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# INTERSECTORAL FINANCIAL FLOWS

## IN IRELAND

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Patrick Honohan



THE ECONOMIC & SOCIAL RESEARCH INSTITUTE

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December, 1992

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# INTERSECTORAL FINANCIAL FLOWS IN IRELAND

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IN IRELAND*

**Patrick Honohan**

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## GENERAL SUMMARY

The purpose of this paper is to review trends in asset holdings and in savings and lending at the sectoral level. Our primary interest is in international flows but as these often reflect, and are driven by, domestic saving and investment decisions, it is necessary to look behind the international flows to the whole range of financial assets and liabilities. We have assembled data from a variety of different sources, and attempt to show how these data can be collated to give an overall view of trends. We distinguish between the household, corporate and government sectors, and track in particular the importance of international assets and liabilities. Public availability of data in this area is less satisfactory in Ireland than in many other countries, and we point to certain potential improvements in official statistics which could be made without undue expense. The focus is on structural aspects, rather than on short-term interest sensitive flows.

The last decade has seen a remarkable turnaround in the direction of international flows involving Ireland, from a deficit of 15 per cent of GNP to a surplus approaching 8 per cent. The change in the Government's financial performance has been a contributory factor. Less well-known, but equally significant, is the sharp growth in business saving: up almost 6 per cent of GNP since 1984. This increase in business saving has not been matched by a corresponding increase in domestic business capital formation. The share of GNP corresponding to household saving has drifted somewhat lower since the mid-1980s.

Taking a longer view, the household sector has been accumulating financial assets at the rate of about 6 per cent of GNP on average since 1949. The business sector has borrowed more than 3 per cent of GNP on average. According to econometric analysis of the data since 1949, movements in the net surplus and deficit of the three domestic sectors are not closely linked. Thus, except to the extent that it may have contributed to higher interest rates, Government borrowing does not seem to have crowded out private business sector borrowing, and conversely the contraction in Government borrowing has not resulted in any noticeable "crowding in" of private capital formation. Although an increase in Government borrowing does tend to reduce the household surplus in the same year, changes in Government borrowing have tended to be associated more with contemporaneous changes in the balance of payments deficit.

Most of the increased business saving of the last few years has gone into acquiring foreign assets (amounting to a net cumulative £3 billion over five years, not including the holdings of financial institutions). The household sector too has been accumulating net foreign assets (though the net cumulative flow here is estimated at not much more than £1 billion). Indeed, the accumulation of foreign assets by the private sector has emerged as the most striking characteristic of financial flows in the early 1990s. While accumulation at recent rates cannot be sustained indefinitely, previous experience does not offer much evidence that a reversal is imminent.

Comparing recent flows with those of the past, the declining role of banks and other credit institutions is striking. Whereas these accounted for close to one-half of household and non-financial business sector flows in the early 1970s, their share had fallen to 26 per cent for households and 37 per cent for businesses in the period 1986-90. Much of the difference for households was taken up by life assurance and pension funds; for the business sector, the increasing role of foreign financial intermediation was the main factor.

Despite net accumulation of foreign assets by the private sector, there is evidence of increased borrowing by residents from non-resident banks. Looking to the future, the tendency for increasing internationalisation will remain, and the increasing freedoms from the end of the year could result in some acceleration of gross international flows.

Official statistics on financial flows are rather deficient relative to best international practice. This paper represents an attempt to collate what is available, but it cannot substitute for a thorough overhaul of official statistics in the area.

## Chapter I

### *INTRODUCTION*

This paper is an attempt to pull together available information on financial flows in Ireland over the past several years, a period which has seen some remarkable developments in the financial environment: the introduction and then phasing out of exchange controls, entry into the European Monetary System and loss of the sterling link, and a dramatic turnaround. Our focus is on medium-term trends rather than on short-term speculative flows.

Despite the importance and volatility of financial flows, data is scarce, and for many issues one is often reduced to back-of-the-envelope calculations. A subsidiary purpose of the paper is to draw attention to data deficiencies and to generate interest in the application of official resources to greater data collection and dissemination in this area.

A special focus of the paper is on the international dimension. While there has been a strong growth in international holdings of financial assets worldwide in recent decades, in this regard Ireland's experience has been somewhat mixed. In certain respects, notably because of the end of the sterling link and the existence of more restrictive exchange controls than in previous decades, the Irish capital market in the 1980s was less integrated with the outside world than it had been before. Yet flows of capital have assumed an importance and an influence on policy that was not evident in previous decades.

Indeed, from a situation – barely more than a decade ago – when foreign borrowing and a record current account deficit in the balance of payments began to impose acute constraints on macroeconomic policy, Ireland has suddenly moved to a position where its current account balance of payments surplus is proportionately among the largest in the world, almost 7 per cent of GNP in 1991, and expected to be higher in 1992 and 1993.

With growing international integration of financial markets, external flows have tended to represent a residual element in the competition of domestic sectors for funds. Thus, through much of the 1970s and 1980s the large current account deficits in the balance of payments reflected the large borrowing requirement of the public sector. At the same time, the

mid-1980s saw the emergence of a sustained net financial surplus in the private sector on a scale that has never hitherto been observed. It is this that, combined with much lower Government borrowing (especially from 1988 on), has led to the large and growing current account balance of payments surplus. Thus the economy as a whole has, in net terms, been repaying foreign debt or accumulating foreign assets.

It is not the intention to provide here a full account of why this change in behaviour has occurred. Undoubtedly, a recognition of the unsustainability of previous policy, together with greatly increased international transfers from the EC, has contributed to the stabilisation of the public finances. The increased private sector surplus is more complex, and its explanation must await further work. We make a start to the explanation by documenting the flows of funds that are involved, distinguishing between the role of household, business and financial sectors.

A large part of saving flows has been channelled through the institutions of the financial system. Thus, for example, household savings deposited with banks or assurance companies may indirectly find their way to net repayment of foreign indebtedness by banks or acquisition of foreign stock market assets by assurance companies. Tracking this web of domestic and international financial claims can help us understand how savings are made available to would-be borrowers, and the role of different financial institutions in facilitating this process.

We begin (in Chapter 2) with a review of the theory of international financial intermediation, examining some of the different motivations for international holdings of financial assets and for capital flows. Chapter 3 explores the main data sources and synthesizes these to obtain for Ireland preliminary estimates of the main financial accounts, namely, the capital accumulation accounts 1986-91 and the capital finance accounts 1986-90. Chapter 4 examines the recent evolution of household and business flows in Ireland. It focuses in particular on international flows and judges the degree to which international capital market integration has progressed during the latter part of the 1980s. The concluding Chapter 5 considers the likely future evolution of financial intermediation in the run-up to the single currency.

In principle, changes in sectoral saving behaviour may both result from, and contribute to, changes in financial market conditions, such as interest rates and loan availability. This is certainly true of the Government's borrowing which has a strong influence on confidence factors feeding into interest rates. However, the degree to which private saving behaviour could affect interest rates and loan availability is

increasingly questioned, given the importance of international factors. A fully integrated capital market would imply tight linkages between interest rates at home and abroad. A later paper will examine the degree to which Irish interest rates have been determined from abroad, and in particular the contribution of external factors to interest rate volatility.

## Chapter 2

### *INTERNATIONAL FINANCIAL INTERMEDIATION*

#### *2.1 Why Transnational Holdings of Financial Assets?*

We begin by reviewing briefly the theoretical reasons why there are international financial flows at all. The concepts of gross and net flows must be sharply distinguished. Even if a country's balance of payments is in equilibrium, there may be acquisition of foreign assets as well as of liabilities to foreigners. Thus gross flows may exist even if there are no net flows. Considerations of portfolio balance underlie most explanation of gross flows, while net flows are usually explained either in terms of economic development or in terms of confidence factors.

##### 2.1.1 Gross Flows

There are good reasons why residents of one country should, even in times of economic stability, wish to hold claims on non-residents. The first reason is risk diversification. The future value of a portfolio of financial assets depends not only on the risk and return characteristics of the individual components of that portfolio, but also on the covariance of the various components. A portfolio split evenly between two assets of equal risk and return, but whose value is highly negatively correlated, will have an expected return equal to that on either of the assets, but will also have a much lower risk.

The returns to international portfolio diversification are a function of how stock markets and bond markets in different countries behave, and of exchange rate movements. (Cho, Eun and Senbet, 1986; Roll, 1992.) Even in large countries such as the US, UK or Germany, the risk-return characteristics of a portfolio of domestic assets can be significantly improved by adding foreign assets. For a country as small as Ireland the benefits must be even greater. That means that the return to Irish savers can be higher and more secure when they, and the financial institutions (such as assurance companies and pension fund managers as well as banks), are allowed to hold foreign assets as well as domestic ones. From this point of view, national welfare is likely to increase as the result of the removal of exchange controls.

Related to the question of risk diversification is liquidity. No financial market is perfectly liquid. The ability of a large institution to realise a substantial part of its portfolio quickly is constrained by the drop in price that may be necessary to accomplish the sale. But in a wider market with more participants it should be possible to sell without causing a big price movement. This too argues for holding a well-diversified international portfolio.

Finally, the opening of financial markets to international competition should limit the market power of resident financial institutions, thereby permitting greater efficiency in the provision of financial services.<sup>1</sup>

Two institutional factors which can also be relevant are taxation and exchange controls. There may be considerable tax advantages for residents holding financial assets abroad. Whether the advantages are legal (avoidance) or not (evasion), there can be no doubt that tax considerations have been important in influencing gross capital flows. The existence of exchange controls may have complex effects. On the one hand it is generally thought that, while they can be effective in the short-run, the ability of administrative controls to restrict flows in the long-run is limited. On the other hand, the existence of such controls can itself induce residents to hold precautionary balances abroad.

Ideally, many of the considerations mentioned above should be symmetrical. Thus, foreign portfolio managers should find it in their interest to hold Irish assets in order to improve the risk-return trade-off. To that extent, the argument for portfolio optimisation on risk and return grounds suggests that capital account liberalisation should result in gross capital flows, but not necessarily in a net flow.

In principle, therefore, there is no presumption that opening the door to international capital movements should reduce the access of domestic borrowers to investment funds.<sup>2</sup> Indeed, it may be possible for a domestic firm to sell equity at a higher price if it is selling to investors who also have access to assets whose returns are likely to be negatively correlated with the prospects of the firm.

In practice, however, the hoped-for symmetry may not prevail, especially because information in international capital markets is

<sup>1</sup> The academic debate as to whether greater competition in fact improves the functioning of the financial system continues to rage; a recent summary is in Hellwig (1991).

<sup>2</sup> To a large extent, the considerations which explain the private demand for international financial intermediation are also the basis of traditional arguments favouring comparative freedom of international flows from the point of view of national welfare.



imperfect. The opportunities for investing in assets whose performance is likely to be influenced by local conditions in Ireland are hard to evaluate from abroad, so foreign portfolio managers will be slow to acquire Irish assets. If they invest, it will be on the basis of a more favourable risk-return prospect, to compensate for the cost of accumulating the necessary information about the prospects and quality of the assets. In contrast, the investment opportunities in London or New York are well-known to Irish portfolio managers. Thus, it may well be that an open capital market will be associated with a lower price of Irish financial assets.<sup>3</sup>

Furthermore, it has been argued by many that complete freedom of international capital flows represents a threat to financial stability and a complicating factor for domestic monetary policy. While the balance of advantages on this is still being debated,<sup>4</sup> most of those who advocate retaining some exchange controls confine their attention to such restrictions on short-term capital movements as can be activated on an emergency basis. The policy decision to fully liberalise international capital movements within the EC is due to have effect from the end of 1992.

### 2.1.2 Net Flows

Explanations for the net international flow of funds can be divided fairly sharply into long-term structural considerations, and shorter term factors relating to confidence.

*Structural considerations:* Systematic differences between countries in thrift and productivity will give rise to an international flow of assets. High saving countries will start to accumulate net holdings of foreign assets as profitable domestic investment opportunities become exhausted. A clear example would be Japan today. Likewise, countries with exceptional investment opportunities will attract inflows of capital to the extent that their local savings are inadequate. Mineral-rich countries like Australia have long been importers of capital for this reason.

A kind of "life-cycle" model of national development fits the experience of many countries. In this model an early phase, in which (despite low income) domestic productive capital is accumulated rapidly on the basis of foreign borrowing, is succeeded by a period of high income and high saving in which the foreign borrowing is repaid and foreign assets accumulated.

<sup>3</sup> Note, however, another practical consideration, namely that removal of exchange controls can signal policy and financial stability. If so, it could encourage confidence on the part of domestic and foreign investors and thereby boost asset prices.

<sup>4</sup> Especially since the re-emergence of exchange market instability in September 1992.

Of course the real world is more complex than this. Nevertheless, if the international capital market is functioning well, the determinants of national saving and national investment can be quite different, and there need be no correlation at all between the two. For example, any deficiency of national saving relative to profitable investment opportunities could be made up by foreign borrowing. In a well-known and controversial paper, Feldstein and Horioka (1980) observed that investment and savings rates were in fact correlated across countries, suggesting that the ability of capital to move across frontiers to where it was best rewarded was imperfect. That paper struck at the heart of the existing theory of international capital movements and led to an extensive literature which still accumulates.

The Feldstein-Horioka observations do not seem to be repeated systematically as the sample of countries grows (Dooley, Frankel and Mathieson, 1987, Caprio and Howard, 1984). And even for the original countries looked at by Feldstein and Horioka, the correlation between saving and investment rates is weaker as time goes on (Bayoumi, 1990).

As discussed later, examination of Irish saving and investment ratios to GDP over the past two decades does not tend to support the Feldstein-Horioka thesis, but suggests, in line with standard theory, that investment and savings ratios have been largely determined independently, and presumably by the traditional forces of thrift and productivity, as well as by the important influence of Government decisions.

*Considerations of confidence:* Short-term fluctuations in capital flows are more likely to be related in one way or another to issues of confidence. In particular this applies to what is termed "capital flight". This describes the purchase by residents of foreign assets in an attempt to avoid an anticipated loss, whether in the form of taxation, exchange rate depreciation, or expropriation. Defining capital flight precisely is less easy than it might appear at first sight. The portfolio decision of residents will normally be based on their expectations regarding relative returns and the risk of different portfolio configurations. One can hardly refer to all portfolio shifts resulting from a changed perception of these returns and risks as capital flight. The term capital flight is usually reserved to a number of special types of situation. For instance, the expectation of a large or discrete devaluation can cause substantial purchases of foreign exchange from the Central Bank over a relatively short period. Likewise, the fear of imposition of capital levies or exchange controls can lead to pre-emptive capital movements.

Over the years many less stable countries have found themselves in a situation where domestic wealth-holders have placed much of their funds in foreign assets, while governments have borrowed substantial foreign

funds to cover its deficits. A form of international financial intermediation is recycling, albeit in a very indirect way, the savings of these countries back. The logic of the situation may be that residents have greater reason to fear levies and taxation than the foreign banks and other institutions which are lending money to the governments. But the last decade has shown that international lenders too can still suffer from imprudent loans to over-extended governments. The collapse of confidence in the ability and willingness of Latin American sovereign borrowers to service all loans led to a sharp reduction in bank lending to these countries in the 1980s.<sup>5</sup>

### 2.2 *What Counts as an International Flow?*

A number of interrelated concepts must be distinguished in any discussion of capital flows. We are primarily concerned with international ownership of financial assets. Clearly therefore, the residence of the owner and the issuer of the asset are important here. The currency of denomination of the asset is also of interest in analysing the international financial intermediation generally, but it is of secondary importance: as we will see, many foreign currency assets of Irish residents are claims on other Irish residents.

We restrict ourselves to financial assets for the sake of clarity only. In fact the standard convention, which we follow here, is to treat all physical assets as being owned by entities resident in the country where the asset is located. These entities – perhaps fictitious in the sense of not corresponding to any actual legal entity – may in turn be owned by non-residents. Thus, from the statistical point of view, nobody directly owns a tangible asset in another country; what they own is a financial claim to that asset.

Thus, for example, a manufacturing plant located in Ireland and ultimately owned by an US corporation is treated as being owned by an Irish firm which in turn is owned by the US corporation. This treatment alerts us to the distinction between capital movements which merely involve changes of ownership, and those which involve physical capital formation. Suppose the US corporation decides to install a new piece of capital equipment – say an imported generator – in its Irish plant, with the parent company paying for the equipment. In the statistics, this is treated as the combination of at least two events: first, a new financial investment in the Irish venture by the US corporation; second, the import of capital goods by the local plant. In fact the legal contracts involved could be either

<sup>5</sup> See Bulow and Rogoff (1990) for a recent discussion of efforts to resolve this situation.

simpler or more complex than this. At one extreme the operation might be entirely within a single multi-national corporation: the parent could simply be shipping a generator produced by itself to the Irish plant without any purchase or investment transactions being undertaken. Even in this case we would still conceptually separate the operation into investment and physical trade components (though later we will examine the extent to which this convention is actually obeyed in the Irish statistics). At the other extreme, the operation might have several contractual layers. The financing of the imported capital good might involve the local plant leasing the equipment from an Irish or foreign financial institution, possibly through one or more associated companies. The tangle of legal documents associated with such operations will rarely emerge in aggregate national statistics, though to the extent that Irish financial intermediaries are involved, some of these layers will actually appear.

### *2.3 Ireland's Capital Links with the Rest of the World*

Three aspects of Ireland's capital links with the rest of the world stand out. First, the high level of external public indebtedness, peaking in 1986 at a share of GNP well above that of any other country in the OECD area. Second, the high level of foreign ownership of Irish industry. Third, the curious feature whereby Irish financial sector links with the rest of the world were weakened by exchange rate and exchange control policy measures adopted at the end of the 1970s, just when worldwide financial integration was accelerating.<sup>6</sup>

Before the sterling link was broken in 1979, the Irish capital market was strongly integrated with that of the UK.<sup>7</sup> Irish banks had important business on both sides of the border, and their liquidity needs were provided by the London money markets. Indeed, until the foreign exchange reserves were consolidated in the Central Bank from the late 1960s, the commercial banks held a large part of the nation's external reserves in the form of liquid assets in London. These were run down or built up as proved necessary by the relative fluctuations of deposit and loan demand in Ireland.

The close ties with London were reflected (before 1979) in a tight link between Dublin and London interest rates<sup>8</sup> which rarely moved far apart.

<sup>6</sup> Bryant (1987) describes trends in international financial intermediation.

<sup>7</sup> McGowan (1990) provides an interesting account of the Irish banking system in the Sterling link period.

<sup>8</sup> Documented in Browne and O'Connell (1978); but see also Honohan (1982b).

The absence of exchange rate uncertainty was an important factor in facilitating this capital market integration. Indeed, until late in the 1970s the currency of denomination for many assets and transactions, including banking business, remained ambiguous because of the automaticity of the conversion between Irish and UK pounds.

Since the introduction of exchange controls against the UK in the run up to the European Monetary System, and the subsequent break of the sterling link (end-March 1989), interest rates have tended to move apart, and the links with London have weakened.

Not only did exchange rate uncertainty result in a one-off readjustment of portfolios during 1979 (despite exchange controls – and indeed perhaps encouraged also by the introduction of exchange controls), but it also resulted in a number of episodes of flight capital in anticipation of currency realignments.

Fiscal policy developments (Honohan, 1992), and especially taxation policy has also been a factor in influencing capital flows. With the percentage share of tax in GNP rising by over 1 percentage point a year from 1979 on, both specific tax measures relating to financial assets, and fear of further taxation probably contributed to outflows (notably in 1986).

International capital market integration in less liquid assets was also provided by the openness to foreign direct investment from the 1950s on. With substantial parts of the industrial and commercial capital stock already owned by UK residents, new foreign investment became increasingly important during the 1970s and 1980s. By 1990, for example, 70 per cent of manufacturing output, and not far short of one-half of manufacturing employment, was attributable to foreign-owned firms. The sensitivity of their investment to the relative cost position of Ireland *vis-à-vis* the rest of the world – and thus the degree to which they contribute to capital market integration – has been documented in Bradley *et al.* (1989). At the same time, integration has been deepened by the acquisition by several large Irish manufacturers and financial firms of foreign subsidiaries.

The removal of exchange controls, the prospect of a single currency in the EC under EMU, the stabilisation of the fiscal position and the recent declining trend in external debt to GNP ratio all point towards a reversal of the Irish situation towards a more normal pattern. It remains to be seen whether the newer anomaly of an exceptionally high balance of payments surplus is sustained.

## Chapter 3

### *DATA ON FINANCIAL ASSET STOCKS AND FLOWS*

Data on international flows and stocks are scarce for most countries. Flows are collected for the purpose of balance of payments accounts, but data on stocks is usually confined in large part to banking assets and liabilities. For all countries there tends to be a substantial discrepancy between the estimated balance of payments on current account (based on data collected about current transactions) and that based on capital transactions. Nor does this discrepancy sum to zero worldwide: far from it.<sup>9</sup> Accordingly, the attempt to obtain a picture of international capital flows is necessarily based on a piecemeal accumulation of pieces of evidence from different sources. This section discusses such sources and attempts to build a skeleton of the national financial accounts for the late 1980s.

Ireland has fallen behind in the international presentation of financial data (nineteen out of twenty-three OECD countries have at least some elements of the financial accounts – though many of these have not kept up to date). An objective of our presentation is to keep the issue of timely and comprehensive financial statistics alive. The data that can be put together on the basis of publicly available data (as presented here) does not allow us to answer many of the important questions which could be addressed if more official data was available. We are very far from the point of diminishing returns in this area.<sup>10</sup> The publication of systematic and regular financial accounts is within the reach of the Central Bank, and should be made a priority.

