
The Origins of Financial Accounts in the United States and Italy: Copeland, Baffi and the Institutions

2

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Abstract

The paper analyses the birth of financial accounts in the US and in Italy. We start by looking at Morris A. Copeland, the first scholar who rationalized the account framework. We debate the intellectual environment that influenced Copeland's work, namely the building of national accounting and the discussion on business cycle measurement. We summarize the Federal Reserve's intervention that led to the regular presentation of the flow of funds in the 1950s. We then explore the multiple intellectual sources of the "Italian way" to financial accounts, underlining the role of Paolo Baffi, chief economist of the Bank of Italy in the 1950s. The Italian case epitomizes the idea that statistics are not neutral: in their conception and design they reflect the needs of the institutions which implement them. Multiple examples are given of how the rhetorical needs of the Italian central bank shaped the definition of the building blocks of the financial accounts and their presentation. We conclude by describing the later interaction between the evolution of macroeconomic theory and the rise of financial accounts in the 1960s and 1970s, a loss of interest in these statistics in the 1980s and 1990s, and its revival in recent years, mostly influenced by the financial crisis.

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2.1 Introduction

Thomas Kuhn has made us aware how difficult it is, when talking about scientific revolutions, to answer questions of the type ‘When did it happen?’ or ‘Where did it take place?’ Although the invention of financial accounts, which completely by-passed most of the world’s population, can aspire at most to the qualification of ‘minor revolution’, the methodological precautions advised by Kuhn apply nonetheless. If we were to stretch the truth of the records and answer those questions, ‘In the ‘Fifties!’ and ‘In the United States!’’, we would run into another problem. Scientific revolutions are rarely the product of individual genius, whatever the romantic myth of the lone inventor implies. More often they are the fruit of the efforts of several scholars, who may come to the same conclusion by different routes. Moreover, it is unlikely that those scholars, especially in the twentieth century, would be able to achieve anything without the support of organisations equipped with the necessary means. Therefore, we must examine how the motives of scholars converge with those of organisations if we are to understand the progress of knowledge.

In this essay we show that the invention of financial accounts was the culmination of a complex process undertaken by economists and statisticians, which began almost independently in several countries. That process, although it responded to a series of common theoretical questions and practical concerns, cannot be ascribed to a single cause. It gave rise to similar, but separate, systems and conceptual frameworks. That said, there is no doubt that the greatest statistical organiser of accounts was Morris A. Copeland (1895–1989), who published in 1952 the fundamental text *A Study of Moneyflows in the United States*.

We begin by describing Copeland’s work, from the origins of his ideas to the publication of his main book and the subsequent intervention of the Federal Reserve, more or less at the end of the 1950s (Sect. 2.2). We then look at parallel developments in Italy, where, as in most European countries, the influence of economic policy on statistics has been more explicit (Sect. 2.3). We close with some later research on financial accounts (Sect. 2.4). We chose to concentrate on the US and Italy because the financial accounts were published regularly in the US from 1955, while Italy was one of the first countries to present financial accounts in Europe, starting in 1963 (the following chapter by Riccardo Massaro deals with parallel developments of financial accounts in other European countries).

An underlying theme runs throughout our essay: it is the importance of the institutions for the development of statistics. Financial accounts have had their own Royal Society, Max Planck Institute, and *Accademia dei Lincei*: central banks, semi-public research organisations such as the National Bureau of Economic Research, central statistical institutes, and international bodies.

The structure of this essay is due to the subject-matter. The section on the United States, in which we have to analyse a complex theoretical construction, deals at length with the history of doctrines; the part devoted to Italy seeks to explain how economic policies – and the debates surrounding them – were able to determine the structure of financial accounts tables.

2.2 Copeland's Moneyflows and the Federal Reserve's Flow of Funds

2.2.1 Copeland's Intellectual Context

Copeland's work ties in with various lines of analysis. The first connection is with the developments in national accounts that followed Keynes's *General Theory*. Keynes invented not only a discipline, but also the words to describe it, setting the national accounts on a new basis. Their construction was not an easy one. Blanchard (2000) described macroeconomics before the Second World War as 'an age of confusion'. During the interwar years progress in national accounts can be attributed to Colin Clark and Simon Kuznets.¹ According to Patinkin (1982), the work of Clark and Kuznets was a statistical revolution that anticipated the Keynesian one.² Later on, in 1942, Hicks published the first edition of *The Social Framework*. A major effort of organisation produced the United Nations' *System of National Accounts* (SNA) of 1947, strongly based on Richard Stone's paper (1945) on 'Definition and Measurement of the National Income and Related Totals'.

Copeland had already studied the national accounts before the Second World War, publishing papers in the NBER series *Studies in Income and Wealth*. His essays of 1935, 'National Wealth and Income – An Interpretation', and 1937, 'Concepts of National Income', were cited by Stone in the preparatory work for the SNA. Copeland's view was that the estimation of national income could benefit from the use of a double-entry bookkeeping system, i.e. of the approach he would apply for his future moneyflows. During the Second World War, statistical work on national accounts received a tremendous impulse (see Carson 1975). After the focus on the 'inflation gap', i.e. the amount by which the real GDP exceeds potential GDP, it became natural to ask questions concerning the spending capacity (and therefore the financial situation) of the different sectors of the economy: households, firms, government, financial intermediaries, the rest of the world. In other words, when the concepts of national income and other non-financial accounts had been codified, it was a consequent, yet complex, step to move on to the notion of financial accounts.

¹ A survey of the origins of national accounts goes beyond the scope of this paper. On the subject see Vanoli (2005).

² McCloskey's (1985) challenge should not be forgotten: '...the Keynesian revolution in economics would not have happened under the modernist legislation for science. The Keynesian insights were not formulated as statistical propositions until the early 1950s, 15 years after the bulk of younger economists had become persuaded they were true. By the early 1960s the Keynesian notions of liquidity traps and accelerator models of investment, despite repeated failures in their statistical implementations, were taught to students of economics as matters of scientific routine. Modernist methodology would have stopped all this cold in 1936: where was the evidence of an objective, controlled and statistical kind?'

A second inspiration for moneyflows was the debate on the business cycle. Since at least the nineteenth century economists had been discussing the real or financial origins of downturns and expansions of economies. These debates took place without a complete knowledge of how money, credit and other financial variables moved during the business cycle. After the First World War, Wesley Mitchell devoted great effort to the collection of relevant statistics on fluctuations in economic activity, building annual estimates of national income while working at the NBER (see Fabricant 1984, and Rutherford 2003, on the history of the NBER and the role played by Mitchell). Mitchell and Copeland were very close. The moneyflows project was the last undertaken by Mitchell before retiring. Copeland had already worked in the field of statistics before joining the NBER (see Millar 1990). He had been executive secretary of the Central Statistical Board (1933–1939) and director of research for the Bureau of the Budget (1939–1940). In 1944 he entered the NBER where he was commissioned to create a statistical framework for the money circuit. The project was carried out in collaboration with the Federal Reserve, in particular the Board's Division of Research and Statistics.

Moneyflows are part of the American tradition of institutionalism – stretching from Veblen to Commons and from Ayres to Mitchell himself – which stresses the importance of an empirical approach to the interpretation of economic phenomena and the need to build statistics based on time series. It is not an obvious approach: Koopmans's cutting verdict, 'measurement without theory', appeared in 1947 in a review of Burns and Mitchell's book on the measurement of economic cycles.³

Copeland's ideas on moneyflows were first and briefly published in 1947, in an article in the *American Economic Review*. His principal book, published in 1952, analysed the moneyflows of US institutional sectors from 1936 to 1942.⁴ In Chap. 1 of the volume Copeland quoted some passages from an unpublished memo that Mitchell had written in 1944 ('The Flow of Payments, A Preliminary Survey of Concepts and Data'). In this note Mitchell divided the economy into four groups of units: families, business enterprises, governments and philanthropic agencies. Each group makes payments to and receives payments from the others. In double-entry accounts, the payments made by each group are recorded on one side and the payments received on the other.

³ Some defence of Mitchell can be found in Kydland and Prescott (1990). See Della Torre (1993) and (2000) on the links between institutionalism, national accounts developed at the NBER, Mitchell's work, and theory of the business cycle.

⁴ Kuhn's conviction – that scientific revolutions are never brought about by one scholar only – is borne out by Copeland himself, who wrote in the preface to his work: 'Mention should be made, too, of a study that to some extent parallels the present attempt to organise debt and credit information and relate it to gross national product information, Raymond Goldsmith's study of saving and capital markets in the United States. Had some of the results of Goldsmith's study become available a year or so earlier, my task would have been easier.' Copeland was referring to Goldsmith's research, which eventually became part of the monumental work, *A Study of Saving in the United States*. Goldsmith's use of the balance sheets of institutional sectors and of flow of funds falls outside the scope of our work and merits specific treatment.

Following Mitchell's memo, Copeland wanted to provide a comprehensive system of measurements of moneyflows and to appraise the significance of such a system. The book is divided in two parts. In the first Copeland presents his statistical framework. In the second he offers some tentative interpretations in the light of monetary theory. We will discuss the main messages of the book following the same line of reasoning: first the statistics (Sect. 2.2.2), then the economic analysis (Sect. 2.2.3).

2.2.2 What Are 'Moneyflows'?

Moneyflows are payments and receipts made and received by one sector to and from another. In his book Copeland provides statistics for 11 sectors: households; farms; industrial corporations; business owners and partnerships; the federal government; state and local governments; banks and monetary funds; life insurance companies; other insurance carriers; other financial intermediaries not included in the above categories; and the rest of the world.

