	0.1	0.1	
Canada		0.6	1.2	0.4	0.5	1.1	
France		0.5	0.5	0.5	0.5	0.7	
Germany		0.2	0.5	0.5	0.4	0.4	
Italy		0.6	0.5	0.5	0.5	0.7	
Sweden		0.9	0.9	0.4	-3.4	-2.0	
Norway		1.5	1.6	1.8	3.5	2.0	
Finland		0.6	0.3	0.3	0.0	-0.1	
Australia		0.4	0.5	0.9	1.2	1.1	
Table 12: Bank post tax profit		1988	1989	1990	1991	1992	
(percent of assets)							
United Kingdom		0.9	0	0.4	0.2	0.1	
United States		0.8	.1	0.5	0.5	0.9	
Japan		0.3	0.2	0.2	0.2	0.1	
Canada		0.8	0.4	0.8	0.8	0.4	
France		0.3	0.2	0.2	0.2	0.1	
Germany		0.2	0.2	0.2	0.2	0.2	
Italy		0.5	0.7	0.8	0.8	0.6	
Sweden		0.3	0.4	0.2	2.0	0.2	
Norway		-0.3	0.1	-0.7	-3.1	-0.3	
Finland		0.5	0.2	0.3	-0.8	-2.7	
Australia		0.7	0.7	0.4	0.4	-0.1	

