Measuring the Value Added of the Financial Sector in Ireland

Mary Everett, Joe McNeill and Gillian Phelan

Abstract
The financial crisis has convincingly demonstrated the risks a large financial sector poses to society’s well-being. An informed debate on financial regulation after the crisis should, therefore, evaluate the sector’s contribution to economic activity. This requires an accurate measurement of the sector’s output, which is not a straightforward task. Despite government supports of €63.1 billion to Irish banks, the financial sector continues to add value within national statistical accounts, amounting to €15 billion in 2011. The article examines this conundrum. The current measurement of financial sector output is presented in this article. It finds that financial sector output is likely to have been overstated, particularly after the onset of the financial crisis. It then examines the methodological and conceptual issues that result in these counterintuitive measures. Measurement of financial sector output, reflective of economic reality, continues to be the subject of international statistical debate. The conclusion of these discussions is essential for further work in this area.

1 The views expressed in this article are solely the views of the authors and are not necessarily those held by the Central Bank of Ireland or the European System of Central Banks. The authors would like to acknowledge, with thanks, the helpful discussions with Christopher Sibley, Central Statistics Office (CSO).
1. Introduction

Financial markets are crucial players in a dynamic modern economy, channelling resources from savers to borrowers and allocating them to productive investment opportunities. The pre-crisis2 period was characterised by the growing size, complexity and interconnectedness of financial markets, as financial services played a key role in supporting growth. The onset of the financial crisis showed that there can be a substantial trade-off between economic growth and financial stability; when credit growth exceeds the levels implied by economic fundamentals.

The crisis highlighted the need to understand the role of the financial sector within the real economy. It is important that on-going benefits are properly weighted alongside the costs of the crisis, Haldane et al. (2010). A good measurement of the sector’s output is, therefore, a prerequisite. ‘Value added’ is the standard method of measuring the contribution of a sector to Gross Domestic Product (GDP) and, therefore, its contribution to economic activity. Firstly, this article will examine the value added of the financial sector in Ireland as measured within the national accounts framework. It will also present estimates of the value added of the major sub-sectors – banking, insurance and investment fund administration. Secondly, the article will discuss the issues underlying international statistical conventions which may not adequately reflect the contribution of the financial sector. The measurement of output, which is reflective of economic reality, is key to accurately gauging the impact of the financial sector on the real economy and essential for further work in this area. This article is structured as follows: – Section 2 provides an overview of the financial sector in Ireland; in Section 3 the conventional measure of value added is outlined in terms of the current international statistical framework for the financial sector and sub-sectors; the general issues surrounding the appropriateness of national statistical conventions for measuring of financial sector activity, and specifically banks, are explored in Section 4; and Section 5 concludes.

2. The Financial Sector in Ireland

The financial sector in Ireland is diverse encompassing domestic financial activities and internationally-traded financial services, the latter known collectively as the Irish Financial Services Centre (IFSC)3. Domestically focused financial activities are predominantly banking and insurance. However, the IFSC is made up of heterogeneous entities in terms of size, complexity and nature of business. It includes entities such as global investment banks, shadow banks (predominantly money market funds and securitisation vehicles), investment funds, insurance and reinsurance enterprises and a variety of auxiliary financial service entities.4 Financial auxiliaries engage in a variety of financial and advisory activities that assist financial intermediation e.g. brokering, management and administrative services.

A large number of studies have examined the relationship between financial deepening and economic growth. Some have also attempted to assess the equilibrium size of the financial sector. However, the purpose of this article is more modest, focusing instead on value added and conceptual issues relating to its measurement.

Total assets of the financial sector in Ireland, shown in Chart 1, amounted to €3.6 trillion in Q2 2012, or 2.147 per cent of Irish GDP.

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2 Crisis refers to both the global financial and domestic banking crises.
3 Following the abolition of tax certification for IFSC companies in 2000 (a transition period was implemented until 2006) there was no longer a requirement for international financial service providers to physically locate in Dublin’s Docklands. Since then, IFSC categories in national statistical releases (the Central Statistics Office and the Central Bank of Ireland) reflect international financial services activities that have little interaction with the domestic economy.
4 Ireland also hosts significant aircraft leasing and treasury industries, whose activities are classified differently within the national accounting and balance-of-payments frameworks. In national accounts these industries are not considered as part of the financial sector, whereas they are recorded as IFSC entities in the balance of payments – owing to their role in channeling capital via Ireland.
Within this, credit institutions accounted for €1.06 trillion, which means that 71 per cent of the sector is outside of the banking system. Insurance companies and investment funds accounted for a further €299 billion and €957 billion, respectively; which is close to 50 per cent of the non-bank financial sector in total asset terms. Other financial entities accounted for €526 billion in Q2 2012. The contribution of these various entities to national output varies significantly across the financial sector and is not reflective of their balance sheet size. Measurement of the output of the financial sector and its components is described in detail in the following section.