Copeland identifies four origins of moneyflows, or motivations: households' distributive shares, households' product transactions, transfer payments, and flows through financial channels. There are 14 types of moneyflows, all of which can be traced to one of these four motivations. Four moneyflows can be attributed to households' distributive shares: wages and salaries, cash dividends, cash interest, and net owner take-outs (i.e. entrepreneurial cash withdrawals by the owners of unincorporated businesses plus net money rental income of persons). A further four moneyflows are the result of production transactions: customer's payments to firms for goods and services (the greatest moneyflow); rents; instalments to contractors; payments for real-estate sales. Five moneyflows – insurance premiums, insurance benefits, taxes collected, tax refunds, and public purpose expenditures – fall into the category of transfer payments. The fourteenth moneyflow consists in financial transactions and constitutes the fourth motivation. These changes in loan fund balances include currency and deposits, bank credit accounts, securities, mortgages, etc. Table 2.1, taken from the Meldenson's (1955) review of Copeland's book, summarises the structure of the moneyflows.

Moneyflows are sources (or receipts) and dispositions (or payments) of money. One moneyflow may be a source for one sector and a payment for another (and vice versa). For instance, for households the main sources are wages and salaries, while the main payments are customer moneyflows. For industrial corporations and business proprietorships, on the other hand, customer moneyflows are mainly sources while wages and salaries are the main payments.

Moneyflows are presented as an extension of the national accounts, which Copeland had written extensively about from the end of the 1920s. Moneyflows are compared with the concept of national income, underlining analogies and differences. First, household distributive shares differ from corresponding items in the national income account because of accruals and imputations (which are not moneyflows), and the different disaggregation by sectors. Second, moneyflows are

mainly measured on a cash basis while the national accounts are predominantly on an accrual basis. Third, loan fund transactions are not product transactions and therefore are not included in the GNP. Fourth, the GNP account only reports transactions connected with the final, current production of goods and services, while moneyflows include product transactions and transfer payments which are intermediate transactions that disappear in the GNP accounts. For this reason moneyflows are much greater than the GNP as the latter excludes transactions involving moneyflows that are non-final-product expenditures.

Copeland states that both his approach and the national income one are based on the notion of the economy as a circuit. Moneyflows make it possible to analyse debit and credit movements that are not part of the concepts of production and income distribution. Copeland describes his work as an extension of 'social accounting to moneyflows measurement', highlighting the advantages of his approach over the equation of exchange. The disaggregate approach produces 'money inflows' and 'money outflows' for each sector. Despite the different definition given to the institutional sectors, Copeland maintains that Leontief's work is similar to his own.⁵ Moneyflows go from one sector of the economy to another, with sources 'financing' uses. Leontief describes inputs in producing outputs. There is a visual similarity between the two approaches, as the phenomena are measured by constructing large double-entry matrices.

In addition to moneyflows, Copeland also considers stocks, which are measured by loan funds, i.e. financial assets and liabilities of institutional sectors. He cites Irving Fisher's *The Nature of Capital and Income* of 1906, which draws a distinction between stocks and flows. Copeland stresses the importance of using financial statements in economics, following an approach already adopted by Robertson, Mitchell, Hawtrej, Lutz, Hicks and others.⁶ He recalls the difficulty of communication between accounting and statistics, principally because of the different conventions they employ.

Copeland makes a clear distinction between consolidated statements, in which positions between sectors are net of reciprocal transactions, and combined statements, which include – as in the case of moneyflows – all transactions between sectors. He examines issues on which economists and statisticians are still working, such as the differences between real accounts and financial accounts, and – in the case of business owners – the distinction between assets belonging to the business and assets of the owner's family. He points to the difficulties of 'balancing' the total

⁵ 'The Leontief set of measurement resembles the set of moneyflows measurement presented here', Copeland (1952), 2.

⁶ In his seminal work of 1935, Hicks said 'we shall have to draw up a sort of generalised balance sheet, suitable for all individuals and institutions'. Furthermore, 'monetary theory needs to be based . . . upon a similar analysis, . . . not of an income account, but of a capital account, a balance sheet.' Hicks's contribution was fundamental in guiding monetary theory towards an interpretation of money as a store of value instead of a means of exchange. On Hicks, see also Chap. 3 by Massaro.

assets and liabilities of the economy caused by three differences: in the timing of entry of transactions; in the classification of identical items; and in the evaluation criteria applied to assets and liabilities (see Copeland 1952, Chap. 8 in particular.)

2.2.3 Copeland's Monetary Theory and an Interpretation of His Work

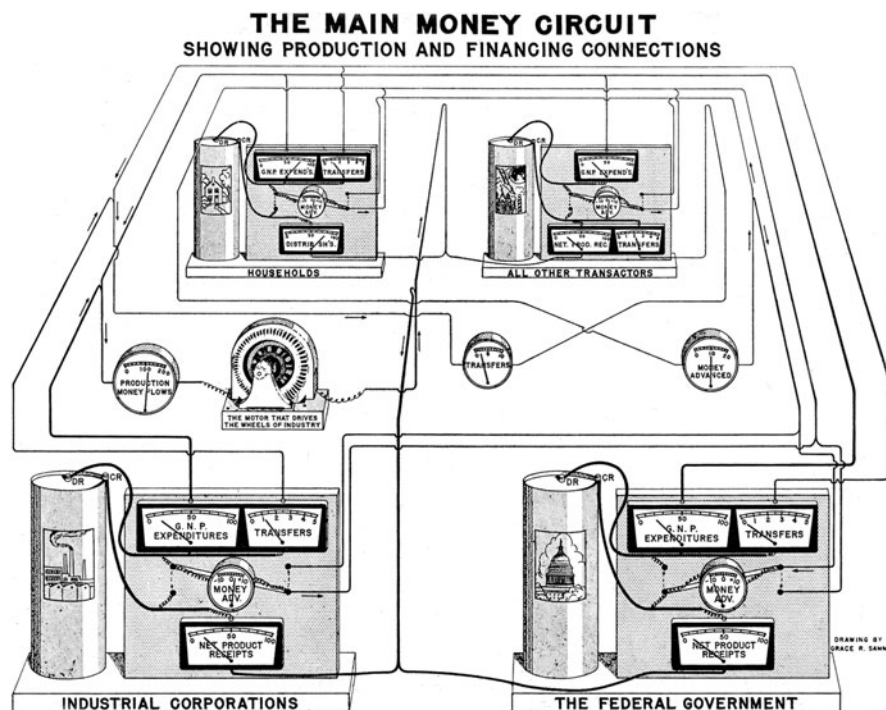
After making a statistical reconstruction of moneyflows, in the second part of his book Copeland looks at contemporary monetary theory. He argues that the economy is based on exchanges between economic subjects through a system of prices and the operation of different institutions. Money enables an economy to work. One of its functions is to keep track of moneyflows, i.e. of the claims that economic agents have over the social product; besides being a medium of exchange, it is a storehouse of value that cushions the imperfect coincidence between the institutional sectors' revenues and payments. Money performs this last function with the aid of financial assets and liabilities, including trade credits and debts.

Copeland studies how money influences the business cycle. Regarding the link between expansions and contractions of money, on one hand, and the performance of production, on the other, he proposes 'a partial reformulation of economic theory'. He criticises the quantity theory of money, particularly the aggregate version, according to which money flows to the whole economy indistinctly. Copeland contrasts this 'hydraulic analogy' of economic activity with his version of the economy as an electric circuit, in which several sectors exchange money (Table 2.2). Although the electric circuit analogy sometimes becomes confused and over-stretched – as stated in Baumol's (1954) review of Copeland's book – its purpose is to underline that, in contrast with the hydraulic analogy, every sector has two poles, to and from which money flows, and that the transmission of funds occurs virtually instantaneously.

The sectors make discretionary decisions regarding the size and composition of moneyflows. Each sector's balance depends partly on its choices and partly on those of the other sectors. The equation of exchange does not tell us which sectors 'were advancing or returning money through financial channels and which sectors were obtaining money by financing'. In Copeland's circuit the sectors produce income, receive and make transfers, and create financial flows. Some sectors need external funds to finance their spending, while others supply these funds. According to Copeland, Keynes's view is similar, but in the *General Theory* he takes an aggregate perspective. Keynes was interested in how adjustments between saving and investment affect the level of income. The moneyflows approach links changes in output to changes in money balances and to the structure of the economy's debts and credits. The behaviour of the sectors affects changes in production; some institutional sectors may reduce their financial assets and increase their expenditure; others may build up their financial resources instead.

Copeland examines the banks' role in the business cycle, comparing Fisher's position – that banks influence fluctuations – with Hansen's – that banks cannot

Table 2.2



influence the cycle (the two theories are set out respectively in Fisher 1935, and Hansen 1941). The most important flows for banks are changes in the volume and composition of deposits and of credit to the economy, which is given by the sum of loans and securities held in their portfolio. Banks do not autonomously set the supply of credit; it is affected by the decisions of the Federal Reserve through the supply of liquidity, the purchase and sale of securities, and the setting of minimum reserves. The Federal Reserve's influence over the banking system allows the banks to be considered in aggregate, disregarding the differences that exist within the category.

Copeland believes that the behaviour of banks is asymmetrical during the four phases of the business cycle, i.e. depression, recovery, peak of expansion, and recession. In the midst of a depression, the banks' willingness to increase credit can have a positive effect, but they are unable to bring about an economic recovery on their own. Once the recovery gets under way, it can be assisted by a greater availability of loans. If the expansionary phase is close to peaking, higher interest rates and tighter lending policies can have negative effects on moneyflows and cause an economic slowdown. When the economy is in recession, banks can make matters worse by adopting restrictive policies, although 'easier' lending policies alone cannot halt the recession. In summary, banks do influence moneyflows and

economic fluctuations, but mainly during expansionary phases. These positions are close to the view that monetary policy cannot ‘push on a string’.

Copeland concludes with a suggestion of directions for future research. He calls for the construction of statistics that separate the balance sheets of poor households from those of rich ones, an objective that is still pursued. He hopes that quarterly data on the activity of enterprises and regional analyses of moneyflows in the United States will become available. Above all, he considers the use of statistics that identify not only the issuers of financial instruments, but also their holders. This principle, known as ‘from whom to whom’, appears in a few instances in his book due to the lack of statistics; it was introduced in the United States and Italy between the 1950s and 1960s, but it was only used systematically in European financial accounts when the European System of Accounts was introduced in 1995. Copeland ends by recalling Keynes’s emphasis on the role of demand in triggering variations in national income. He believes that his own approach – based on the discretionary nature of the sectors’ decisions – also helps to highlight the importance of demand. When demand increases, so does the general price level, but relative prices move differently and their variations can be analysed by examining the money circuit.

