

Session Number : August 24th, 4A
Session Title : Treatment of Financial Services
Session Organizers: Ruth Meier and Paul Schreyer
Discussant: Anne Harrisson

*Paper Prepared for the 28th General Conference of the
International Association for Research in Income and Wealth (IARIW),
Cork, Ireland, August 22nd-28th 2004*

A Tale of Two Worlds: How Bankers and National Accountants view Banking

Philippe Stauffer

Philippe Stauffer
Swiss Federal Statistical Office (SFSO)
Espace de l'Europe 10
2010 Neuchâtel
Switzerland
philippe.stauffer@bfs.admin.ch
(++41.32.730.60.75)

The views expressed in this paper are those of the author
and do not necessarily reflect the views of the Swiss Federal Statistical Office.

This paper is posted on the following websites: <http://www.iariw.org>
<http://www.econ.nyu.edu/iariw>
<http://www.cso.ie/iariw/iariwhome.html>

A Tale of Two Worlds: How Bankers and National Accountants view Banking

Abstract

While most users would agree that data from national accounts (NA) adequately replicate global economic growth they are often puzzled by the figures on financial institutions. Bankers are particularly critical and often question the measures of banking output.

This paper dwells on differences of perspective of bankers and national accountants. It argues that the issue boils down to divergent focuses and conventions:

- 1. While the banker focuses on global income, the national accountant is interested in production measures.*
- 2. Bankers have no need to know who pays the bill whereas national accountants have to find counterparts for their equation to be balanced.*
- 3. Viewpoints on interest flows and holding gains are at odds.*

The current conceptual framework of NA provides little room for convergence. As a way to overcome these differences the paper suggests treating banks as margin industries. In this view all balance sheet items contribute to the production of financial services. For national accountants this would represent an extension of the production of banks currently labelled "Financial Services Indirectly Measured" (FISIM) in national accounts. This extension nevertheless raises fundamental issues and has limits which are addressed in the paper.

TABLE OF CONTENTS

1. Introduction	3
2. What do financial corporations do?	3
2.1 The banker's perspective	3
2.2 The national accountant's perspective	5
2.3 Summary	7
3. Bridging the worlds	8
3.1 Of the importance of unpriced services...	8
3.2 ... their identification ...	8
3.3 ...and their measure	10
3.4 Summary	11
4 Implications	12
5. Many questions still remain ...	13
6. A numerical example	15
7. Conclusions	17
Bibliography	

1. Introduction

While most users would agree that data from national accounts (NA) adequately replicate global economic growth they are sometimes puzzled by the figures on financial institutions. In particular bankers are often critical and tend to question the conventions for measuring banking output in NA. Of course, times are gone when national accountants debated whether banks had any productive activity at all. The question is now more centred on a production measure that incorporates important changes in the way banks operate in global financial markets.

In this context the present document will question the relevance of current prescriptions of the System of National Accounts (SNA 1993) used by national accountants and comes up with proposals. In a first chapter, the stage is set by the banker's and the national accountant's views on banking. Chapter 3 deals with the issue of unpriced financial services and identifies a list of major services. Building on the previous developments, it provides a new framework for the analysis of financial corporations. Chapter 4 dwells on major implications of this new framework while a selected number of open issues are addressed in Chapter 5. A numerical example is provided in Chapter 6 and Chapter 7 presents a brief conclusion.

2. What do financial corporations do?

2.1 *The banker's perspective*

Traditionally, transaction costs and asymmetric information have provided the foundation for understanding financial intermediaries. In this view, fixed costs of asset evaluation mean that intermediaries have an advantage over individuals because they allow such costs to be shared. Similarly, trading costs mean that financial intermediaries can more easily be diversified than individuals. In such a context it is efficient for financial corporations to take on liabilities, such as deposits, and invest the proceeds in assets like loans, bonds or real estate. By channelling funds from lenders to borrowers, banks accept a mismatch of terms.

Prior to the 1970's, such mismatches were not a significant problem as interest rates experienced only modest fluctuations. Moreover, as yield curves were generally upward sloping, banks could earn a significant spread by borrowing short and lending long. *Interest rate differentials* were the main source of income of bankers. Besides, assets and liabilities were held at *book value*. "Risk management" relied on dual long term relations with systematic monitoring of firms on the one hand and stable relations with depositors on the other hand. Balance sheets were stable over time. Short-term assets were accumulated when times were good and sold when times were bad, ensuring the stability of the system. This type of risk management, sometimes termed as "intertemporal smoothing of risks" by economists, can be analysed as a spread *over time* of risks which could not be diversified by other means.

Things changed significantly in the 1970s and 1980s, two periods characterized by volatile interest rates. Various interest rate regulations were abandoned. Banks faced serious problems as book values often disguised important risks arising from the *structure* of assets and liabilities. Basically bankers identified the danger that the capital of financial corporation might be depleted by a narrowing of the difference between assets and liabilities. Such a difference can arise when assets and liabilities fail to move in tandem. The capital of most financial institutions is small relative to the firm's assets or liabilities, so small percentage changes in assets or liabilities can translate into large percentage changes in capital. An important mismatch of terms can turn out to be very dangerous when conditions worsen drastically.

As a reaction bankers (i) increasingly chose to value assets and liabilities at *market prices* and (ii) focused on *asset-liability risk*. Using market values instead of book values changes the perception of balance-sheet positions of banks. *Holding gains and losses* are systematically tracked and enter the decision-making process of bankers. At the same time, asset-liabilities management (ALM) departments were set up to value the risks of assets and liabilities of financial corporations which could not be benchmarked with a market price. By using gap analysis and duration analysis techniques, bankers are able to assess new types of risks. Both methods work well when assets and liabilities comprise fixed cash flows, but are not an optimal answer for new tools like options which are embedded in mortgages or callable debt. Banks therefore also developed *scenario analysis* where the impact on assets and liabilities of various interest rate settings are assessed. Assumptions are usually made about the performance of assets and liabilities under each scenario with ensuing decisions about the potential composition of the balance sheet.