3. Measuring Irish Financial Sector Output

‘Value added’ is the standard statistical method of measuring the economic contribution of a sector i.e. output. The financial sector adds value directly to the economy through compensation of employees (wages) and operating surplus (the statistical definition of profits). The financial crisis has shown that there are a number of issues with traditional measures of operating surplus. There is evidence that financial sector output grew less quickly over the recent past than the official data suggest. This will be examined further in Section 4.

At end-2011, the latest period for which these data are available, national accounts data record that the value added of the financial sector to the Irish economy was €15 billion or almost 10 per cent of Gross Domestic Product (GDP). This comprised wages of €6 billion, and operating surpluses of €9 billion. On the basis of this, the financial sector in Ireland makes a higher contribution to the economy’s output compared to the euro area average but their trends are very closely correlated. The euro area average has remained close to 4 per cent of GDP since 2001; while in Ireland the value added as a percentage of GDP climbed from 7 per cent in 2001, peaked at just over 10 per cent in 2010 and has remained just below this level up to end-2011.

The contribution of the main financial sub-sectors to value added in 2011 is shown in Table 1. The value added of the Irish financial sector is largely derived from just three

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5 For the purposes of this article, ‘insurance’ is defined to include pension funds.

6 Gross National Product (GNP) is frequently used as the most appropriate measure of Ireland’s output given the significant volume of net factor flows. GDP is the most relevant denominator of output for value added as it reflects the total output of goods and services produced within Ireland.

7 All sectors also contribute indirectly through the purchase of domestic services. This feeds into the value added of the sector providing the service.
Measuring the Value Added of the Financial Sector in Ireland

sub-sectors – banks, insurance and financial auxiliaries. The former two categories provide services to the domestic retail market and also trade internationally in financial services. The value added of financial auxiliaries is predominantly generated through international financial services exports by investment fund administrators. The contribution of other financial sub-sectors to value added is marginal.

Banks contribute most to this measure of financial sector output, with a value added of €10.7 billion, or nearly 7 per cent of GDP, and almost 70 per cent of the value added of the financial sector. The value added of insurance was €2.3 billion, contributing 1.5 per cent to GDP, and 15 per cent to financial sector value added. Investment funds administrators (the largest component of financial auxiliaries) made a smaller contribution representing just over €1 billion in value added, less than one per cent of GDP. The remaining contribution to value added from the financial sector is from financial auxiliaries other than investment fund administrators. In overall terms, non-bank financial activity accounted for almost 31 per cent of the value added of the financial sector.

The relative contribution of wages and operating surplus to value added differs significantly across the financial sector. The financial sub-sectors are examined in more detail below. The data is estimated based on a breakdown of the value added of the sector as measured within national accounts.

3.1 Banking

Banks provide a range of services including payment services, maturity transformation (transforming deposits into funding for borrowers) and liquidity transformation. A key role of banks in providing financial intermediary services is the reduction of asymmetric information between borrowers and lenders, and through the screening and monitoring of borrowers.

The Irish banking system is diverse, comprising IFSC banks and a domestic banking system. While the former hosts a significant number of foreign subsidiaries with substantial balance sheets, their activities are largely with non-residents thereby having limited direct impact on the domestic Irish economy. Domestically relevant banks comprise both Irish-owned and foreign subsidiaries of European parents, offering retail banking services in the Irish credit market.

The value added of the Irish banking system is recorded as €10.7 billion at end-2011, with operating surplus accounting for just over 60 per cent of the sector’s contribution to output, and employee compensation accounting for the remainder, see Chart 3.