Copeland’s approach was predominantly empirical. He thinks that Keynes’ theoretical approach was one of the reasons the General Theory had been assimilated in the Neoclassical Synthesis (see Millar 1991). Copeland had already attacked the abstraction of the neoclassical approach in 1931, causing Frank Knight to express several reservations (the debate is summarised in Asso and Fiorito 2001). In a nutshell, Copeland was an advocate of behaviourism, with its emphasis on distinguishing between science, based on observed behaviour, and the approach to economics based on introspection or mental states which cannot be tested experimentally. On the other hand, Knight criticised the adoption of behaviourism in economics. He defended the role of introspection in the examination of human behaviour and refused the mechanical interpretation of human nature.

It would be wrong to classify Copeland’s contribution as empirical only, and to level against him the same accusation that Koopmans made against the Burns-Mitchell duo. Copeland has in mind not only the work of Keynes, but also that of Hicks, notably *Value and Capital*, which was first published in 1939, and in particular Chap. 14 on the difficulties of defining and measuring an economy’s income, and Chap. 19 on the demand for money. He asserts that a similarity exists between his ideas and those put forward in *Value and Capital*, underlining that Hicks focuses only on households and firms. Copeland has a vision of an economic system with a wealth of specialised and interconnected activities that is co-ordinated by institutions of the law: property rights, regulations governing contracts and negotiable instruments, rules on compensation and bankruptcy, and freedom of association. Money and other ‘pecuniary institutions’ are further elements that allow an economy to function (on Copeland as an institutionalist see Rutherford 2002).

After the essays on moneyflows, he remained interested in money, particularly the origin of monetary economies and the development of bank deposits. His interest in all the institutional sectors of the economy led him to study the US

general government debt, with strong emphasis on relations between the federal government, on one side, and state and local bodies, on the other (see Copeland 1961, with a preface by Kuznets).

2.2.4 Moneyflows after Copeland: The Federal Reserve in 1955 and 1959

The history of scientific revolutions is made of adjustments, adaptations and the assimilation of new discoveries. First there was the work from moneyflows to flow of funds. Copeland's work was followed by two economists at the Federal Reserve: Winfield Riefler, who wrote the introduction to Copeland's book, and Ralph Young, manager of the Research and Statistics Division. It was Young who carried on Copeland's work within the Federal Reserve during the 1950s, joined by Dan Brill, who had been Copeland's chief assistant in the reconstruction of statistics (see Taylor 1991). In 1955 the Federal Reserve produced the first version of flow of funds, containing annual flows from 1939 divided by institutional sector and by instrument; statistics on stocks of financial assets and liabilities for banks and other financial intermediaries were also provided. The change of name, from moneyflows to flow of funds, was made for several reasons. First, the expression 'moneyflows' caused ambiguities because it could be confused with changes in the stock of money. Second, Copeland used 'moneyflows' as one word to distinguish his system from business accounting, in which 'money flows' is used to denote cash flows. The Federal Reserve wanted greater clarity to avoid any possibility of confusion with the terminology used by enterprises.

The Federal Reserve, like Copeland, makes flow of funds part of a triad that includes national accounts and input-output tables, highlighting the differences between the three systems. In national accounts the emphasis is on the production and distribution of goods and services. Input-output tables concentrate on relationships between different industries. Flow of funds has two specific features: the economy is divided into sectors and financial transactions are taken into consideration alongside the non-financial transactions typical of national accounts. Flow of funds records transactions entailing the transfer of a credit and/or of money; the production of new goods is taken into consideration, as in the GDP account, as well as transactions involving existing goods, such as the sale of houses and land. The Federal Reserve underlines the differences between flow of funds and the production and distribution of income account: the classification of transactions and sectors, offsetting criteria, consolidation methods, timing of entries, evaluation rules, and estimation methods.

The 1955 version of flow of funds focuses not only on the links between financial and non-financial transactions, but above all on the latter's composition (Table 2.3). In the case of households, non-financial transactions give rise to the following main uses of funds: purchases of goods and services, purchases of houses and durable consumer goods, and payments of insurance premiums and taxes. The non-financial sources of funds are wages and salaries, sales of houses and durable goods, tax

Table 2.3

SUMMARY OF FLOW-OF-FUNDS ACCOUNTS FOR 1953

S = Sources of Funds, U = Uses of Funds

(Annual flows, in billions of dollars)

Sectors		Consumer		Business				Government				Financial institutions				Rest of the world		Total					
				Corporate		Non-corporate		Farm		Federal		St. and loc.		Banking						Insurance		Other	
														S	U					S	U	S	U
Transactions		S	U	S	U	S	U	S	U	S	U	S	U	S	U	S	U	S	U				
Nonfinancial																							
A	Payroll.....	195.5	2.7		118.7		30.0		2.6		19.0		13.5		1.9		2.6		4.4		195.5	195.5	
B	Receipts from and payments on investment.....	59.4	16.3	9.7	20.0	17.5	40.0	1.1	13.0	1.0	5.5	.8	1.0	6.2	2.1	3.5	.3	1.7	1.5	.5	1.9	101.4	
C	Insurance and grants.....	23.9	22.7	1.3	12.2	1.0	3.0	.4	7.5	14.4	11.9	11.7	*	8	2.3	29.0	16.7	5.7	1.4	2.2	.3	82.8	
D	Taxes and tax refunds.....	2.60	40.9	5.5	36.0	6.8			1.1	64.8	3.1	21.4										89.4	
E	Capital acquisitions.....	22.0	63.8	2	26.7	1.5	6.0	4	5.0	*	4.2	1	7.8			1	*	2	2.1			89.6	
F	Net change in inventories.....				1.6		.9																
G	New fixed capital.....	39.4		24.9		5.1			4.6		4.2	7.2		1		*		2.1				819.5	
H	Other.....	22.0	24.4	2		1.5		.4		*	.1	.5											
I	Purchases and sales of other goods and services.....		155.4	138.3	341.8	195.8	130.2	29.8	10.8	5.0	38.8	5.8	6.4	.8	.7	.5	3.4	4.9	3.0	15.8	14.3		
J	Total.....	303.4	301.8	550.0	555.3	215.9	31.7	32.8	78.4	85.1	40.0	40.4	7.0	5.9	33.0	23.9	12.3	12.4	18.4	16.5	1,290.0	1,290.0	
Financial¹																							
K	Currency and deposits.....		4.4			1	.4		*		-1.6		1.0	5.0			.2		.2	*	.3	5.0	
L	Federal obligations.....		.3		1.1		.6			5.2			1.8		9					.6	5.2	5.1	
M	Mortgages.....		6.2		1.3		1.8		.4		.3				2.5		2.1	*	3.7		9.8	9.8	
N	Corporate securities and State and local obligations.....		3.2	6.7	3						-3	3.6	.3	1	1.1		6.5	.4	.3	1	10.9	10.8	
O	Other.....		4.5	4.4	-6	1	1.6	2.3	.6	*	.1	.2			2.2	1.4	.3	2	4.5	.6	11.8	10.8	
P	Total.....	10.7	12.9	7.4	1.6	3.5	3.2	1.0	*	5.3	-1.4	3.6	3.0	5.2	5.8	.3	9.1	5.0	5.0	.6	2.3	42.6	
Q	Grand total.....	314.4	314.4	557.4	557.4	219.3	32.8	32.8	83.7	83.7	43.6	43.6	12.2	12.2	33.3	33.3	17.3	17.3	19.0	19.0	1,332.7	1,332.7	
Memoranda:																							
R	GNP identifiable in J.....		215.1		29.5		6.9		6.9		57.9		24.4	*	1.4		*		10.7		-1.9	350.9	
	Bank credit in P.....		3.5		.5		1.2		.6		.9		.7		6.9				-1		6.9	6.9	

*Less than 50 million dollars.

¹Financial sources of funds represent net changes in liabilities; financial uses of funds represent net changes in financial assets.

NOTE.—For contents of each line, see notes to summary tables, pp. 1123-24.

refunds, pensions and other public payments. Financial transactions contain information on monetary circulation and deposits, federal government securities, mortgages for house purchases, and securities issued by enterprises and local authorities.

After 1955, the Board of the Federal Reserve asked for the frequency of the statistics to be increased. In 1959 quarterly flow of funds were published in the *Federal Reserve Bulletin*, with a revision of the statistics from 1949. The system adopted for non-financial transactions was simplified (Table 2.4). Many items, such as wages and salaries, were not available on a quarterly basis and were therefore left out, as was much of the data for which Copeland had provided estimates. Compared with the 1955 version, many details regarding non-financial transactions, of households and enterprises alike, were excluded in order to focus on the relation between saving and investment (see Ritter 1963).⁷ The Federal Reserve set out, for each sector and for the economy as a whole, the relation between saving, investment, and acquisition of financial assets and liabilities. The new statistics were already, even if at an embryonic stage, integrated accounts of the economy, showing saving, private capital expenditures and net financial investments of the institutional sectors.⁸ The emphasis shifted onto the financial variables, which were broken down into greater detail than in 1955, with some loss of information regarding the real aggregates, for which statistics were produced by the Department of Commerce. In sum, the FED flow of funds started to include mainly those moneyflows that Copeland had classified as financial transactions (the fourth origin of moneyflows; see Sect. 2.2.2), with details on net acquisitions of financial assets and net increases in liabilities. For the first time, information was included on savings accounts and fixed-term deposits, insurance companies and pension funds, consumer credit, and shares. An explanation of the reorientation of the statistical framework away from real variables and more towards financial ones lies in the willingness to avoid potential conflict between the Federal Reserve and the Department of Commerce.

With the regular publication by the Federal Reserve, flow of funds became an established tool of analysis of the economy.