All these techniques tend to be associated with fairly “standard” products. In parallel the growing sophistication of *derivative products* and the growing importance of the *trading book* of financial intermediaries led to the development of *market risk* management. Bankers came up with notions like “value-at-risk” or “market risk limits”. These describe probabilistically the market risk of a trading portfolio, mainly by using historical volatility as a risk interpretation.

From a general perspective, these developments can be seen as an effort of bankers to *identify* and *control* the various components of the risks of the banking business. In a last but decisive step bankers also contributed to the creation and growth of *over-the-counter* (OTC) derivative markets. These facilitate a variety of hedging strategies. A significant development is *securitization*, which allows firms to address asset-liability risk by removing assets or liabilities from their balance sheets. This not only eliminates asset-liability risk, but also frees up the balance sheet for new business.

The preceding paragraphs show that the way banks are operated changed in a radical way. Beginning with a general concern about “financial risks”, bankers developed sophisticated measures of *market* risks, then shifted the focus to techniques of measuring and managing portfolio *credit* risks, and ended up with developing concepts on *operational* risks like employees or systems failures. These tools cope with the uncertainty and the exposure components of risks faced by bankers. By creating complex financial instruments, bankers were able to bundle and unbundle the different components of risk, ensuring that risk-averse agents bear less risks than risk-friendly agents. Tailor-made and innovative products make it possible to exchange risks among agents *at a given point in time*.

Bankers have also changed the way they provide *liquidity*, a notion which is often associated with risk management. Most investors are concerned about the time at which they may want to increase or reduce their holdings of a financial asset. At the same time borrowers are uncertain about their ability to raise added funding in the future. Traditionally banks were able to provide liquidity by accepting short-term deposits and granting credits. A distinctive attribute of credits and deposits is that they fluctuate according to the needs of bank customers (“demand-driven”). As they remained by and large in the balance sheet of the original bank, the latter was mainly remunerated with the interest rate differential. Besides financial liberalization and globalization, the growing securitization of assets, the increasing importance of short-term capital flows and the development of OTC derivative instruments providing leverage to users changed the physiognomy of the provision of liquidity. By offering new contingent financial products, financial corporations are often the instigators in the provision of liquidity. Typical activities like arbitrage activities, counterpart activities and underwriting facilities provide liquidity and are remunerated through *holding gains* and commissions.

From the viewpoint of the banker, these developments mean that:

1. Banks have developed institution-specific know-how aimed at reducing the level of uncertainty and exposure to particular components of risks. This know-how is explicitly used to generate holding gains.

2. All positions of balance sheets are providers of potential *services* to customers. The *management of risk* and the *provision of liquidity* emerge as kinds of general *activities*.
3. All incoming and outgoing flows are systematically scrutinized and *benchmarked* with a final product called the provision of “*finance*” to customers. Bankers use both collected funds and incoming property flows to generate “output”.
4. *Income* is defined in general terms. It thus can include holding gains, whether realized or unrealized (for further details, see Box 1).

Unsurprisingly all these changes had deep consequences on the structure and income of financial corporations. Both banks and non-banks financial corporations now manage huge portfolios of financial products, either on own account or on behalf of customers. Balance sheets positions tend to change substantially over time as active trading in securitized assets and liabilities become the norm, generating substantial holding gains/losses and commissions with a parallel decline of the importance of net interest flows.

More generally, the financial sector as such is newly characterized by:

- a dramatic increase of intra-sectoral transactions. There was a radical shift away from direct participation by individuals in financial markets towards participation through intermediaries like mutual funds and pension funds.
- greater heterogeneity. The decline of “traditional” actors (banks, insurances) was more than offset by the increase of the size of non-bank firms, leading both to a substantial expansion of the sector and a change in the relative importance of actors.

Box 1: Types of securities in portfolios of financial institutions

An important distinction between securities from an accounting viewpoint (valuation according to International Accounting Standard 39) is between:

Trading securities: the part of a financial institution’s asset portfolio that is expected to be realised over the short term to produce trading gains. In the balance sheet, trading securities are reported at fair value. Non-realised holding gains or losses are recognised in profit/loss statements.

Securities held-to-maturity: the part of a financial institution’s asset portfolio that is held on a longer-term basis, or to maturity. In the balance sheet, these assets are essentially valued at acquisition prices. Consequently, price changes of these assets do not influence profits/losses.

Securities available for sale include all other securities. In the balance sheet, they are reported at fair value. However, non-realised holding gains or losses may or may not be recognised in the profit/loss statements. In the latter case, these non-realised price changes are shown as a separate component of shareholders’ equity.

2.2 The national accountant’s perspective

In the current reference manual of national accountants, the System of National Accounts 1993 (SNA 1993), financial corporations are analyzed from an *institutional* perspective, with a particular emphasis on their economic *activity*. Units are considered as financial corporation when they engage in financial intermediation, or in auxiliary financial activities that are closely related to financial intermediation. Financial intermediation itself is defined as

“...a productive activity in which an institutional unit incurs liabilities on its own account for the purpose of acquiring financial assets by engaging in financial transactions in the market. The role of financial intermediaries is to channel funds from lenders to borrowers by intermediating between them. They collect funds from lenders and transform, or repackage, them in ways that suit the requirement of borrowers. They obtain funds by incurring liabilities on their own account, not only by taking deposits but also by issuing bills, bonds or other securities. They use these funds to acquire financial assets, principally by making advances or loans to others but also by purchasing bills, bonds, or other securities. A financial intermediary does not simply act as an agent for other institutional units but places itself at risk by incurring liabilities on its own account.” (Paragraph 4.78 of the SNA 1993).

In the accounts, this activity generates two sources of income:

- On the one hand, financial corporations charge explicit fees for transactions like exchange services, advice about investments or taxations. These fees and commissions are readily available in profit and loss accounts and pose no particular measurement problem.
- On the other hand, financial corporations defray their expenses and have an operating surplus by receiving rates of return on the funds they lend that are higher than the rates they pay on the funds they borrow.