<table>
<thead>
<tr>
<th>Table 1: Value Added of the Financial Sector, end-2011</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Value added</strong></td>
</tr>
<tr>
<td><strong>(€ million)</strong></td>
</tr>
<tr>
<td>Banks</td>
</tr>
<tr>
<td>Insurance</td>
</tr>
<tr>
<td>IF financial auxiliaries</td>
</tr>
<tr>
<td>Other financial auxiliaries</td>
</tr>
<tr>
<td><strong>Total Gross Value added</strong></td>
</tr>
</tbody>
</table>

Sources: CSO published data and internal Central Bank estimates.
Measuring the Value Added of the Financial Sector in Ireland

Table 2 shows the split between wages and operating surplus for the domestically relevant banks and IFSC banks. Banks active in the Irish domestic retail market, the bulk of which are Irish-owned, added 3 per cent of value to the economy at end-2011. Almost 60 per cent of this contribution was in the form of employee compensation. Conversely, IFSC banks contributed more than 3.5 per cent to national output, with almost 80 per cent of this derived from operating surplus.

3.2 Insurance

The insurance industry plays a major role in the transfer of risk and the provision of risk management services within an economy. Insurers are important financial intermediaries through their investments arising from premium pre-funding. The core activity of insurers is underwriting premiums to enable funding for loss events. For most types of insurance these events are unique and idiosyncratic in nature, unlike other financial risks such as market and credit risk. These risks can be partially mitigated through reinsurance.

The Irish insurance industry is heterogeneous. There is a substantive captive market (where insurance is linked to the risks of only one company), a domestic life and non-life market and also a large international sector. The international sector covers a range of product types, with concentrations in reinsurance and variable annuity services. The ability to provide insurance products on a pan-European basis has been a driver of the growth in the IFSC. This model involves a company, operating as a single legal entity, but providing services on a cross-border basis via branches, rather than via subsidiaries. In the context of Solvency II, insurance undertakings are realising the value in moving to this so-called ‘hub and spoke’ operating model where they can make significant efficiency gains, particularly in relation to the concentration of capital, and building competitive advantage in the region.

‘Reinsurance’ is insurance for insurers allowing them to free themselves from the part of a risk that exceeds their underwriting capacity, or from risks which they do not wish to bear alone. In a typical transaction, the ‘ceding insurer’ transfers a reinsurance premium to the reinsurer along with the accounting liability for the business being ceded. The reinsurance sector has been a particular growth area, with levels of business remaining relatively buoyant throughout the financial crisis.

Insurance improves allocation and productivity of capital through the increased availability of equity assets and by making additional business ventures where possible. A first effect of insurance growth is the direct contribution of the insurance sector to economy-wide value added; measured at €2.3 billion in 2011 (1.5 per cent of GDP). Employee compensation was derived using average industry salaries and the total number of employees. Table 3 shows that the total number employed in the insurance sector in 2010 was 20,343. The majority of these are involved in the traditional domestic businesses of life, non-life, pensions and health insurance. Results show that total employee compensation within the insurance sector has remained relatively stable since 2006 (Chart 4). In 2011 approximately 41 per cent of value added was derived from compensation of employees.

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Table 2: Value Added of the Banking Sector, end-2011

<table>
<thead>
<tr>
<th>€ million</th>
<th>Value added</th>
<th>Compensation of employees</th>
<th>Operating surplus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestically relevant banks</td>
<td>5,000</td>
<td>2,952</td>
<td>2,048</td>
</tr>
<tr>
<td>IFSC banks</td>
<td>5,672</td>
<td>1,206</td>
<td>4,466</td>
</tr>
<tr>
<td>Total banking sector</td>
<td>10,672</td>
<td>4,158</td>
<td>6,515</td>
</tr>
</tbody>
</table>

Sources: CSO published data, the Central Bank of Ireland’s Locational Banking Statistics Survey and internal Central Bank estimates.

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8 Solvency II is an EU Directive that codifies and harmonises EU insurance regulation. Primarily this concerns the amount of capital that insurance companies must hold to reduce the risk of insolvency.

9 The ‘ceding insurer’ is the insurance company purchasing the reinsurance.
Chart 4 also presents an estimate of the operating surplus for the insurance sector. Results show that it peaked at €2.6 billion in 2008 but by 2011 had fallen to €1.4 billion; its lowest level since 2002. This represented a fall in the contribution of operating surplus to value added from 73 per cent in 2008 to 59 per cent in 2011.

The structure of the insurance industry is changing. This, in part, reflects the changing regulatory structure. It is likely that these changes will significantly impact on the overall balance sheet of the sector, but the impact on the contribution of the sector to value added remains unclear.