2.3 The Beginnings of Financial Accounts in Italy

Copeland was a pioneer, but not before the middle of the 1950s, when his method was suddenly propelled forward by a force stronger than the purely scientific value of his work. That force was the central bank of the leading country of the western world, the United States, which adopted his method and put it into practice with

⁷ Young (1957) provides an application of US flow of funds to the years 1953–1955. See also Taylor (1958).

⁸ Sigel (1962) discusses the integration of US flow of funds with the national accounts. For the recent integration of US macroeconomic accounts see Antoniewicz et al. (2005).

Table 2.4

SUMMARY OF FLOW-OF-FUNDS ACCOUNTS FOR FIRST QUARTER, 1959

[In billions of dollars]

Transaction category	Consumer and non-profit sector		Nonfinancial business sectors				Government sectors ²		Financial institutions sectors				Rest-of-world sector		All sectors		Dis-crop-sav-ing and invest-ment ⁷	Natl. sav-ing and invest-ment ⁸
	U	S	U	S	U	S	Federal	State and local	Commercial banking ³	Savings institutions ⁴	Insurance ⁵	Finance n.e.c. ⁶	U	S	U	S		
A Gross saving ⁹	18.7	10.6	3	2.2	7.1	5	5	5	2	2	4	1	10.6	39.1	113.6	28.5	A	28.5
B Net saving (A-B).....	10.6	8.2	1.0	2.0	5.0	2.1	5	5	2	2	4	1	10.6	39.1	113.6	28.5	B	28.5
C Net saving (A-B).....	8.2	5.0	1.0	2.0	5.0	2.1	5	5	2	2	4	1	10.6	39.1	113.6	28.5	C	28.5
D Gross investment (E+J).....	18.6	10.6	3	2.2	7.1	5	5	5	2	2	4	1	10.6	39.1	113.6	28.5	D	28.5
E Private capital expenditures (net of sales) ¹⁰	14.5	9.4	1.4	3.1	7.4	2.4	7.4	2.4	1	1	1	1	10.6	39.1	113.6	28.5	E	28.5
F Consumer durable goods.....	9.4	4.3	1.2	2.7	5.4	2.0	5.4	2.0	1	1	1	1	10.6	39.1	113.6	28.5	F	28.5
G Nonfarm resident constr. ¹⁴	4.3	1.9	1.2	2.7	5.4	2.0	5.4	2.0	1	1	1	1	10.6	39.1	113.6	28.5	G	28.5
H Plant and equipment.....	9.7	4.3	1.2	2.7	5.4	2.0	5.4	2.0	1	1	1	1	10.6	39.1	113.6	28.5	H	28.5
I Change in inventories.....	3.2	1.4	0.2	0.9	2.0	0.6	2.0	0.6	0	0	0	0	0	3.2	1.4	0.2	I	3.2
J Net financial invest. (K-L).....	4.1	1.1	0.9	0.3	2.1	0.6	2.1	0.6	0	0	0	0	0	4.1	1.1	0.9	J	4.1
K Net acq. of finan. assets.....	6.6	2.5	1.1	0.6	2.1	0.6	2.1	0.6	0	0	0	0	0	6.6	2.5	1.1	K	6.6
L Net increase in liabilities ¹¹	2.5	1.1	0.6	0.3	2.1	0.6	2.1	0.6	0	0	0	0	0	2.5	1.1	0.6	L	2.5
M Gold and Treas. currency ¹⁸	1.3	0.6	0.1	0.1	0.2	0.1	0.2	0.1	0	0	0	0	0	1.3	0.6	0.1	M	1.3
N Currency and dem. dep. ¹⁹	1.3	0.6	0.1	0.1	0.2	0.1	0.2	0.1	0	0	0	0	0	1.3	0.6	0.1	N	1.3
O Fixed-value redeem. claims.....	2.2	1.1	0.2	0.2	0.4	0.2	0.4	0.2	0	0	0	0	0	2.2	1.1	0.2	O	2.2
P Time deposits ²⁰	1.1	0.6	0.1	0.1	0.2	0.1	0.2	0.1	0	0	0	0	0	1.1	0.6	0.1	P	1.1
Q Savings shares ²¹	1.4	0.7	0.2	0.2	0.4	0.2	0.4	0.2	0	0	0	0	0	1.4	0.7	0.2	Q	1.4
R U. S. savings bonds ²²	0.2	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0	0	0	0	0	0.2	0.1	0.1	R	0.2
S Saving through life insur. ²³	1.8	0.8	0.3	0.3	0.6	0.3	0.6	0.3	0	0	0	0	0	1.8	0.8	0.3	S	1.8
T Saving through pen. funds ²⁴	1.6	0.8	0.3	0.3	0.6	0.3	0.6	0.3	0	0	0	0	0	1.6	0.8	0.3	T	1.6
U Credit and equity mkt. instr. ²⁵	4.5	2.5	0.7	0.4	1.0	0.2	1.0	0.2	1	1	2	1	1	4.5	2.5	0.7	U	4.5
V Federal obligations ²⁵	2.6	1.5	0.4	0.2	0.6	0.1	0.6	0.1	0	0	0	0	0	2.6	1.5	0.4	V	2.6
W State and local obligations.....	1.9	1.0	0.3	0.2	0.5	0.1	0.5	0.1	0	0	0	0	0	1.9	1.0	0.3	W	1.9
X Corporate stock.....	0.5	0.3	0.1	0.1	0.2	0.1	0.2	0.1	0	0	0	0	0	0.5	0.3	0.1	X	0.5
Y 1-to 4-family mortgages.....	2.2	1.2	0.4	0.2	0.6	0.2	0.6	0.2	0	0	0	0	0	2.2	1.2	0.4	Y	2.2
Z Other mortgages.....	0.6	0.3	0.1	0.1	0.2	0.1	0.2	0.1	0	0	0	0	0	0.6	0.3	0.1	Z	0.6
a Consumer credit.....	0.6	0.3	0.1	0.1	0.2	0.1	0.2	0.1	0	0	0	0	0	0.6	0.3	0.1	a	0.6
b Savings credit.....	1.2	0.6	0.2	0.2	0.4	0.2	0.4	0.2	0	0	0	0	0	1.2	0.6	0.2	b	1.2
c Bank loans n.e.c. ²⁷	1.1	0.6	0.2	0.2	0.4	0.2	0.4	0.2	0	0	0	0	0	1.1	0.6	0.2	c	1.1
d Other loans ²⁸	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0	0	0	0	0	0.1	0.1	0.1	d	0.1
e Trade credit.....	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0	0	0	0	0	0.1	0.1	0.1	e	0.1
f Trade credit net in acct. in noncorporate business ²⁹	1.4	0.7	0.2	0.2	0.4	0.2	0.4	0.2	0	0	0	0	0	1.4	0.7	0.2	f	1.4
g Misc. financial trans. ³⁰	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0	0	0	0	0	0.1	0.1	0.1	g	0.1
h Sector discrepancies (A-D) ³¹	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0	0	0	0	0	0.1	0.1	0.1	h	0.1
i	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0	0	0	0	0	0.1	0.1	0.1	i	0.1

* Less than \$50 million.

NOTE.—U=uses of funds; S=sources of funds. Financial uses of funds represent net acquisitions of assets; financial sources of funds, net changes in liabilities.

For discussion of saving and investment concept see pp. 831-43 of this BULLETIN. Descriptions of

sectors and of transaction categories are given in notes to tables and in "Technical Notes," on pp. 846-59 of this BULLETIN.

Details may not add to totals because of rounding.

For other notes see pp. 1047 and 1049.

tools suited to the magnitude of the task. Before the 1950s and despite the common intellectual roots we mentioned in the introduction, academics and institutions from various countries, and first and foremost the central banks, had moved haphazardly in that direction.⁹ This Section describes the ‘Italian route’ to financial accounts, explains some of its peculiar features, and gauges its relationship with other national stories.

2.3.1 Paolo Baffi

Paolo Baffi, a young assistant professor from Milan’s Università Bocconi who was hired by the Bank of Italy in 1936, is a central figure for understanding Italy’s experience. Before and especially during the Second World War, Baffi, influenced by Giorgio Mortara, his teacher, and by Wesley Mitchell, whose work he had translated,¹⁰ examined the problem of drawing up financial statements for the various categories of operators. His basic aim was to predict more accurately the impact of the central bank’s monetary policies and, more generally, the reactions of the economy to cyclical or structural changes in interest rates, costs and productivity. To this effect, he needed to achieve a deeper knowledge of the terrain on which monetary policy acted, especially regarding the liquidity position of the various classes of actors in the economic process. In the end, Baffi’s scientific programme, which he outlined during the war, was to highlight the link between real phenomena and financial phenomena.¹¹ The problem was defined clearly in a letter written in January 1941 to the head of the Bank of Italy’s Research Office, when Baffi, then in his thirties, was at Pola, having just been called up:

Dear *Commendatore*,

At the Research Office, where we follow and analyse statistics, principally of a monetary and financial nature, we find ourselves poorly equipped to understand the movements of non-monetary aggregates, barring those associated with foreign trade and the manufacture of some products. Yet such movements are among those at the root of financial phenomena: to give an example, the money obtained to underwrite public debt issues or deposited in bank accounts may have been previously invested in inventories, which could not or would not be renewed; or it may have represented the amortisation of plant and tangible assets, which will not be renewed in the present circumstances (ships or buildings).

⁹ An early survey on different national approaches may be found in E. Hicks (1957a).

¹⁰ W.C. Mitchell, ‘Fenomeni e fattori dei cicli economici’, in Mortara (1932). The text that Baffi translated was the first chapter of Mitchell’s book *Business Cycles*.

¹¹ It is quite probable, as Della Torre (2006) points out, that the Italian experience with the ‘money circuit’ during the war (an attempt to cancel out, via compulsory saving, the inflationary effects of monetary financing of the State’s expenditure) may have had a role in defining Baffi’s scientific programme. In fact the money circuit functioned in so far it had no leaks: a detailed knowledge of the liquidity situation of the different classes of actors was instrumental in pointing out possible leaks. One could say that the money circuit was (as an intellectual stimulus) the dictatorial counterpart of the inflationary gap discussed in the same period in the US.