There were long debates about this issue. In the view of national accounts, interest earned from lending cannot be a payment for the output of banks. As a rule, interest is regarded as income, not production. The fact that many of the services provided by financial corporations are implicitly priced nevertheless found its way into the accounts. The SNA uses receipts of net interest and dividends as an indirect measure for production. This activity is known as “financial intermediation services indirectly measured” (**FISIM**), which are defined as “the total property income receivable by financial intermediaries minus their total interest payable, excluding the value of any property income receivable from the investment of their own funds, as such income does not arise from financial intermediation” (SNA 1993, paragraph 6.125¹).

Three points are noteworthy:

- Output is not defined as the provision of finance, but as financial intermediation whose specificity is a “transformation” function and a “risk-taking” function. No particular services are identified.
- In contrast to the general definition of the activity, the definition of FISIM restricts the items of the balance sheet entering the production process by excluding own funds. These are therefore eliminated from the intermediation process.
- As a general rule, holding gains and losses are excluded from the production process and from property income in national accounts. Holding gains and losses are thus considered as changes in value of an asset due to changes in its price that constitute neither transactions nor income.

¹ . Property income comprises interests, distributed income of corporations (such as dividends), reinvested earnings on foreign direct investment, property income attributed to insurance policy holders and rent. For financial corporations, the main items in this list are interest payments and distributed income of corporations.

Box 2: Eurostat FISIM: an operational definition

When elaborating on the *allocation* of output among users, the SNA 1993 refers to the possibility of using the “difference between the actual rates of interest payable and receivable and a reference rate of interest. The latter represents the pure cost of borrowing funds – that is a rate from which the risk premium has been eliminated to the greatest extent possible and which does not include any intermediation services”(SNA 1993, paragraphs 6.127 and 6.128). This, of course, has implications for the value of production which would be derived as the sum of the services rendered to borrowers and to depositors.

In its regulation on FISIM, Eurostat uses this approach not only as a way to *allocate* FISIM but also to *determine* its value as the sum of allocations. While the SNA 1993 left open various possibilities the reference rate chosen by Eurostat is a computed rate based on interbank loans and production is restricted to deposits and loans.

Eurostat FISIM is then calculated as $= (rr-r_D)y_D+(r_L-rr)y_L$ where r_D is the actual rate of interest paid to depositors, r_L the rate charged to borrowers, rr is the reference rate and y_D and y_L are the values of deposits and loans, respectively.

2.3 Summary

Bankers have a very broad view of their business. Production is measured by “revenues” which incorporate not only dividends and net interests received, but also income from trading activities, i.e, realised holding gains or losses.

National accountants have two production measures for unpriced services, both based on an approach of netting income flows. The broader notion “global FISIM” comprises property income received, namely interests and dividends, minus interest paid. The narrower notion “total FISIM” is built bottom-up and only relates to interest received on loans and interests paid on deposits (see Box 2).

These views are summarized in the following table:

	Interest received	Dividend received	Interest paid	Dividend paid	Holding gains
Banker	☑	☑	☑		☑
National accountant					
Global FISIM (1)	☑	☑	☑		
Total FISIM (2)	☑		☑		

(1) Global FISIM excludes property income received from investment of own funds.

(2) Only interests received on loans and paid on deposits are considered.

While having different opinions on the production² and measurement issues, bankers and national accountants both consider that risk management and liquidity transformation are typical activities carried out by banks. Based on this common perception, the next section tries to bridge these visions by building on issues like the notion of financial services and alternative measures of unpriced production.

² It may be useful to note explicitly that bankers and national accountants fully agree on the inclusion of *commissions* and *fees* in the measure of production. Their views only diverge on unpriced production.

3. Bridging the worlds

3.1 *Of the importance of unpriced services...*

When the SNA 1993 set the stage for the measurement of financial intermediation, it defined the notion of financial services indirectly measured (FISIM). In the meantime it has often been argued that unpriced services would be less important in the future as banks are increasingly charging explicit prices for their products. This would suggest that the importance of unpriced services should decrease, belittling the relevance of this issue.

Although banks have indeed increased their revenue from fees, it is worthwhile to note that banker's policies still encourage the provision of unpriced services. This phenomenon is partly linked to the importance of reserves which banks have to keep in order to cope with withdrawal risks. "Free" checks usually accrue only to depositors who maintain some minimum (not average) balance. If banks were simply compensating depositors for the volume of funds put at the bank's disposal, one might expect that the volume of unpriced services would depend on the average balance. However, when depositors commit to a minimum balance, this reduces the variability of deposit withdrawals, and accordingly will reduce the size of optimal reserves, and so reduce bank costs. For this reason, even unregulated banks may continue to compensate depositors with unpriced services, rather than paying higher interest on deposits and charging explicit fees for checks and ATM machines.

3.2 ... *their identification* ...

There is a wide body of literature explaining why firms should undertake risk management activities, but it fails to make a distinction between financial and non-financial firms. Little is actually offered as a convincing argument as to why *financial* corporations should be offering risk-management and liquidity services with *specific characteristics*, and what value is brought to the activity by these units. An argument in this context is that financial systems should be analyzed in terms of a "functional perspective" rather than an "institutional perspective". A functional perspective is one based on the services provided by the financial system, such as providing a way to transfer economic resources through time. In contrast, an institutional perspective is one where the central focus is on the activities of existing institutions like banks and insurances. The argument in favour of focusing the functional perspective is that functions have been more *stable* over time than institutions. As a matter of fact financial instruments may be packaged differently according to time and markets, but functions and services provided remain more or less the same.

Following this line of thoughts, it makes sense to *identify* financial **services**. The following list, though not exhaustive, tries to identify the most important ones, namely:

- **Monitoring services:** monitoring of potential borrowers is costly and it is efficient to delegate the task to a specialized agent, the bank. Thus, faced with a choice of going out and screening potential borrowers on the financial market, an investor buys this service from a financial corporation by depositing his funds with the intermediary. The latter helps avoiding participation costs by creating financial *instruments* with relatively stable returns, allowing investors to monitor their asset holdings on a relatively infrequent basis. In return, financial institutions use their knowledge to invest on the financial market to finance the income due to investors. Avoidance of participation costs applies also to potential borrowers: financial institutions monitor depositors on behalf of borrowers to identify for example those who are willing to commit to long-term deposits. Generally, monitoring services or services to avoid participation costs are a way of bringing together potential borrowers and investors who otherwise would have to incur search costs on financial markets.