3.3 Investment Fund Administration

The investment fund sub-sector comprises two main components, namely investment funds themselves and their ancillary service providers. This sub-sector represents close to 40 per cent of the non-bank financial sector assets in Ireland (Chart 1); but represents just over 22 per cent of the value added of the non-bank financial sector (Table 1).

Beyond their legal incorporation, investment funds have a negligible physical presence in Ireland. In practice, the administration of investment funds is carried out by investment fund administrators, who may also carry out related trustee/custodian duties (Figure 1). In exchange for these administrative financial services, investment funds pay management fees to resident fund administrators. Value added by the funds industry to the Irish economy is predominantly attributable to these administrators in their role as financial service providers. The investment funds only contribute marginally to value added through directors fees, and their profits are regarded as distributions to shareholders and not part of the operating surplus of the Irish economy. The fee income of administrators is classified as service exports within the balance of payments, as the unit holders in Irish investment funds are predominantly non-resident. Furthermore, investment funds tend to invest little in the Irish domestic market, concentrating instead on accumulating foreign portfolios.

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Table 3: Employment in the Insurance Sector, 2010

<table>
<thead>
<tr>
<th>Source</th>
<th>Employment</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>20,343</td>
<td></td>
</tr>
<tr>
<td>Of which: IFSC</td>
<td>4,011</td>
<td></td>
</tr>
<tr>
<td>Of which: Reinsurance</td>
<td>405</td>
<td></td>
</tr>
</tbody>
</table>

Sources: CSO and Accenture.

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10 At end-June 2012, non-residents held over 94 per cent of units in Irish investment funds. Irish domiciled investment funds are exempt from tax on income and capital gains from their underlying investment assets. This facilitates use of Irish investment funds by foreign investors without incurring Irish tax liabilities.

11 At end-June 2012, the value of these foreign investments was more than €850 billion.
There are approximately 40 investment fund administrators employing over 9,000 people directly in Ireland.\(^\text{12}\) The value added of investment fund administrators was estimated to be just over €1 billion at end-2011. Employee compensation related to these administrators amounted to approximately €418 million at end-2011, or 0.3 per cent of GDP. The balance of €639 million, or 0.4 per cent of GDP at end-2011, is attributable to operating surplus. The contribution of the sector to aggregate financial sector value added, from 2001 to 2011, is contained in Chart 5.

4. Refining the Measurement of Financial Sector Output

Given its ability to both invigorate and incapacitate the non-financial economy, there is a strong case for seeking improved means of measuring the true value added of the financial sector, Haldane et al. (2010). It is important that the measure of value added is reflective of economic reality. Given the capital transfers and injections by the State of €63.1 billion into Irish banks; it is puzzling why they contribute any value to the economy in the recent past. This puzzle is explained by the treatment of financial sector output in national accounts. An overview of the complexity of measuring financial sector output is outlined in this section, with particular focus on banks.

Prior to 1995, the international statistical framework\(^\text{13}\) did not attribute any profits to banks. The rationale was that banks merely intermediated between lenders and borrowers, and their only value added was through wages. Profits generated through financial intermediation were neither included as a contribution of the banking sector, nor as an expense of the borrowing sector. In this way, profits related to loans and deposits were perceived to net-out within the economy. However, this was considered an unrealistic measure of banks’ economic contribution given the wide range of financial intermediation services provided.

Banks charge both explicitly and implicitly for their financial intermediation services. Explicit charges include account service fees, credit card fees, financial advice fees, asset management and brokerage fees. Difficulties lie in measuring the services not explicitly

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\(^\text{12}\) The estimate of employees on the Irish Funds Industry Association (IFIA) website is higher at 11,000, though this includes some indirect employment generated by the funds industry. This indirect employment is captured in other sectors, mainly professional services, in national accounts.

\(^\text{13}\) Irish national accounts are compiled in accordance with the European System of Accounts, 1995 (ESA 95).
charged for. These implicit charges are the key component for measuring banks’ financial services output.

Post-1995, a methodology was implemented that included a measurement of both explicit and implicit services of banks. The explicit services are easily quantifiable and this component of value added can be calculated as per non-banking sectors. Calculation of banks’ implicit services is more complicated. The statistical framework measures these implicit services, for which banks do not charge directly, as the margin between a reference market rate (normally the interbank funding rate)\(^{14}\) and retail deposit and loan interest rates. Banks imputed profits are derived as the sum of these deposit and loan margins. This indirect measure of the banks’ implicit charges is called ‘Financial Intermediation Services Indirectly Measured’ (FISIM).