In order to obtain a clear view of the international financial asset structure, it is important to embed the discussion within the overall financial asset position of the economy. Households or businesses acquire financial assets issued by a number of different types of entity. The largest

<sup>9</sup>The world sum of national current account deficits has averaged US\$60 billion during 1982-88, while the sum of identified capital account surpluses averaged US\$40 billion. The sum of national residuals (errors and omissions) was the difference: US\$20 billion per annum. (Cf. Goldstein *et al.*, 1991).

<sup>10</sup>An illustration of what can be done with more comprehensive financial accounts is contained in Gertler and Gilchrist (1991) which analyses the differential impact of credit restraint on small and large firms.

single issuer of financial assets in the State is the Government itself. More important collectively are the various financial intermediaries, which both issue assets (bank deposits, assurance policies, etc.) and acquire assets (bank loans, company shares etc.). Of these intermediaries the most important are the credit institutions, including the banks, dominated by the two largest banking groups.<sup>11</sup> Life assurance and pension funds come next. A number of smaller financial institutions are also worth including in the analysis. Businesses issue financial assets to non-financial entities, notably in the form of shares. Businesses and households also hold foreign financial assets, whether in the form of bank deposits, company or Government securities. They also have foreign indebtedness.

In order to quantify as much as possible of this web of claims, we first look at each of the main categories of issuer of financial assets in the State, briefly discussing the kind of assets with which they are involved (Section 3.1). We then (Section 3.2) proceed to draw together the available information in as systematic a manner as possible, and to present a coherent summary of the intersectoral flows of funds (including international flows) in recent years.

### *3.1 Analysis by Sector*

#### *3.1.1 Official Borrowing*

The biggest single borrower in the economy is the Government (Table 1), with total gross obligations at end-1990<sup>12</sup> given in the National Debt Statement as £26.4 billion. Of this, £17.6 billion was denominated in Irish pounds (about £13.7 billion of which was held by residents), and £8.8 billion was denominated in foreign exchange mostly held by non-residents. Net of liquid assets, the National Debt was £25.1 billion.

In addition to this direct indebtedness, the Government has a contingent liability in the form of guarantees of borrowing by semi-state borrowers and others totalling in excess of £5 billion.

The Government offers a range of different types of instruments with maturities ranging from 7 days to over 20 years. Of over £13 billion in National Loans, about £2.4 billion is at floating rate and the remainder at fixed interest. In addition rather less than £1 billion in short-term

<sup>11</sup>As elaborated later, the term "credit institutions" means all licensed banks and building societies together with the ACC, ICC and TSB.

<sup>12</sup>Although more recent data is available for some elements, for consistency the text will concentrate on the situation at end-1990. The accompanying tables include the more recent data.

Table 1: *Government Debt*

<i>£ million</i>	1986	1987	1988	1989	1990	1991
Denominated in IRE	12,879	14,757	16,361	17,172	17,565	18,099
of which:						
Government Stock	10,876	12,510	12,297	12,681	13,199	13,821
Exchequer Bills	455	866	929	1,137	929	491
Small Savings	957	1,034	1,338	1,551	1,628	1,797
Savings Certificates	549	597	839	1,030	1,110	1,248
Prize Bonds	78	81	84	86	86	89
Index-linked Savings Bonds	227	244	292	302	286	300
National Instalment Saving	103	112	123	133	146	160
Other	592	347	1,797	1,803	1,809	1,990
Denominated in Foreign Exchange	9,754	9,693	9,498	9,168	8,848	9,128
Total	22,633	24,450	25,859	26,340	26,413	27,227
as % GNP	128.5	130.0	127.5	119.3	112.0	108.5
Government liquid assets	1,022	756	1,248	1,512	1,330	1,836
Net Government Debt	21,611	23,694	24,611	24,828	25,083	25,391
as % GNP	122.7	126.0	121.4	112.4	106.4	101.2

*Source:* Finance Accounts.

*Note:* Per cent of GNP is calculated at average of current and subsequent year's GNP.



Exchequer bills was outstanding at end-1990. About £1.6 billion<sup>13</sup> is in the form of small savings instruments carrying convenience (and in some cases inflation-proofing) characteristics. The currency composition of the foreign currency debt varies, but in recent years has shifted away from the US dollar and at end-91 had about one-third in Deutsche marks, one-third in Swiss francs and about 15 per cent in US dollars.

The major domestic holders of Government securities are the banks and financial institutions mentioned below. At end-1990, credit institutions, insurance companies and pension funds between them accounted for over four-fifths of nominal domestic gilt holdings, about equally divided between the credit institutions on the one hand and insurance companies and pension funds on the other.

*Statistical issues:* The new Annual Report of the National Treasury Management Agency and the annual *Finance Accounts* include particulars of the Exchequer debt in the National Debt Statement.<sup>14</sup> The methodology of that Statement has been overhauled in recent years. While the official statistics on Government borrowing and the National Debt are correct and fully in line with international practice, there are some statistical points which are worth clarifying for academic purposes.<sup>15</sup>

First, though foreign exchange values are converted at market exchange rates, the National Debt Statement enters national loans and foreign debt at face value (i.e. the value which the Exchequer is obliged to pay on redemption) rather than market value. While this practice is unexceptionable from the point of view of standard accounting practice, it is arguably not the only useful measure.<sup>16</sup> Because of significant deviations between coupon and market yields, the gap between market and face value

<sup>13</sup>Net of accrued interest.

<sup>14</sup>Here, of course, National debt means Government debt, and does not include the debt of private individuals, nor is it confined to sums owed to foreigners.

<sup>15</sup>A number of other areas, including the valuation of contingent liabilities (especially guaranteed loans) could also be mentioned. However, this would lead naturally to consideration of larger issues of government accounting going beyond the scope of the present paper.

<sup>16</sup>The point is sometimes made that, since the Government has no obligation to – and no intention of – buying back all of its debt in the market, use of the market value could be misleading. However, reference to the market value does not rely on any such assumption, but merely recognises the fact that the *present value* of the future cost of servicing the debt over its remaining period of maturity and repaying the principal is equivalent to the market value of the debt. This also weakens the force of the objection that market valuation is volatile, and unrelated to current rates of borrowing.

can be quite high. At end-1990, the market value of these securities fell below face value by about £0.7 billion. The difference is very variable: in other recent years, the average market value exceeded the face value.

The second issue is one which arises out of the practice, unfortunately common worldwide, of preparing Government accounts on a cash rather than accruals basis. This crops up in many cases, but one significant issue of direct concern here is that the National Debt Statement excludes accrued interest on Savings Certificates. The presentation of this issue in the 1991 report is improved in that an explicit note refers to the problem and quantifies it.<sup>17</sup> A difficulty in changing reporting practice here is that it would result in a cosmetically unattractive unilateral increase in Ireland's measured debt ratio. But note that encashment of savings certificates results in an immediate jump in interest payments as the accrued interest is all treated as being paid in the year of encashment. The total size of this overhang threatens a considerable jump in the measured borrowing requirement (and debt) in the event of a significant portfolio shift on the part of savings certificate holders – even if that shift were to be in favour of other Government obligations.

Third is the question of developing a series for General Government debt, to include a wider concept of Government than just the Exchequer.<sup>18</sup> This is a matter which is under discussion at EC level in the context of arriving at a consistent EC-definition, relevant to the assessment of

<sup>17</sup>It amounted at end-1991 to some £0.7 billion including Savings Certificates, Savings Bonds and National Instalment Savings.

<sup>18</sup>The problem here is not so much the agencies of Government which, for most purposes, are lumped together into the concept of Government but which, hold financial claims on the Exchequer. A good example is the Social Insurance Fund. Surplus balances in that Fund are lent to the Exchequer, and such loans augment the National Debt. In practice, however, the sums here tend to be small. Another case relates to the POSB Fund (i.e. the amounts advanced from the Post Office Savings Bank to the Exchequer); however, the POSB Fund's holdings of Exchequer debt could not be netted out without adding in the corresponding liabilities of the POSB itself. Hence, the inclusion of the POSB Fund into a wider borrowing entity would also involve little or no net change in the total debt.

It is worth mentioning here that this problem does not apply to National Loan Sinking Funds despite their similar character. The Prospectus for some older National Loans included the provision that a sinking fund should be established to build-up a kind of reserve to ensure that the loan could be easily repaid when it fell due. In practice, the balance in these sinking funds is advanced to the Exchequer. The National Loan Sinking Funds are identified in the National Debt Statement, and are netted out of the National Debt figure.

A similar problem arose in the past with respect to the Local Loans Fund, but has been greatly reduced by the decision to waive repayment of advances to the local loans fund amounting to £2.6 billion. The servicing of these advances had become a purely fictitious circular payment within the Government system.

national fiscal policies in the context of the convergence criteria set out in the Maastricht Treaty. For domestic analysis, it would be very helpful if figures on indebtedness could, in any event, be published corresponding to the main National Accounts concepts of Government, namely,

- (a) "Central Government and Extra-Budgetary Funds",<sup>19</sup> which includes the Post Office Savings Bank, the National Loans sinking funds and the Social Insurance Fund;<sup>20</sup>
- (b) "Public Authorities", which adds the local authorities.

The fourth area concerns the link between flows and stocks of debt and borrowing. In accounting generally, items resulting in changes in indebtedness<sup>21</sup> can normally be placed in one of two categories: saving (or dissaving) and capital value changes. This has not been the case in a number of recent instances. Thus for example, sums borrowed from the Central Bank in 1985 and onlent to the Insurance Compensation Fund were not brought into the Exchequer Borrowing figures for that year, though they do enter the debt statement.<sup>22</sup> There is a similarity here with contemporary debates about the treatment of exceptional items in private accounting standards. A full discussion of the appropriate criteria for Government accounting would take us far afield, and into controversial territory.<sup>23</sup> One point that does seem worth highlighting is the effect of privatisation proceeds on reported Government borrowing. In arriving at the Budget presentation of the Exchequer Borrowing Requirement in 1991, the Government did not credit the proceeds (£270 million).<sup>24</sup> However, it is clear that these proceeds did reduce the borrowing requirement. A consistent treatment of such items, possibly including the use of the concept of "Net Financial Deficit" (to correspond to what the borrowing requirement would be had asset sales not occurred) should be the aim.

<sup>19</sup>The difference between this and the net National Debt as published at present would be relatively small.

<sup>20</sup>And also, since 1988, such grant-aided bodies as FÁS, Udaras na Gaeltachta, Bord Iascaigh Mhara, Bord Fáilte and EOLAS.

<sup>21</sup>That is, net indebtedness. Government overfunding of its borrowing requirement has frequently occurred in recent years, giving rise to sometimes substantial Government financial assets.

<sup>22</sup>Another instance is the repayable advances of surplus income from the Central Bank from 1987 to 1989, which have been treated as income in the Exchequer accounts, whereas they seem more analogous to borrowing in that they are subject to repayment according to a fixed schedule (though without interest).

<sup>23</sup>Blejer and Cheasty (1991) is a good survey.

<sup>24</sup>Though it did so for the Greencore privatisation. Note that the Irish Life proceeds are, of course, correctly accounted for in the Finance Accounts.

### 3.1.2 Banks and Near-Banks

*The Banks:* As mentioned, the banks are still by far the dominant sector in financial intermediation in Ireland. The banking system consists of the Central Bank and some 35 licensed banks (reflecting 24 distinct banks or banking groups). Consolidated total assets of the banking system at end-1990 came to some £21.3 billion, or about 91 per cent of GNP. The Central Bank issues currency (over £1.55 billion outstanding at end-1990) and holds the main Government deposits together with required and voluntary deposits of the banks and of building societies. The Central Bank also holds the official accounts with the IMF and any official borrowing from that source would have consequences for the Central Bank's accounts.<sup>25</sup> On the asset side, the Central Bank holds the official external reserves (£2.9 billion at end-1990) as well as some Government securities (£0.5 billion at end-1990) and claims on banks (£0.9 billion at end-1990). The components of the asset side of the Central Bank's balance sheet tend to fluctuate widely, reflecting the Bank's role as manager of domestic liquidity conditions.

The licensed banks still confine most of their domestic financial claims to lending at interest (including overdrafts, term loans and residential and other mortgages),<sup>26</sup> with little by way of real equity investment.<sup>27</sup> In net terms they obtain most of their domestic resources through interest-bearing deposit accounts – current accounts came to less than £2.0 billion at end-1990. In addition there is considerable inter-bank borrowing and lending, both at home and *vis-à-vis* foreign banks.

While our discussion is mainly confined to on-balance sheet items of the banks' business, some mention must be made of the huge and growing amounts of off-balance sheet business. Data on aggregate off-balance sheet business of the banks has recently been made available. This includes a

<sup>25</sup>This differs from most official foreign borrowing which affects the Central Bank only incidentally (through its purchase of the foreign currency proceeds of the borrowing) and not explicitly. When the most recent drawings on the IMF were made in the mid-1960s, the procedure followed was that the Government borrowed Irish currency from the Central Bank and passed it to the IMF, in return for which the Government received foreign exchange. The explicit consequences of these transactions for the balance sheet of the Bank were that it acquired an asset in the form of a specifically identified claim on the Government, and a liability, in the form of an increase in the IMF's deposit account at the Bank.

<sup>26</sup>Leasing and other asset-backed lending is also well developed.

<sup>27</sup>The equity element of tax-based lending, especially the so-called Section 84 lending is essentially a legal fiction.

number of contingent liabilities (including loan guarantees and performance bonds) amounting to about £3 billion at end-1991. Forward and futures markets transactions and swaps, together with other commitments involve a gross amount of no less than £135 billion – a multiple of the banks' balance sheet. About two-thirds of these commitments, are with non-residents. Of course, for the most part these items do not represent net lending; most of them involve matched transactions reflecting little credit risk by comparison with the huge size of the principal sums.

*International business of the banks:* Since the foundation of the State, a large proportion of the total banking activity of the Irish banking groups has been international in character. As well as the international business conducted by offices within the State, Irish banks have traditionally had a considerable network of branches in Northern Ireland as well as retail and wholesale activities in Britain.<sup>28</sup> Mergers and acquisitions involving Irish banks over the past quarter century have altered the picture somewhat. Thus, of the "Associated Banks" as defined in legislation, mergers have brought their number down to four, of which only the two largest (AIB and Bank of Ireland) remain both Irish registered and quoted. The third (Ulster Bank) continues to operate North and South of the Border, but is now part of the UK-based National Westminster Group.<sup>29</sup>

In addition to UK links, the two largest banks have acquired important US subsidiaries: the largest of these, owned by AIB, had end-1990 total assets of US\$ 9 billion. US assets of AIB Group amount to just under one-third of the total, with the UK accounting for 22 per cent and Ireland for 45 per cent.

Further international dimensions of the banking system arise from ownership links. Even for AIB and Bank of Ireland, more than one in ten shareholders are resident outside the State. All of the remaining banking groups are at least part-owned by foreign banking concerns.

All in all, the international financial asset and liability position of the banks is a dominant feature of the national balance sheet.

<sup>28</sup>Indeed, at end-1982, the last end-year date for which this information was collected, well over one-third of the total assets of the licensed banks related to the business of their branches outside the State.

<sup>29</sup>The fourth bank (NIB) is much smaller: it is a wholly-owned subsidiary of National Australia Bank and comprises essentially the branches of the former Northern Bank located South of the Border.

Since 1982, it has become the practice for statistical analysis of the banking system to focus on the business of within-the-State branches of the banks.<sup>30</sup> The international business of these branches is large and growing, as shown in Table 2. At end-1982, international assets came to 28 per cent of total assets of the banks. This share dipped to about 25 per cent at end-1985, but from then on rose quite sharply and steadily to reach 36 per cent by end-1990. The international liabilities had increased only a little more slowly.<sup>31</sup>

Three main categories of this international business can be identified. First, business denominated in foreign exchange with non-residents; second, business denominated in Irish pounds with non-residents; third, business denominated in foreign exchange with residents. Each of these can be further subdivided into assets and liabilities.

The fastest growing of the six components of international business has been foreign exchange liabilities to residents, which has jumped from less than £1 billion in 1982 to over £3.5 billion eight years later. This reflects growing use by Irish corporate entities of deposits denominated in foreign currency to help manage their foreign currency risk, and for transactions purposes. It reflects a progressive adjustment of corporate treasury management following the 1979 break with sterling. A gradual relaxation of exchange controls in this area probably also contributed to the phased growth.

There has also been rapid growth in the remaining five categories; the slowest growing being also the smallest category: claims on non-residents denominated in Irish pounds.<sup>32</sup>

Much of this international business – between one-half and two-thirds – is interbank business. The considerable size of such business, both for assets and liabilities, is explained by the fact that bank treasury practice is

<sup>30</sup>*Vis-à-vis* both residents and non-residents. That means not only the business of branches in Northern Ireland and Britain, but also that of the US banking subsidiaries of the two main banking groups are excluded. As an indication of the degree to which this narrows the focus, note that for the four "Associated Banks" this covers little more than two-fifths of the total assets in their consolidated balance sheets.

<sup>31</sup>As a matter of fact, these percentages are not substantially in excess of worldwide experience. For instance Bryant (1987) presents estimates for the share of international assets in total banking assets for 15 industrial countries in the early 1980s. The average share was 25 per cent, with Germany (8), Japan (11) and the US (17) on the low side, the UK (72) and Luxembourg (96) on the high side.

<sup>32</sup>While the demand by non-residents for Irish pound borrowing would not normally be very large anyway, the slow growth here is explained by exchange controls strictly limiting this class of business.

to eliminate most foreign exchange and interest risk. This means that, in response to a commitment with a non-bank customer involving foreign exchange, the bank will establish a foreign exchange claim, typically with a non-resident bank, and corresponding in both maturity and currency with the original commitment. The use of derivative instruments complicates the picture further, but the same logic applies.

The non-bank element is also substantial. Taking the asset side, it has increased from less than £2 billion equivalent to about 12 per cent of GNP in 1985 to over £3.5 billion or 16 per cent of GDP at end-1990. The role of Irish banks contributing to international syndicates involving the International Financial Services Centre (IFSC) in Dublin has undoubtedly contributed to this. However it should be noted that those foreign banking companies operating within the centre which do not have domestic banking licenses are treated as non-banks in the statistics.<sup>33</sup>

Though evasion of exchange controls can result in holdings of almost any form of foreign financial asset, the question of bogus non-resident deposits at Irish financial institutions is particularly relevant in the present context in that it may have affected the residency classification of the liabilities of those institutions. This matter arose especially during the 1980s, and of course was not confined to banks; building societies and other institutions were also affected. Briefly, it has been widely believed that in order to evade the retention tax on deposit interest (DIRT), and more generally to evade tax or exchange control obligations, some residents have held bank, building society or other deposits under bogus foreign addresses. This behaviour would have increased the figures for international business in a spurious manner, to the extent that the accounts were held with a branch of an Irish bank (or building society, etc.) within the State. Quantification of this is not available, though it is understood that these matters are now more tightly controlled than used to be the case. To the extent that other bogus non-resident accounts were held at branches outside the state, or indeed with foreign banks abroad, they vanished almost entirely from data sources, being subsumed into the global world banking system without a clear link to Ireland.<sup>34</sup>

<sup>33</sup>Their activities thus appear in banking statistics only to the extent that they have dealings with domestic licensed banks.

<sup>34</sup>In this connection it may be of interest to note that sterling deposits by non-bank UK residents with the Northern Ireland banking system totalled £stg 1.68 billion in 1985, rising to £stg 2.25 billion by 1988. Sums deposited with Northern Ireland branches by persons who, though truly resident in the Republic, falsely stated themselves to be residents of Northern Ireland, could have contributed to this rapid growth.

The currency composition of the international business is also shown in Table 2. This table reveals the perhaps surprising importance of sterling. Not only is sterling the most important currency for both assets and liabilities, for residents and non-residents, but its share has shown a rising tendency since 1982. It may be that smaller companies only became gradually aware of the possibilities of hedging the risk of Irish pound/sterling movements following the break of the sterling link in 1979. The US dollar is the second most popular currency, with the DM coming only third.

The preference on the part of non-residents for sterling is reflected in the predominance of the UK in the geographical breakdown. Though its share has declined a little in recent years, it still accounts for almost two-thirds of the total, with the remainder of the EC and the USA each taking about one-eighth, and offshore banking centres about five per cent.

*Near-banks:* Under the heading of near-banks we include the building societies, the "other credit institutions", the Post Office Savings Bank (POSB) and a number of non-bank hire-purchase companies.

The building societies operate under different legislation to the banks, but increasingly their business, tax situation and regulatory environment is becoming close to that of the banks. Most of them are mutual institutions, rather than limited liability companies, but this too may change in the years to come. The most important difference in practice is their emphasis on lending for house purchase secured by mortgage. The aggregate assets of the building societies at end-1990 was £4.8 billion.

The "other credit institutions" comprise the Agricultural Credit Corporation (ACC), the Industrial Credit Corporation (ICC) and the Trustee Savings Banks (TSBs). The first two of these are Government-owned banks, attracting deposits from the public, as well as from international long-term credit banks and lending primarily to agriculture and industry respectively. The mutually owned TSBs (like the POSB) traditionally on-lent all of the resources raised from depositors to the Government, but they now do some non-Government lending. Total assets of these "other credit institutions" was just under £2.5 billion at end-1990.

The remaining near-banks are much smaller. The POSB's assets (virtually all of them claims on Government) reflect deposit liabilities from the public and amounted to £0.4 billion at end-1990. A number of non-bank hire purchase finance companies which also send returns to the Central Bank, and are funded by borrowing from banks and other sources, held assets totalling £0.5 billion at end-1990. Not included in Central Bank statistics for "other credit institutions" are the credit unions, of which there are over 500 (including Northern Ireland) with assets approaching £0.9 billion.



