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**The compilation of Quarterly Sector Accounts for the Non-Financial sector in  
the UK**

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The views expressed here are those of the authors and do not necessarily reflect those of the Office for National Statistics and the Bank of England. Richard Walton worked at the Office for National Statistics, 1999-2001 where he developed an international survey of company profitability.

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## **Summary**

This paper will consider how the UK sector accounts are produced as part of the compilation of national accounts and the balance of payments. It will cover the production in the UK of quarterly non-financial accounts, by sector. The paper will discuss the main uses of the sector accounts in the interpretation of the non-financial sector in the UK. This is because these data are analysed by users to provide an indicator of the position of the UK, focusing on net lending/borrowing and profitability of the non-financial sector.

At present the accounts of households, the non-financial sector and government are not publicly available across all member states of the European Union. The introduction of quarterly institutional sector accounts for the European Union and Euro area in 2006 and two new Community regulations for the collection of quarterly data on government revenue and expenditure and another Community regulation on quarterly financial accounts for government sector will all provide the opportunity to improve the quality of national accounts data.

The introduction of this new set of sector accounts will enable consistency in terms of transactions; consistency between the non-financial accounts and GDP; consistency between non-financial accounts and the rest of the world accounts; and consistency between the rest of the world accounts and the Balance of payments accounts. In moving towards these objectives, the indicators described in this note would become harmonised for countries in the EU. Users will for the first time have available a consistent data set which allows intra-EU comparisons of the position of company and household sectors.

### **Integrated sector accounts in the UK: an overview**

In the UK, both the financial accounts and the sector accounts are compiled by the Office for National Statistics (ONS) within an integrated framework that produces quarterly data within 90 days from the end of the quarter. The main reason for publication within 90 days is the needs of key users for timely economic information.

There are three broad teams of staff at ONS who are involved in the production of statistics. One team is responsible for the co-ordination and analysis of GDP and Sector and Financial Accounts data; there is a team who run the central data system responsible for data storage and dissemination; and, finally, there is the team of compilers who are experts in sectors of the economy and also for particular transactions in the economy.

In terms of systems, the national and sector accounts need to be run in a certain order to ensure consistency.

1. Financial accounts (and balance sheets) are run first as one system.
2. The Dividends and Interest matrix (DIM) is run next - this takes balance sheet data and applies interest rates to produce flows of interest from deposits/bonds/loans. For dividends, reported payments are used. Balance sheet holdings by sector are used to derive receipts.

3. The GDP system runs next - this takes the Financial Intermediation Services Indirectly Measured (FISIM) number estimated from the DIM system. (This can also be run independently of the sector accounts, as in the first and second releases of GDP in the quarter)
4. The Income and Capital system runs last, taking property income data from DIM and various data from the GDP system and other direct delivered data on taxes on income, social contributions, transfers and grants.

### **Data sources for sector accounts**

One of the factors which allow the UK to produce quarterly institutional sector accounts in 90 days is that the results of the quarterly data surveys (below) are available within 60-70 days. The following are the main data sources:

Data from the Bank of England: The Central Bank has regular returns from the population of Monetary Financial Institutions (MFIs) in the United Kingdom. ESA 95 data requirements cover levels and flows for deposits and currency (F2 in ESA 95), data on MFI issues and holdings of securities other than shares (F3), loans issued by UK MFIs (F4), and holdings of quoted and unquoted shares (F5). The Bank also has data on UK official reserves: data for Monetary Gold and Special Drawing Rights (SDRs) (F1).

Financial Assets and Liabilities Survey: This is a statutory quarterly survey into private non-financial companies' financial assets and liabilities: F2, F3, F4, F5 and F7. This is a sample of 660 company groups (considered to be the population for this panel) whose employment (in the majority of industries) exceeds 2000. It was observed that industries classified to Standard Industrial Classification (SIC) codes 11 and 27 (extraction of crude petroleum and gas, and manufacture of basic metals respectively) had the characteristic of containing some relatively small companies holding large total assets/liabilities. Conversely, SIC 70 (real estate) had large companies holding small assets/liabilities. Thus, these three 'special industries' are treated differently. A rough estimate is then made for the total assets/liabilities of the businesses below these employment cut-offs.