The current approach to measuring value added has various shortcomings as highlighted by the crisis. Firstly, this method does not appropriately capture the full balance sheet composition of the banking sub-sector as shown by the example in Box 1. Secondly, banks’ output omits other features such as capital gains and losses, impaired loans, capital injections and promissory notes. Value added measures a sector’s output based on production (or transactions) in a given time period. During each period net income and expense flows accumulate in a profit or loss which is then carried forward to the balance sheet. Profits in the years preceding the crisis, contributed positively to value added and the balance sheet position of the sector. The losses on banks’ assets which materialised subsequently are not, however, treated as negative output in national accounts, as they are not part of production. Instead, they are only reflected as a reduction in the sectoral balance sheet. This leads to an asymmetry in the treatment of profits and of holding gains/losses in national accounts, particularly in the measurement of value added. This issue is further explored in Box 2.

**Box 1: Deriving Value Added from Banks’ Balance Sheets**

Below is a stylised framework of two banks, A and B, balance sheets.

<table>
<thead>
<tr>
<th>Bank A</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Assets</td>
<td>Liabilities</td>
</tr>
<tr>
<td>Loans</td>
<td>100</td>
</tr>
<tr>
<td>Other assets</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>102</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bank B</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Assets</td>
<td>Liabilities</td>
</tr>
<tr>
<td>Loans</td>
<td>100</td>
</tr>
<tr>
<td>Securities</td>
<td>1</td>
</tr>
<tr>
<td>Other assets</td>
<td>1</td>
</tr>
<tr>
<td>Central Bank funding</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>102</strong></td>
</tr>
</tbody>
</table>

We assume both banks seek to maximise profits, and have loan books worth €100 on the asset side of their balance sheets. Bank A operates a simplified balance sheet and funds its lending book mainly through its deposit base of €80. It charges 3 per cent for loans and pays an interest rate of 1% on deposits. Bank B raises funds mainly in the wholesale funding market and lends the proceeds onward to borrowers. It receives 3 per cent on loans and pays 1 per cent on both deposits and securities. An interbank rate of 2 per cent prevails.

\(^{14}\) Value added is measured with regard to a benchmark reference rate. Defining appropriate reference rates proves problematic given the volatility in the financial markets during and post the financial crisis.
Box 1: Deriving Value Added from Banks’ Balance Sheets

The statistical framework treats the operating surplus of these two banks differently. Firstly, the calculation of banks’ operating surplus is confined to their loan and deposit portfolio and is not fully representative of their entire balance sheet. Bank A’s profits of €1.80, comprise loan book related profits of €1 = \[€100 \times (0.03 - 0.02)\], and profits from its deposit book of €0.80 = \[80 \times (0.02 - 0.01)\]. The total profits related to Bank B’s loans and deposits, are lower, amounting to €1.20, comprising loan profits of €1 = \[€100 \times (0.03 - 0.02)\] and deposit profits of €0.20 = \[20 \times (0.02 - 0.01)\]. The debt borrowing in the wholesale funding market by Bank B of €70 is ignored as are its equity assets. FISIM is not applied to securities on the basis that the interest rates applicable represent market rates, which the bank cannot influence.

Box 2: Government Supports to Banks and Debt Write-Downs in National Accounts

It is notable that value added has been consistently positive for Irish-owned banks in the years following the onset of the financial crisis despite; large losses being recorded in their published financial statements; and the requirement for government supports. This apparently counter-intuitive treatment can be largely explained by the recording of these government supports and by the treatment of impairments/write-downs within the national accounts framework, particularly within institutional sector accounts.15

Institutional sector accounts sub-divide the economy between resident sectors including government and financial corporations. The accounts provide an overview, of the economic activities of resident sectors and the rest of the world and their inter-relationships. As the sum of transactions between the resident sectors and the rest of the world must net to zero, the accounts provide a net borrowing or lending figure for each sector. This net lending/borrowing total is reflected as the acquisition of financial assets or the incurrence of financial liabilities in the balance sheet of each sector as recorded within the accounts. Balance sheet changes also include non-transaction effects such as valuation movements in financial instruments or the writing down of debts.