Parallel Session 4A Treatment of Financial services
A Tale of Two Worlds: How Bankers and National Accountants view Banking

- **Convenience services:** these services comprise, for example, safeguarding, automatic payments, money transfers and the provision of cheques.
- **Liquidity provision services:** for depositors, liquidity provision services relate to the capacity to finance unforeseen expenditure due to the possibility to withdraw deposits at short notice and at small cost. For borrowers, liquidity provision services are provided when a financial institution offers contingent credit lines to potential borrowers. Financial corporations thus provide tools for smoothing decisions over time.
- **Risk assumption services:** in the absence of financial corporations, individual (non-financial) economic agents would bear the full risk of financial operations. Financial corporations, by making use of scale economies, can offer to accept part of the risks that would otherwise accrue to units with financial surpluses and units seeking finance.
- **Financial information services:** when information about investment opportunities is costly, then there is value in producing it. Financial information services can, however, be sold in very different forms:
 - a) As a separate product as is for example the case with credit rating agencies. Another example is investment banks that offer after-issuance advice to corporations after a security has been underwritten. Such advisory services will be all the more required when advanced financial tools are involved such as callable bonds or convertible bonds where a corporation often relies on the investment bank to determine the optimal moment for exercise. Typically, there is an explicit price charged for this service.
 - b) Embedded in portfolio management activities: this occurs, for example, when financial corporations manage portfolios on behalf of third parties: although the financial corporation does not expose itself to risk, it makes investment decisions, thereby selling financial information implicitly. A mutual fund would be an example of implicitly sold information services.
- **Underwriting services:** these are core activities of investment banks and involve the issuance of a security by a corporation or by government. The investment bank acts as a consultant during the entire process and finally enters a contract with the client to purchase the security for a specified price. Underwriting services are typically compensated by a *margin* that the investment bank takes on the price of the security. Securization services are a special type of underwriting services and entail packaging individual (fixed-income) assets into pools. Ownership claims to various portions of the cash flow from the pool are then sold to the public in the form of transferable securities. Securization increases the liquidity of the underlying assets and therefore implies the provision of liquidity services to the initial owners of the underlying assets.
- **Inventory, trading and market making services:** certain financial institutions, in particular investment banks, act either as traders who bring together buyers and sellers of securities or hold permanent inventories of stocks so as to satisfy demand as it arises. Such market makers play a central role in many equity markets by buying and selling shares to service the public's demand to trade immediately. Buyers and sellers often arrive at the market at different times and the market maker stands ready to trade from his or her own inventory of shares. The service is not free as *prices are charged implicitly*: the dealer sells to buyers at higher 'ask' prices and buys from sellers at lower 'bid' prices. This bid-ask spread is the market maker's compensation for inventory services. But the bid-ask spread also compensates the market maker for accepting risk due to uncertainty concerning future prices and future transaction volume in the asset.

Furthermore the following points can be made:

1. A clear distinction must be made between financial services and financial products. Financial *services* constitute the typical **output** of financial corporations, whereas financial *instruments* are the **observable form** of the transaction between financial corporations and customers. Few of the services can be unambiguously and directly linked to individual financial instruments, as they are often indirectly priced. Instruments are often bundled in order to provide a financial service. This is an important point, as there is a general tendency to associate services and products.
2. Once the various instruments are identified, there is no point in trying to categorize them into “inputs to” or “outputs of” the production process. All instruments are needed to generate financial services, which constitute the only output of financial corporations.
3. Once identified, services must appear in a general context of **activities** performed by banks. Considering both the body of banking literature and current SNA prescriptions, these general activities can be viewed as “risk management” and “liquidity transformation”.

3.3 ...and their measure

The SNA 1993 proposes net property income exclusive of income earned on own funds as a proxy for the measure of unpriced intermediation. This treatment calls for the following remarks:

- (1) *Issue of own funds*: the SNA 1993 states that own funds do not give rise to financial intermediation. This definitely sits uneasily with a general view that as money is fungible, bankers cannot say whether funds available for a loan derive from deposits or from own funds. Considering this, a first step towards reconciling bankers and national accounts is to reconsider the issue of own funds. Unpriced production could thus be defined in a general way where own funds are not excluded.
- (2) *Consideration of balance sheet items*: in line with the preceding point, and building on the explicit identification of services of the previous section, output should be considered as the production of financial services. Balance sheet items are instruments and there is not necessarily a one-to-one relationship between instruments and services. This implies a looser vision of FISIM than the one adopted, for example, in the EU where production is measured exclusively on deposits and loans because these are the instruments for which a one-to-one link with financial services is readily established. While straightforward in the identification of buyers –counterparts are per definition depositors and borrowers-, this approach excludes those implicitly-priced services that are not in a monotonic relationship with a particular instrument. In the vision proposed here, all items of the balance sheet should enter the measure of production and allocation should only be considered in a second step.
- (3) *Income netting*: Bankers’ production measure tends to overestimate the economic performance of the sector, as it is basically centred on received “income”. In such a context, the SNA view of income netting as a proxy for unpriced production builds on firmer grounds. As a matter of fact, a growing body of literature shows that an extension of the SNA view of income netting could well be the way to bridge both worlds.

In this view, banks would be treated like a **margin industry**, similar to the national accounts treatment of retail and wholesale trade. In trade, the margin is sales minus the cost of goods sold. In banking, the margin can be interest received less interest paid. Jack Triplett³ develops the argument of the margin industry along the following lines:

“[financial firms] move credit, or the provision of finance, from place to place, or from primary producers to ultimate buyers, much like the wholesale/retail distribution does for goods” (p.14). “The cost to the bank of acquiring the finance they resell is the total cost of

³ Jack Triplett (2003), *Measuring banking and finance : Conceptual issues*, Unpublished manuscript.

deposits and other sources of funds, including interest costs and an imputation for the cost of transactions services” (p. 35).