Table 2: *International Business of Banks*

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Liabilities of local banks (£bn)	<i>£ billion</i>										
to non-residents in FX	1.97	2.53	2.95	3.33	2.89	3.90	4.40	5.15	6.03	6.01	6.15
to non-residents in IR£	1.22	1.41	1.49	1.72	2.01	1.78	1.80	1.80	1.86	3.01	3.15
to residents in FX	0.69	0.98	0.88	1.01	0.98	1.49	1.66	2.05	2.29	3.56	5.93
of which interbank											
to non-residents in FX	1.34	1.76	2.18	2.53	2.04	3.00	3.44	4.04	4.76	4.51	4.44
to non-residents in IR£	0.22	0.21	0.06	0.08	0.17	0.18	0.32	0.28	0.33	1.35	1.56
to residents in FX	0.42	0.52	0.56	0.58	0.52	0.88	0.95	1.28	1.39	1.87	4.01
Claims of local banks											
on non-residents in FX	1.35	1.78	2.06	2.37	2.21	2.43	3.09	3.45	5.31	6.03	7.18
on non-residents in IR£	0.07	0.11	0.07	0.07	0.07	0.06	0.10	0.08	0.18	0.16	0.16
on residents in FX	1.33	1.80	1.89	1.99	1.97	2.72	3.07	3.74	3.91	4.67	6.31
Domestic business*		9.30	10.53	12.09	12.71	14.14	14.59	15.61	17.35	19.31	19.67
of which interbank											
on non-residents in FX	1.11	1.48	1.61	1.86	1.78	1.98	2.71	2.96	4.82	5.10	5.42
on non-residents in IR£	0.04	0.05	0.03	0.04	0.03	0.03	0.05	0.04	0.12	0.11	0.08
on residents in FX	0.42	0.59	0.56	0.55	0.51	0.85	0.92	1.32	1.30	1.92	4.00
Domestic business*		1.72	1.93	2.30	2.50	3.57	3.65	3.87	4.18	5.08	5.02
Total foreign assets	2.75	3.69	4.02	4.43	4.25	5.21	6.26	7.27	9.40	10.86	13.65
of which interbank	1.57	2.12	2.20	2.45	2.32	2.86	3.68	4.32	6.24	7.13	9.50
Foreign as % total		28.40	27.60	26.80	25.10	26.90	30.00	31.80	35.10	36.00	41.00
Currency analysis (%)	<i>Per cent</i>										
Liabilities of local banks:											
To non-residents in FX											
USD	33.5	41.1	41.4	40.5	30.4	28.2	35.9	35.5	37.3	30.6	30.1
GBP	49.2	37.5	40.7	39.9	49.5	44.6	38.2	40.4	39.6	44.6	43.6
DEM	11.2	11.5	7.1	10.5	6.6	13.6	11.4	6.4	7.8	7.7	10.2
To residents in FX											
USD	55.1	50.0	56.8	57.4	48.0	32.2	25.3	34.1	27.1	15.4	17.2
GBP	30.4	29.6	26.1	23.8	24.5	45.0	47.6	38.5	40.6	46.3	30.0
DEM	10.1	13.3	8.0	5.0	6.1	6.0	7.2	10.2	12.2	15.2	19.4

*Continued*

Table 2: *International Business of Banks – continued*

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Claims of local banks:	<i>Per cent</i>										
On non-residents in FX											
USD	20.0	35.4	40.8	39.2	34.8	24.7	40.5	27.2	38.6	28.4	32.5
GBP	73.3	52.2	49.0	49.8	51.6	56.8	42.4	54.8	48.2	55.2	47.8
DEM	2.2	8.4	4.4	2.1	4.5	5.3	4.2	4.9	3.2	6.0	6.3
On residents in FX											
USD	48.9	43.9	53.4	52.8	43.7	32.4	28.7	32.6	31.7	21.2	18.7
GBP	22.6	21.7	18.5	17.6	20.3	30.1	31.6	26.5	25.8	31.7	26.3
DEM	19.5	17.2	11.1	14.6	13.7	16.2	15.6	10.2	9.7	16.9	20.6
Geographical analysis (%)											
Liabilities of local banks:											
To non-residents in FX											
UK		17.1	69.2	63.7	72.7	71.5	58.9	60.4	57.5	63.2	59.2
Other EC		12.3	10.8	15.0	14.2	14.1	18.0	17.1	18.7	17.6	18.0
USA		7.5	8.8	9.3	5.9	5.9	9.3	11.3	11.1	7.0	5.7
Switzerland		1.2	1.7	2.1	1.0	2.6	3.2	3.5	4.0	3.7	2.1
Offshore			4.1	4.2	3.5	3.8	5.7	4.3	4.6	4.2	10.2
To non-residents in IR£											
UK		83.0	91.9	90.7	89.6	80.3	77.2	76.7	72.0	71.1	77.8
Other EC		4.3	1.3	1.7	2.5	3.4	5.0	6.1	5.9	7.0	6.0
USA		7.8	4.0	4.7	5.5	11.8	11.1	11.7	14.0	15.3	11.7
Offshore					0.5	1.7	3.3	1.7	3.2	3.0	1.0
Claims of local banks:											
On non-residents in FX											
UK		71.3	60.7	60.3	73.8	68.7	56.0	58.0	51.4	62.4	57.0
Other EC		15.2	14.1	11.8	11.3	14.0	15.9	16.5	13.9	12.1	17.5
USA		3.4	6.8	8.0	5.4	3.3	9.7	9.6	14.3	14.3	14.9
Offshore					3.2	7.8	9.4	10.7	12.1	6.5	3.1

Source: Derived from Central Bank bulletins

\* i.e. with residents in IR£

The grand total of the assets of credit institutions – the banks, the building societies and the “other credit institutions” at end-1990 was £40.0 billion, of which £32.3 billion reflected claims on Irish residents. The total of liabilities to domestic residents was £27.3 billion. The net external liability of credit institutions was £5.0 billion. These figures include considerable inter-institutional claims exceeding £6.5 billion at that date. Consolidating the accounts by netting out all inter-institutional claims gives the figure for “money and other liquid assets”: £19.9 billion at end-1990 (inclusive of £1.3 billion of notes and coin held outside the banking system and of £2.0 billion of Government savings schemes).

*Statistical issues:* While the banking statistics (which are available in the bulletins and monthly statements of the Central Bank) have been greatly refined over the past decade, a number of significant issues still arise. Among the most notable of these is the fact that interbank lending and borrowing figures shown by the Central Bank returns do not balance. The discrepancy here can be quite large, and until it can be resolved it must serve to cast some doubt on the accuracy of the remaining figures. It is understood that efforts are being made to eliminate this discrepancy. From the statistical point of view also it can be regretted that the published returns only relate to within-the-state branches of the banks. The importance of international banking transactions suggests that some valuable information may have been lost to the public in the decision to stop publishing the banks’ “elsewhere” business.

### 3.1.3 Institutional Portfolio Investment

*Insurance and pension funds:* Insurance and Pension Funds are important intermediaries in Ireland. Indeed, in some years the net inflow of premium income to the insurance sector in Ireland has represented a higher percentage of GNP than in any other country in the World. This is attributable to the fact that not only do we have relatively high motor insurance premiums, but that the tax treatment of savings placed with life assurance companies has until recently been seen as relatively favourable.

Four main categories of business may be identified. First is health insurance, in which the Voluntary Health Insurance Board (VHI) has a *de facto* virtual monopoly because of tax concessions. Second is the remainder of non-life or general insurance, mainly motor, fire and liability business. Third is the management of pension funds, and the fourth is the remainder of life assurance.

*Non-life funds:* Even non-life insurance companies maintain substantial invested funds. In a steady state this would not necessarily be so, in that the current year’s premium income should be sufficient on average to pay the

claims arising. Admittedly, non-life business is known to be prone to cycles of profitability with periods in which premium income is competed to unduly low levels, followed by periods in which premiums rise once more, recovering previous losses.<sup>35</sup> Nevertheless, the funds are far in excess of what would be needed even to absorb fluctuations in the ratio of claims to premium income. Thus, even for the non-life business, the value of end-1990 financial assets is almost twice annual net<sup>36</sup> premium income. The accumulation of a reserve of this type mainly reflects the average time delay between the receipt of premiums and the payment of claims.

Because premium income is invested, it is possible for non-life companies to charge less than the actuarial risk involved in the contingency, in the knowledge that investment income and capital gains will be available to make up the shortfall. Thus, for 1990 investment income plus capital gains of non-life insurance (other than VHI) came to £137 million. This augmented total premium income of about £750 million by just enough to meet claims and expenses.

The size of non-life funds in Ireland in recent years, and their allocation between different assets is set out in Table 3. Though important, these first two categories of institutional investor should be seen in perspective. Together, they dispose of assets of a magnitude little greater than those of the largest building society.

*Life and pension funds:* Turning to the third and fourth category of insurance the scale increases quite substantially. Indeed, investment of the accumulated funds represents by far the most important part of this type of business. Of course, the original reason for the existence of both types of business is the fact that the timing of death represents a diversifiable risk. Both traditional life assurance<sup>37</sup> and pension business pool the risk of the timing of death. For pension funds, the risk is of later death, since what is being paid is a life annuity: if the individual saved an equivalent sum over her working life the uncertainty of the time of death would oblige her to consume less each year of retirement than the pension fund or annuity could offer, for fear that the savings would run out. For life assurance the risk is of early death: purchasers of life assurance are typically making provision for the needs of their dependents against the event that the insured person dies before retirement.

<sup>35</sup>The persistence of such a cycle remains unexplained. In theory, one would expect such cycles to be eliminated by skilful planning in a sophisticated market.

<sup>36</sup>Net of reinsurances ceded.

<sup>37</sup>The term "assurance" is used to refer to the life business of insurance companies.

Table 3: *Non-Life Insurance Company Assets*

<i>£ million</i>	1985	1986	1987	1988	1989	1990
Gilts	256	329	401	532	507	541
Stocks, shares and debentures	34	59	58	85	134	146
Property, land, fixtures and fittings	46	59	57	59	75	85
Accounts and sundry debtors	161	277	243	242	238	283
Current and deposit accounts and cash	110	248	291	265	402	546
Other	50	61	89	77	92	74
Total Non-life	657	1,033	1,139	1,260	1,448	1,675
VHI (not included above)	70	83	89	94	96	107
Memo:						
Life		5,449	6,608	8,198	9,789	9,144
Life + Non-life		6,482	7,747	9,458	11,237	10,819
Life + Non-life + VHI		6,565	7,836	9,552	11,333	10,926
Non-life as % Life + Non-life		15.9	14.7	13.3	12.9	15.5

Source: *Insurance Annual Report* (Blue Book); VHI Annual Reports.

Note: VHI is the Voluntary Health Insurance Board.

Both pension annuities and life assurance thus represent financial instruments which smooth consumption patterns in the face of risk. But the attraction of life assurance contracts goes beyond that. By virtue of their effectiveness (albeit highly variable in practice from company to company) in pooling investment risk, the managers of assurance companies have been offering in effect a joint product of life assurance and investment management. This is not a new development: the shifting preference towards endowment policies (where there is a lump sum payment at the end of a given term even if the insured person does not die) began more than fifty years ago. However, the degree to which life assurance *per se* has become less important in the business is illustrated by the fact that of over £1 billion in claims paid by life companies in 1990, only £78 million took place on death.

While the traditional life assurance policy involved regular premium payments, new products involving single premium payments have become popular. Fluctuations in the share of single premiums in the total can be very substantial: in 1987 they approached two-thirds of total premiums, and in 1989 exceeded 60 per cent. By 1990, however, they were down to less than 53 per cent. (Single premiums represent, of course, a much higher share of new business written.)

For a variety of reasons, life assurance companies were in a good position over the years to offer high net-of-tax returns especially to the higher bracket taxpayer. This has contributed significantly to the growth in their business. Recent tax changes have reduced the advantage offered.

Data for life assurance and pension funds cannot be fully disentangled. Some of the pension fund management is carried out by the insurance companies on their balance sheet, and data for this is included in the official statistics prepared by the Department of Industry and Commerce "Blue Book" (*Insurance Annual Report*). The totals from this source are included as a memo item in Table 3. Though much of this data is very detailed, the breakdown of the assets provided is of limited value: about one-half of the assets are merely shown as being "linked", i.e. tied to the performance of unitised funds, without a further breakdown of the underlying assets of these funds. Furthermore it does not distinguish between domestic and foreign. Such a breakdown (apparently covering about 95 per cent of the assets identified in the blue book) is provided in data collected by the Irish Insurance Federation. With some extrapolation using other sources mentioned below we can put together a more comprehensive picture of assurance company funds (Table 4), though the data before 1989 should be treated as tentative.

In addition to the funds managed on the balance sheets of assurance companies, considerable additional funds are managed on a segregated basis, i.e. the funds do not form part of the balance sheet of the company managing them. Segregated funds can also form part of the business of banking groups and other corporate entities as well as assurance companies.

A collection of data on pension funds managed by other entities as well as by the assurance companies is gathered by the Irish Association of Pension Funds. Using this, and the other sources mentioned, together with some extrapolations, allows us to offer tentatively a time series of the portfolio composition of the pension funds (Table 5). Once again the accuracy of this table undoubtedly deteriorates the further back in time we go.

Taking account of the need to avoid double-counting for the overlap between the assurance company and pension fund figures, for 1990 we conclude that the combined investment portfolio of life assurance and pension funds was £13.1 billion, of which pension business accounted for £8.1 billion or almost 62 per cent (Figure A). Over two-fifths of the pension funds (by value) represents non-segregated assets managed by assurance companies, who thus manage a total of £8.4 billion, or 64 per cent of the total of pension funds and assurance funds. Only £3 billion, or 27 per cent of the total, was held in foreign assets.

Table 4: *Assets of Assurance Companies*

<i>£ million</i>		<i>1983</i>	<i>1985</i>	<i>1987</i>	<i>1989</i>	<i>1990</i>	<i>1990 %</i>
Irish	Gilts	1,188	2,135	2,989	3,269	3,011	44
	Property	484	525	490	773	855	12
	Shares	220	525	1,078	2,879	2,189	32
	Other	308	315	343	669	832	12
	Total	2,200	3,500	4,900	7,590	6,887	100
	Pension	880	1,400	1,960	3,036	2,755	
	Non-Pension	1,320	2,100	2,940	4,554	4,132	
Foreign	Gilts				59	99	6
	Property				97	111	7
	Shares				1,562	1,156	75
	Other				18	205	13
	Total	483	768	1,076	1,736	1,534	100
	Pension	193	307	430	694	614	
	Non-Pension	290	461	645	1,042	920	
Total	Gilts				3,328	3,110	37
	Property				870	966	11
	Shares				4,441	3,345	40
	Other				687	1,037	12
	Total	2,683	4,268	5,976	9,326	8,421	100
	Irish as % total	82*	82*	82*	81	81.8	
	Pension	1,073	1,707	2,390	3,730	3,369	
Non-Pension	1,610	2,561	3,585	5,596	5,052		

*Source:* Irish Insurance Federation and own calculations.

Before 1989 most of these numbers are extrapolated using Blue Book or by grossing up pension fund figures.

\* = Assumed percentage.

Table 5: *Assets of Pension Funds*

		<i>£ million</i>	1983	1985	1987	1989	1990	1990 %
Irish	Gilts		759	1,587	2,268	2,644	2,623	43
	Property		431	301	259	646	749	12
	Shares		357	943	1,236	2,524	2,046	34
	Other		254	152	413	462	620	10
	Total		1,804	2,983	4,176	6,276	6,038	100
Foreign	Gilts		42	62	96	234	307	15
	Property		19	33	46	38	45	2
	Shares		334	530	723	1,820	1,653	80
	Other		1	33	50	44	52	3
	Total		396	655	917	2,136	2,057	100
Total	Gilts		801	1,649	2,364	2,878	2,930	36
	Property		451	334	305	684	794	10
	Shares		691	1,472	1,959	4,344	3,699	46
	Other		256	185	464	506	672	8
	Total		2,200	3,638	5,093	8,412	8,095	100
	Irish as % total		82*	82*	82*	74.6	74.6	

*Total Life Assurance and Pension Funds*

	<i>£ million</i>	1983	1985	1987	1989	1990	1990 %
Irish		3,124	5,083	7,116	10,830	10,170	77
Foreign		589	962	1,347	3,178	2,977	23
Total		3,810	6,199	8,678	14,008	13,147	100

*Source:* Irish Association of Pension Funds Surveys; Irish Insurance Federation Five Year Profiles; Gerard Hughes (1992), *Private Pensions in Ireland*, Paris: OECD, Series on Private Pensions and Public Policy. For early years many extrapolations have been made.

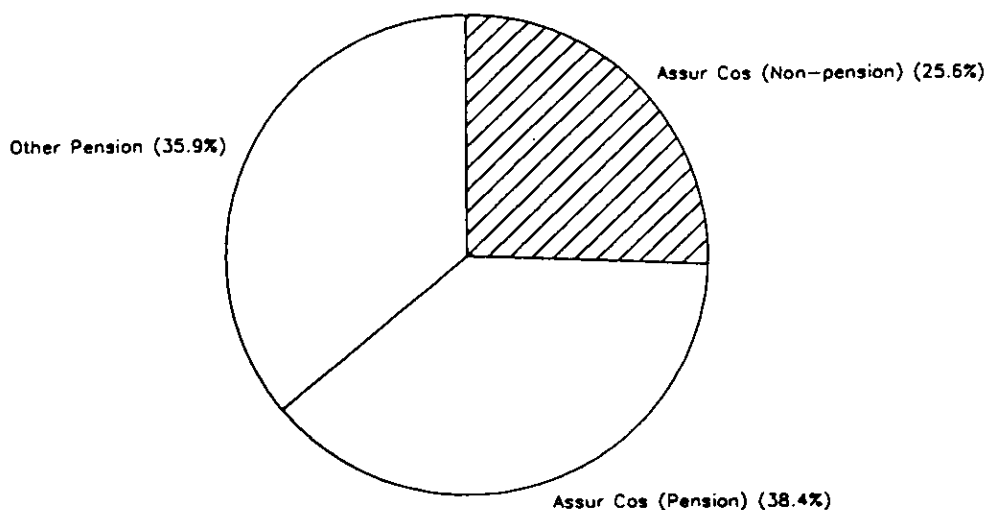
\*Assumed percentage.



## FIGURE A

## LIFE ASSURANCE AND PENSION FUNDS

Asset Breakdown 1990



As intermediaries, the life assurance and pension funds ultimately represent claims of the household and corporate sector on final borrowers and other assets. Of their Irish assets, about 44 per cent represent claims on Government,<sup>38</sup> about one-third are company shares, while about 12 per cent represents property holdings. The foreign part of the portfolio is much more heavily weighted towards company shares.

In addition to segregated pension funds, other client funds are managed by assurance companies, merchant banks and others. This would include corporate, charity and personal funds. No systematic statistics are prepared on this sector, which could approach £2 billion, according to the opinion of market participants.

<sup>38</sup>The Central Bank's analysis of government stock at end-1990 attributes holdings of £4.45 billion, or over one-third of the total, to the insurance companies (including non-life companies) and pension funds. This may be compared with a total of £4.9 billion which would be derived from adding the figures for non-life insurance and pension funds (Tables 3 and 5) to a proportion of life assurance gilts holdings corresponds to the non-pension share of their business.

*Other collective investment undertakings:* Other collective investment management entities are also represented in the Irish market, and regulated by the Central Bank. Some of these<sup>39</sup> are now defined under EC law as UCITS (undertakings for collective investment in transferable securities), but they also include some unit trusts and investment companies which are not strictly UCITS. In traditional practice, unit trusts (corresponding to "open-ended trusts" in the United States) are true trusts with variable capital in which units may be bought and sold at posted prices reflecting the market value of the assets in which the net proceeds of sales of units are invested. Investment trusts or companies (much less popular in the Irish market) can be financed by equity capital and borrowing, their shares can be quoted in the market, but they have not typically been bought in units. There have been tax advantages for investing all or part of a portfolio through the vehicle of a unit trust.

A distinction must be made between unit trusts on the one hand and unit-linked funds on the other: While both are commonly called "unit-funds", the term unit-linked funds normally refers to portfolios in which specific policyholders are allocated units, but which form part of the assets of life assurance companies. The purpose of unit funds generally is to allow investment managers to offer a variety of savings products differentiated by the type of asset in which the sums are invested. For instance, when an unit-linked life assurance policy matures, it is entitled to receive the value of the units which were subscribed for it. Such unit-linked assurance products have largely replaced the "with profits" policies of the past. Likewise, the assets of a smaller pension fund might be in the form of units of one or more unit funds; thus allowing it to benefit from the economies of scale in investment management. Unlike unit-linked funds, unit trusts (and investment companies) have a separate legal existence, although they may be managed by a life assurance company or a bank. Note that a unit-linked fund may hold units in another unit-linked fund or in a unit trust. Therefore simply aggregating the reported size of different unit funds could lead to serious double-counting.

Data on unit trusts and other UCITS is collected by the Central Bank, but not published on a systematic basis.<sup>40</sup> Some indication of the scale of investment trusts and unit trusts may be obtained by the Central Bank's estimate of their holdings of Government securities alone at end-1990 of £280 million.

<sup>39</sup>Most of them in the IFSC.

<sup>40</sup>The Irish Association of Investment Managers is in the process of compiling such data from member returns.

*Statistical Issues:* While the efforts of the industry associations have helped, data needs in the area of institutional investment are considerable. The problems centre around inter-institutional holdings, and the overlap between pension funds, life assurance and independently managed client funds. Some data is collected, but not published; some information is not collected at all; some sources include an uncertain proportion of business recorded in other sources (for example the significant bank deposits and unit trust holdings of pension funds and life assurance companies). The Blue Book reports were greatly improved from 1986, but still show no national or currency breakdown of assets, for example; besides they relate only to one segment of the market.