The institutional sector accounts document the generation of value added by sector. This essentially comprises compensation of employees and operating surplus (profits). National GDP is derived as the sum of value added of the resident sectors from the production of goods and services. Gross Disposable Income is derived by adding net income from non-production activities to operating surplus. Non-production income includes dividend and land rental earnings, net transfer payments and net taxes payable on income and wealth. Gross Disposable Income is further adjusted to account for net capital transfers and capital formation to generate the net lending/borrowing for each institutional sector. The sequence of accounts is illustrated in a simplified example in Table A below.

Treatment of Government Supports and Impairments

State supports to the banking sector are recorded either as capital transfers or as financial transactions in line with Eurostat methodological treatments. Essentially capital transfers reflect the part of the supports that are not expected to generate a return for the exchequer. Financial transactions are regarded as an investment in the equity of the bank which should generate a return over time. To date, €63.1 billion has been transferred by the Irish Government to the banking sector to address balance sheet difficulties – of this €42.7 billion has been classified as capital transfers, while €20.4 billion has been recorded as the acquisition of financial assets.

15 CSO, Institutional Sector Accounts.
Box 2: Government Supports to Banks and Debt Write-Downs in National Accounts

The capital transfer of €42.7 billion does not directly reduce GDP but is recorded as a transfer of income between the government and the financial sector. This has a negative impact on the government balance sheet and a corresponding increase in financial sector wealth.

Furthermore, writing-off debt and increasing provisions against bad debts is not part of GDP, even though this has been the key determinant of bank losses within their published financial statements. Realised losses also do not impact on GDP but are reflected in a decline in the balance sheet of the relevant sector. This is particularly important for Irish banks in the context of loan transfers to NAMA. Haircuts applied on the sale to NAMA contribute directly to losses in published financial statements. These are recorded, however, as holding losses and a reduction in assets on the balance sheet of the financial sector within the national accounting framework. This is not part of production activities and, therefore, is not part of GDP. Increased provisioning for loan losses is regarded as internal book-keeping entries within sectors and is not recorded within the international statistical system.

In summary, GDP is derived from real transactions in goods and services between economic entities. Non-transaction effects arising from distributions of income or debt write-downs are not measured as part of GDP for any economic sector. The application of this framework explains, in part, why the value added of the banking sector has remained positive following the crisis, despite large losses being recorded in their published accounts.

Table A: Summary of the Sequence of Accounts for each Institutional Sector

**Production Account**

Output:
- Less intermediate consumption
  - Gross Value Added
- plus net taxes/subsidies on products
  - Gross Domestic Product

**Generation of Income Account**

Gross Domestic Product:
- Plus net property income
  - Gross National Income

**Distribution of Income Account**

Gross National Income:
- Plus net current transfers
- Plus net taxes on income/wealth
  - Gross Disposable Income

**Use of Disposable Income Account**

Gross Disposable Income:
- Less final consumption
  - Gross saving

**Changes in Net Worth**

Gross saving:
- Plus net capital transfers*
- Less consumption of fixed capital
  - Changes in net worth

**Acquisition of Non-Financial Assets Account**

Changes in net worth:
- Less gross fixed capital formation
  - net lending (+)/ borrowing (-)

* Capital transfers described in this Box, are recorded as negative for government (outflow) and positive for financial institutions (inflow).
Measuring the Value Added of the Financial Sector in Ireland

In summary, GDP is derived from real transactions in goods and services. Non-transaction effects arising from distributions of income or debt write-downs are not measured as part of GDP for any economic sector. This explains why the value added of the banking sector has remained positive following the crisis.

Given the shortcomings outlined above, the question arises of whether the value added of the financial sector in Ireland is overstated. Between 2002 and 2007, the output of the Irish financial sector averaged 14 per cent per year, compared with GDP growth averaging 8 per cent per annum over the same period. On the eve of the global financial crisis value added of the sector stood at 9 per cent of GDP. However, during the fourth quarter of 2008 market value losses of approximately €11 billion were recorded for the Irish banking sector. Between 2008 and 2011, a period that witnessed the onset of the domestic banking crisis, the value added of the financial sector in Ireland, as recorded in the national accounts, remained high. At end-2011 it amounted to 10 per cent of GDP.