This is equivalent to saying that the production of banks is the *difference between the costs of assets and the costs of liabilities*. This “margin perspective” then shows the net benefit or net cost of adding one unit of a particular asset or liability to a financial portfolio.

- (4) *Reference rate*: As mentioned before, bankers tend to *benchmark* the various components of their output. This seems to sit easily with the proposal of the SNA to introduce a reference rate mentioned in Box 2. There is, however, a difference. In the SNA logic, the introduction of a reference rate is used to determine the counterparts of FISIM. In the present context, the reference rate is introduced to capture risk premiums with a view to reflecting the risk assumption services performed by financial corporations, or as a measure of income with consideration for some opportunity cost of investment, for example to depositors.

A last, but important point which must be stressed here is that the new analytical framework suggests a *global* measure of production. Put differently, **the global measure of output consistently produces positive results, but negative differentials between rates of return and the reference rate may appear at the level of individual products**. Inverted interest slopes are a case in point, as short term interest rates can be higher than long term returns. More fundamentally, regulations sometimes induce banks to buy government bonds with low returns for the simple reason that they are not included in the construction of solvency ratios. Banks therefore have no opportunity costs in terms of own funds and can settle for low rates of return. If positions of the balance sheet were excluded, such a situation might be problematic, but the proposed definition, by setting a global measure of production, circumvents this difficulty.

3.4 Summary

Bankers and national accountants each have good arguments for their vision of banks. Banker’s view that all items of the balance sheet are instruments for the provision of financial services to customers is compatible with the general view of financial intermediation set in the SNA 1993. At the same time, the notion of income netting put forward by the SNA seems to be an appropriate measure of unpriced production. Both worlds can meet when banks are treated as a margin industry. In its widest version, the measure of production put forward here correspond to the difference between *all economic returns* to assets and *all economic returns* to liabilities. In this view, returns not only include “traditional” income flows like interests and dividends, but also expected price changes on specific positions. All items are “benchmarked” with a reference rate

This can be summarized in the following table:

Instrument	Value of production =	
Loans	$+ [r_L^t$	$- rr^t] y_L^t$
Bonds owned	$+ [r_{BO}^t + \Delta P_{BO}^{t+1} / P_{BO}^t$	$- rr^t] y_{BO}^t$
Shares owned	$+ [d_{SO}^t + \Delta P_{SO}^{t+1} / P_{SO}^t$	$- rr^t] y_{SO}^t$
Deposits	$- [r_D^t$	$- rr^t] y_D^t$
Bonds issued	$- [r_{BI}^t + \Delta P_{BI}^{t+1} / P_{BI}^t$	$- rr^t] y_{BI}^t$
Shares issued	$- [d_{SI}^t + \Delta P_{SI}^{t+1} / P_{SI}^t$	$- rr^t] y_{SI}^t$

Where:

rr^t : reference rate

On the asset side:

y_L^t : value of loans outstanding at period t

r_L^t : nominal interest rate applicable to loans during period t

y_{BO}^t : value of bonds owned by the financial corporation

r_{BO}^t : interests on bonds owned by the financial corporation

P_{BO}^t : price of bonds owned

y_{SO}^t : value of shares owned by the financial corporation

d_{SO}^t : dividends on shares owned

P_{SO}^t : price of shares owned

On the liabilities side:

y_D^t : value of deposits at period t .

r_D^t : nominal interest rate applicable to deposits during period t .

y_{BI}^t : value of bonds issued by the financial corporation

r_{BI}^t : interest on bonds issued by the financial corporation

P_{BI}^t : price of bonds issued

y_{SI}^t : value of shares issued by the financial corporation

d_{SI}^t : dividends on shares issued by the financial corporation

P_{SO}^t : price of shares owned

Thus, the return on loans is equivalent to the margin between the interest rate and the reference rate multiplied by the value of loans outstanding during the period under consideration. All other items on the asset and liability side are treated in the same way, and represent the difference between the rate of return and the reference rate. For some instruments (bonds and shares), the rate of return includes expected price changes and for shares a term that measures expected dividends. The overall measure of production is the value of these expressions on the asset side minus the value of these expressions on the liability side and hence a margin. The implications of this measure are dealt with in the next section.

4 Implications

An important implication of the new analytical framework is the treatment of own funds. Their inclusion in the production of financial services implies for example that money lenders, which are very important in developing countries, can now be considered as financial corporations, even though their main or exclusive resources are often own funds.

Let us now consider more generally the implications of the extension of output to all items of the balance sheet. While the treatment of interest rate differential earned by banks on loans and deposits is usually not contested among economists, endorsement of its extension to securities (bonds or shares) is more limited. Consider a financial corporation which issues securities to attract additional funds and invests them on the market for securities issued by non-financial firms. The financial corporation produces some portfolio management service, which can either be:

- (1) Explicitly priced. This is the case of mutual funds, where collective investment is provided against an explicit service charge. Here, no risk is assumed by the financial corporation.
- (2) Implicitly priced. In that case, the provision of services can be value by the difference between the returns generated by the financial corporations' investment minus the returns that accrue to holders of the financial corporations' securities, corrected for a minimum return. While many economists support this treatment for bonds, the issue of shares is more controversial:
 - On the one hand, when a financial corporation purchases shares, it is providing the issuer (in the simple case of a primary market transaction between the issuer and the

financial corporation) with a source of fund. Viewed this way, the service could be the same as the credit service provided via a loan. Besides, when a financial corporation purchases shares it provides a signal to the market that the issuer is creditworthy, which distinguishes this action from that of all other non-financial actors.

- On the other hand, some economists consider that shares simply cannot provide any financial service. Others argue that, while there may be some services involved, the inclusion of shares in the measure of production has undesirable consequences on NA. For example, symmetry of treatment would call for an equivalent treatment for all institutional units. This would imply that non financial units purchasing equity would also produce financial services. An intuitive counter-argument might be that only financial corporations have the production of financial services as their main activity. On that basis, only institutional units qualified as financial corporations could use equity in their output function.