Non-financial Sector accounts: The large majority of data used in the non-financial sector accounts are taken from data supplied for National Accounts (GDP compilation) purposes; for example: companies' profits, compensation of employees, final consumption expenditure, trade in goods and services, gross capital formation.

Quarterly Dividends Inquiry: Some unquoted dividends data is collected via a quarterly inquiry to those companies that have been identified as paying unquoted dividends. However it is recognised that many such companies are probably missed - so a grossing factor is required. Data on quoted dividends payments are collected from the Stock exchange database.

General data sources: Administrative data are received from the Treasury (and other government departments including Inland Revenue, Customs and Excise and Department for Work and Pensions). These data includes Central and Local government holdings and issues in most transaction lines in the financial account (F3, F4, F5, F7) and also provide data for most General Government entries in the non-financial accounts (i.e. D2, D3, D5, D6, D7, P3 and P5).

Surveys of Insurance and Pension funds Security Dealers and other financial institutions: There are various quarterly statutory inquiries on Income and Expenditure and Transactions in Financial Assets and annual balance sheet inquiries for insurance corporations, pension funds and securities dealers. Mutual funds and trusts data are collected via voluntary inquiries. Bank Holding companies' data are collected via an annual inquiry into income and expenditure and balance sheets.

### **Net lending/borrowing of the non-financial sector: Construction of data**

Net lending/net borrowing in the UK is the final balancing item of the non-financial account. This is a flow concept which represents the balance on the financial account and is the difference between changes in financial assets and changes in financial liabilities. As such, it represents the amount the sector has available to invest in financial assets (or to repay debt) or the amount the sector has available to borrow through financial liabilities. In the capital account, net lending/net borrowing (B.9) takes into account gross fixed capital formation (P.51) and changes in inventories (P.52, collected in UK from direct data surveys of companies) and the acquisition of land and other non-financial assets (K.2). Any discrepancy between this and the balance on the financial account is shown as the statistical discrepancy and is an indication of net errors and omissions.

### **Net lending/borrowing of the non-financial sector: Recent trends**

Net lending/borrowing is not just a reconciliation variable in the national accounts dataset, but also an indicator of the financial position of the corporate sector. This indicator shows the demand for financing by non-financial companies, by bringing together the corporate sector data from income and capital accounts (profitability, dividends and capital expenditure). The table below shows net lending/borrowing as a percentage of GDP for the UK since 1995. It also includes data for the Euro area and US which are not publicly available yet, but were published by the ECB in their monthly bulletin in February 2004.

Net lending/-borrowing, 1995-2003 (percentage of GDP)

	1995	1996	1997	1998	1999	2000	2001	2002	2003
Euro area	2.1	-0.2	-0.8	-0.8	-1.7	-3.5	-1.9	-0.8	
US	-0.5	-0.2	-0.4	-1.2	-1.8	-2.6	-0.7	0.6	
UK	0.2	0.4	-0.6	-0.6	-1.5	-1.1	-1.6	0.1	1.4

Sources: Office for National Statistics, Quarterly National Accounts, Q1 2004. ECB Monthly Bulletin, February 2004, Developments in private sector balance sheets in the euro area and United States.

In the UK, private non-financial companies (PNFCs) ran a cumulative financial deficit in 1997-2001, of £49 billion. With weaker profits in 2001, unusually strong dividend payments and capital investment still at a high level, companies' net borrowing was large, at £16 billion (1.6% of GDP). Companies financed this borrowing through capital market issues and bank borrowing. In contrast, in 2002, UK non-financial companies had a financial surplus of over £1 billion, despite very little change in profitability. The main reasons for this change in their financial position were a sharp reduction in dividends and a fall in interest payments to banks, together with a cut back in investment and inventories.

In 2003, the company sector was in financial surplus (a record £15 billion/1.4% of GDP), driven by stronger profits mainly in service sector industries, a further fall in taxes on income and a fall in investment. A further surplus was recorded in the first quarter of 2004.

In the Euro area, there was a similar increase in net borrowing, from 1995-2000 which according to the ECB<sup>1</sup> reflected lower profit levels and the increase in capital spending which included the acquisition of the third generation mobile phone licenses in the euro area.

### **Profitability of the private non-financial sector: Construction of data**

From the annual sector accounts, ‘top-to-bottom’ accounts can produce profits data. The table below sets out various ESA balancing items which are related to profits concepts. Profits may be computed before taxes, after taxes, or as an increase in net worth of the corporation.