The strong contribution of the banking sector to Irish GDP appears counter-intuitive compared to their published financial statements (Table 4). Conceptual difficulties in defining the measurement of financial sector output, particularly for the banking system, have raised uncertainty in international fora about the appropriateness of the existing methodology. This has been a long-standing issue within the statistical community. A recent strand of economic literature produced by the staff of the Federal Reserve and the European Central Bank contains a modified approach to estimate bank operating surplus. The modified methodology for measuring banks operating surplus uses a suite of reference rates applied by type and maturity of loan and deposits held by each counterpart sector, as opposed to a single reference rate. The choice of a single reference rate can lead to implausible results given that it excludes the maturity structure of loans and deposits. The choice of a single reference rate can, therefore, have a significant effect on the estimated level of banks’ output.

Table 4: Irish-Owned Banks’ Operating Surplus as a Per Cent of GDP, 1998 – mid-2012

<table>
<thead>
<tr>
<th>% of GDP</th>
<th>Modified approach</th>
<th>Current Approach</th>
<th>Profit/loss per published accounts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>2.58</td>
<td>2.65</td>
<td>3.14</td>
</tr>
<tr>
<td>1999</td>
<td>2.99</td>
<td>2.79</td>
<td>2.80</td>
</tr>
<tr>
<td>2000</td>
<td>3.13</td>
<td>3.17</td>
<td>2.66</td>
</tr>
<tr>
<td>2001</td>
<td>3.07</td>
<td>3.34</td>
<td>2.42</td>
</tr>
<tr>
<td>2002</td>
<td>2.68</td>
<td>3.18</td>
<td>2.42</td>
</tr>
<tr>
<td>2003</td>
<td>2.05</td>
<td>3.05</td>
<td>2.21</td>
</tr>
<tr>
<td>2004</td>
<td>2.39</td>
<td>3.14</td>
<td>2.53</td>
</tr>
<tr>
<td>2005</td>
<td>2.53</td>
<td>2.92</td>
<td>3.60</td>
</tr>
<tr>
<td>2006</td>
<td>3.33</td>
<td>3.39</td>
<td>3.23</td>
</tr>
<tr>
<td>2007</td>
<td>3.78</td>
<td>3.24</td>
<td>3.52</td>
</tr>
<tr>
<td>2008</td>
<td>3.46</td>
<td>4.08</td>
<td>1.90</td>
</tr>
<tr>
<td>2009</td>
<td>0.63</td>
<td>3.08</td>
<td>-11.01</td>
</tr>
<tr>
<td>2010</td>
<td>-3.97</td>
<td>3.15</td>
<td>-20.56</td>
</tr>
<tr>
<td>2011</td>
<td>-3.52</td>
<td>2.34</td>
<td>-4.36</td>
</tr>
<tr>
<td>Mid-2012</td>
<td>-1.65</td>
<td>2.50</td>
<td>-2.45</td>
</tr>
</tbody>
</table>

Note: Statistical operating surpluses based on the current methodology and the modified approach comprises domestically relevant banks. Published accounts are for the Government guaranteed banks.

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16 For a complete explanation of the methodology used in measuring output vis-à-vis the modified approach see Colangelo and Mink (2008); Colangelo and Inklaar (2012); and Baiku et al. (2011).
In order to benchmark the plausibility of operating surplus in the statistical framework, Chart 6 compares estimates based on the current methodology with the modified approach and with published bank profits. It is worth noting that operating surplus peaked in 2008, when calculated according to the current methodology.

Notably, accounting and statistical profits (current and modified) are highly correlated before the crisis and range from 3.2 to 3.8 per cent of GDP. However, published accounting profits of banks were also possibly over-stated pre-crisis, due to the accrual of income related to construction loans and the non-recognition of loan-related losses (Kay, 2011). While we would not expect to see profit measures equate exactly, we would expect to see similar trends. It is worth noting that the modified approach gives negative operating surplus for 2010 onwards. This is much smaller in magnitude, but follows the same trends as published financial statements.

A significant portion of the financial sector’s role involves risk-taking activities. An important issue is the extent to which bearing risk should be measured as a productive service provided by financial intermediation activities. As currently measured, the contribution to value added of an entity in the financial sector is not derived using a risk-adjusted rate. Given that riskier loans tend to attract higher interest rates, value added, therefore increases as the level of risk rises. Haldane et al. (2010) highlights the fact that a banking system that does not accurately assess and price risk is not adding much value to the economy. Therefore, determining credit worthiness of borrowers and risk management can be regarded as production, thereby contributing to output. However, it is not clear that bearing risk is, in itself, a productive activity.