#### 3.1.4 Ownership of Industry

For statistical purposes, the non-Government non-financial institution sector of the economy can be divided into two sectors – which we call “household” and “business” for short. The first sector is often also known as the personal sector, the second is often referred to as the industrial and commercial sector. Whatever about these terms, which are used loosely, the actual statistical dividing line is between incorporated businesses and the rest. Thus identification of the non-corporate with “households” is rather inaccurate. Indeed, what we call the household sector includes in Ireland essentially all of the agricultural sector, since most agricultural production units are not incorporated businesses. This is a major weakness of the dividing line, but one which is common worldwide.

It does not appear to be possible yet to form a comprehensive view of the financial position of corporate entities.<sup>41</sup> The biggest problem is that, unlike households, companies are important issuers of financial obligations to entities other than financial institutions. Thus, while we can, to some extent, track claims between financial companies and non-financial, we have little systematic information about claims of non-financial companies on each other, and of households on non-financial companies. Company accounts can help, though until recently only the category of enterprise known as “public companies”<sup>42</sup> had to provide information, and they covered only a small proportion of the business sector in Ireland.<sup>43</sup>

<sup>41</sup>That is of non-financial corporate entities; we drop the term “non-financial” where the context is sufficiently clear. Commercial semi-state bodies (other than the ACC and ICC) are included here as well.

<sup>42</sup>Essentially companies with more than 50 shareholders.

<sup>43</sup>Stewart (1986) discusses this data source.

There are undoubtedly very important shareholdings in private companies which should be included in a comprehensive picture, but are not readily available. Foreign-owned companies provide a striking example here. For most statistical purposes, and often in legal structure, the Irish branches or subsidiaries of these companies are treated as domestic entities whose shareholdings are held by non-residents. As an illustration of the magnitudes involved here, we may note the figures published by the US Department of Commerce in respect of manufacturing plants in Ireland owned by US residents. For end-1989, the value given is US\$13.0 billion, or about £8.3 billion.<sup>44</sup>

Another difficulty with the corporate sector is the absence of systematic data on their foreign assets, whether portfolio assets or direct foreign investment<sup>45</sup>. A growing number of large Irish non-banking companies have very substantial foreign holdings. Much of the accumulation of these holdings, which include shareholdings in foreign joint ventures, is not recorded in official balance of payments statistics. This is especially the case for holdings purchased with retained earnings abroad as, in contrast with normal international practice, the reinvestment of foreign income is not treated as new foreign investment in the Irish balance of payments statistics,<sup>46</sup> which therefore tend to understate the accumulation of foreign assets.

It would be possible to approach the measurement of such foreign assets by examination of the balance sheets of the publicly quoted companies, but this would yield partial information at best. As an indication of the large international holdings of some Irish firms,<sup>47</sup> we note that, just taking the two largest non-financial quoted companies – CRH and Smurfit – over 80 per cent of each company's turnover was outside the state. Between them, these two companies held almost £1.1 billion in bank deposits at the end of 1990, and had outstanding bank loans totalling £0.6 billion. It may be assumed that the bulk of this banking business was international in character. Total operating assets employed by the two companies exceeded £1.1 billion, most of them again abroad.

<sup>44</sup>These figures should be treated with caution especially as they are based on arbitrary assumptions regarding reinvestment of profits.

<sup>45</sup>Both categories would be treated as "financial assets" in the flow of funds accounts. Cf. Section 3.2 below.

<sup>46</sup>Another growing phenomenon is the practice of subsidiaries of multinational companies making loans to their parents instead of paying dividends. There can be tax advantages to this practice which increases the complexity of international financial claims. I am indebted to Jim Stewart for pointing this out to me.

<sup>47</sup>The data in this paragraph are taken from the published Annual Reports of these firms.

Gross acquisition of tangible assets by the two companies exceeded £0.2 billion in the latest year, mostly abroad. The ownership of these companies is also internationally diversified, and each has significant medium-term borrowings and convertible debt, some held abroad.<sup>48</sup>

Another large company (not yet quoted), GPA, has even bigger international assets and obligations. The prospectus for the 1992 public offer of GPA stock showed borrowings of \$4.0 billion and cash assets of \$0.4 billion. Its aircraft portfolio was valued at \$4.2 billion.

While these are the most significant cases, their scale indicates the degree to which further statistical information is needed on the international position of Irish companies. The sources used for this study are unlikely to capture all of the flows and assets involved.

One potentially important source of information here is the returns made to the Bank for International Settlements and to *International Financial Statistics* on claims of foreign banks on Irish residents and claims of Irish residents on foreign banks (Table 6). However, the Irish residents

Table 6: *Deposits and Borrowing of Non-banks With Banks Across Frontiers*

US\$ billion, end-year	Deposits		Bank Credit	
	A	B	A	B
1981	1.32		4.24	
1982	1.21	2.67	5.47	0.54
1983	1.43	2.66	5.51	0.56
1984	1.24	2.60	5.26	0.54
1985	1.98	3.57	7.39	0.59
1986	2.69	3.75	9.54	0.69
1987	3.28	4.56	12.17	0.73
1988	3.01	4.43	10.92	0.80
1989	4.12	5.16	11.97	0.86
1990	7.50	6.79	15.95	2.06
1991	9.01	7.35	19.85	3.21

Source: *International Financial Statistics*.

Example: In 1982 non-bank Irish residents held deposits totalling \$1.21 (billion) with, and borrowed \$5.47 from, banks abroad; while Irish banks lent \$0.54 to, and accepted \$2.66 in deposits from, non-banks abroad.

<sup>48</sup>The move by large Irish firms to direct investment abroad may well reflect the lighter exchange controls imposed in the 1980s on this form of foreign investment relative to portfolio investment.

included in these figures comprise household and Government as well as business customers. While households probably represent only a small part, the large holdings by foreign banks of Irish Government debt mean that it is difficult to use these figures as indicators of business sector debt.<sup>49</sup>

The claims of Irish residents on foreign banks – which have grown sharply since 1988 – may be more confidently ascribed to the private sector,<sup>50</sup> as is the practice in the balance of payments statistics. On the other hand, the emergence of a positive residual in the official balance of payments statistics in 1989, growing to almost £1 billion in 1990, may be related to this practice. Because of the large growth in both deposits and liabilities of residents, omitting the liabilities probably has the effect of exaggerating measured short-term capital outflows.

For publicly quoted companies we do have data<sup>51</sup> for the market value of their shares, which reached almost £8.8 billion at end-1989, before falling back to £6.5 billion at end-1990. The corporate sector owed about £8.7 billion to resident banks and near-banks at end-1990. In addition, it may be noted that bank guarantees, performance bonds and similar contingent liabilities, largely in favour of the resident corporate sector, approached £2 billion at the same date. We do not have estimates of non-equity borrowing by the corporate sector other than from resident banks and near-banks. Inter-company indebtedness is conspicuously missing from our data sources.

Combining the available sources as best we can (including the flow of funds analysis described below) allows us to put together a tentative table of identified financial assets and liabilities of the non-financial corporate ("business") sector (Table 7). This shows the business sector with financial assets totalling 43 per cent of GNP, and financial liabilities (including market value of equity) totalling 65 per cent of GNP. We don't really know the level of international assets, but net accumulation of international assets since 1985 was greater than the identified gross accumulation by the sector of other financial assets. By 1990, these recently accumulated international assets already accounted for over 30 per cent of the total. These large non-financial business sector flows put the comparatively modest scale of institutional foreign investment flows (about £1.7 billion for assurance and pension funds over the same period) into perspective.

<sup>49</sup>Except perhaps since 1988.

<sup>50</sup>Indeed, a substantial part of this growth could be attributable to the build-up of Smurfit bank balances in 1989-90.

<sup>51</sup>From the Annual Report of the Stock Exchange.

Table 7: *Sectoral Financial Assets: Business*

<i>£ billion</i>	1985	1986	1987	1988	1989	1990
Notes and coin	0.3	0.3	0.4	0.4	0.4	0.4
Deposits with licensed banks	4.5	4.3	4.7	5.0	5.2	6.2
Borrowing from banks	-5.5	-6.0	-6.3	-6.8	-7.5	-7.9
Borrowing from non-banks	-0.4	-0.4	-0.4	-0.5	-0.7	-0.8
Government securities	0.1	0.1	0.1	0.2	0.4	0.3
Companies securities	-2.8	-3.9	-3.9	-6.2	-8.8	-6.5
International non-bank private assets	0	0.5	0.9	1.7	2.5	2.9
Financial Assets	4.9	5.3	6.1	7.3	8.5	9.8
Financial Liabilities	8.7	10.3	10.7	13.6	17.0	15.2
Net financial assets	-3.8	-4.9	-4.6	-6.2	-8.5	-5.3
Financial assets/liabilities	0.56	0.52	0.57	0.54	0.50	0.65
Financial assets/liabilities (excl. equity)	0.43	0.38	0.42	0.37	0.33	0.45
<i>% GNP:</i>						
Financial Assets	29.9	30.1	32.4	35.9	38.0	42.2
Financial Liabilities	53.1	58.2	57.0	66.3	76.2	65.0
Net financial assets	-23.2	-28.1	-24.5	-30.4	-38.1	-22.8

*Source:* Constructed from the *Capital Finance Account* on which Table 12 is based.

*Statistical issues:* It is in this area that statistical information is most deficient. Ideally, we would like to see a comprehensive balance sheet and flow figures not only for the corporate sector as a whole, but also for size categories and with a breakdown between manufacturing, non-financial services and other industry. This would allow us to track interfirm indebtedness and the international financial relationships of firms.

Apart from this general point, it is worth highlighting the fact that the definition of residency for the new Irish multinational firms presents conceptual issues which have not yet been fully resolved. In as much as reinvested foreign earnings, and presumably foreign acquisitions financed by foreign borrowing, do not appear in the Irish national income accounts or the balance of payments, we are obtaining only a very partial picture of international financial relationships in the economy. The definitional conventions which have been adopted conceal the magnitude of gross international flows here. It would seem desirable to adopt the international standard double-entry approach to capture these important flows.

## 3.1.5 Household Behaviour

Household assets and liabilities are, for the most part, also captured in the balance sheets of other entities already discussed. Once more the main exception is foreign assets; as discussed, though they include household sector claims, the BIS-IFS banking returns do not throw much light here since the household sector is likely to account for only a small proportion of the figures included.

In the absence of systematic information here, we have worked back from the flow of funds accounts (discussed below) to apportion estimated residual foreign capital flows between corporate and household sectors. The result is used in the accompanying tentative estimates of household financial assets and liabilities (Table 8). This reveals the household's financial assets at over 130 per cent of GNP, with financial liabilities at

Table 8: *Sectoral Financial Assets: Household*

<i>£ billion</i>	1985	1986	1987	1988	1989	1990
Notes and coin	0.6	0.7	0.7	0.8	0.9	0.9
Deposits with licensed banks	3.1	3.0	3.4	3.6	3.8	4.4
Deposits with non-banks	4.5	4.7	5.0	5.3	5.6	6.3
Small savings	0.8	1.1	1.2	1.6	1.9	2.0
Lending: banks	-2.3	-2.4	-2.5	-2.8	-3.3	-3.8
Lending: non-banks	-0.4	-0.5	-0.4	-0.4	-0.4	-0.4
House purchase loans	-2.7	-2.9	-3.2	-3.7	-4.5	-5.2
Government securities	0.2	0.3	0.4	0.4	0.4	0.4
Companies securities	0.7	1.0	1.0	1.5	2.2	1.6
International non-bank private assets	0	0.6	0.9	0.9	0.9	1.4
Life assurance/pension funds	5.5	8.2	9.9	12.3	14.7	13.7
Financial Assets	15.5	19.6	22.5	26.4	30.3	30.7
Financial Liabilities	5.4	5.8	6.2	6.8	8.2	9.4
Net financial assets	10.1	13.8	16.3	19.5	22.1	21.3
Financial assets/liabilities	2.89	3.40	3.65	3.86	3.68	3.27
% GNP:						
Financial assets	94.7	111.1	119.5	129.0	136.1	131.9
Financial liabilities	32.8	32.7	32.8	33.4	37.0	40.4
Net financial assets	62.0	78.4	86.8	95.6	99.2	91.5

Source: As Table 7.



about 40 per cent. Though net accumulation of foreign assets by the sector is estimated to have exceeded £1 billion since 1985, this still accounted for less than 8 per cent of gross financial asset accumulation in that period, and to only about 3 per cent of estimated total financial assets.

It is interesting to note that while the data indicates an increase in household financial liabilities as a percentage of GNP, that increase is dwarfed by the growth in financial assets. Thus Ireland's household sector does not appear to have shared the rapid expansion of indebtedness that has characterised other industrial countries in recent years.

*Statistical issues:* To a large extent the household sector is a residual in much of the data we have. It would be especially desirable to find some way of isolating the firm sector and charities to arrive at something more closely approximating the normal meaning of the term household sector, but this may be a counsel of perfection.

### 3.1.6 The Overall Asset Picture

In addition to these sectoral asset tables, two summary figures may be presented to round off the assets picture so far as it can be based on available data. First, Figure B shows money and other liquid assets plus life assurance and pension fund assets and finally that part of domestic holdings of Government stocks not held by credit institutions, assurance companies or pension funds. This gives a fairly clear picture of the relative importance of these domestic financial assets held by residents when inter-institutional holdings are netted out. The total of the assets shown comes to 140 per cent of GNP. The importance of the banking and credit institutions (near-banks) as issuers of the assets held by non-financial entities becomes more evident in this presentation. Though assurance companies and pension funds have grown in importance, their obligations still remain smaller than the broad money stock. Furthermore, the figure shows that, because Government bonds are mostly held by financial intermediaries, only a relatively small amount is held by non-financial domestic entities.<sup>52</sup>

Figure C displays an estimate of foreign assets and liabilities of domestic entities. As indicated, these figures are very incomplete, yet they are much more complete than those published in *Eurostat*, as we have added an estimate for the assurance and pension business, and an estimate (based on recent changes in the IFS banking returns) of gross bank positions of the domestic non-bank private sector. The growing internationalisation of the economy, despite reductions in official foreign borrowing, is clearly revealed.

<sup>52</sup>Equities are not included in the table: because most are held by institutions, or by non-residents, they too would add a comparatively small amount to the total.

FIGURE B (i)  
ASSETS HELD BY RESIDENTS, 1990  
Shares excluding inter-inst. claims

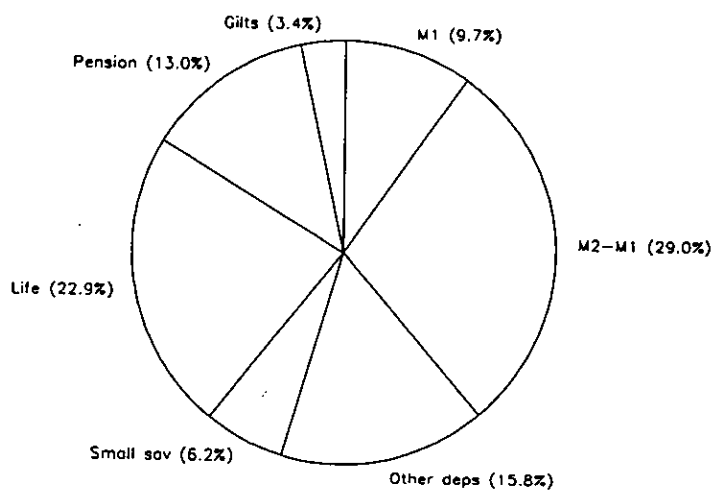
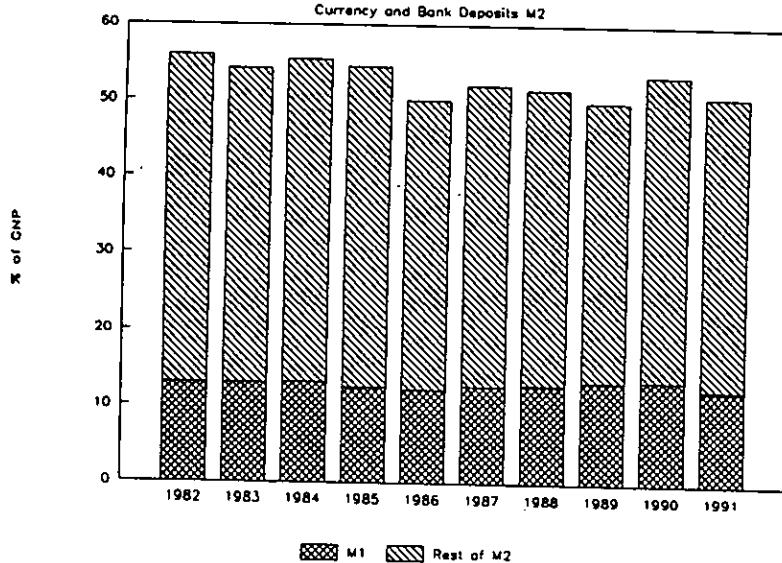


FIGURE B (ii)  
MONEY HOLDINGS, 1982-91  
Currency and Bank Deposits M2



INTERSECTORAL FINANCIAL FLOWS IN IRELAND

FIGURE C (i)

IDENTIFIED FOREIGN FINANCIAL ASSETS

(GROSS)

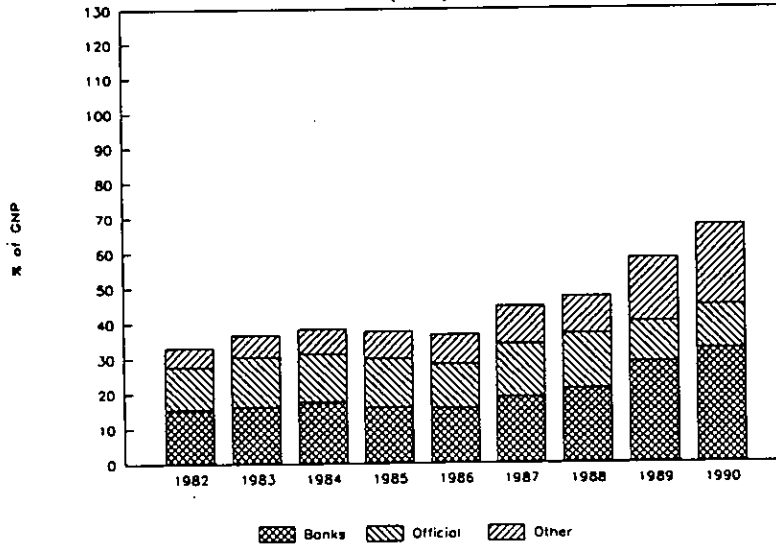
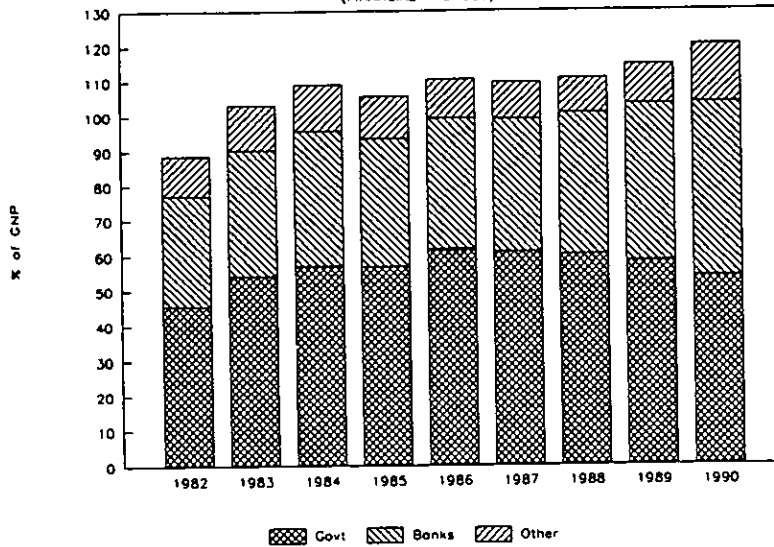


FIGURE C (ii)

IDENTIFIED FOREIGN LIABILITIES

(FINANCIAL - GROSS)



### 3.2 *Intersectoral Flows of Funds*

*The construction of flow of funds accounts:* The most systematic way of presenting flows of funds between sectors and internationally is the method integrated into the system of national income and expenditure accounts. This method was set out comprehensively in the 1968 United Nations System of National Accounts (SNA), which has been adapted for the European System of Accounts (ESA) and national systems.<sup>53</sup> The flow of funds accounts in the SNA comprise two tables, the capital accumulation account and the capital finance account. The first of these shows the net accumulation of financial assets by sector; the second breaks this net accumulation down into individual assets.

*Capital accumulation account:* The capital accumulation account represents the transition between the national income concepts of saving and capital formation, and the financial accounts concept of net surplus or net lending. In broad terms, the excess of each sector's gross saving (inclusive of capital consumption provisions) over its gross capital formation (inclusive of stock accumulation) will approximate its net accumulation of financial claims on other sectors – shown as net lending. Adjustments should however be made for *capital taxes and transfers*, and for purchases and sales of *land and intangible assets*. The balancing item of this account, net lending (or equivalently “financial surplus”), is broken down in the capital finance account.

An example of capital transfers would be a Government grant for the purpose of capital accumulation. Net capital grants to a sector allow it to augment the resources provided by savings to increase the sector's acquisition of real or financial assets. However this item tends to be relatively small.