The preceding point illustrates that the option of the “margin industry” raises important questions. These will be dealt with briefly in the following part.

5. Many questions still remain ...

This chapter aims to give an overview of points yet unsolved or controversial. It shows potential directions for future studies, but does not claim for any authoritative solution.

Question 1: Are holding gains really a device of the devil?

It was mentioned in the preceding chapter that the inclusion of shares in the measure of production can be criticized as having undesirable consequences on NA. One is linked to the issue of holding gains and losses (HG) which equity often generates. The inclusion of equity in the production measure could mean that HG would enter the production *boundary*, which would constitute a revolution for NA. The issue of HG is a tricky one. The difficulty of excluding all price changes from measures of financial *returns* lies in the simple fact that economic actors look at *all* components of remuneration of financial assets during the decision-making process, and price changes are an important component. In the case of shares, expectations of future prices might even be the most important element. From an economic perspective, it can be argued that expected holding gains are part of the price at which some financial services are exchanged. Their exclusion would thus weaken the concept of financial returns presented as an alternative in this document. While not claiming to solve this important issue, various options exist:

1. *Splitting trading income* into a relevant financial services component and an irrelevant portfolio income component. Most financial corporations separate trading and investment books (see Box 1). In this perspective, income derived from the trading book could be seen as a proxy for the production of financial services, whereas income derived from its investment book (i.e., investment securities in its banking book) could be considered portfolio income.
2. Introducing the notion of *return to financial capital* in NA. This option would substitute “property income” in the output definition of banks by the expression “return to financial capital”. The later would have to be defined. It could for example include interest, dividends and expected holding gains and losses on financial assets. A consequence would be that measures of output based on formulas that include property income would increase by the amount of expected HG which would be included in the enlarged notion of income.
3. Introducing *explicit and differentiated rates of return* on all instruments which are used to measure the value of indirectly-priced financial services. This extends the differential approach of Eurostat SIFIM (see Box 2) to all components of the balance sheets and

introduces an extra element of opportunity cost. Such an element could arguably dampen the effects of swings in financial markets on measured production, as financial market movements enter both the asset and the liability side. This can produce an offsetting effect when securities held and issued follow similar movements on financial markets.

If options 2 or 3 are chosen, the next question is the choice of “proper” rates of return. This question has two dimensions:

1. Should rates of return be chosen for each category of asset and liability, or is an average rate of return a more appropriate answer?
2. Should ex-post observed rates of return be used, or are ex-ante rates not more adequate?

These dimensions have not been yet fully addressed. Appropriate specific rates of return are difficult to find, and an average rate might be a pragmatic answer. The ex-post versus ex-ante dilemma is easily solved from a conceptual viewpoint. Only expected holding gains or losses that reflect remuneration for systematic risk on financial markets should be considered. It is a fact that many units act because they have *expectations* about future prices or income flows. In this view “expected” rates of return would be best to replicate the decision-making process that motivates a unit to engage in a given process. That leaves the tricky issue of measuring “expected” rates of return. One simple solution is to measure expected by actual rates of return. This approach rests, however, on the hypothesis that economic actors perfectly foresee market developments. This is a very strong assumption which essentially defines away the problem. Another possibility is to say that expectations are fulfilled *on average*. Trend movements could thus be captured by constructing moving averages of actual (ex-post) rates of return. In such a context, backward-looking moving averages would reflect *adaptive expectations* and trace actual development with a lag. As stated, these dimensions have not been fully addressed by experts, and more work is needed.

Question 2: Who are the counterparts?

National accounts are based on equilibrium between supply and demand. Any production should thus be allocated to users. The SNA 1993 currently refers to the possibility of using the difference between the actual rates of interest payable and receivable and a reference rate of interest to allocate production. This would for example mean that the difference between the reference (risk-free) rate and the rate on deposits would be the measure of production indirectly measured which is bought by depositors. This attractive device allows a splitting of production on the counterparts holding the assets *and* liabilities of the financial corporation. It therefore squares well with the idea that services are provided to *all* customers of the financial corporation. Its main drawback is the fact that it tends to establish an unambiguous link between a position of the balance sheet and the provision of a specific service. This is at odds with the view presented in this document that banks provide *services* which *cannot* be linked in a one-to-one relation to instruments and that production should be seen as *global* phenomena. The option chosen by the SNA is therefore a matter of *convention*. As it is admittedly hard to come up with radically new ideas, this option will probably be the road for the future. It would, for example, allow arguing that the total value of services relating to securities (bonds and shares) represents the risk assumption services which are delivered to purchasers of bonds and shares *issued* by the financial corporation. Some economists feel ill at ease with the idea embedded in the paper’s proposal that financial corporations can deliver services to issuers of securities *held* by the financial corporation itself. Thus, by convention, unpriced production would be delivered to borrowers, depositors, and owners of securities issued by the financial corporation.

Question 3: Are financial derivatives important?

Financial derivatives are assets based on or derived from a different underlying instrument – usually another financial asset but also a commodity or an index. Derivatives have gained in scope and

importance as financial markets became more sophisticated. If the principle applies that all financial assets and liabilities are potential carriers of financial services, this would mean that derivatives should not be *a priori* excluded. However, identification of the financial service is not straightforward and may depend on the type of derivative. For example, option prices include an explicit service element that provides a way of measuring financial services. Also, marketable derivatives have fees attached which permits direct measurement of at least parts of the financial services that come with the handling of derivatives. In other cases such as swaps, the identification of the service element turns out to be even more difficult.

Empirically, a large proportion of trading in derivatives is internal to the financial sector. This would reduce their importance for the measurement of financial services as delivered from the financial sector to the rest of the economy. Lastly, mention is made of the virtual impossibility to trace back empirically derivatives to other items on the balance sheet.

And more question to come...

The preceding three questions are only a *selection* on a list of issues. The list of questions that have to be addressed is much longer. Separations between price and volume components or choices of the reference rates for example have not yet been properly discussed. These questions nevertheless illustrate the complexity of the issue.