The interest rate spread between the retail interest rate and the reference market rate should reflect how banks charge for risk management and risk-bearing services. Risk-management activities, through the screening and monitoring of borrowers, add productive economic value via labour and capital inputs. Compensation for risk-bearing services, i.e. liquidity and credit risk, is not however, considered as productive output and it is questionable whether this should contribute to economic activity. However, current methodology does not differentiate between risk-management and risk-bearing activities, with the result that the entire margin between bank retail rates and the reference market rate is considered as value added. The conceptual issues arising from this treatment are demonstrated in the following scenario.

Consider two identical banks (A and B) with representative borrowers for each. Bank A lends to relatively safe borrowers, whose probability of default is low, and charges a relatively low interest rate. Bank B’s borrowers are more risky and are correspondingly charged comparatively higher interest rates. Both banks employ the same level of lending services, i.e., the screening and monitoring of borrowers. Under current statistical methodology, Bank B yields greater value added than Bank A, as its lending rate has a higher spread over the reference market rate. This bank, therefore, appears to be more productive despite having no additional employment.

In the pre-crisis period, while lending volumes grew for Irish banks, the margins on bank loans compared to reference rates were
Measuring the Value Added of the Financial Sector in Ireland

Sharply compressed. While value added growth was driven by increased volumes lending in the pre-crisis period, the tight margins meant that returns to banks for risk management and risk bearing activities were very low. Excluding risk-bearing activities would have reduced the margins and value added. However, as Oulton (2013) demonstrated it is unlikely that any overstatement of banking value added would have had a major impact on GDP growth. Furthermore, GDP levels may also not have been impacted as it is likely that the value added of other sectors may have been understated as a result.

In the wake of the crisis, Irish banks’ responded to increased expectations of loan defaults by raising retail interest rates on loans. The related increase in compensation for rising risk levels implies greater banking sector financial services output as measured under the current international statistical framework. However, this increase in value added does not correspond with any increased economic activity. Furthermore, the contraction in the interbank lending market and increased reliance on official funding raised questions about the suitability of the reference interbank rate for measuring the operating surplus of Irish banks. Similar questions about the appropriateness of the measure also arise, for the years following the onset of the crisis.

A further cited conceptual criticism of current measures of financial sector output [Oulton (2013); Reinsdorf (2011); Haldane et al. (2010)] is that rising profits in the financial sector reflect the increasing assumption of ‘tail risk’. The rationale is that profits are realised but they will inevitably be followed by losses at some date in the future. Accounting for this would require a risk-adjusted measure. However, this would have more far-reaching implications for the measurement of value added over the broad financial sector, and indeed the non-financial sector.

In summary, the use of a risk-adjusted rate for the measurement of bank value added would reduce output for both the pre-crisis period and for subsequent years. Similarly, sufficient loan provisioning during the mid-2000s would also have reduced banks’ profits.

5. Conclusion

Despite government supports of €63.1 billion to Irish banks, the financial sector continues to add value within national statistical accounts. Official data suggest there is a direct positive contribution by the financial sector to the Irish economy of approximately €15 billion, of which €6 billion comprises wages, while operating surplus accounts for the remainder. At end-2011, this amounted to a contribution worth almost 10 per cent of GDP, which is significantly higher than the euro area average worth 4 per cent of GDP.

Representatives of the international statistical community have, however, raised concerns about the appropriateness of the current methodology for measuring the operating surplus of banks, particularly in the wake of the financial crisis. These concerns are particularly apposite in light of substantial losses experienced by Irish banks as evidenced in their published financial statements. The application of a modified approach would suggest the overstatement of Irish banks’ operating surplus.

A further conceptual issue relates to the role of risk. The reward for risk is fundamental to any assessment of the economic role of the financial sector. It is a primary function of financial intermediation services. However, it is not adequately reflected in the current statistical framework. The use of a risk-adjusted rate for the measurement of bank value added would reduce output for both the pre-crisis period and for subsequent years. Debate is ongoing within the international statistical community in relation to these issues.
References


Oulton, N. (2013). ‘Has the Growth of Real GDP in the UK been Overstated because of Mis-Measurement of Banking Output?’, Centre for Economic Performance, Occasional paper no. 33.