We are at a similar disadvantage as regards our knowledge of the problems encountered by business enterprises: yet the data of such problems determine the situation of whole 'branches' of industry. For example, it is possible that in one industry the plant is not utilised at full capacity (whereas, on first impression, one might conclude that in wartime it should be); why is this so? Is it because low-cost enterprises win against co-existing high-cost enterprises, forcing them to become idle? Is manpower lacking, or are raw materials? (And, incidentally, why, vice versa, does some manpower not find employment?) Have profitable outlets abroad disappeared? Is the market unable to absorb goods produced at the increased costs?¹²

Baffi's programme reflected the theoretical interests of the group of 'statisticians-economists' of the 1930s and 1940s, academics who, as we saw in the previous section, believed that the measurement of economic phenomena could play a key role in understanding them. We can include in this group not only the Italian, Mortara, and the American, Mitchell, but also Kondratiev in the Soviet Union and Beveridge in England, whose lessons at the London School of Economics were attended by Baffi in 1931.¹³

Immediately after the war, Baffi found himself acting head of the Bank of Italy's Research Department, from which position he wielded great power to determine the direction of research. The post-war monetary situation offered many opportunities for reflection on the liquidity of the various sectors, particularly because for a long time the household sector had hoarded large amounts of banknotes, which remained idle until, with the change of economic climate in the summer of 1946, they fuelled the sharpest inflation in the country's history. While the Bank of Italy's Annual Reports for 1945, 1946 and 1947 make mention of the problem, it was not until the 1948 Report that a table of flows was published, called the 'national monetary balance sheet' (see Table 2.5 below, taken from the English version of the Report). It divided the economy into two sectors, 'public sector' and 'private sector'. The liabilities of these sectors (short- and long-term debts and securities, but not the Treasury's debt vis-à-vis the central bank) were offset by 'collections from the public' (current and savings accounts, and again securities, this aggregate being absolutely identical to its counter-item) owned by the economy (essentially households) and by a so-called 'residual' item, containing mainly central bank financing of the economy. Below the line, the central bank's transactions with the Treasury and with the foreign sector were entered. A further line of totals revealed the overall creation of central bank money, as well as total financial asset and liability formation during the period. The whole exercise used flows, not stocks.

¹² Banca d'Italia, personal file.

¹³ See the short biography of Baffi in Gigliobianco (2006).

Table 2.5 National Monetary Budget (billion lire)

		1964		Collections			
		Lending		from the public			
		To the public sector	To the private sector	Net of current accounts	Current accounts		
Banca d'Italia (direct transactions with the public and special institutions)							
	(individuals)		1.1				
1.	Advances to (special institutions)		3.0				
2.	Deferred payments to individuals						
3.	Direct discounts						
4.	Rediscunt of short bills to farm credit banks and local farm credit branches						
5.	Rediscunt to the Consorzio avvicinato su valori industriali		3.4				
			- 1.1				
			6.4				
6.	Private deposits			29.9			
7.	Money orders, checks, other sight liabilities				3.7		- 25.2
					11.0		
Cassa di Risparmio							
Compulsory investments in ordinary Treasury bills (required by reserve regulation):							
8.	direct	72.7					
9.	through the Banca d'Italia	61.1					
10.	Other investments in ordinary Treasury bills	73.6					
11.	Investments in other government securities	3.9					
12.	Deposits with the Treasury	- 10.6					
		194.7					
13.	Commercial loans		34.1				
14.	Surplus of miscellaneous credit items over miscellaneous debit items						
			34.1				
15.	Savings deposits and current accounts with customers			277.0	229.4		13.6
16.	Money orders and checks						
17.	Surplus of miscellaneous debit items over miscellaneous credit items			27.2			
					547.4		
Coverage of the difference between lending and collections:							
18.	Rediscunts						- 10.6
19.	Cash advances						13.3
20.	Deferred payments						0.1
21. a)	minus Deposits required by reserve regulation, not invested in ordinary Treasury bills						13.3
21. b)	minus Other bank deposits						- 24.2
							- 3.6
Cassa di Risparmio e Fondazioni							
22.	Current account with the Treasury	132.8					
23. a)	Investments in ordinary Treasury bills						
23. b)	Investments in other government securities (including Biliries)	4.5					
		137.3					
24.	Other investments		23.7	142.0	13.0		- 161.0
Special institutions and capital markets							
25.	Issue of shares against payment		71.1				
26.	Issue of industrial bonds		24.4				
			43.7				
27.	Special institutions (Treasury bills and time deposits)		5.4				
			145.6				
28.	minus Investments of credit institutions and of the Cassa di Risparmio e Fondazioni in non-government securities		21.4				
			123.2				
29.	Subscription by the public of ordinary Treasury bills	109.5					
30.	Subscription by the public of other government securities and Biliries	2.7					
31.	Deposits of non-banking entities with the Treasury		0.8				
			113.0				
(1)	445.0	502.4	743.1	276.2	228.2		- 28.8
Current account of the Treasury with the Banca d'Italia							
32.	Advances of the Banca d'Italia to the Treasury	76.6					76.6
33.	Current account of the Italian Foreign Exchange Office, gold and foreign exchange of the Banca d'Italia	- 0.2					- 0.2
34.	Foreign etc.		162.6				162.6
35.	Minor items on the Banca d'Italia balance sheet	73.2	30.6	187.1			- 52.3
		(2) 15.1	(2) 2.9			(2) 15.0	
		609.7	698.3	870.4	228.2	179.3	176.2
37.	Government budget collections	250.7					
38.	Difference between minor Treasury collections and payments	1.2					
		853.9					
39.	Payments for budgetary expenditures	(3) 1,663.6					

2.3.2 An Analysis of the ‘National Monetary Balance Sheet’

In this Section, we discuss the ‘national monetary balance sheet’, as we believe it was the embryo of the financial accounts that appeared in the Bank’s Report for the year 1964. Before doing so, we must show that one derives from the other. First, we must explain that the use of the word ‘monetary’ should not be taken to indicate that the first statistics were only monetary statistics and that those introduced later were also financial: in practice, they all attributed the same importance to medium- and long-term financial assets, as is apparent from rows 25, 26 and 27 of the table of the monetary balance sheet. No changes of significance occurred between 1948 and 1960. The table published in the Annual Report for 1960 (Table 2.6 of this essay) adopted a very different form from its predecessor, although it was still called (in the Italian version) ‘sources and uses of monetary and financial assets’ (*Relazione Annuale*, 1960, page 286, not translated in the abridged English version). The link with the previous table was openly acknowledged: ‘In this Report, the aforementioned tables have been replaced by others that reproduce the main lines of the monetary balance sheet and the tables mentioned earlier, but with the addition of some variations’ (*Relazione Annuale*, 1960, page 276). The line of reasoning was maintained, and apart from the graphic layout the data were the same. A further innovation was introduced in the Annual Report for 1964, which at last adopted the expression ‘Financial Accounts’ (*Abridged English Version of the Report for the year 1964*, page 114), still in use today, and contained a large double-entry table entitled ‘National Financial Assets and Liabilities’ (Table 2.7 of this essay). Although the change was a very significant one, mainly because the from-whom-to-whom principle was established and stock figures were introduced, the line of thinking was the same (particularly as regards the ‘statistical motivation’, a concept we will explain later)¹⁴ and most of the data were taken from an ongoing research project (on insurance companies, social security institutes and the national accounts). This continuity in research – from 1948 to 1964 – is our *first conclusion*.

We now return to the 1948 table (our Table 2.5), which will be our main focus of study. What first strikes today’s reader is the fact that it combines elements of what is a classic financial accounts table with elements of a table of the sources and uses of monetary base. One explanation is that the table was not developed in an academic institution but in a hierarchical one, a central bank, which was by nature wary of any radical innovation. The origin of monetary circulation (the term ‘monetary base’ only entered the language 15 years later) had long been a subject of study in the Bank, a tradition that arose from the fact that notes originating from Treasury financing received a different tax treatment – normally, less favourable – from those originating from the ‘economy’ and ‘foreign’ sectors (which were not separate). In its annual reports the Bank had always distinguished between

¹⁴ The ‘statistical motivation’, in terms of the 1964 table, emerges clearly in the research paper published by two of its main authors. See Ercolani and Cotula (1969).

Table 2.7 Financial Assets and Liabilities of Italy (changes in billion lire)