Purchases and sales of land do not enter into the current income and outlay account, i.e. the main part of the National Income and Expenditure (NIE) Accounts. But land is not capital either. Nevertheless, a particular sector may use its savings to acquire land instead of capital or financial assets. Conversely, the sale of land by a sector augments the funds available to it for the purchase of capital or financial assets. Of course appreciation in the capital value of a given piece of land is invisible to these accounts which are flow accounts.

Intangible assets refer to such things as patent rights which are neither capital nor financial assets.

<sup>53</sup>A revised methodology for the SNA is in preparation.

Capital accumulation accounts for Ireland were first prepared by Dowling (1974) for the period 1949-72. These accounts were extended to 1977 by Honohan (1982) and to 1985 by O'Connell (1986).<sup>54</sup> Tables 9 and 10 present a further extension of these accounts to 1991. The new figures incorporate a number of conceptual refinements, relative to those presented in previous work, notably in the treatment of stock appreciation and capital transfers from abroad. The refinements bring the estimates closer in line with international practice. However, the Irish data still do not include any figures for intersectoral transactions in land or intangible assets.

For Ireland, the studies referred to identify separately personal, company, Government and foreign sectors. The personal, or *household*, sector includes unincorporated businesses and thus essentially the entire farm sector. The company, or *business*, sector includes financial institutions.<sup>55</sup> The *Government* sector corresponds to the concept of "public authorities" in the National Accounts, i.e. central Government plus the extra-budgetary funds plus local authorities. The main task in preparing these accounts is to distribute depreciation and capital accumulation between the different sectors. Increased detail now being provided in the CSO's publications allow this to be done with some greater degree of confidence than was possible in the past.<sup>56</sup>

*A sample year, Ireland: 1985:* In order to obtain a picture of the typical contents of capital accumulation accounts, we may examine, as an example, the data for 1985 in Table 9, based largely on the work of O'Connell, before moving on to our own preliminary estimates for more recent years.<sup>57</sup>

Beginning with the household sector, we see that<sup>58</sup> the household sector is the largest saver, with gross saving<sup>59</sup> of £2,427 million or about 15.3 per cent of GNP. To this is added £106 million of capital transfers from the Government giving a total of £2,533 million, out of which £30 million was paid in capital taxes. Thus £2,503 million was available for

<sup>54</sup>Partial figures were also presented by Bradley, Fitz. Gerald and McCoy (1991) with projections for future years; however, they are on a different basis to those discussed here.

<sup>55</sup>This is fully the case only in the capital accumulation accounts; for the capital finance accounts the intermediation activities of the financial sector are separately identified.

<sup>56</sup>Data sources are outlined in the Data Appendix. In general previous methodology was used, but we also found some simplifications which do not materially alter the estimates.

<sup>57</sup>In this, as in other tables, rounding results in columns not always adding to totals.

<sup>58</sup>As is the case in nearly all countries, cf. Honohan and Aiyas, forthcoming.

<sup>59</sup>Made up of £427 million in provision for depreciation and £2,000 million of net saving.

Table 9A: Flow of Funds: Ireland 1983-1991

<i>£ million</i>	1983	1984	1985	1986	1987	1988	1989	1990	1991
<b>HOUSEHOLD</b>									
Saving	2,044	2,143	2,000	1,926	2,062	1,712	1,654	2,025	2,410
Depreciation	385	408	427	446	470	490	527	565	584
Capital Grants	116	106	106	129	195	166	124	145	145
All Sources	2,545	2,657	2,533	2,501	2,727	2,368	2,305	2,735	3,138
Fixed Capital Formation	879	951	943	1,004	1,034	1,041	1,386	1,578	1,480
Stock	74	104	-7	-51	44	74	222	67	56
Capital Taxes	25	29	30	32	38	60	54	66	82
All Uses	978	1,084	966	986	1,116	1,174	1,662	1,711	1,618
Net Acquisition of Financial Assets	1,566	1,573	1,568	1,515	1,611	1,194	643	1,023	1,521
<b>BUSINESS</b>									
Saving	76	97	531	731	906	765	949	1,516	1,737
Depreciation	960	1,022	1,110	1,193	1,339	1,449	1,614	1,761	1,860
Capital Grants	151	124	145	152	125	102	96	128	130
Capital Transfers from Abroad	4	-67	-32	-57	-118	-46	-35	-23	27
All Sources	1,191	1,176	1,754	2,019	2,252	2,270	2,624	3,382	3,755
Fixed Capital Formation	1,846	1,893	1,716	1,721	1,730	2,006	2,392	2,627	2,539
Stock Changes	32	124	180	169	-16	-92	37	449	501
Capital Transfers to Government	66	69	80	64	97	115	141	145	145
All Uses	1,944	2,086	1,976	1,953	1,811	2,030	2,570	3,221	3,186
Net Acquisition of Financial Assets	-752	-910	-223	65	441	240	54	162	569
<b>GOVERNMENT</b>									
Saving	-1,145	-1,056	-1,406	-1,498	-1,388	-859	-277	-479	-428
Depreciation	183	167	187	197	207	224	225	230	240
Capital Taxes	25	29	30	32	38	60	54	66	82
Capital Transfers from Domestic	66	69	80	64	97	115	141	145	145
Capital Transfers from Abroad	88	74	82	88	105	108	107	243	347
All Sources	-783	-717	-1,027	-1,117	-941	-352	250	205	386
Fixed Capital Formation	689	662	718	693	553	423	466	561	583
Capital Transfers to Domestic	267	230	251	281	320	268	220	273	275
All Uses	956	892	969	974	873	691	686	834	858
Net Acquisition of Financial Assets	-1,739	-1,609	-1,996	-2,091	-1,814	-1,043	-436	-629	-472
<b>FOREIGN</b>									
Net Foreign Disinvestment	925	945	650	509	-239	-391	-261	-556	-1,616

DATA ON FINANCIAL ASSET STOCKS AND FLOWS

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Note: Based on *National Income and Expenditure, 1991*.

Table 9B: *Flow of Funds: Ireland 1983-1991*

<i>Per cent of GNP</i>	1983	1984	1985	1986	1987	1988	1989	1990	1991
<b>HOUSEHOLD</b>									
Saving	15.0	14.5	12.6	11.4	11.3	8.9	7.8	8.8	9.9
Depreciation	2.8	2.8	2.7	2.6	2.6	2.5	2.5	2.5	2.4
Capital Grants	0.9	0.7	0.7	0.8	1.1	0.9	0.6	0.6	0.6
All Sources	18.7	18.0	16.0	14.8	14.9	12.3	10.8	11.9	12.9
Fixed Capital Formation	6.5	6.4	6.0	5.9	5.6	5.4	6.5	6.9	6.1
Stock	0.5	0.7	-0.0	-0.3	0.2	0.4	1.0	0.3	0.2
Capital Taxes	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3
All Uses	7.2	7.3	6.1	5.8	6.1	6.1	7.8	7.5	6.7
Net Acquisition of Financial Assets	11.5	10.7	9.9	9.0	8.8	6.2	3.0	4.5	6.3
<b>BUSINESS</b>									
Saving	0.6	0.7	3.4	4.3	4.9	4.0	4.5	6.6	7.2
Depreciation	7.1	6.9	7.0	7.0	7.3	7.5	7.6	7.7	7.7
Capital Grants	1.1	0.8	0.9	0.9	0.7	0.5	0.5	0.6	0.5
Capital Transfers from Abroad	0.0	-0.5	-0.2	-0.3	-0.6	-0.2	-0.2	-0.1	0.1
All Sources	8.8	8.0	11.1	11.9	12.3	11.8	12.3	14.8	15.5
Fixed Capital Formation	13.6	12.8	10.8	10.2	9.4	10.4	11.3	11.5	10.5
Stock Changes	0.2	0.8	1.1	1.0	-0.1	-0.5	0.2	2.0	2.1
Capital Transfers to Government	0.5	0.5	0.5	0.4	0.5	0.6	0.7	0.6	0.6
All Uses	14.3	14.1	12.5	11.5	9.9	10.5	12.1	14.1	13.1
Net Acquisition of Financial Assets	-5.5	-6.2	-1.4	0.4	2.4	1.2	0.3	0.7	2.3
<b>GOVERNMENT</b>									
Saving	-8.4	-7.2	-8.9	-8.9	-7.6	-4.5	-1.3	-2.1	-1.8
Depreciation	1.3	1.1	1.2	1.2	1.1	1.2	1.1	1.0	1.0
Capital Taxes	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3
Capital Transfers from Domestic	0.5	0.5	0.5	0.4	0.5	0.6	0.7	0.6	0.6
Capital Transfers from Abroad	0.6	0.5	0.5	0.5	0.6	0.6	0.5	1.1	1.4
All Sources	-5.8	-4.9	-6.5	-6.6	-5.1	-1.8	1.2	0.9	1.6
Fixed Capital Formation	5.1	4.5	4.5	4.1	3.0	2.2	2.2	2.4	2.4
Capital Transfers to Domestic	2.0	1.6	1.6	1.7	1.7	1.4	1.0	1.2	1.1
All Uses	7.0	6.0	6.1	5.8	4.8	3.6	3.2	3.6	3.5
Net Acquisition of Financial Assets	-12.8	-10.9	-12.6	-12.4	-9.9	-5.4	-2.1	-2.7	-1.9
<b>FOREIGN</b>									
Net Foreign Disinvestment	6.8	6.4	4.1	3.0	-1.3	-2.0	-1.2	-2.4	-6.7

*Note: Based on National Income and Expenditure, 1991.*

Table 10: *Flow of Funds 1949-1991*

<i>Net Acquisition of Financial Assets by Sector</i>									
<i>Per cent of GNP</i>									
	<i>Household</i>	<i>Business</i>	<i>Govt</i>	<i>Foreign</i>		<i>Household</i>	<i>Business</i>	<i>Govt</i>	<i>Foreign</i>
1949	2.7	-1.4	-3.8	2.5	1971	4.3	-3.1	-4.9	3.8
1950	0.3	-3.6	-4.3	7.6	1972	4.4	-1.6	-4.9	2.1
1951	-1.7	-6.2	-6.8	14.7	1973	6.1	-3.6	-5.5	3.0
1952	4.9	-2.6	-4.1	1.9	1974	8.5	-8.7	-8.9	9.2
1953	5.1	-1.8	-4.6	1.3	1975	18.3	-6.5	-13.3	1.5
1954	5.0	-1.9	-4.1	1.0	1976	10.6	-6.2	-9.5	5.2
1955	1.0	-3.5	-3.9	6.4	1977	10.2	-6.7	-8.8	5.4
1956	3.8	-2.1	-4.2	2.6	1978	10.6	-6.5	-11.0	6.8
1957	5.6	-1.8	-2.2	-1.6	1979	7.5	-8.2	-12.8	13.4
1958	1.8	-0.2	-1.7	0.2	1980	10.7	-8.2	-14.1	11.5
1959	2.4	-2.4	-1.4	1.4	1981	7.9	-7.7	-14.9	14.7
1960	3.4	-1.3	-2.2	0.1	1982	11.7	-6.8	-15.4	10.6
1961	5.7	-2.5	-3.1	-0.2	1983	11.5	-5.5	-12.8	6.8
1962	4.6	-3.0	-3.4	1.8	1984	10.7	-6.2	-10.9	6.4
1963	3.5	-2.8	-3.4	2.7	1985	9.9	-1.4	-12.6	4.1
1964	4.1	-3.5	-4.0	3.4	1986	9.0	0.4	-12.4	3.0
1965	3.1	-3.1	-4.2	4.2	1987	8.8	2.4	-9.9	-1.3
1966	4.7	-3.4	-2.8	1.6	1988	6.2	1.2	-5.4	-2.0
1967	6.0	-1.3	-3.3	-1.3	1989	3.0	0.3	-2.1	-1.2
1968	4.5	-2.4	-3.4	1.3	1990	4.5	0.7	-2.7	-2.4
1969	4.3	-4.8	-4.2	4.7	1991	6.3	2.3	-1.9	-6.7
1970	5.2	-4.2	-5.0	3.9					

*Note:* Based on *National Income and Expenditure 1991*.

acquiring assets. The household sector acquired £943 million of fixed capital assets (in Ireland) but ended the year with £7 million less in stocks. This left a balance of £1,568 million, or just under 10 per cent of GNP, which should therefore equal the sector's net accumulation of financial assets from other sectors. Note that acquisition of foreign real capital is treated as acquisition of a financial asset in the accounts.

As is often the case, the pattern for the business sector is broadly symmetrical to that of the household sector. Net business savings – i.e. undistributed profits – are important (over 3 per cent of GNP in that year), and the depreciation allowance comes to about 7 per cent of GNP. But accumulation of capital is even larger, leaving a net financial deficit or net borrowing by the business sector amounting to some £223 million in that year.



The Government sector has been a net dissaver in Ireland for many years, its dissaving amounting to almost 9 per cent of GNP in 1985. In addition it is an important accumulator of capital – over 4 per cent of GNP – leaving it with a large borrowing requirement in 1985 amounting to almost 13 per cent of GNP. The sum of net lending by the domestic sectors by definition equals the balance of payments on current account, which thus came to a deficit (net lending by foreign sector) of 4 per cent of GNP in 1985. A few terminological pitfalls may be noted here. Thus in particular the net lending or financial surplus of the foreign sector is equivalent to the deficit on the nation's balance of payments on current account.<sup>60</sup>

Trends in these sectoral surpluses and deficits in the past two decades have been rather dramatic, and are analysed in Chapter 4.

*Capital finance accounts:* The capital finance account, which distributes the net lending of each sector among the different financial instruments, largely relies for its basic data on sources different to those used for the capital accumulation account. The first capital finance accounts prepared for Ireland are in Honohan (1982), and these were updated to 1985 and extended by O'Connell (1986). Both papers relied on confidential Central Bank files, and their methods cannot be replicated fully in the present paper. Nevertheless, it is possible to go a good distance in presenting approximate capital finance accounts for the period 1986-90 based on published material and these calculations have been performed. The results are summarised in Table 12. An important point to be noted is that the intermediation function of the financial sector is identified separately in the table, though (as noted below) it is constrained to have no net surplus.<sup>61</sup>

Because of the fact that different sources are involved, each of them imperfect, a discrepancy exists between the net lending deduced from the capital accumulation account and that identified in the capital finance account. This discrepancy can be very large indeed, as has been illustrated in the work done for 1960-85. However, there does appear to have been a tendency for revisions in the NIE accounts to result in a reduction in the discrepancy, and the revised 1985 figures shown in Table 11 (based on refinements in both the capital finance account and the capital accumulation account) have much lower residuals than those provided by

<sup>60</sup>This net lending of the foreign sector is sometimes misleadingly referred to as "net foreign savings"; we avoid the latter term since the gross saving and capital formation of the rest of the world is not identified in these accounts.

<sup>61</sup>Implicitly one is treating the surplus of the financial sector as being owned by the business sector - thus achieving conceptual consistency between the sectoral breakdown of the capital accumulation and capital finance accounts.

Table 11: Ireland: Capital Finance Account 1985

<i>£ million</i>	<i>Personal</i>	<i>Industrial/ Commercial</i>	<i>Banks</i>	<i>Central Bank</i>	<i>POSB</i>	<i>TSB</i>	<i>Assurance Cos/ Pension funds</i>	<i>Building Societies</i>	<i>ACC/ ICC</i>	<i>General Govt.</i>	<i>Foreign</i>
Notes and coin	31	16	-8	-39	0	0	0	0	0	0	0
Deposits with licensed banks	219	28	-628	0	0	-13	84	55	32	-29	252
Deposits with non-banks	537	0	0	0	-64	-96	0	-314	-64	0	0
Small savings	199	0	0	0	-199	0	0	0	0	0	0
Lending: banks	-206	-47	266	0	0	0	-40	12	-19	0	34
Lending: non-banks	-1	-4	0	0	0	21	0	0	-16	0	0
House purchase loans	-268	0	13	0	0	0	4	250	0	0	0
Direct external borrowing	0	-19	0	0	0	0	0	0	20	-805	805
Government securities	-25	12	240	-109	0	0	654	9	29	-894	83
Companies securities	35	-100	0	0	0	0	65	0	0	0	0
Identified foreign investment	0	0	0	0	0	0	139	0	0	0	-139
Life assurance/pension funds	990	0	0	0	0	0	-990	0	0	0	0
Official external reserves	0	0	0	196	0	0	0	0	0	0	-196
Advances by government	0	0	0	0	0	0	0	0	0	0	0
Advances to government	0	0	0	0	274	97	0	0	0	-371	0
Balancing item	57	-75	131	-25	-11	-8	-0	-1	18	103	-190
Financial surplus	1,568	-189	15	24	0	1	-84	11	1	-1,996	650

Based on O'Connell (1986).

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Table 12: Ireland: Capital Finance Account 1986-1990

Per cent of GNP	1986					1988					1990				
	Household	Business	Financial System	Government	Foreign	Household	Business	Financial System	Government	Foreign	Household	Business	Financial System	Government	Foreign
Notes and coin	0.2	0.1	-0.3	0.0	0.0	0.4	0.2	-0.5	0.0	0.0	0.0	-0.0	-0.0	0.0	0.0
Deposits with banks	-0.4	-0.9	-1.8	0.0	3.1	1.1	1.6	-4.0	0.0	1.3	2.9	4.5	-10.0	0.0	2.6
Deposits with non-banks	1.0	0.0	-1.2	0.0	0.1	1.5	0.0	-2.0	0.0	0.6	2.8	0.0	-3.3	0.0	0.5
Small savings	1.5	0.0	0.0	-1.5	0.0	1.8	0.0	0.0	-1.8	0.0	0.4	0.0	0.0	-0.4	0.0
Lending: banks	-0.7	-2.8	3.5	0.0	0.0	-1.2	-2.7	3.9	0.0	0.0	-1.9	-1.7	3.6	0.0	0.0
Lending: non-banks	-0.1	0.0	0.1	0.0	0.0	0.3	-0.4	0.1	0.0	0.0	-0.1	-0.4	0.5	0.0	0.0
House purchase loans	-1.6	0.0	1.6	0.0	0.0	-2.6	0.0	2.6	0.0	0.0	-3.2	0.0	3.2	0.0	0.0
Official external borrowing	0.0	0.0	0.0	-5.2	5.2	0.0	0.0	0.0	2.6	-2.6	0.0	0.0	0.0	-0.3	0.3
Government securities	0.5	0.8	4.1	-6.8	1.4	0.1	0.1	0.2	-4.9	4.5	-0.0	-0.0	1.5	-1.7	0.3
Company securities	0.3	-1.1	0.8	0.0	0.0	0.8	-3.0	2.3	0.0	0.0	0.8	-3.2	2.4	0.0	0.0
International non-bank private flow	2.7	4.1	0.9	0.0	-7.7	-0.6	4.8	0.8	0.0	-5.0	2.2	1.9	0.9	0.0	-5.0
Life assurance/pension funds	4.5	0.0	-4.5	0.0	0.0	4.2	0.0	-4.2	0.0	0.0	3.8	0.0	-3.8	0.0	0.0
Official external reserves	0.0	0.0	-0.4	0.0	0.4	0.0	0.0	1.8	0.0	-1.8	0.0	0.0	2.2	0.0	-2.2
Position at Central Bank	0.0	0.0	-0.5	0.5	0.0	0.0	0.0	-1.2	1.2	0.0	0.0	0.0	0.7	-0.7	0.0
Net lending by Government	0.0	-0.8	0.0	0.8	0.0	0.0	0.2	0.0	-0.2	0.0	0.0	0.0	0.0	-0.0	0.0
Balancing item	0.9	0.9	-2.2	-0.1	0.5	0.6	0.6	0.2	-2.4	1.1	-1.9	-1.9	2.1	0.7	1.0
Financial surplus	9.0	0.4	0.0	-12.4	3.0	6.2	1.2	0.0	-5.4	-2.0	5.7	-0.9	0.0	-2.3	-2.4
			1987					1989					Average 1986-90		
Notes and coin	0.3	0.1	-0.5	0.0	0.0	0.3	0.2	-0.5	0.0	0.0	0.24	0.12	-0.36	0.00	0.00
Deposits with banks	1.9	2.0	-3.1	0.0	-0.8	0.7	1.0	-0.4	0.0	-1.4	1.25	1.62	-3.84	0.00	0.97
Deposits with non-banks	1.8	0.0	-2.2	0.0	0.4	1.6	0.0	-2.1	0.0	0.5	1.73	0.00	-2.17	0.00	0.44
Small savings	1.0	0.0	0.0	-1.0	0.0	0.7	0.0	0.0	-0.7	0.0	1.08	0.00	0.00	-1.08	0.00
Lending: banks	-0.8	-2.0	2.8	0.0	0.0	-2.6	-3.1	5.7	0.0	0.0	-1.46	-2.45	3.91	0.00	0.00
Lending: non-banks	0.3	-0.1	-0.2	0.0	0.0	-0.2	-0.7	0.9	0.0	0.0	0.05	-0.33	0.27	0.00	0.00
House purchase loans	-1.6	0.0	1.6	0.0	0.0	-3.7	0.0	3.7	0.0	0.0	-2.51	0.00	2.51	0.00	0.00
Official external borrowing	0.0	0.0	0.0	-5.2	5.2	0.0	0.0	0.0	1.6	-1.6	0.00	0.00	0.00	-1.30	1.30
Government securities	0.4	0.6	3.9	-7.4	2.5	-0.3	-0.4	-3.0	-2.5	6.1	0.14	0.21	1.54	-4.65	2.96
Company securities	0.4	-1.7	1.3	0.0	0.0	0.3	-3.1	2.4	0.0	0.0	0.61	-2.45	1.84	0.00	0.00
International non-bank private flow	-0.3	3.7	0.9	0.0	-4.3	-0.8	4.6	4.5	0.0	-8.3	1.51	2.93	1.62	0.00	-6.06
Life assurance/pension funds	4.7	0.0	-4.7	0.0	0.0	5.0	0.0	-5.0	0.0	0.0	4.45	0.00	-4.45	0.00	0.00
Official external reserves	0.0	0.0	3.3	0.0	-3.3	0.0	0.0	-3.0	0.0	3.0	0.00	0.00	0.80	0.00	-0.80
Position at Central Bank	0.0	0.0	-2.0	2.0	0.0	0.0	0.0	-1.2	1.2	0.0	0.00	0.00	-0.34	0.34	0.00
Net lending by Government	0.0	-0.9	0.0	0.9	0.0	0.0	0.4	0.0	-0.4	0.0	0.00	-0.20	0.00	0.20	0.00
Balancing item	0.7	0.7	-1.2	0.8	-1.0	1.4	1.4	-2.1	-1.1	0.4	0.41	0.41	-0.63	-0.58	0.40
Financial surplus	8.8	2.4	0.0	-9.9	-1.3	3.0	0.2	0.0	-2.0	-1.2	7.49	-0.14	0.00	-6.56	-0.79

Table shows the accumulation or decumulation of the given assets by each sector as a percentage of GNP.