Code	Description	Profit concept	UK (2003)
B.2n	Net Operating Surplus	Similar to Gross Margin	140,900
B.4n	Net Entrepreneurial Income	Profit Before Taxes	230,978
		After tax profits	206,889

Source: Office for National Statistics, Blue Book, 2004.

The ‘profit-after taxes’ concept does not have a clear counterpart concept in ESA95, but can be derived as B.4n-D.5 (see Annex). In stock terms, the most significant determinants of the different profit concepts are the items appearing on the ‘Generation of Income’ account: ‘Consumption of Fixed Capital’ and ‘Compensation of Employees’ (see Annex).

The key starting aggregate for estimation of quarterly corporate profitability in the UK by the Office of National Statistics is net operating surplus. UK private non-financial corporations gross trading profits are based on profits data obtained from the collection of UK corporation tax. A quarterly profits inquiry provides a quarterly series of profits from a sample of corporations in the UK - drawn from a Business Register.

#### Private non-financial corporations: net operating surplus (billions of national currency) 1996-2003

	1996	1997	1998	1999	2000	2001	2002	2003
UK	108.3	119.1	123.2	124.1	128.9	127.2	128.1	140.9

Source: Office for National Statistics, Profitability of UK Companies, Q1 2004.

<sup>1</sup> ECB Monthly Bulletin, February 2004, *Developments in private sector balance sheets in the euro area and United States*.

Profits data can be used in measures of rates of return. These rates of returns can be calculated in many ways<sup>2</sup>.

The ONS produces quarterly rates of return ratios in a Press Release, *Profitability of UK companies*. This release provides the quarterly net rates of return for UK private non-financial corporations: Manufacturing companies, service companies and United Kingdom Continental Shelf companies. The UK ONS measure of profitability expresses the ratio of operating surpluses to capital employed. These ratios measure the ‘accounting’ rates of return achieved in a particular year against total capital employed. The net rate of return uses capital estimates which are net of capital consumption. Net rates are more widely used than the gross rate of return. The ONS has also examined net rates of return across countries<sup>3</sup>. For most countries, this study used profits from national accounts data; but for a few countries, ONS used company balance sheets and the profit and loss data.

Many national accounts principles (for example the accruals concept) are virtually indistinguishable from business accounting, and a significant proportion of the business-related source data originates from company accounting systems. National accounts data has other distinct features:

- National accounts definitions and concepts for operating surplus net of depreciation in ESA95/SNA93 are consistent across all firms and over time. When conventions have changed, historic as well as current data are revised.
- National accounts cover the earnings of the resident corporate sector, not just publicly quoted companies.
- Data in the non-financial sector of the national accounts are consistent with those for other sectors of the economy.
- Capital is measured at current replacement cost, rather than at the prices at which the assets were purchased.

### **Profitability of the private non-financial sector: Recent trends**

UK Private Non-financial companies: net rates of return, 1995-2003. Per cent

	1995	1996	1997	1998	1999	2000	2001	2002	2003
All companies	12.4	13.1	13.7	13.9	13.3	13.1	12.4	12.1	13.0
Manufacturing	11.4	12.0	13.1	11.3	9.9	8.2	7.9	6.6	7.0
Services	15.0	15.7	17.0	19.0	17.7	16.6	15.4	15.4	15.9

Sources: Office for National Statistics, *Profitability of UK Companies*, Q1 2004.

The table above shows rates of return for UK companies since 1995.

<sup>2</sup> The numerator could be defined exclusive of net interest. Profits could be after tax or based on financial accounting standards. Similarly, capital could be measured at historical cost rather than at current cost and could include goodwill and intellectual property. Or the denominator could be equity or sales.

<sup>3</sup> See latest Survey, *International comparisons of company profitability* (UK Economic Trends, 15 October 2002).

In the UK, net rates of return fell from 1998, in each of the four subsequent years. In the UK, data are available for the manufacturing and service sectors. Net rates of return weakened in the late 1990s for both UK manufacturing and service companies. For manufacturing, at 6.6%, the rate of return in 2002 was the lowest since 1992. For the service sector, net rates of return peaked at 17.1% in the second quarter of 1998, before declining sharply to 13.8% in the first quarter of 2002. For 2003, there was a rise in non-oil companies' profitability. For service sector companies, the net rate of return for 2003 was 15.9%, the highest since 2000. Service sector profitability in 2004 Q1 was at its highest level since 2002 Q4. The net rate of return for manufacturing companies in 2003 was 7.0%, 0.4pp higher than in 2002. Manufacturing profitability in 2004 Q1 was at its highest level for two years.