6. A numerical example

This section aims at clarifying the relation between the different measures of banking production mentioned in the text above. To summarize, four measures have been discussed:

- The bankers' view: turnover or production is the sum of interest income minus interest payments plus income from trading and investment activities, including holding gains and losses. Holding gains and losses may be realised or non-realised depending on the accounting provisions but they are always ex-post measures.
- The SNA's treatment as stated in its paragraph 6.125. Here, production is measured as all property income received minus interest paid and excluding property income received from investment of own funds. This measure (also labelled 'global FISIM' by some authors) constitutes a form of margin approach, although an asymmetric one. All property income is considered on the asset side but only interest payments on the liability side. Furthermore, income from own funds is excluded.
- The SNA's treatment as derived from paragraph 6.127. Here, production is measured as the sum of the value of implicitly-priced services provided to depositors and to borrowers. The value of implicitly-provided services for each financial instrument is computed as the difference between interest income or interest payments and a reference rate – where the latter stands for the pure cost of borrowing funds. This measure (also labelled 'total FISIM') values the services provided along with individual instruments and adds them up. At the same time, there is a clear rule as to who consumes banking services. Typically, however, this approach is confined to deposits and loans, thereby leaving out other sources of financing and investment.
- The margin approach proposed in the present paper. Here, production is measured as a margin between risk-premia and implicitly-priced services on assets (where the bank assumes risk) and risk premia and implicitly-priced services on liabilities (where the bank passes risk on to other sectors). The premium that reflects risk and implicitly-priced services is simply the difference between the expected return on a financial instrument and a risk-free rate. In the simplest case of a bank that has no equity, takes only deposits and finances only loans, the margin approach coincides with the 'total FISIM' measure. In a more realistic setting where

there are other liabilities and assets, the measures may differ in size. The margin approach is also different from the banker's viewpoint because it draws a clear line between expected return and ex-post return: this is of importance with non-interest bearing securities. Holding gains and losses that simply materialise as a reflection of random market events, should be excluded from the computation of the margin measure. Holding gains that are expected because they reflect systematic risk that attaches to a particular instrument, on the other hand, should be considered in the calculation of the measure. They constitute an essential part of remuneration and compensation for risk-pooling and risk assumption.

Consider the following numerical example presented in the table below. Column one and two provide the necessary elements for the calculation in the form of a simple balance sheet with loans, bonds owned and shares owned on the asset side and deposits, bonds issued and equity on the liability side. Along with the market value of these items comes the rate of return, composed of interest or dividend income and price changes (holding gains and losses) where appropriate.

The column 'Banker's view' then produces a measure of output or turnover that reflects interest and dividend flows from loans, deposits and bonds as well as holding gains and losses from shares. In the example at hand, the resulting value is 42 currency units.

Next, consider the 'global FISIM' column. The various elements add up to 10 units only – essentially because holding gains from shares owned (30) are not considered here. To keep things simple, abstraction was made from the SNA's prescription to subtract income from own funds from the computation.

The fifth column stands for 'total FISIM' – the measure presently in use in many EU countries. Its computation, for example for loans, requires a reference rate (taken at 1.6%) which is deducted from the implicit interest rate on loans and multiplied through by the value of loans $(2.5\% - 1.6\%) * 800 = 7.2$. For deposits, the same operation is carried out but with inverted signs: $(1.6\% - 1.0\%) * 1000 = 6$. The sum of both values – each which constitutes the implicitly-priced service to borrowers and depositors – is the value of total output with implicit prices.

The sixth column presents the margin measure: all instruments are considered, including shares on the asset and liability side. In essence, this margin measure adopts a shareholder's perspective: what is the net premium for systematic risk and implicitly-priced services involved in the banking operation? The price for transactions in risk has to be a forward-looking one and consequently, only expected price changes enter the picture. For example, the contribution of shares owned to the overall value of financial services is computed as the difference between the expected rate of return on shares owned, multiplied through by the market value of these shares: $(10\% - 1.6\%) * 300 = 25.2$. On the liability side, a similar calculation applies for shareholders: $(12\% - 1.6\%) * 100 = 10.4$. Because equity is on the liability side of the balance sheet, the value enters with a negative sign into the margin calculation.

**Parallel Session 4A Treatment of Financial services
A Tale of Two Worlds: How Bankers and National Accountants view Banking**

	Banker's view		National accounts		
	Units	Revenues	Global FISIM	Total FISIM	Margin industry
Loans	800				
Interest payments receivable	20	20	20	7.2	7.2
Implicit interest rate	2.5%				
Bonds owned	100				
Interest payments on bonds owned	10	10	10		9.4
Actual price change of bonds owned	2	2			
Expected (medium-term) price changes of bonds owned	1				
Implicit rate of return based on expected price change	11.0%				
Shares owned	300				
Dividend payments received on shares owned	5	5	5		25.2
Actual price changes of shares owned	30	30			
Expected (medium-term) price changes of shares owned	25				
Implicit rate of return based on expected price change	10.0%				
Deposits	1000				
Interest payments to depositors	10	-10	-10	6	6
Implicit interest rate	1.0%				
Bonds issued	200				
Interest payments to bond holders	15	-15	-15		-11.8
Implicit rate of return	7.5%				
Shares issued (equity)	100				
Dividend payments to shareholders	0				-10.4
Actual price changes of shares issued	10				
Expected (medium-term) price changes of shares issued	12				
Implicit rate of return based on expected price change	12.0%				
Reference rate	1.6%				
Total		42.0	10.0	13.2	25.6

7. Conclusions

Bankers and national accountants currently have different views on the way banks are operated. In a sense, this is logical as the initial focus is different. Bankers have a unit-based, micro-economic view with an accounting background. National accountants have a sector-based, macro-economic view supported by economic theory. Still, the ultimate ambition of NA is to depict reality in all its complexity. In such a context, developments which recently reshaped the banking world should not be overseen. The extensive use of balance sheet positions, the development of trading activities, securitization are changes which should influence the way national accountants see banking. This paper suggests considering banking services as a **margin industry**. This is partly in line with the SNA treatment of financial intermediation services indirectly measured, but the suggested treatment goes further by including all flows, once netted with a reference rate. This treatment is consistent with the view put forward in the document that production should be viewed in a general perspective, implying that **financial services cannot be linked to individual products**. Conventions will probably have to be set to allocate production, but this should be compensated by the fact that this new definition creates a bridge between the world of bankers and the universe of national accountants.