Based on *National Income and Expenditure, 1991*.

O'Connell.<sup>62</sup> More generally, it should not be thought that the discrepancies, or balancing items, are wholly a nuisance. Indeed, they can be used to throw light on the accuracy of the more tentative elements of the tables, and thus represent a useful component of analysis.

The elements of the capital finance account can be examined once more by looking at the (revised) figures for 1985 (Table 11). Here the various assets are listed in the first column, with the four sectors previously identified in the capital accumulation account augmented by a number of classes of financial institution. The Central Bank is separately identified. For the most part the table is self-explanatory: a positive entry means that the sector to which the column refers has accumulated that amount of the asset to which the row refers. Thus, for example, the 31 in the top left corner indicates that the personal sector acquired £31 million in currency. Each row sums to zero as there must be an issuer of each financial asset. Indeed, most of the entries are based on analysis of the balance sheets of the various financial institutions. Each column should sum to the net accumulation of financial assets by the sector, but as mentioned does not necessarily sum to the independent, national accounts based, estimates obtained from the NIE accounts, hence the need for a balancing item.

Among the reasons for the balancing item is the difficulty of obtaining flow figures from balance sheets, especially when assets such as foreign exchange, equities, or long-term bonds are concerned, whose capital value may change. But in addition there are discrepancies in the underlying data: for example, interbank borrowing and lending in official returns do not net to zero, as conceptually they must, but sometimes show a net figure of as much as £400 million. There are also some large differences between the NIE borrowing requirement for public authorities and the cash exchequer borrowing requirement, on which the elements in the body of the table are based. These are especially large in 1988, the year of the large tax amnesty, when the NIE assumes that some tax revenue actually received in 1988 referred to previous years. That year also involved some very large imputed central Government subsidy payments in the NIE relating to cash shortfalls in EC recoupments to the Agricultural Intervention Agency. Finally the well-known residual in the balance of payments forms the main part of the balancing item in the foreign column.

*The new estimates:* It would be tedious to review the sources and methods used for the latest estimates of the capital finance accounts, especially as they are preliminary in nature, considering that they do not benefit, as

<sup>62</sup>For example, the household residual has been brought down from £603 million to £57 million, and the business residual from (-)£480 million to (-)£75 million.

estimates from previous years have, from internal Central Bank data notably on the sectoral breakdown of bank deposits. Suffice it to say that the general procedures used in the past have been followed in most cases, to the extent that data was available, and that some new sources of data have been used, especially on the side of life assurance and pension funds. Further detail on the sources is provided in the Data Appendix.<sup>63</sup>

A number of classification modifications have been introduced. First, in line with data availability, direct private foreign borrowing has been grouped with the remainder of private acquisition of foreign assets or liabilities. Second, lending by the Central Bank has been separately identified. Third, lending by the POSB and TSBs to the Government has been included in the Government securities row rather than having a row to itself.<sup>64</sup>

The final significant deviation from the methodology of the past has been in the treatment of the balancing item. Before the adjustment that will now be described, the balancing item for each sector was as shown in the upper panel of Table 13. Noting the uncertainty attaching to the residual in the balance of payments, and recognising that, were it to be eliminated, most of the correction would likely occur in the household and business accounts, we have taken the residual in the balance of payments and distributed it between household and corporate acquisition of foreign assets in such a way as to minimise the sum of squared balancing items for those two sectors.<sup>65</sup> This approach effectively assumes that the residual in the balance of payments is all capital in nature.<sup>66</sup> The adjustment reduces the standard deviation of the balancing item for the three affected sectors by almost two-thirds. It is these adjusted figures which we discuss in the next chapter.

<sup>63</sup>Recent revisions in the base sources, up to and including National Income and Expenditure (NIE) 1991, dated July, 1992, have been incorporated in the capital accumulation and capital finance accounts shown in the tables and the figures. Note that detailed balance of payments statistics for 1991 were not yet available when the paper was completed. The econometric results of Chapter 4 refer to a data series based on NIE 1990.

<sup>64</sup>This notwithstanding the fact that POSB lending to Government is now being treated as a ways and means advance in the National Debt Statement.

<sup>65</sup>This can be thought of as a specific application of the methodology proposed in Honohan (1982). Essentially we choose numbers  $a$  and  $b$ , such that  $a+b$  equals the balance of payments residual, and when added to the figure for net accumulation of international assets by the household and business sectors respectively minimise the sum of squares of the resulting balancing items for those two sectors.

<sup>66</sup>It might be objected that there have been several important revisions to the current account of the balance of payments in recent years. The logic of our approach is to assume that these revisions have reflected a considerable improvement in the methodology of estimating current items, an improvement which has not been matched on the capital side. This leads us to conclude that the remaining residual is more likely to be a capital item.

Table 13: *Balancing Item in Flow of Funds*

<i>£ million</i>				
<i>Before adjustment</i>	<i>Household</i>	<i>Business</i>	<i>Government</i>	<i>Foreign</i>
1986	362	847	-18	-824
1987	-183	500	145	-249
1988	-266	630	-462	60
1889	-127	648	-242	172
1990	-467	-984	63	914
<i>After adjustment</i>				
1986	152	152	-18	81
1987	128	128	145	-187
1988	108	108	-462	207
1989	302	302	-242	89
1990	-387	-387	63	237

## Chapter 4

### *DISCUSSION OF THE TRENDS IN FINANCIAL FLOWS*

#### *4.1 Savings and Investment*

Before looking at the net lending and borrowing figures, it is worth noting some features of the underlying saving and investment data. Figure D(i) displays the national saving and investment ratios for the past two decades. A glance is enough to show that the two series do not move closely in line, and that the Feldstein-Horioka idea that national saving and national investment may be correlated because of international capital market imperfections has very little apparent confirmation in Irish data.<sup>67</sup> Indeed, despite a downward trend in national saving during the 1970s, national investment remained very high in the 1970s - over 24 per cent of GDP in every year except 1975. Only after 1981 did the rate of investment begin to fall, by which time national saving had stabilised at about 16 per cent of GDP. The fall in investment continued until 1989, by which time saving had started to climb, exceeding investment for the first time in 1987.

Foreign borrowing, especially by the Government sector, financed the 1975-86 excess of national investment over national saving. (Figure D(ii) shows official borrowing, including the subscriptions of non-residents to domestic Government debt.) Since 1988, an increase in transfers from the EC has been one of several factors helping to reduce reliance on foreign borrowing - though, as shown in Figure D(iii) the increase here is not as large as is often thought.

Figures E and F (based on Table 9) reveal the contrasting experience of the early and late 1980s in regard to the sectoral contribution to saving and investment. In this figure and others below the abbreviations *HH*, *B*, *C* and *F* refer to the main sectors as defined above. *HHB* denotes the sum of the household and business sector; net lending by this sector is equivalent to that of the remaining sectors (*FC*) with the sign reversed.

<sup>67</sup>Contemporaneous correlation is only 0.26. The Feldstein-Horioka theory relates to contemporaneous correlations; even including lags does not help much, with an  $R^2$  of only 0.34 if savings is regressed on current and two lags of investment (with a constant term);  $R^2$  of 0.43 for the reverse regression.

FIGURE D (i)  
NET NATIONAL SAVINGS AND INVESTMENT

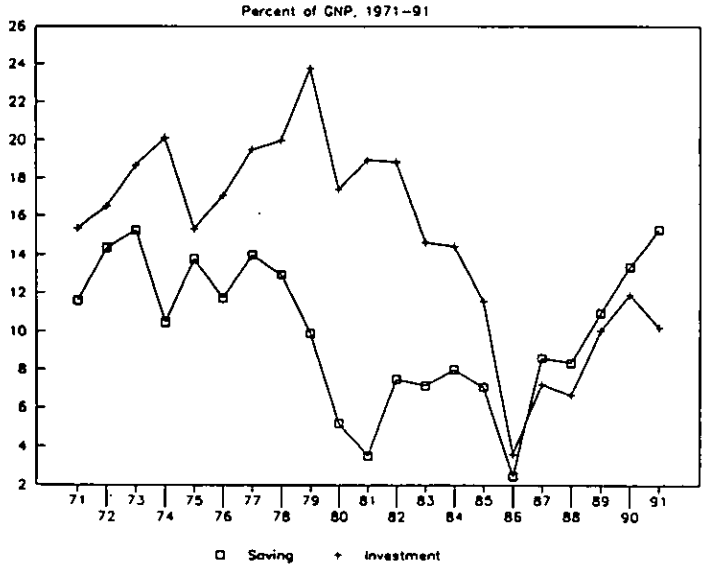


FIGURE D (ii)  
OFFICIAL BORROWING FROM NON-RESIDENTS

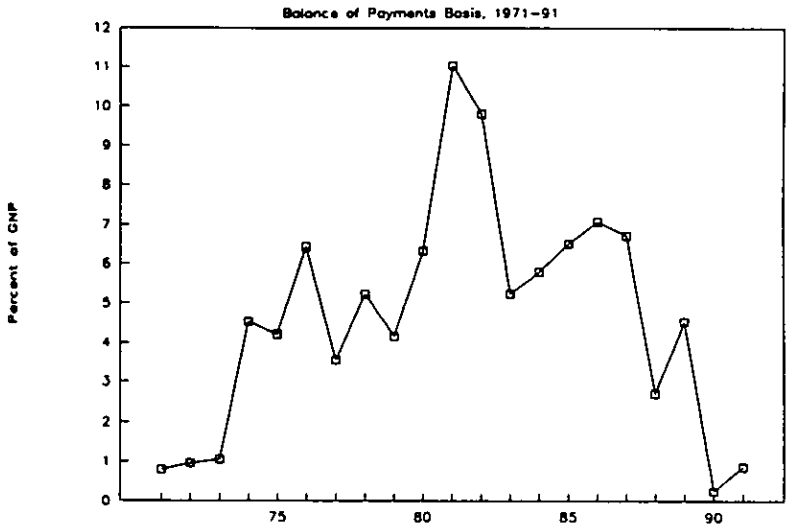




FIGURE D (iii)

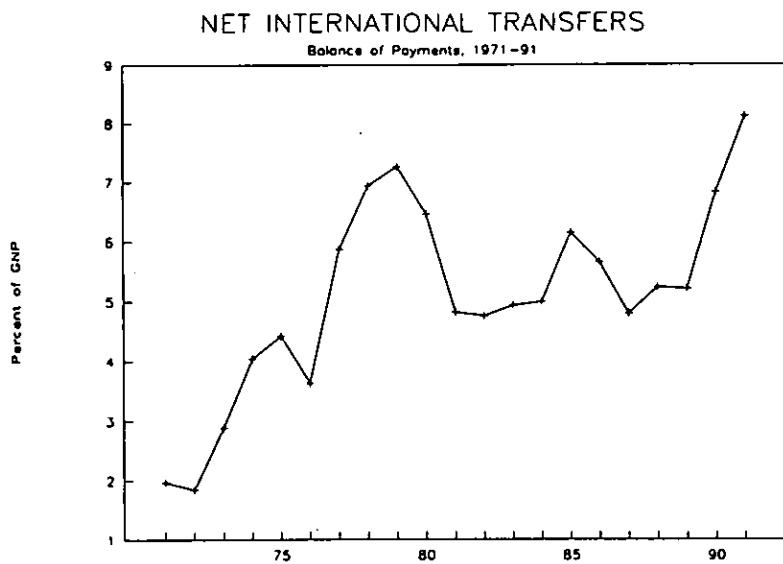


FIGURE E

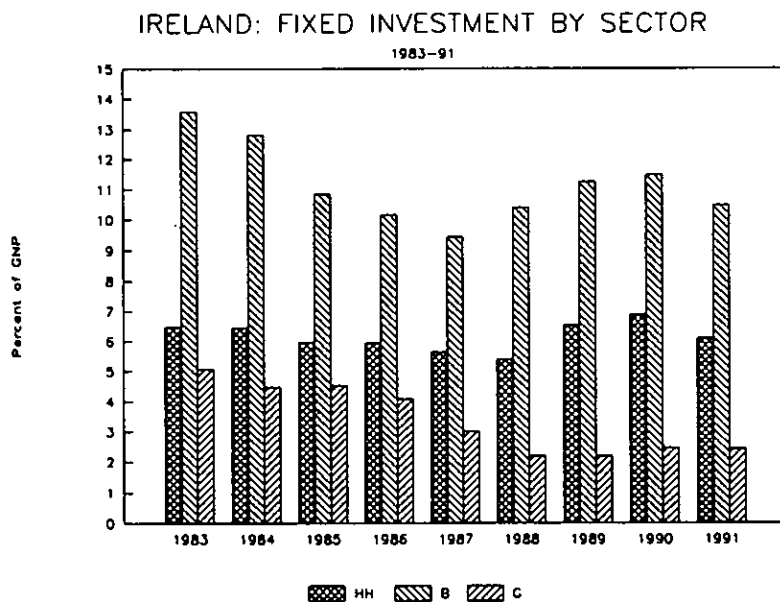
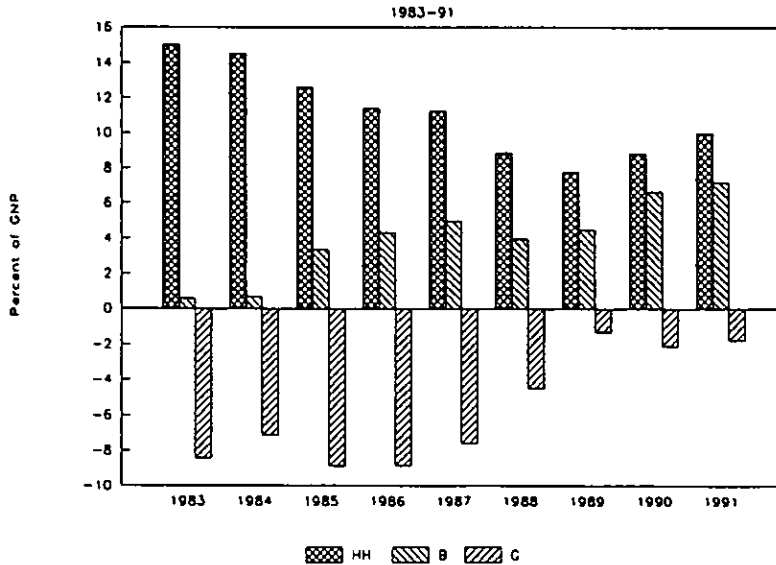


FIGURE F  
IRELAND: SAVING BY SECTOR



Household saving (as a percentage of GNP) showed a generally declining trend<sup>68</sup> until 1990, and national saving was sustained largely by growth in business saving, from 1984, and by the reduction in Government dissaving. Each of the three sectors contributed to the decline in fixed capital formation up to 1987; the recovery since then has been primarily in the household and business sectors.<sup>69</sup>

#### 4.2 Sectoral Surpluses and Accumulation of International Assets

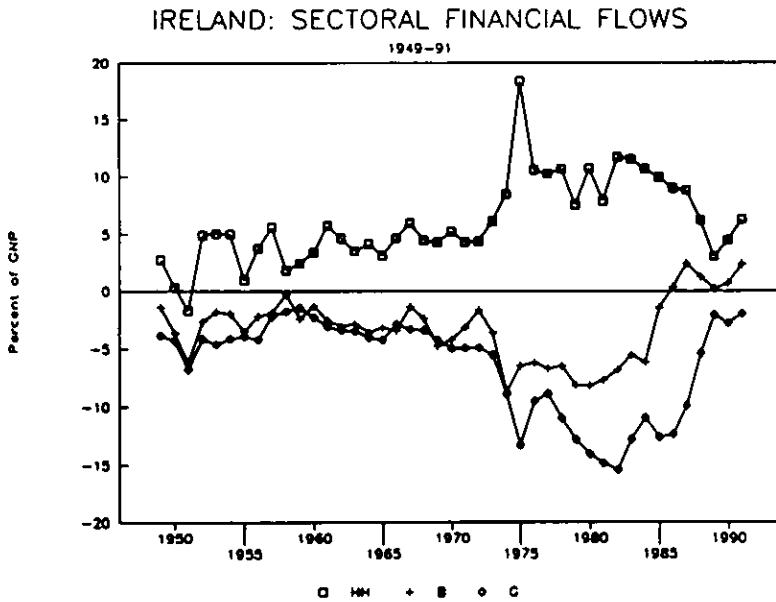
Figure G (based on Table 10) presents a 40-year perspective of the sectoral flows in the Irish economy. Four main features stand out. First, the household sector is almost always in surplus, the only exception in the data being 1951. Second, the corporate sector is in deficit in every year until 1986. From then on it has shown small surpluses in most years. The run of surpluses since 1986 is quite unusual by international standards, and is definitely the most noteworthy characteristic of the data.<sup>70</sup> Third, the

<sup>68</sup>Though not as a percentage of household income. The declining share of household income in GNP explains the difference.

<sup>69</sup>Recall that Government here excludes the State-sponsored bodies.

<sup>70</sup>There is no corresponding experience in the 17 developing countries studied by Honohan and Aiyas, forthcoming.

FIGURE G



Government sector has been in deficit in every year. The volatility of the Government's deficit is the largest of the three. Fourth, the foreign sector is more often in surplus than in deficit (i.e. the balance of payments on current account is usually in deficit), but this has been reversed since 1986. Finally, the absolute level and year-to-year volatility of sectoral surpluses generally increases sharply from 1973 on.

Looking at these propositions more closely we begin with the household sector. Its mean surplus has been 6.2 per cent of GNP with a standard deviation of 3.8 per cent (cf. Table 14). It dipped to a deficit of 1.7 per cent in 1951 - the year of the Korean war crisis - but from then until 1974 stayed in the range 1.0 to 6.1 per cent. After 1974 the household surplus becomes much higher on average (9.6 per cent as compared with 3.8 per cent) and more volatile. The huge 1975 surplus of over 18 per cent of GNP corresponds to the high personal savings rate recorded in that year and which has been variously explained as a response to sharply increased inflation, increasing unemployment, or developments in farm incomes in that year. In reality, 1975 remains an outlier in all studies of savings behaviour and is unlikely ever to be fully explained. After 1975 the household surplus remained in the vicinity of 10 per cent of GNP until 1988 when it dipped to below 5 per cent by 1989 before making a modest recovery in 1990 and 1991.

Table 14: *Sectoral Surpluses 1949-1991: Summary Statistics*

<i>Per cent of GNP</i>	<i>Household</i>	<i>Business</i>	<i>Government</i>	<i>Foreign</i>
<i>1949-91</i>				
Maximum	18.3	1.0	-1.4	14.7
Minimum	-1.7	-8.7	-15.4	-5.2
Mean	6.22	-3.43	-6.40	3.61
Standard Deviation	3.76	2.55	4.22	4.50
<i>Correlation Matrix</i>		<i>B</i>	<i>G</i>	<i>F</i>
<i>HH</i>		-0.38	-0.77	0.10
<i>B</i>			0.64	-0.84
<i>G</i>				-0.65
<i>1949-73</i>				
Mean	<i>HH</i> 3.79	<i>B</i> -2.74	<i>G</i> -3.83	<i>F</i> 2.77
Standard Deviation	1.84	1.24	1.18	3.23
<i>1974-91</i>				
Mean	<i>HH</i> 9.59	<i>B</i> -4.40	<i>G</i> -9.98	<i>F</i> 4.80
Standard Deviation	2.96	3.44	4.16	5.62

Based on Table 10 above.

The business sector, with a mean deficit for the whole period of 3.4 per cent of GNP, experiences an even sharper change in behaviour after 1973. Having fluctuated below 5 per cent of GNP in the previous two decades, in 1974 it slipped to its record deficit of 8.7 per cent, before recovering to the vicinity of 7-8 per cent for the following 10 years. From 1985 on, there is a marked trend and the business sector deficit is converted into a surplus. This turnaround has contributed to the jump in volatility post 1973. Indeed, measured by standard deviation, volatility of the business deficit has almost tripled since 1973.

It is not easy to say why the business sector has moved into such a sustained period of surplus. Table 9 makes it clear that increased saving (retained earnings) rather than reduced investment is the source of the surplus, but why has the sector not reinvested at home? One idea is that it is related to the dualistic nature of Irish business, with foreign firms making large profits but not reinvesting, while domestic firms' profitability is depressed. However, that would not explain why the phenomenon emerged only in the mid-1980s. An increased propensity of profitable domestic firms to invest their savings abroad is clearly a factor. Altered dividend behaviour by multinationals may also be relevant. Explaining this

phenomenon represents a major challenge to which we are not yet in a position to respond fully.