For the EU as a whole, rates of return have been calculated by the ECB<sup>4</sup>. Their review shows that EU rates of return are below those of the US. US non-financial companies' profitability averaged 11.4% since 1995, higher than the comparable EU figure of 8.3%.

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<sup>4</sup> ECB Monthly Bulletin, January 2004, *Measuring and analysing profit developments in the euro area*.

**Annex: Private Non-financial companies (S.11002 and S.11003): Annual sector accounts**

Data for 2001-2003 below (Source; UK Blue Book, June 2004) are calculated in millions of national currency, on the basis of the UK transmission of national accounts by sector in table 8 of the ESA 1995 transmission programme.

	<b>National Accounts variable</b>	<b>ESA95 Code</b>	<b><u>2001</u></b>	<b><u>2002</u></b>	<b><u>2003</u></b>
	Output (Market + own use)	P.1	1,205,908	1,229,235	
-	Intermediate Consumption	P.2	635,428	642,652	
=	Value added, gross	B.1g	570,480	586,583	
-	Consumption of fixed capital	K.1	58,922	60,879	62,944
=	Value added, net	B.1n	511,558	525,704	
	<b>Value added, gross</b>	<b>B.1g</b>	<b>570,480</b>	<b>586,583</b>	
-	Compensation of employees	D.1	370,195	383,251	395,048
-	Taxes on production	D.29	16,606	17,299	17,723
+	Other subsidies on production	D.39	190	636	1,214
=	Gross operating surplus	B.2g	183,869	186,669	201522

ESA95 code P.1 Output

P.2 Intermediate consumption

B.1g Gross Value Added must be obtained from direct sources. It may be compiled on the basis of survey and administrative data sources.

K.1 Consumption of Fixed Capital could be compiled using the Perpetual Inventory Method.

D.1 Compensation of Employees accounts for 70 % of Net Value Added in the UK. It needs to be obtained from labour force or labour cost surveys and administrative data sources.

D.29-D.39, Other taxes less subsidies on production would need to be compiled on the basis of administrative sources or counterpart observation.

Quarterly estimates of B.2g are built from extrapolating by use of a quarterly index, using quarterly surveys of company profits. These surveys provide a quarterly growth rate for company profits which is applied to the latest annual benchmark figure provided from UK tax sources. The following table shows how gross operating surplus might then be converted into an approximate estimate of corporate profits.



**Allocation of primary income account of private non-financial corporations**

	<b>National Accounts variable</b>	<b>ESA95 Code</b>	<b><u>2002</u></b>	<b><u>2003</u></b>
	Gross operating Surplus	B.2g	186,669	201522
-	Consumption of fixed capital	K.1	60,879	62,944
=	Net operating surplus	B.2n	125,790	138,578
	<b>Gross operating Surplus</b>	<b>B.2g</b>	<b>186,669</b>	<b>201,522</b>
+	Interest received	D.41 Resources	8,226	8,444
-	Interest paid	D.41 Uses	36,253	37,404
+	Distributed income of corporations received	D.42 Resources	31,064	53,334
-	Distributed income of corporations	D.42 Uses	86,800	94,524
+	Reinvested earnings on foreign direct investment received	D.43 Resources	27,098	10,394
-	Reinvested earnings on foreign direct investment	D.43 Uses	3,760	4,188
+	Property income attributable to insurance policyholders received	D.44 Resources	314	320
+	Rents received	D.45 Resources	118	119
-	Rents paid	D.45 Uses	1,917	1,563
=	Balance of gross primary income	B.5g	124,759	136,454
=	Entrepreneurial Income (Before tax profits)	B.4n	211,559	230,978
-	Taxes on income and wealth	D.5	24,487	24,089
=	After tax profits		187,072	206,889
	Property income, resources: D.41+D.42+D.43+D.44+D45	D.4 resources	66,820	72,611
	Property income, uses:D.41+D.42+D.43+D.44+D45	D.4 uses	128,730	137,679

Entrepreneurial income does not take account of distributed income (e.g. dividends) paid by corporations, but only distributed income received by corporations. It also takes no account of changes in inventories. This calculation also does not take account of certain items in business accounts which do not feature in the national accounts system. For example, there are no adjustments for changes in provisions or amortisation of intangible assets (such as patents). The calculation does also not take account of holding gains and losses – changes in the value of financial and non-financial assets. In effect, this means that the national-accounts based estimate of corporate profits excludes many of the “one-off” effects that introduce volatility into the business accounts based estimate of profit.