BIBLIOGRAPHY

- Allen, Franklin and Anthony M. Santomero (1999); “What Do Financial Intermediaries Do?”, *Wharton Financial Institutions Center Working Papers* 99-30-B.
- Allen, Franklin and Anthony M. Santomero (1998); “The theory of financial intermediation”, *Journal of Banking and Finance* 21, p. 1461-1485.
- Allen, Franklin and Douglas Gale (1996); “Financial markets, intermediaries and intertemporal smoothing”, *Wharton Financial Institutions Center Working Papers* 96-33.
- Baltensperger, E.(1980); “Alternative approaches to the theory of the banking firm”, *Journal of Monetary Economics* 6, pp. 1-37.
- Barnett W.(1978); “The User Cost of Money”; *Economics Letters*, 2, 145-49.
- Basset, William F. and Mark Carlson (2002); “Profits and Balance Sheets Developments at U.S. Commercial Banks in 2001”; *Federal Reserve Bulletin* June.
- Bernard, Henri and Joseph Bisignano (2000), “Information, liquidity and risk in the international interbank market: Implicit guarantees and private credit market failure”, *BIS Working Papers* n° 86.
- Bournay, Jacques (1998); “Répartition du service d’intermédiation financière indirectement mesuré (SIFIM)”; paper presented at the 7th Colloque de l’Association de Comptabilité Nationale; Paris.
- Clark, Jeffrey A. (1996); “Economic Cost, Scale Efficiency, and Competitive Viability in Banking”; *Journal of Money, Credit and Banking*, Volume 28, 342-364.
- Fixler, Dennis (1993); “Measuring financial service output and prices in commercial banking”; *Applied Economics*, Vol 25, 983-993.
- Fixler, Denis and Kimberley Zieschang (1991); “Measuring the nominal value of financial services in the National Income Accounts”; *Economic Inquiry* 29, 53-68.
- Fixler, Dennis and Kimberley Zieschang (1999); “The Productivity of the Banking Sector: Integrating Financial and Production Approaches to Measuring Financial Services Output”; *Canadian Journal of Economics*, Vol 32, No 2, 547-569.
- Fixler, Dennis J., Brent R. Moulton (2001); “Comments on the treatment of holding gains and losses in the national accounts”; Paper presented at the OECD Meeting of National Accounts Experts, October.
- Fixler, Dennis J. (2002); “Identifying Bank Financial Services in the US”; Paper prepared for the OECD Task Force on Financial Services.
- Gorton, Gary and Andrew Winton (2002); “Financial Intermediation”; *NBER Working Paper Series* 8928.

- Hancock, Diana (1985); “The Financial Firm: Production with Monetary and Nonmonetary Goods”; *Journal of Political Economy*, vol 93, no 51, 859-880.
- Harrison, Anne (1996); “Rethinking FISIM”, unpublished manuscript.
- Harrison, Anne (2002); “Defining and measuring financial services”; Paper prepared for the OECD Task Force on Financial Services.
- Harrison, Anne (2003); “Accounting in full for pension liabilities”; unpublished manuscript.
- Hill, Peter (1996); “The Services of Financial Intermediaries of FISIM Revisited”; unpublished manuscript.
- Moulton, Brent R. (2000); “Measurement of banking services in the U.S National Income and Product Accounts: Recent changes and outstanding issues”.
- Ravets, Christian (2003); “Allocation of Financial Intermediation Services Indirectly Measured (FISIM) in the European Union Countries”; *SNA News*, Number 16, April.
- Rajan, Raghuram G. (1996); “Is there a future in banking? Towards a new theory of the commercial bank”, Northwestern University and the University of Chicago.
- Roll, Richard (1992); “Investment Banking”; *The New Palgrave Dictionary of Money and Finance*; 143-145.
- Santos, Joao A. C. (2000); “Bank capital regulation in contemporary Banking theory: a review of the literature”, *BIS Working Papers* n° 90.
- Schmidt, Reinhard H., Andreas Hackethal, and Marcel Tyrell. (1998); “Disintermediation and the role of banks in Europe: an international comparison”, *Johann Wolfgang Goethe-Universität, Working Paper Series: Finance & Accounting* N°10.
- Schreyer, Paul, and Philippe Stauffer (2003); “Measuring the production of financial corporations. Background report OECD Task Force on financial services (banking services) in national accounts”, Paper presented at the 2003 OECD National Accounts Experts Meeting [STD/NAES (2003)8], Paris.
- Schuermann, Til (2004); “Why were banks better off in the 2001 Recession?”, *Current issues in economics and finance*, Federal Reserve of New York
- Schwartz, Robert A. (1992); “Market Makers”; *The New Palgrave Dictionary of Money and Finance*; 143-145.
- Swiss Reinsurance Company (2001); *The economics of insurance: How insurers create value for shareholders*; Technical Publishing, Zurich.
- Stauffer, Philippe and Ruth Meier (2001); “What services for what society? How should the services provided by financial intermediaries in a modern society be measured?”; paper presented at the 2001 OECD National Accounts Experts Meeting [STD/NA(2001)13], Paris.
- Thakor, A.V. (1996), “The design of financial systems: An overview.” *Journal of Banking & Finance* Vol. 20, pp. 917-948.

Parallel Session 4A Treatment of Financial services
A Tale of Two Worlds: How Bankers and National Accountants view Banking

Triplett, Jack (2003); Measuring banking and finance: Conceptual issues, draft publication (chapter 7).

Wang, Christina J.; Susanto Basu and John G. Fernald (2004); "A general-equilibrium asset-pricing approach to the measurement of nominal and real bank output", draft paper prepared for the CRIW Conference on Price Index Concepts & Measurements, Vancouver.