The Government deficit averaged 3.8 per cent of GNP in the period 1949-73, and 10.0 per cent since. The volatility of the Government's deficit was again much greater after 1973 (standard deviation of 4.2 as compared with 1.2 percentage points). Corresponding approximately with the Exchequer Borrowing Requirement (EBR) the path of this deficit in the 1970s and 1980s is well known and has been widely discussed.<sup>71</sup> Thus, apart once more from 1951, the deficit did not exceed 5 per cent of GNP until 1973. It then slipped sharply to 13.3 per cent in 1975, was reined in during the following two years, slipped again from 1977 to a record 15.4 per cent in 1982, and contracted thereafter with some hesitation in 1985 and 1986. By 1989, the deficit was lower than in any year since 1960. The surge, and subsequent decline, in the Government sector's foreign borrowing was an important feature of the past two decades.

#### 4.3 *Issues of Solvency and Convergence*

During the late 1970s and early 1980s serious doubts were raised about solvency, both of the Government and of the economy as a whole. In particular, the borrowing requirement of the Government was seen to be so high that the ratio of Government debt to GNP was rising apparently without limit. The current account deficit of the balance of payments was also growing at an alarming rate. Recent reductions in Government debt and the move of the current account of the balance of payments into surplus have reduced the anxiety on this score, only to replace it with a new concern, whether the emerging accumulation of private sector surpluses is likely to continue without limit, thereby depressing the level of investment, employment and economic activity generally.

Thus it becomes an important issue as to whether intersectoral flows are, in the long-run, constrained by considerations of portfolio balance and solvency. Specifically, can we assume that, just as the period of rapid accumulation of Government debt was followed by a reversal of the trend, the present pattern of substantial net accumulation of foreign assets by the private sector will come to an end?

Theoretical considerations lead one to suppose that, while there may be periods where sectors accumulate particular classes of assets or liabilities much more quickly than the rate at which their wealth is growing, over the long-run, the ratio of any particular asset or liability to the sector's net worth should not have a consistent trend. One can imagine that the household

<sup>71</sup>I have presented a recent comprehensive account in my (1992) paper.

sector will decide on the optimal composition of its portfolio of assets and liabilities. The optimum structure may vary, depending on households' perception of the likely yields and the potential for hedging other risks. In addition, the sector's net worth will change, both as a result of saving behaviour and because of capital gains and losses. The household sector's attempt to reach the desired composition of its portfolio will result in flows which may be quite large relative to the change in the sector's wealth. Likewise the business sector will decide as between domestic and foreign investment, and between different forms of financing, depending on risk and return considerations, and this too may lead to surges in certain flows, though over the long run the accumulation of, say, foreign assets will tend to be constrained by the capitalisation of the sector. Even the Government sector is likely to be constrained by solvency considerations in accumulating debt.

But these theoretical considerations need to be supplemented by empirical evidence. Even with more than 40 years of observations, it is hard to be conclusive about these issues on the basis of past experience. Nevertheless, it is worth looking at our long series of data to discover whether they reveal a tendency to mean reversion in sectoral deficits, or whether on the contrary, they display "non-stationarity" - i.e. no tendency for changes in surpluses to reverse themselves.

Recent papers<sup>72</sup> consider the appropriate methodology for assessing, on the basis of data on sectoral surpluses, whether a sector is likely to violate its budget constraint at some time in the future. They note that stationarity over time of the sector's net surplus is a sufficient condition for the discounted present value of the sector's future net liabilities to converge to zero. That is to say, if the sector's surplus has a tendency to revert to some mean value, its net liabilities will not tend to grow faster than the rate of interest - which is the criterion of solvency which they propose. It may also be noted that the same condition rules out "super-solvency", i.e. a tendency for the sector's net assets to accumulate faster than the rate of interest.

Before presenting the results of statistical analysis, consider Figures H (i) and (ii), which display a very rough measure of net sectoral assets. To obtain these figures we have cumulated the sectoral surpluses (discussed in the previous section) and reduced the resulting figures by the rate of nominal GNP growth.<sup>73</sup> The particular weakness of this data is that no allowance is made for capital value changes: these figures are considered less reliable than others presented in the paper, and will not stand up to close scrutiny, but they are nevertheless likely to be suggestive of broad trends.

<sup>72</sup>Notably by Trehan and Walsh (1991) and by Ballabriga, Dolado and Vinals (1991).

<sup>73</sup>Specifically, each year's figure equals that of the previous year plus the sectoral surplus (as a percentage of GNP) all reduced by the rate of nominal GNP growth.

FIGURE H (i)

## CUMULATED FLOWS

Discounted by nominal GNP growth

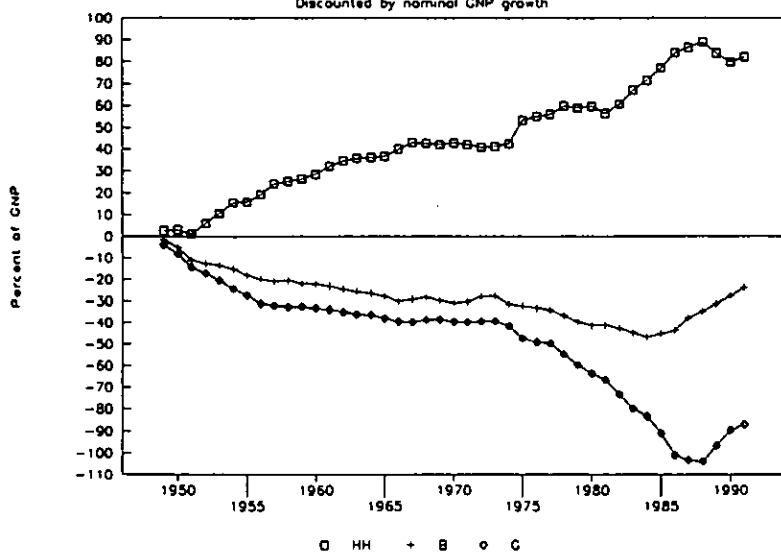
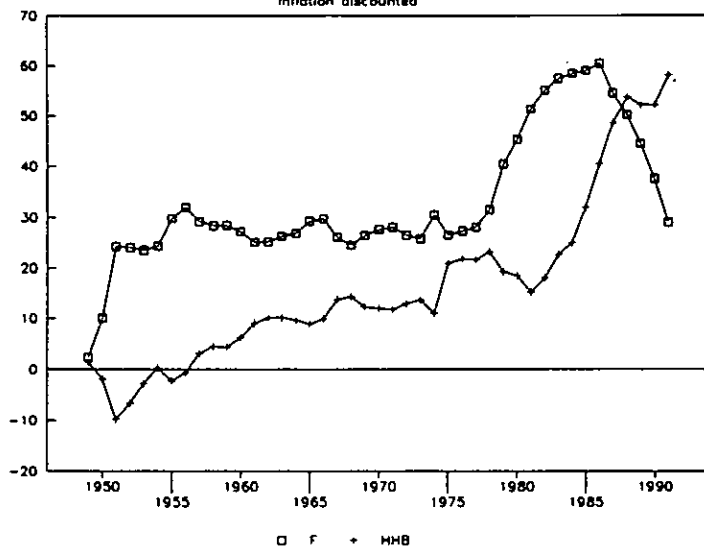


FIGURE H (ii)

## CUMULATED FLOWS

Inflation discounted



The visual impression given is interpreted as follows: first, the sharp reversal since 1986 in the cumulated foreign liabilities of the economy is sufficient to suggest strongly that the economy as a whole does not violate the budget constraint.<sup>74</sup> Nevertheless, the rapid accumulation of assets by the combined household and business sectors suggests a possible "super-solvency" problem. For the household and business sectors separately, and for the Government sector, the cumulated surpluses do not show such a trend.

When we turn to the statistical analysis of stationarity, the more formal approach to testing for solvency, the visual impression of super-solvency is not confirmed. In fact in this case stationarity is confirmed for the combined private sector surplus, largely because its mean reverting behaviour in the first thirty-five years of the sample are enough to offset the apparently divergent development noted in the last half decade or so. Thus the long time series is telling us that, if the past is a guide to the future, the present run of years of above average private sector financial surplus will be reversed before too long.

Using the available tests, which have low power (i.e. they tend not to find stationarity even when it is present), the data cannot reject the hypothesis that the remaining sector surpluses - the Government sector and the foreign sector, are individually non-stationary. Thus, in particular, while the balance of payments is now in surplus (in contrast to its mean position over 40 years, which is one of deficit) there is no strong evidence from the historical path to indicate that it will converge back towards equilibrium. We interpret this finding to mean that the historical swings in the balance of payments have been too large and too sustained to allow one to predict how quickly the balance of payments will revert towards equilibrium.

#### *4.4 Interaction Between Different Sectors*

In this section we explore the interaction between the surpluses and deficits of different sectors. We use the abbreviation "NFF" (for net financial flow) as a shorthand for either the surplus, or the deficit with sign-reversed, of a sector.<sup>75</sup> Because the NFFs are constrained to sum to zero, there must be an interaction between them: our interest is to discover whether this interaction is a stable one and if so which sectors tend to be the driving force (exogenous), and which the passive (endogenous).

<sup>74</sup>Indeed the DF test indicates that this cumulated foreign surplus series is itself stationary.

<sup>75</sup>Note in particular that the foreign sector surplus is the same as the balance of payments deficit.



FIGURE I

## IRELAND: SECTORAL FINANCIAL FLOWS

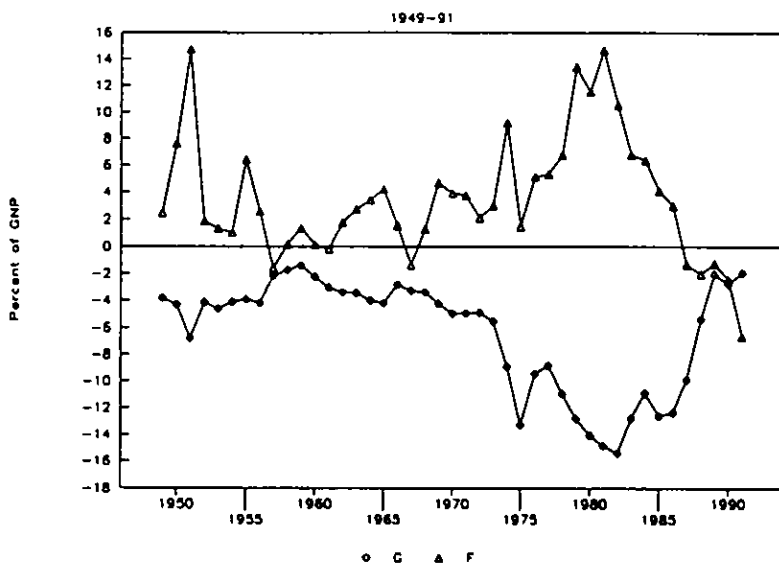


FIGURE J

## IRELAND: SECTORAL FINANCIAL FLOWS

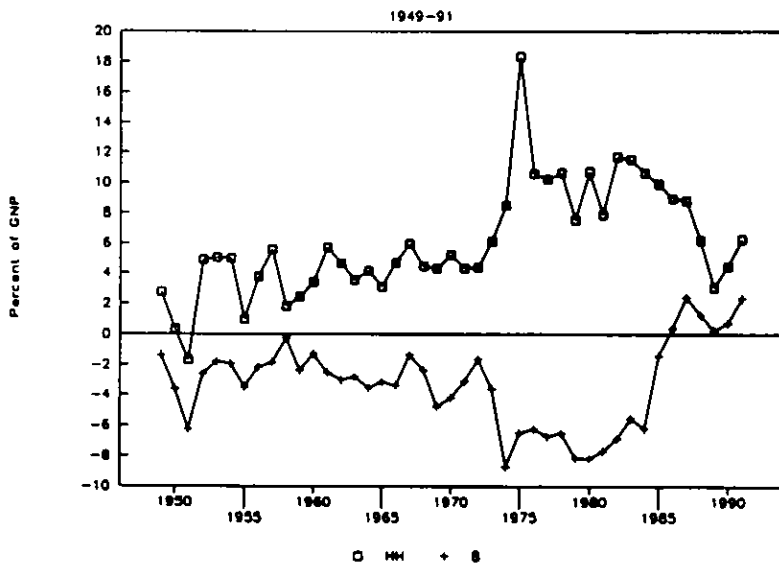
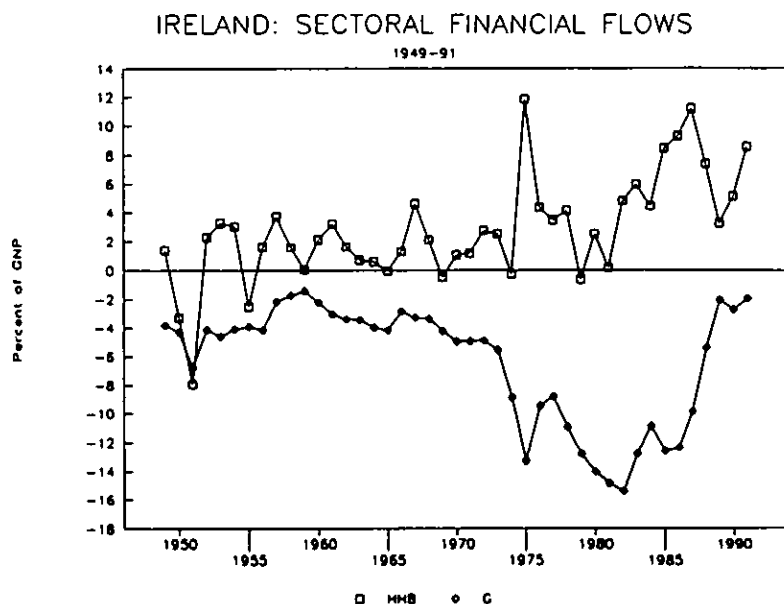


FIGURE K



A striking feature of the sectoral data is the fact that the household surplus has been at its highest in the mid-1970s to the mid-1980s, exactly when the Government deficit was at its highest. (Visual comparison of the sectoral surpluses is facilitated by Figures I, J and K, which regroup information already presented in Figure G.) This would at first sight appear to be in conformity with the predictions of the neo-Ricardian view on the private sector reaction to Government deficits. (Honohan 1986.) Thus, the private sector increases its accumulation of financial assets when the Government is borrowing so that it will be able to meet future tax liabilities arising from the Government's need to service the accumulated debt. However, closer examination of the data casts doubt on this superficial interpretation.<sup>76</sup>

Note in particular that the foreign surplus (the balance of payments deficit), which is the equal to the net deficit of public and domestic private sectors, is by no means stable and close to zero, as it would be if private

<sup>76</sup>The question has been considered in terms of regression analysis of personal consumption behaviour by Moore (1987) and by Whelan (1991). The present conclusion is in line with that of Whelan on this point.

sector surpluses moved to offset public sector deficits. Indeed, as can be seen from Figure 1, the foreign surplus is more volatile than the NFF of any of the three domestic sectors. Thus, the balance of payments deficit peaks in 1951 (when exceptionally each of the domestic sectors experienced deficit) at 14.7 per cent of GNP, a figure it attains again in 1981. Between those two dates, the balance of payments experiences a modest surplus on three occasions (1957, 1961 and 1967). After 1981 there is a steady reduction in net foreign borrowing, and the economy becomes a net lender to the rest of the world in 1986, with net lending exceeding 5 per cent by 1991.

It is often remarked that an important exogenous influence on the foreign surplus has been the rapid growth in international transfers, mainly from the EC. However, the sharp rise in the structural funds in very recent years is not sufficiently large to explain the turnaround in the Government and foreign sector flows. Indeed, net international transfers (mainly from the EC) fluctuated between about 5 and 7 per cent of GNP over the period 1977-90, averaging 5.7 per cent of GNP. In 1990, the figure was 6.8 per cent and in 1991 about 8.1 per cent. A relative decline in agricultural support payments in the earlier years explain the relatively modest increase despite the rapid growth in the structural funds.

The question of interactions between sectoral NFFs deserves a closer examination, and we conducted regression analysis on the 40 year time series to identify statistical regularities. Such analysis is fraught with methodological pitfalls since the four NFFs must add to zero and are therefore perfectly mutually correlated by definition. Our approach follows Atiyas and Honohan (forthcoming) in testing one candidate sector for exogeneity, and conducting the analysis conditional on the results of this test. In particular, we explore the hypothesis that the Government NFF is exogenous to the other three. This hypothesis is not rejected by the data, and it allows us to present a simple reduced form model of the flow interactions.

Specifically, our model estimates that a 3 per cent of GNP increase in Government borrowing results in an increase of no more than about 1 percentage point in household lending, if that, and in a 2 percentage point deterioration in the balance of payments. If there is an impact on the business sector (and this is less clear from the data) it may also be to increase its borrowing (or reduce its lending).

Two important implications of this finding may be noted. First, it suggests that the Government deficit and the balance of payments deficit are indeed correlated, but not to the extent of 100 per cent. Second, it could cast some doubt on the idea held by some that Government deficits

crowd out business sector borrowing.<sup>77</sup> We now turn to a more detailed discussion of the regressions underlying this proposition.

#### 4.5 *The Detailed Regression Results*

The regressions fall into two groups. The first concentrates on the univariate stability properties of each sectoral NFF data series. The second examines the impact of changes in the Government deficit on the other NFFs. (This section provides greater technical detail on the regression results, but the main conclusions have already been noted in the previous section.)

The first group of results is shown in Table 15. This presents the so-called unit root tests, designed to check whether a series is stationary or not. A non-stationary series has a tendency to drift away from its starting point without limit. A standard test for this is the Dickey-Fuller (DF) test. A critical value of the DF statistic, depending on the number of observations, can be consulted in standard statistical references. If the DF statistic for a given series is above the critical value, then we can say with 95 per cent confidence that the series is stationary.

Table 15: *Unit Root Tests: Sectoral Surpluses*

	<i>Household</i>	<i>Business</i>	<i>Government</i>	<i>Foreign</i>	<i>Foreign+ Government</i>
Mean	6.22	-3.38	-6.40	3.57	-2.84
(t-stat)	(10.8)	(8.4)	(10.0)	(5.1)	(5.0)
Dickey-Fuller	2.74	2.04	1.23	2.54	3.64
DW	2.20	1.91	1.49	1.97	2.03
Ch-sq (1)	1.24	0.05	3.20	0.04	0.53
Augmented DF (2)	2.36	1.40	1.18	1.92	2.89
DW	1.85	1.79	1.73	1.44	2.89
Ch-sq (1)			4.47		
Augmented DF (4)			1.44		
DW			1.99		
Ch-sq (1)			0.14		

DW is the Durbin-Watson Statistic.

Ch-sq (1) is Godfrey's Chi-squared test statistic for serial correlation. Augmented DF (i) is the augmented Dickey-Fuller test with i lags.

<sup>77</sup>The OECD (1991) has presented evidence in favour of the idea that government borrowing does influence interest rates, but the evidence remains somewhat tenuous. Even if that link is established, our regressions provide no support for the hypothesis that this in turn crowds out investment spending and reduces business net borrowing.

In our case, as already discussed, the main result is that, after removing the estimated constant term, and with the exception of the combined private sector,<sup>78</sup> non-stationarity of each sectoral NFF cannot be rejected.<sup>79</sup> The implication of this is that, again with the exception of the combined private sector, explosive behaviour of sectoral debt or assets cannot be ruled out on the basis of these results.

The remaining regressions are shown in Table 16. The idea we start with here is that the Government NFF  $G$  might be the exogenous or driving force to which the other sectoral NFFs respond. Accordingly, Table 16 has a panel for each of the other NFFs. Each panel begins with a simple autoregression with a constant term (intercept) and a linear time trend, this simply describes the general dynamic characteristics of the dependent variable; as with many macroeconomic ratios, each NFF proves to have a high degree of autocorrelation. The second regression in each panel has  $G$  as an explanatory variable, without the lagged dependent variable. Each panel also includes a regression with both  $G$  and the lagged dependent variable included. If  $G$  is significant in this equation, then it is tested for exogeneity by estimating with instrumental variables (IV) - these are the starred regressions - and using Sargan's test.<sup>80</sup>

The risk of omitted variables bias is partially met by inclusion of a small number of macroeconomic variables. These are the annual volume growth of merchandise exports, the nominal interest rate,<sup>81</sup> and the rate of CPI inflation.<sup>82</sup> It is not obvious on a priori grounds what the impact of these variables on sectoral NFFs might be;<sup>83</sup> but it is better to think of these variables not in terms of a specific model, but rather to see their inclusion as a technical matter designed to eliminate spurious statistical correlation between  $G$  and the other NFFs. These regressions are not designed as a complete model of the determination of each NFF: they have a narrower purpose.

<sup>78</sup>The test-statistic for the household sector NFF is also near the critical value.

<sup>79</sup>The validity of the DF test needs to be checked by testing whether the residuals from an equation used to obtain the DF statistic are autocorrelated. We used the Durbin-Watson test, and a Chi-squared test due to Godfrey (1988) for this purpose, and these are also shown in Table 15. In the case of the  $G$  the DF equation did display serial correlation; for this case the so-called augmented DF test was then employed with two and four lags. No significant evidence of serial correlation was found in the four-lag case.

<sup>80</sup>Discussed in Godfrey (1988).

<sup>81</sup>Representative yield on Government Bonds: *International Financial Statistics* Line 61.

<sup>82</sup>Annual average.

<sup>83</sup>Higher inflation, interest rates and exports might be expected to increase  $HH$ , for reasons discussed in the literature on the consumption function. Higher interest might increase  $F$ , as international capital flows responded. Higher exports might increase  $B$  in the short run, but lower it in the longer run if investment was increased in response to better export opportunities. Some, but not all, of the estimated coefficients correspond to those priors.