towards counterpart sectors		1968												
		House- holds and non- financial enter- prises	Bank of Italy and Ital. Exch. Office	Banks	Special credit insti- tutes	Insur- ance compa- nies	Government	Central Post Office Savings Fund	Social Insur- ance Funds	Foreign Sector	Unclassi- fiable and discrep- ancies	Total		
Assets transferred and liabilities contracted by sectors												assets	liab.	balance
HOUSEHOLDS AND NON-FINANCIAL ENTERPRISES														
a) Notes and coin	—	432.4	—	—	—	8.5	—	—	—	—	—	440.9	—	440.9
b) Sight deposits	—	9.9	647.2	—	—	—	82.1	—	—	1.0	—	740.2	—	740.2
c) Other deposits	—	—	1,031.7	—	—	—	339.7	—	—	—	—	1,371.4	—	1,371.4
d) Short-term securities	—	—	—	—	—	117.7	—	—	—	—	—	117.7	—	117.7
e) Short-term credits	—	1.7	2,044.9	54.6	—	—	—	—	—	—	—	2,097.8	—	2,097.8
f) Medium- and long-term credits	—	—	255.6	956.3	17.3	14.4	351.2	32.3	14.4	8.5	22.9	1,800.7	1,800.7	—
g) Bonds	135.0	—	336.9	—	—	162.0	—	—	11.0	—	—	320.9	—	320.9
h) Shares and equity participations	153.0	5.5	70.5	2.0	4.0	—	137.4	8.9	2.9	—	—	369.2	—	369.2
i) Other financial assets and liabilities	141.6	—	2.5	1.6	1.0	—	—	—	34.7	—	—	101.8	—	101.8
Net financial surplus or deficit	—	438.5	631.2	521.7	87.5	332.6	60.2	126.9	227.8	123.5	4,160.8	4,709.3	539.5	—
FINANCIAL ENTERPRISES														
Bank of Italy and Italian Exchange Office														
a) Gold	—	—	—	—	—	—	—	—	62.3	—	—	62.3	—	62.3
b) Notes and coin	—	—	32.3	—	—	2.7	—	—	—	—	—	2.7	—	2.7
c) Sight deposits	432.4	—	31.6	3.1	—	320.3	—	7.6	81.7	—	—	186.4	186.4	—
d) Other deposits	9.9	—	322.1	—	—	8.8	—	—	10.4	—	—	323.7	—	323.7
e) Short-term securities	—	—	—	—	—	54.6	—	—	336.8	—	—	391.4	—	391.4
f) Medium- and long-term credits	1.7	—	453.1	18.4	—	450.7	—	—	12.2	—	—	917.3	—	917.3
g) Bonds	—	—	—	—	—	28.6	—	—	6.0	—	—	22.6	—	22.6
h) Shares and equity participations	—	—	—	—	—	—	—	—	0.8	—	—	0.8	—	0.8
i) Other financial assets and liabilities	—	—	—	—	—	—	—	—	15.3	28.6	11.6	28.6	—	28.6
Net financial surplus or deficit	438.5	—	67.1	14.9	—	767.2	—	7.6	374.5	28.6	630.9	630.9	—	—
Banks														
a) Notes and coin	—	32.3	—	—	—	—	—	—	1.3	—	33.6	—	33.6	—
b) Sight deposits	—	31.6	117.4	33.3	—	0.3	2.3	—	40.8	1.0	77.3	—	77.3	—
c) Other deposits	647.2	—	117.4	61.8	7.3	—	—	204.1	275.6	—	1,078.6	1,078.6	—	—
d) Short-term securities	—	72.2	—	9.5	—	—	—	—	168.5	—	81.4	—	81.4	—
e) Short-term credits	1,031.7	—	—	—	—	13.8	—	—	—	—	969.0	969.0	—	—
f) Medium- and long-term credits	—	—	—	—	—	75.9	—	—	18.0	1,905.8	1,905.8	—	—	—
g) Bonds	2,044.9	453.1	8.8	—	—	—	—	—	25.5	—	487.4	487.4	—	—
h) Shares and equity participations	255.6	—	—	46.0	0.8	—	—	—	—	—	300.8	300.8	—	—
i) Other financial assets and liabilities	70.5	—	—	307.5	36.3	—	—	—	—	—	941.7	941.7	—	—
Net financial surplus or deficit	631.2	67.1	—	276.8	8.1	126.3	2.3	204.1	406.1	98.6	2,631.7	2,631.7	—	—
Special Credit Institutes														
a) Notes and coin	—	3.1	61.8	—	—	—	—	—	—	—	64.9	—	64.9	—
b) Sight deposits	—	—	33.3	—	—	—	—	—	—	—	33.3	—	33.3	—
c) Other deposits	—	—	9.5	—	—	—	—	—	—	—	9.5	—	9.5	—
d) Short-term securities	—	54.6	18.4	—	—	11.1	—	—	—	—	43.5	18.4	25.1	—
e) Short-term credits	956.3	—	—	—	—	—	—	—	20.0	—	982.3	—	982.3	—
f) Medium- and long-term credits	—	—	46.0	—	—	42.8	—	15.0	38.5	8.5	150.8	150.8	—	—
g) Bonds	5.0	—	—	—	—	0.5	—	—	—	—	4.5	—	4.5	—
h) Shares and equity participations	336.9	0.4	307.5	—	18.8	—	53.1	58.8	—	—	774.7	774.7	—	—
i) Other financial assets and liabilities	0.2	—	—	1.4	—	16.5	—	—	—	—	1.2	—	1.2	—
Net financial surplus or deficit	155.5	—	27.9	1.4	4.1	—	—	—	13.2	13.2	155.5	155.5	—	—
Insurance companies														
a) Notes and coin	—	7.3	—	—	—	—	—	—	—	—	7.3	—	7.3	—
b) Sight deposits	17.3	—	—	—	—	—	—	—	—	—	17.3	—	17.3	—
c) Other deposits	—	—	—	—	—	—	—	—	—	—	—	—	—	—
d) Short-term securities	—	—	—	—	—	—	—	—	—	—	—	—	—	—
e) Short-term credits	4.0	—	—	18.8	—	2.1	—	—	—	—	20.7	—	20.7	—
f) Medium- and long-term credits	11.3	—	—	4.1	—	—	—	—	12.9	—	28.3	—	28.3	—
g) Bonds	1.0	—	—	—	—	—	—	—	—	—	1.0	—	1.0	—
h) Shares and equity participations	119.1	—	—	—	—	—	—	—	—	—	119.1	—	119.1	—
i) Other financial assets and liabilities	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Net financial surplus or deficit	87.5	—	8.1	22.9	—	2.1	—	—	6.4	—	73.6	125.8	52.2	—

(continued)

‘monetary circulation on behalf of the Treasury’ and ‘monetary circulation on behalf of trade’.

Since the table is a table of flows and does not distinguish between households and enterprises, it would not have been of much use in an analysis designed to predict or contain an episode of inflation such as the one that happened in 1947. Other factors, in addition to the intention to analyse inflation, must therefore have been at play in order to bring about the construction of a table which was not useful for calculating sectoral liquidity. In the first place one has to mention the very

Table 2.7 (continued)

towards counterpart sectors		1963													
		House- holds and non- financial enter- prises	Financial enterprises				Treasury			Foreign Sector	Unclassi- fiable and discrep- ancies	Total			
			Bank of Italy and Ital. Exch. Office	Banks	Special credit insti- tutes	Insu- rance compa- nies	Govern- ment	Central Post Office Savings Fund	Social Insur- ance Funds			assets	liab.	balance	
Assets transferred and liabilities contracted by sectors															
TREASURY															
Government															
a)	Notes and coin	—	0.5	—	—	—	—	—	—	—	—	—	0.5	—	0.5
	Notes and coin	8.5	2.7	—	—	—	—	—	—	—	—	—	—	5.8	5.8
b)	Sight deposits	—	320.3	—	—	—	—	—	—	—	—	—	320.3	—	320.3
	Sight deposits	—	15.1	0.3	—	—	—	—	—	—	—	—	15.1	15.1	—
c)	Other deposits	—	8.8	—	—	—	—	256.4	6.8	—	—	—	8.8	249.6	240.8
d)	Short-term securities	—	54.6	—	—	—	—	—	—	—	—	—	—	186.1	186.1
e)	Short-term credits	117.7	459.7	75.9	11.1	—	—	—	—	—	—	—	—	378.7	378.7
f)	Medium- and long-term credits	14.4	28.6	—	42.8	—	—	—	—	—	—	57.2	28.6	28.6	—
g)	Bonds	162.0	8.8	36.3	0.5	2.1	—	143.9	5.0	—	—	—	70.8	70.8	—
h)	Shares and equity participations	47.0	—	—	10.5	—	—	—	—	—	—	63.5	—	63.5	—
i)	Other financial assets and liabilities	—	—	—	—	—	—	—	1.3	—	—	—	1.3	1.3	—
	Net financial surplus or deficit	332.6	767.2	126.3	70.9	2.1	—	112.5	3.1	—	—	—	208.9	83.0	125.9
Central Post Office Savings Fund															
b)	Sight deposits	82.1	—	2.3	—	—	—	—	—	—	—	—	—	84.4	84.4
c)	Other deposits	539.7	—	—	—	—	—	256.4	—	—	—	—	256.4	339.7	596.1
f)	Medium- and long-term credits	351.2	—	—	—	—	—	—	—	—	—	—	351.2	—	351.2
g)	Bonds	137.4	—	—	53.1	—	—	143.9	—	—	—	—	384.4	—	384.4
h)	Shares and equity participations	—	—	—	1.5	—	—	—	—	—	—	1.5	—	1.5	—
i)	Other financial assets and liabilities	6.6	—	—	—	—	—	—	—	—	—	—	6.6	—	6.6
	Net financial surplus or deficit	60.2	—	2.3	54.6	—	—	112.5	—	—	—	—	430.7	430.7	—
Social Insurance Funds															
b)	Sight deposits	—	7.6	204.1	—	—	—	—	—	—	—	211.7	—	211.7	—
c)	Other deposits	—	—	—	—	—	—	6.8	—	—	—	—	6.8	—	6.8
f)	Medium- and long-term credits	32.3	—	—	15.0	—	—	—	—	—	—	47.3	—	47.3	—
g)	Bonds	8.9	—	—	58.8	—	—	5.0	—	—	—	62.7	—	62.7	—
h)	Shares and equity participations	4.9	—	—	—	—	—	—	—	—	—	4.9	—	4.9	—
i)	Other financial assets and liabilities	173.9	—	—	—	—	—	1.3	—	—	—	1.3	173.0	171.7	1.7
	Net financial surplus or deficit	186.9	7.6	204.1	73.8	—	—	3.1	—	—	—	—	334.7	173.0	161.7
FOREIGN SECTOR															
A)	Gold	—	62.3	—	—	—	—	—	—	—	—	—	62.3	62.3	—
a)	Notes and coin	—	—	1.3	—	—	—	—	—	—	—	—	—	1.3	1.3
b)	Sight deposits	—	81.7	275.6	—	—	—	—	—	—	—	357.3	—	357.3	—
	Sight deposits	—	—	40.8	—	—	—	—	—	—	—	—	40.8	40.8	—
c)	Other deposits	—	10.4	—	—	—	—	—	—	—	—	10.4	—	10.4	—
	Other deposits	—	4.2	168.5	—	—	—	—	—	—	—	—	172.7	172.7	—
d)	Short-term securities	—	336.8	—	—	—	—	—	—	—	—	—	336.8	336.8	—
e)	Short-term credits	—	—	25.5	—	—	—	—	—	—	—	25.5	—	25.5	—
	Short-term credits	—	12.2	18.0	—	—	—	—	—	—	—	—	5.8	5.8	—
f)	Medium- and long-term credits	173.6	0.8	—	38.5	—	—	—	—	—	—	212.9	—	212.9	—
	Medium- and long-term credits	14.4	6.0	—	26.0	—	—	—	—	—	—	—	34.4	34.4	—
g)	Bonds	2.9	—	—	—	—	—	—	—	—	—	2.9	—	2.9	—
	Bonds	11.0	15.3	—	—	—	—	—	—	—	—	—	26.3	26.3	—
h)	Shares and equity participations	669.6	—	—	—	—	—	—	—	—	—	669.6	—	669.6	—
	Shares and equity participations	34.7	—	—	—	12.9	—	—	—	—	—	—	47.6	47.6	—
i)	Other financial assets	—	—	3.4	—	6.5	—	—	—	—	—	3.1	—	3.1	—
	Other financial liabilities	913.8	—	—	—	—	—	—	—	—	3.0	—	916.8	916.8	—
	Net financial surplus or deficit	227.8	374.5	406.1	12.5	6.4	—	—	—	—	3.0	1,181.7	625.8	555.9	—