In arriving at estimates for the various profit concepts outlined above, the UK follow the 'top-down' method. This starts from the Generation of Income Account, where Value Added generated by non-financial enterprises is received from the production account. The balancing item for the generation of income account, Gross operating surplus is made up of: value added, less compensation of employees (channelled to households), less taxes on production payable, plus subsidies received (directed to Government). This is carried down into the allocation of the primary income account as a resource. The primary income account then takes gross operating surplus and augments it with property incomes received (D.41 through to D.45). It subsequently subtracts payments of property incomes to other sectors that are not related to withdrawals of equity. The balancing item of this account is B.5g, the balance of gross primary income.

#### Allocation of secondary income account of Private non-financial corporations

	National Accounts variable	ESA95 Code	2002	2003
	<b>Balance of gross primary income</b>	<b>B.5g</b>	<b>124,759</b>	<b>136,454</b>
+	Actual social contributions	D.6111		
+	Social contributions	D.612	4,450	4,232
+	Non-life insurance claims	D.72	5,978	6,532
+	Current international co-operation	D.74		
+	Miscellaneous current transfers	D.75		
-	Taxes on income	D.51	24,487	24,089
-	Other current taxes	D.59		
-	Private funded social benefits	D.622		
-	Social benefits	D.623	4,450	4,232
-	Non-life insurance premiums	D.71	5,978	6,532
-	Miscellaneous current transfers	D.75	422	430
=	<b>Gross disposable income (Gross saving)</b>	<b>B.6g</b>	<b>99,850</b>	<b>111,935</b>

In the secondary distribution of income account, the major item is taxes on income (D.51), as well as flows regarding social contributions and benefits (D.612 and D.623) and the operation of insurance claims and premiums (D.71 and D.72). This yields an estimate of Gross Disposable Income (B.6g) and Savings (B.8g).

## Capital account

### Capital account of Private non-financial corporations

	<b>National Accounts variable</b>	<b>ESA95 Code</b>	<b><u>2002</u></b>	<b><u>2003</u></b>
=	<b>Gross saving</b>	<b>B.8g</b>	<b>99,850</b>	<b>111,935</b>
-	Capital transfers (resources less uses)	D.9	1,718	3,009
=	<b>Change in net worth</b>	<b>B.10.1g</b>	<b>101,568</b>	<b>114,944</b>
-	GFCF	P.51	97,108	96,659
-	Inventories	P.52+P.53	1,964	2,291
-	Net acquisitions of non-produced/fin. assets	K.2	1,255	1,018
=	<b>Net lending/-borrowing from capital account</b>	<b>B.9</b>	<b>1,241</b>	<b>14,976</b>
	<b>Financial accounts variable</b>			
	Net acquisition of financial assets	F.a	133,160	120,977
-	Net acquisition of financial liabilities	F.1	-124,020	-103,171
=	Net lending/borrowing from the financial account	B.9 f	9,140	17,806
+	Statistical discrepancy	DB.9f	-7,899	-2,830
=	<b>Net lending/borrowing from capital account</b>	<b>B.9</b>	<b>1,241</b>	<b>14,976</b>

Gross saving (B.8g) is the balancing item on the uses side of primary income account and equals the net disposable income for the non-financial corporations sector. It carries down to appear in the 'changes in liabilities and net worth' section of the capital account.

### Capital Account

Some items on the capital account will be interesting in their own right, and have been earmarked as being of special interest to users. These are Gross Fixed Capital Formation and Consumption of Fixed Capital.

The significant items on the Capital Account are:

P.51. Gross Fixed Capital Formation which is around 20% of net value added in the UK.

K.1. Consumption of Fixed Capital.

P.52+P53. Changes in inventories.

K.2. Acquisition of non-produced, non-financial assets.