Table 16A: *Regression Results: Household Net Financial Flow*

<i>Dependent Variable: Household</i>														
<i>Equation no:</i>	<i>1.1</i>		<i>1.2</i>		<i>1.3</i>		<i>1.3*</i>		<i>1.4</i>		<i>1.5</i>		<i>1.5*</i>	
	<i>Coeff</i>	<i>t-stat</i>	<i>Coeff</i>	<i>t-stat</i>	<i>Coeff</i>	<i>t-stat</i>	<i>Coeff</i>	<i>t-stat</i>	<i>Coeff</i>	<i>t-stat</i>	<i>Coeff</i>	<i>t-stat</i>	<i>Coeff</i>	<i>t-stat</i>
Intercept	1.077	(1.3)	0.565	(0.8)	0.467	(0.6)	0.28	(0.4)	0.620	(1.1)	-0.922	(1.5)	-1.089	(1.7)
Household (lag)	0.482	(3.3)			0.185	(1.3)	0.094	(0.6)	0.227	(2.0)	0.230	(2.5)	0.183	(1.7)
Government			-0.513	(5.5)	-0.440	(4.0)	-0.574	(3.6)	-0.320	(3.6)	-0.208	(2.1)	-0.244	(2.2)
Time	0.099	(2.2)	0.108	(3.4)	0.082	(2.1)	0.077	(1.9)	0.088	(3.0)				
Export Growth											0.128	(3.9)	0.125	(3.8)
Interest rate											0.454	(3.5)	0.512	(3.3)
Inflation											-0.139	(1.9)	-0.178	(2.1)
Dummy 1975									9.105	(5.1)	9.841	(6.3)	9.936	(6.3)
RSQ/No. of obs	0.558	42	0.682	43	0.688	42	0.676	42	0.817	42	0.883	42	0.882	42
Method/Instruments	OLS		OLS		OLS		IV	5,6	OLS		OLS		IV	L(3,5,6,7)
DW/ChiSq (SerCor)	1.97	0.0	1.55	2.1	1.84	1.0	1.61	1.6	2.05	0.2	2.00	0.6	1.91	0.2
Sargan/DF							6.2	1					8.6	3



Table 16C: Regression Results: Foreign Net Financial Flow

Dependent Variable: Foreign Equation no:	3.1		3.2		3.2*		3.3		3.3*		3.4		3.4*	
	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat
Intercept	1.593	(1.3)	1.234	(1.3)	0.770	(0.8)	1.410	(1.4)	1.388	(1.3)	1.606	(1.9)	1.659	(1.9)
Foreign (lag)	0.694	(5.5)					0.062	(0.3)	-0.016	(0.1)				
Government			-1.018	(8.1)	-1.206	(7.2)	-0.962	(4.4)	-1.080	(4.0)	-0.817	(6.2)	-0.740	(5.0)
Time	-0.028	(0.6)	-0.190	(4.5)	-0.224	(4.7)	-0.190	(3.6)	-0.209	(3.5)	-0.197	(6.1)	-0.188	(5.5)
Export Growth											-0.114	(2.1)	-0.114	(2.2)
Interest rate														
Inflation											0.317	(3.5)	0.352	(3.6)
Dummy 1975											-11.442	(4.8)	-11.442	(4.7)
RSQ/No. of obs	0.439	42	0.619	43	0.598	43	0.627	42	0.624	42	0.801	42	0.799	42
Method/Instruments	OLS		OLS		IV	5,6	OLS		IV	5,6,L3	OLS		IV	L2,3,5,6,7
DW/ChiSq (SerCor)	2.00	0.1	1.68	1.0	1.67	1.0	1.72	2.2	1.64	6.8	1.60	1.9	1.50	1.7
Sargan/DF					3.3	1			6.3	2			8.1	4

\* Estimated by instrumental variables.



Starting with Table 16A, where the household NFF  $HH$  is the dependent variable, regression (1.1) shows a raw autocorrelation coefficient of less than 0.5. Regression (1.2) implies that a given increase in the Government deficit results on average in an increase in the household surplus about half as large. Because of serial correlation in the residual, regression (1.3) is preferred: it yields a broadly similar estimated impact of  $G$ . Regression (1.3\*) which accounts for potential endogeneity of  $G$  does not alter its coefficient by much. The introduction of a dummy variable for 1975 improves the fit substantially (regression 1.4), and also lowers the estimated impact effect of  $G$  to about 0.3. As mentioned, the other three explanatory variables are included (in regressions 1.5 and 1.5\*) more to avoid omitted variables bias than representing a directly interpretable model. Plausibly enough, a one percentage point increase in the nominal long-term interest rate increases  $HH$  by about 0.5 percentage points. Less obviously, the effect of the inflation rate has the opposite sign and a much smaller, though still significant magnitude. Rapid export growth, perhaps a proxy for improved economic conditions, increases  $HH$ .<sup>84</sup> But the main finding here is that the exogeneity of  $G$  is still not rejected by the Sargan statistic<sup>85</sup> from the IV estimate (regression 1.5\*), but the estimate of the impact of  $G$  is now reduced to between 0.2 and 0.25. Therefore, our conclusion from Table 16A is that the Government NFF is an independent causal factor (in the sense that it is exogenous) for the household surplus, but that its impact is modest.

Turning to Table 16B, regression (2.1) shows that the business NFF  $B$  has a higher raw autocorrelation of about 0.8. The coefficient of  $G$  in regression (2.2) has a counter-intuitive sign: an increase in Government NFF seems to increase the business NFF. However, the apparent strong impact of  $G$  in that regression is suspect because of the evident serial correlation in the regression (the low Durbin-Watson statistic). When the lagged dependent variable is included in order to eliminating the serial correlation (regression 2.3),<sup>86</sup> the coefficient of  $G$  becomes quite insignificant, showing that the estimated impact in regression 2.2 was

<sup>84</sup>The change in the sign of the intercept of this regression, as compared with the other regressions, is of no significance: it is simply due to the fact that the explanatory variables introduced in the regression have non-zero means.

<sup>85</sup>This is distributed Chi-squared, with the number of degrees of freedom shown in Table 16 - in this case 3. The Table also shows the instruments used: for example "5.6" means the fifth and sixth variable in the list, i.e. export growth and interest rate; L(3,5,6,7) means lagged values of the specified variables.

<sup>86</sup>Because  $G$  is not significant in 2.3 or 2.4, no IV estimate is reported.

spurious. The additional inclusion of the three other explanatory variables in regression (2.4) further reduces the significance of  $G$ , even though only the nominal interest rate is significant. Altogether, the business NFF on this showing is scarcely distinguishable from a random walk; in particular, the Government NFF has no clear impact on the business NFF.<sup>87</sup> Our equation provides no satisfactory explanation for the surprising emergence of a business sector surplus in the late 1980s - the time trend seems to be the main factor "explaining" this.

The regressions in Table 16C for the foreign NFF  $F$  show a very strong effect for  $G$ . The simple regression with time trend (4.2) has a point estimate of unity, and this survives the test for endogeneity (4.2\*) and the inclusion of lagged dependent variable (4.3 and 4.3\*). The interest rate is not significant here, but the export growth rate and inflation are: export growth reduces the foreign NFF (balance of payments deficit), and inflation increases it. Inclusion of a 1975 dummy has the effect of lowering the point estimate of the impact of  $G$  to between 0.75 and 0.8. Nevertheless, the Government NFF is found from these regressions to have an independent causal role in influencing the foreign NFF, and a large part of any change in the Government deficit tends to lead to an impact on the foreign NFF that is not far short of pound-for-pound.

#### 4.6 *Shifts in the Mix of Assets*

The relative importance of different assets in the annual flow of funds tends to be very volatile, a fact which has militated against the use of the flow of funds matrix as a forecasting tool in any country. However, analysis of the 5-yearly averages of the capital finance account running back to 1960 allows us to see some emerging patterns in the structure of intermediation in the economy, and in gross international flows. Two main messages seem clear.

The first proposition evident from the data is the declining relative importance of the credit institutions (banking system plus near-banks) in intersectoral flows. Thus, taking for each 5 year period, the share of flows, between the credit institutions and the household sector, as a share of the sum of the absolute flows involving the household sector in the capital finance account, we find that this ratio peaked in 1966-70 at almost 53 per cent. In each subsequent 5-year period this ratio fell until by 1986-90 it had

<sup>87</sup>The negative partial correlation between interest rates and  $B$  is the wrong sign for the hypothesis that crowding out occurs through an impact of  $G$  on interest rates. Such crowding out would imply high interest rates being associated with lower investment, and therefore *ceteris paribus*, a higher NFF for the business sector.

reached 26 per cent. Though the data involves a considerable amount of aggregation, and some intermediaries are not separately identified, this decline is too large to be easily dismissed as a statistical artefact.

Much, though not all of this decline in the share of credit institutions in intermediating households' flows has been taken up by the life assurance and pension fund sector, whose share jumped from around 11 per cent in the 1960s and 1970s to 24 per cent in the first half of the 1980s and to 29 per cent in 1986-90.

For the business sector, the peak in the share of credit institutions was later: 1971-75 at 51 per cent. Once again, however, the share has subsequently declined, to stabilise at 37 per cent in 1981-90. In this case, we estimate that international financial intermediation has taken up much of the decline.

Focusing next on the composition of the foreign sector's net lending, the average magnitude of each component as a share of GNP is shown in the lower panel of Table 17. Some of the elements of this table are not unexpected, notably the importance of Government foreign borrowing especially from 1971-85. Less well-known, but also important, is the role of the banking sector in importing funds throughout the 30 years - these flows peaked at an average of 3.3 per cent of GNP in 1976-80, but still averaged 1.4 per cent in 1986-90. Some of what was borrowed abroad was effectively redeposited there by the official sector in the form of additions to the official external reserves: these averaged 1.7 per cent of GNP for the period as a whole.

The purchase of Irish Government securities by non-residents, which reached as much as 3 per cent of GNP on average 1986-90, represents not only a significant part of international flows but has also brought an important degree of internationalisation to the domestic capital market.

But the most striking illustration of increasing international interpenetration comes from the growing sums placed abroad by private non-banks. Relatively modest before 1985, these have exploded to an average of over 6 per cent of GNP in the most recent 5-year period, exceeding the total of Government and bank borrowing from abroad. This trend has undoubtedly been facilitated by the relaxation of exchange controls and to some extent by tax factors.

Table 17: *Long-term Trends in the Role of Different Assets*

<i>(A) Share of Intermediaries in Sectoral Surpluses and Deficits</i>							
<i>Share of:</i>							
<i>five year periods:</i>	<i>61-65</i>	<i>66-70</i>	<i>71-75</i>	<i>76-80</i>	<i>81-85</i>	<i>86-90</i>	<i>61-90</i>
Credit institutions in:							
Household	0.311	0.528	0.463	0.434	0.362	0.260	0.404
Business	0.333	0.179	0.511	0.439	0.370	0.383	0.379
Assurance and pension funds in:							
Household	0.121	0.114	0.115	0.104	0.243	0.292	0.158

*Note:* The denominator is the sum of the absolute values in the columns of the capital finance account.

<i>(B) Contribution to Foreign Sector</i>							
<i>Average: % of GNP</i>							
	<i>61-65</i>	<i>66-70</i>	<i>71-75</i>	<i>76-80</i>	<i>81-85</i>	<i>86-90</i>	<i>61-90</i>
Private Banks*	0.5	1.6	2.7	3.3	1.9	1.4	1.9
Foreign Borrowing	0.9	1.8	3.9	6.2	8.1	1.3	3.7
Irish Government Securities	0.0	0.0	0.6	1.2	0.2	3.0	0.8
Non-bank private	0.0	-0.5	-0.7	-1.0	-0.8	-6.1	-1.5
Off Ext Reserves	-1.1	-2.2	-2.8	-2.0	-1.4	-0.8	-1.7
Balancing Item	2.2	1.6	0.2	1.9	0.4	0.0	1.1
Surplus	2.5	2.3	3.9	9.6	8.4	-0.8	4.3

*Notes:* 1961-85 are drawn from O'Connell (1986).

There is a break in the series at 1985; this affects especially foreign borrowing and non-bank private.

\*and other credit institutions.

## Chapter 5

### *CONCLUDING REMARKS*

The last decade has seen a remarkable turnaround in the direction of international flows involving Ireland. The change in the Government's financial performance has been a contributory factor, but private sector behaviour has made an independent contribution. Except to the extent that it may have contributed to higher interest rates, Government borrowing does not seem to have crowded out private business sector borrowing, and conversely the contraction in Government borrowing has not resulted in any noticeable "crowding in" of private investment.

Instead, the accumulation of foreign assets by the private sector has emerged as the most striking characteristic of financial flows in the early 1990s. While accumulation at recent rates cannot be sustained indefinitely, previous experience does not offer much evidence that a reversal is imminent.

Looking to the future, what can we say about the likely evolution of capital movements in the light of the trends documented here? Three major changes are in the offing which together will have the effect of integrating the Irish capital market even more closely into the European market. These are, respectively, the removal of all exchange controls from the end of 1992, the progressive completion of the internal market in financial services – the end of 1992 will represent an important staging post here too – and progress towards a common currency, which the Maastricht Treaty scheduled for 1999 at the latest.

When all of these changes are finally in place, the exposure of the Irish financial market to the rest of Europe will be even greater than it was under the sterling link. For one thing, the sterling link period was latterly characterised by common exchange controls applied between the Sterling Area and the rest of the World, including the US dollar zone and European capital markets. While the removal of exchange controls is compulsory only with respect to capital movements within the EC, the fact that other members already allow complete freedom of capital movements with the rest of the World means that there is no question of limiting Irish flows to destinations within the Community.

If the Maastricht plans are not derailed, the common currency will restore overall currency stability to that enjoyed during the sterling link period, though it will not eliminate exchange risk for the significant volume of current and capital transactions involving currencies outside the EMU. Exchange market turbulence in the Autumn of 1992 emphasises the value of the single currency programme; at the same time implementation of this programme seems less certain than it did immediately following the Maastricht Treaty.

The biggest change will, however, lie in the liberalisation of provision of financial services across frontiers. Already all national financial markets in Europe have gone through a process of liberalisation to a greater or lesser degree, and the removal of regulatory frontiers will open up a new and much more competitive era. Exactly how quickly and what form the new competition will take is unclear, but come it certainly will.

Our data has shown a progressive growth in internationalisation during the latter part of the 1980s, despite the existence of more severe exchange controls than in previous decades. These trends will undoubtedly accelerate in the newly liberalised environment, and even more so if and when currency risk within the EC is eliminated.

However, the very fact that outflows have already occurred leads us to suppose that there are unlikely to be sudden and drastic new outflows arising from the final liberalisation (the very size of recent short-term flows induced by exchange rate speculation shows how minimal remaining exchange controls were even by mid-1992). Those who desperately wanted to export funds have done so already. Nevertheless, there will be both a one-off portfolio readjustment and, potentially more important, an increasing foreign competition for domestic funds.

Judging from their importance in effecting compensatory inflows, it is to the banking system and to official borrowing that we will need to look to ensure that sufficient compensating funds are imported. The availability of such funds is not questioned. However, in the case of the banking system, it may mean that the banks will lose some of the low cost<sup>88</sup> retail funds with high cost wholesale funds carrying exchange risk. Such risk may have to be swapped into the Central Bank. Even for the official sector, borrowing in Irish pounds could prove an expensive way of meeting financing needs. In the interval between the removal of exchange controls and the establishment of the single currency, a growing exposure of the official sector to foreign exchange risk may be anticipated. Hopefully this will be largely offset by reduced volatility of exchange rates.

<sup>88</sup>That is low marginal cost.

Some of the outflow to date, especially of household funds, may be seen as having been driven by tax evasion. Likewise, the growth of the share in household sector savings taken by assurance and pension funds is partly attributable to tax avoidance. New tax measures being introduced in advance of the removal of exchange controls are likely to alter this picture substantially so far as the relative position of different domestic institutions is concerned.<sup>89</sup> Regarding international flows, while the decisive reduction in the taxation of bank deposits will certainly limit tax-induced capital outflows, they are unlikely to result in substantial inflows.

But the long-term prospects for capital flows are not wholly or even largely dependent on tax considerations, as witness the comparatively greater importance of business sector outflows in the past 5 years. These flows are looking for risk diversification, financial services and profit opportunities. While further liberalisation presents threats to the domestic financial institutions in the face of a likely acceleration of such outflows, it also presents new freedoms within which to attempt to capture a larger share of the international intermediation business.

If the European capital market does become as integrated as seems likely, the very concept of international capital flows will become nebulous. Already the difficulty of defining residency of multinational companies has made interpretation of trends difficult. But with the remainder of the national economy much less integrated into Europe for the foreseeable future, and in particular with no real fiscal integration, the importance of ensuring that Irish business is not starved of investment funds and working capital will continue to represent a policy problem. The need for adequate data will thus continue despite the elimination of international regulatory barriers to capital. This paper has shown that the skeleton of such data already exists. It is now for the Central Bank to collect and present such data systematically and on a regular basis.

Aggregate flow of funds data is, of course, only one of the elements needed to understand the workings of the capital markets. For instance, even if the aggregate availability of funds to Irish business is adequate, its cost could be excessive, and information deficiencies and risk aversion on the part of lenders and institutions could result in misallocation of available funds. The role of Irish financial institutions in providing the maximum efficiency of intermediation, including adequate risk evaluation and monitoring, are aspects whose importance can hardly be overstated, and which deserve further study.

<sup>89</sup>At the time of writing a second Finance Bill for 1992 is promised but not yet introduced.

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## Data Appendix

Data sources for: Capital accumulation account (sectoral financial surpluses):

A number of intermediate calculations are made:

- A NIE line 107 *plus* NIE Table 21: "Total Expenditure – Current" *less* "Total Receipts – Current".
- B NIE line 24: "Agriculture, forestry and fishing".
- C NIE line 24 *less* A *less* B.
- D NIE Table 21: "Taxes on Capital".
- E NIE Table 15: "Dwellings" *plus* NIE Table 16: "Agriculture, forestry and fishing".
- F NIE Table 28: The sum of the items "Gross Physical Capital Formation" in sections "Housing" and "Agriculture, forestry and fishing".
- G NIE Table 21: "Other transfers" *plus* NIE Table 23: "Farm modernisation grants".
- H NIE Table 21: "Grants to enterprises".
- J NIE Table 21: "Gross to physical capital formation".

Using these, the table is constructed essentially as follows:

	Households	Business	Government
Saving	NIE105	NIE106 + NIE119	NIE107
Depreciation	$B+0.1C$	$0.9C$	A
Transfers etc.	G	H	D
Fixed Cap Formation	$E - F$	$NIE 57 - E + F - J$	J
Stocks	$NIE117+0.2*NIE118$	$0.8*NIE118+NIE119$	0
Capital taxes	D	0	0

Note that this approach avoids use of the United Nations compilation used by previous studies. Slight simplifications in capital formation and depreciation are the cost of this approach: improved timeliness is the benefit. Some other simplifications are also used, for example in ignoring the small amount of non-housing, non-agricultural investment in household sector capital formation.

Data sources for Capital Finance Account:

Tables from Central Bank bulletin (CB) identified by their titles in italics.

## Notes and coin:

CB Table: *Money and other liquid assets*: non-bank holdings divided two-thirds to HH, remainder to B.

## Deposits with banks:

Resident deposits from *All licensed banks: aggregate balance sheet* (CB).  
Acquisition of foreign assets is treated as net deposit position with F.  
Building societies lending to banks is identified.  
Remainder is divided 0.4 to HH, 0.6 to B.

## Deposits with non-banks (i.e. near-banks):

CB *Building societies* (CB);  
For POSB and TSB Old CB table used pre-1990. For 1990 derived from  
*Money and other liquid assets* "Other credit institutions".  
For ACC and ICC, Annual reports of those institutions.

## Small savings:

Flow from CB *Financing of EBR*.

## Lending: banks (i.e. loans from banks):

From CB *Analysis of advances*. Rows 1, 9.3 and 10 to HH; remainder  
(except 10.1) to B.

## Lending: non-banks (i.e. loans from near-banks):

Annual reports of ACC and ICC.

## House purchase loans:

CB *Analysis of advances* Row 10.1 plus CB *Building societies*.

## Official external borrowing:

Flow from CB *Financing of EBR* plus flow of "other official borrowing"  
from NIE Balance of Payments table (row 11.3).

## Government securities:

Non-resident holdings: CB *Financing of EBR*.  
Building societies: CB *Building societies*.  
POSB-TSB – all resources assumed.

Central Bank: *CB Financing of EBR.*

Banks: *CB Financing of EBR.*

Residual divided 0.1 to HH, 0.15 to B, remainder to Financial system (assurance companies/pension funds).

Company securities:

*CB Domestic capital market*; Divided 0.75 to Financial system (assurance companies/pension funds), 0.25 to HH.

International non-bank private flow:

F is NIE Balance of Payments lines 10.1 + 10.3 plus residual.

Financial system approximated from partial information on aggregate balance sheets of assurance companies and pension funds.

HH,B deduced to balance.

Life assurance/pension funds:

Flow of new premiums from Insurance Company Statistics, estimation for pension funds.

Official external reserves:

NIE Balance of Payments table (flow).

Position at Central Bank:

CB: *All licensed banks and Central Bank of Ireland summary statement.*

Net lending by Government:

NIE line 64.

International non-bank private flow:

F is NIE Balance of payments lines 10.1 + 10.3

HH+B deduced

Sectors

HH: Household (Personal including Agriculture)

B: Business (Enterprises)

G: Government (Public Authorities)

F: Rest of World

NIE: National Income and Expenditure Accounts (Government Publications).

CB: Central Bank Quarterly Bulletins and Annual Reports.

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