limited availability of data. It was impossible to distinguish, within the item 'bank deposits', those of households and those of enterprises. Another difficulty was how to separate, in the banks' books, lending to enterprises from lending to households.¹⁵

Alongside these two negative elements, or obstacles, we must add two positive elements that had a motivational effect. They are mentioned in the Bank's Annual Report for 1948, in which the table appeared for the first time. It is worthwhile quoting from the Report:

The borrowing requirement associated with the total gross investment mentioned above was evidently met, albeit in a not accurately quantifiable amount, both with funds drawn from resources flowing to the market and with funds derived from depreciation allowances (and hence included in the sale price of goods) and, finally, also by true self-financing out

¹⁵ Both difficulties are well known and were mentioned by Baffi himself, who acknowledged that progress since 1948 had been slow (Baffi 1957, p. 316).

of undistributed profits. Unfortunately, it is not possible, with the data available, to effect a direct comparison between investment, on the one hand, and monetary saving and self-financing, on the other. It is possible, however, to give fairly clear details of the resources flowing to the market and the lending operations of the banking systems, both to the Treasury and to the economy. This table, moreover, by considering the residual effect on monetary circulation of the individual sectors' sources and uses of funds, makes it possible to capture the overall effect of the whole set of fund-raising and lending or investment operations on the monetary circulation.¹⁶

This passage suggests two motivations. The first is to identify the sources of investment financing; the mention of the impossibility of making a direct comparison between investment and saving with the data available indicates that the long-run objective is to match the measurement of investment to that of the sources that help to finance it. This intention, which we call 'statistical', is confirmed by a short internal memo dated October 1949, in which Baffi gives an outline of the Bank's Annual Report to be presented the following year:

For the next annual report it would be useful to examine the possibility of drawing up a national balance on investment by branch of activity using financial data, that is [bank loans, share issues, government investment expenditure, loans from abroad]. There should be a connection between this framework and the national monetary balance sheet, and a comparison can be made between the results and those obtained [...] for the 'real' sector.¹⁷

This document sets out clearly the ambitious programme, only a small part of which was actually achieved during the 1950s, to balance the real aggregates against the financial aggregates in the national accounts.

The second motivation can be broadly defined as an attempt to incorporate the monetary and financial aggregates within a clear quantitative framework. Since the accounts have to balance, this encourages efforts to refine the data. We note that the desire to balance the accounts is expressed, rather surprisingly, as an intention to compute 'the overall effect of the whole set of fund-raising and lending or investment operations on the monetary circulation' (meaning the change in monetary circulation obtained via the banks and the private sector) 'by considering the residual effect on monetary circulation of the individual sectors' sources and uses of funds' (meaning the sum of the differences between investments and deposit accounts observable in the various sectors). This method of presentation, because of the accompanying reasoning in the body of the Report, gives credit to the concept of a central bank that plays a largely passive role in money creation, almost as if constrained within the framework of a posthumous gold standard.

This second motivation calls for further investigation. It ties in with a more general problem affecting the tasks of the central bank during the period of reconstruction and catching-up, as it was perceived by the Governor, Donato Menichella, and the political leaders of the time. There was a very strong 'rhetorical' need – in order to counter repeated outcries against policies described as being

¹⁶ *Annual Report for the year 1948*, Banca d'Italia, pp. 189–192.

¹⁷ Archivio Storico della Banca d'Italia (ASBI), Studi, cart. 343, fasc. 1, last page.

timid, deflationary and suchlike by politicians, trade unionists and occasionally international institutions – to prove that the banking system had ‘done its duty’ relative to its obligation of ensuring economic growth. More precisely, we can say that in the ‘Concluding Remarks’¹⁸ of those years two typical points regarding the financial system were central to the structure of the discourse.

The first point consisted in substantiating the contention that the system had done ‘everything’ it could. Let us take, as an example, the Report for 1948: ‘The entire amount of these assets was used to finance both the private sector and that part of the requirements of the government for which it was obliged to resort [...] to the banking system in order to avoid greater recourse to the central bank. [...] the banking system performed its duty fully, unconditionally and fearlessly’.¹⁹ The second point was the evidence that the resources had been channelled increasingly towards the private sector rather than towards the Treasury. According to the Annual Report for 1949, ‘Nor did the existence of the compulsory bank reserve prevent a shift of the money supply toward the private sector during the last year. [...] In 1948, resorting to the banking system as well as to the financial system in general, the Treasury raised 445 billion [lire] and the private sector 504; whereas in 1949 the Treasury reduced this to 376 billion; and the private sector instead obtained 586 billion, an increase of 82 billion with respect to the previous year.’²⁰

These points are entirely consistent with Menichella’s view of the Italian economy. This view can be summarised as follows: the objective to be pursued is growth; growth depends on investment (while consumption is not recognised as having any role); investment depends positively on saving and negatively on the funds taken up by the Treasury and not allocated to investment. Given these sole determinants of investment, we should reflect that money or credit illusion will only have the effect, through inflation, of altering the distribution of income inequitably.

A crucial element in this argument is the decision to present the liquidity created by the central bank through its refinancing of banks as a ‘residual’ effect *on* monetary circulation of the economy’s sources and uses of funds via the market and the banking system. To give an example, ‘The exceptional growth in the formation of monetary assets has made it possible to reduce the rise in monetary circulation from 283 billion in 1947 to 175 billion in 1948’.²¹ This bears out the concept of a ‘natural’ economy that progresses at a pace it would be impossible to modify with monetary devices: basically, money is a lubricant. An ‘active’ monetary policy was not contemplated (although monetary policy, was by no means non-existent). Alongside issues that we now recognise as being typical of monetary policy (although, it is important to note, *with almost no reference to*

¹⁸ The final part of the Annual Report, read by the Governor at the Annual Meeting of the Bank, was (and still is) called ‘Concluding Remarks’.

¹⁹ Menichella’s ‘Concluding Remarks’ have been reprinted in Cotula, Gelsomino and Gigliobianco (1977), Vol. ii. The original quotation appears on page 24.

²⁰ Cotula, Gelsomino and Gigliobianco (1997), Vol. ii, page 38.

²¹ Cotula, Gelsomino and Gigliobianco (1997), Vol. ii, p. 21.

interest rates), the Concluding Remarks dealt extensively with the distribution of credit, financial resources, and ‘monetary assets’. Such distribution is regarded as the result of collective behaviour on the part of bankers, rather than of their individual decisions. The prevailing view of the financial system is still a corporative one: it transmits, or at least should transmit, public objectives, not so much by means of the regulatory instruments envisaged by the law (discount rate, compulsory reserves, etc.), but because these objectives are fully appropriated by bank executives. The central bank enters the scene because it sets down the written rules and the unwritten ones, becoming shepherd of the flock of banks. Each member of the flock is free to graze a bit further here and there at will, but mass movements must depend on the authorities.

Interestingly, it was also decided to place central bank financing of banks and the private sector (changes which were added to changes in deposits) above the first line of totals while central bank financing of the Treasury was placed below it. Baffi explains this decision in *Monetary Analysis in Italy* as ‘the area covered by this row of totals is coterminous with the jurisdiction of the monetary authorities under the Bank Act and the statutes regulating the issue of securities.’²² This explanation was clearly intended as a ‘defence’: the line was drawn to indicate what happens in the area for which the Bank is responsible; money created via the Treasury and the foreign sector is outside the Bank’s control. This way of presenting data facilitates and justifies a reasoning which hinges on the structure and behaviour of a ‘natural economy’.

The history of the 1948 table leads us to our *second conclusion*: the Bank’s ‘rhetorical’ needs determined in several ways the manner of presentation of the data. This confirms the validity of a new school of historiography of statistics, which considers the significance of the discipline in terms of culture and communication and not just the purely technical aspect. According to the authors of this school, statistics do not merely reflect reality, they ‘build’ reality, i.e. they have a profound influence on the way that problems are identified and tackled.²³ Central banks, like the majority of organisations, do not have only a policy ‘of things’, but also a policy of communication, including statistical communication, and had one well in advance of the 1980s and 1990s debate on the link between the credibility of central banks and their communication strategies.

Our conclusion is borne out by the fact that what we described as the peculiar features of data presentation ended with the Report for the year 1960, the first issued under Governor Guido Carli: the data are virtually the same (although additional tables provide greater detail), but their presentation has been radically altered. Whereas in another part of the Report a distinction is obviously made between central bank financing of the Treasury and financing of the banks,²⁴ in the financial

²² Baffi (1957), p. 318.

²³ See Desrosières (1993) and Tooze (2001).

²⁴ The distinction appears in Annual Report for the year 1960, Table 109 (and in English in the *Abridged Version of the Report for the year 1960*, Table 34).

accounts table money creation is consolidated; the concept of ‘residual’ referring to refinancing of the banking system disappears. A table of the sources and uses of monetary base appeared 3 years later, in the Annual Report for 1963 (p. 286), only to become regrettably more muddled the following year 1964 (p. 348; p. 86 in the English version).

Our examination of the 1948 table led us to set aside momentarily the source of Baffi’s inspiration, associated with the conduct of monetary policy. We find some trace of it in an essay which Baffi wrote in 1985, ‘Via Nazionale e gli economisti stranieri’: ‘Despite these and other possible defects, the “monetary balance sheet” constituted the first attempt to give an overall view of financial flows (albeit of net amounts) and to identify the forces pushing towards expansion or contraction that stemmed from the sources of monetary base creation (Treasury, economy, and foreign sector) and was extremely useful for analysing the reciprocal links between these sources and the uses of the monetary base.’²⁵ This assertion confirms that there was more than one inspiration for the table. The 1957 essay ‘Monetary Analysis in Italy’ gives some interesting examples of how the table can be used: (1) to relate the flow of funds to the volume of investment, from which indications can be obtained regarding the evolution of self-finance in relation to the business cycle: in periods of inflation (or, rather, of overheating) profits increase and the ratio of flow of funds to investment decreases; (2) to observe - having acknowledged that banknotes are held mainly by households and that households react slowly to price increases - that: ‘The public absorbs cash in a manner which exerts a dampening influence on the inflationary process, for, by decreasing to this extent the liquidity of the banks, the public in effect lowers the coefficient of expansion applying to the funds available to the banking system at the central bank. The use of average coefficients of expansion [i.e. deposit multiplier] therefore seems inappropriate in the analysis of the credit cycle, whenever currency is an important part of the money supply’²⁶; (3) to encourage caution when interpreting cyclical deviations from trend in the volume of deposits.²⁷

2.3.3 The Intellectual Framework of Monetary Movements

Let us now consider the broader intellectual context in which studies on monetary movements developed. We have mentioned the link between Baffi and Mitchell before the Second World War (through Mortara and the translation of Mitchell), but there is no trace of any contact with Copeland after the War, although of course it is possible that Baffi had read his 1947 article. The first documented contact with foreign academics working in the field of flow of funds dates to June 1953, by

²⁵ Baffi (1985), § 11.

²⁶ Baffi (1957), p. 322.

²⁷ Baffi (1957), p. 322.

which time the Italian system was already in place: it was then that Baffi visited Holland as a guest of the Dutch central bank, which was a leader in this field.²⁸ Meetings then took place in 1956–1957 with the Federal Reserve and the group organised by the International Monetary Fund, led by Earl Hicks, who promoted the February 1957 issue of *Staff Papers*, mainly dedicated to the topic.²⁹ In an article written for the issue, Holtrop says that ‘The purpose of the method of monetary analysis [...] is to provide the Bank with a tool to help it in unraveling the mechanism of inflationary and deflationary disturbances and thus to aid the Bank in framing its policies.’³⁰ Earl Hicks was of the same opinion: ‘Monetary Analysis [...] is an inquiry into the sector origins of changes in the quantity of money made for the purpose of trying to understand the forces pushing towards expansion or contraction.’³¹ Baffi’s article, ‘Monetary Analysis in Italy’, which was also published in the 1957 issue of *Staff Papers*, takes much the same line. J.J. Polak, perhaps the group’s leading economist, seems slightly more biased towards real issues: ‘we want to isolate autonomous spending, that is, spending that does not constitute a mere passing on in the next round of income received in the previous round of the income stream. Fluctuations of the expenditure not associated with fluctuations in income by the same sector are precisely what financial statistics focus on.’³² This is consistent with Copeland’s own approach, as described in Sect. 2.2.2.

We can conclude that the original version of the monetary balance sheet was entirely the result of interaction between Baffi and Governor Menichella, and that it can be ascribed basically to four factors: (1) a remodelling of the central bank’s traditional balance sheet (monetary circulation on behalf of trade and monetary circulation on behalf of the Treasury); (2) the willingness to fill the knowledge gaps that Baffi and his colleagues, partly due to the influence of Mitchell and Mortara, spotted during and after the War (economic cycle, monetary policy, statistical motivation); (3) the difficulties in obtaining the data; and (4) Menichella’s political and rhetorical requirements. This is the *third conclusion*, which confirms the ‘multiple’ nature of the financial accounts (their many origins and many uses) mentioned in the introduction and in connection with the experience of the United States.

We can now trace at least one of the directions that could have been taken but was not, *irrespective* of the fact that Menichella had an evident interest in the matter. There does not appear to have been any attempt to develop financial accounts in the way they were originally developed in the United States (the 1955 flow of funds), that is, with an emphasis on the flows created by real transactions in order to capture the sources of operators’ self-financing. This would have been useful to support a certain type of argument that the Bank was

²⁸ Documents regarding this trip, including correspondence between Menichella and Holtrop, Governor of De Nederlandsche Bank, can be found in ASBI, Studi, cart. 383, fasc. 2, sfasc. 83.

²⁹ The correspondence is in ASBI, Carte Baffi, cart. 346.

³⁰ Holtrop (1957), p.303.

³¹ Hicks (1957b) in ASBI, Carte Baffi, cart. 346/2.

³² Polak (1959), pp. 1–8.

often called on to set forward: on several occasions Menichella answered specific categories of operators who complained of the lack of financial assistance by pointing to the sector's aggregate resources resulting from the evolution of relative prices. In 1955 he told farmers and savings banks that 'if the volume of credit flowing to agriculture has been proportionally smaller than the volume of credit flowing to all other economic activities, this is a natural condition because credit to agriculture has been provided by us, by you, by me, paying prices that were much higher than the average of other prices.'³³

2.3.4 The Modernised Format Propounded by Guido Carli: A Short Account

Guido Carli's arrival in the Bank of Italy marked a change of policy and mentality, and a new relationship with the public. The major event on the policy front, from our point of view, was the partly successful attempt to create a money market, which had not existed beforehand: the main instrument was the new system of Treasury bill placement launched in 1962. There began to be scope for a less rudimentary monetary policy. Regarding the change of mentality, new impetus was given to research, which received a substantial endowment of resources, and old approaches and traditions were put aside. As far as public relations went, the amount of communication increased dramatically and the central bank's 'teaching' role was enhanced.³⁴

The new system of accounts introduced in 1960 to replace the monetary movements reflected the changed needs, both material and 'rhetorical', of the central bank. Although considerable interest was still focused on the uses of financial resources, under Carli monetary policy could and did come into the open: this created a need for a theory based on aggregate money supply. The central bank could stop depicting itself as a passive subject: the concept of residual disappeared.

A few years later the main reform was enacted, the one culminating in the large matrix appearing in the Report for the year 1964. This was a double-entry table in which each sector (economy, banks, special credit institutes, market, and Treasury) had a row and a column. Every XY cell contained, instrument by instrument (currency, deposits, bonds . . .), the financial flows from sector X to sector Y.

This system of accounts, which was very similar to the present format (except that the presentation adopted then was later abandoned), was first introduced, as explained in the report and in the methodological notes published in the

³³ Menichella (1955), p. 589.

³⁴ On the innovations brought about by Carli, see his biography in Gigliobianco (2006), in particular pp. 292–297.

Bank's *Bollettino*,³⁵ as part of a convergence of methodologies within the EEC³⁶ (and no doubt following the experience of the Federal Reserve mentioned earlier), and satisfied the new exigencies of the central banker. While the discussion of monetary policy relied on the liquidity table and the analysis of investment financing also had a new and substantial statistical apparatus, the financial accounts matrix served a debate geared to developing the financial market. A mature and deep financial market – this was Carli's argument – is necessary because without it small changes in the supply of bonds cause large changes in securities prices (and interest rates), forcing the central bank to intervene by issuing currency, which may have an inflationary effect.³⁷ From those years onwards, the financial accounts, although they retained and considerably refined their original 'statistical function' (some very interesting work was done to link them to the national accounts, which finally produced concrete results in 1968³⁸), also became the testing ground for international comparisons of the development of markets and intermediaries.

The most serious flaw, the failure to make a distinction between households and enterprises (see Sect. 2.3.2), was rectified in the 1965 Annual Report. Since then, academics and operators have had sounder material on which to base their study of households' propensity to save and firms' indebtedness. Moreover, it finally became possible to make the attempt, until then only possible in theory, to identify the sector of origin of forces pushing towards expansion or contraction by means of sectoral financial analysis (basically, a resumption of Holtrop's and Polak's theories mentioned above).³⁹

This brief incursion in the 1960s allows us to *carry forward the second conclusion* that we reached: the 'rhetorical' needs of a central banker always accompany the evolution of the format of the financial accounts. This is meant as a reminder that statistical work is, now as in the past, conditioned and stimulated not only by the theoretical tools available and the difficulties encountered in gathering data, but also by the particular 'world views' of those who commission it. In fact, once statistics have been produced and published they acquire a power that should not be underrated, the power to consolidate, and even to block, the lens through which both public and experts view reality.

³⁵ Banca d'Italia (1965), pp. 107–125 (the point we are interested in is on p. 122). More information and data can be found in Cotula and Caron (1971).

³⁶ The reference is to the working party that finally produced the ESA70.

³⁷ Banca d'Italia, *Annual Report for the year 1964*, 'Considerazioni finali', p. 493.

³⁸ In the Annual Report for 1967 the first explicit attempt – i.e. not confined to internal memos – was made to link the financial accounts to the capital account.

³⁹ On this point again see Ercolani and Cotula (1969), p. 20.

2.4 Rise, Fall and Revival of Financial Accounts

In this final Section, we briefly look at some developments of financial accounts in the 1960s and 1970s, at their later less frequent use, and, finally, at their intellectual resurgence in recent years.

During the 1960s, the study of financial accounts took different directions, interacting with economic theory and policy applications. We describe only two developments, each of which would really deserve separate and lengthy discussion: Tobin's emphasis in studying the links between the financial and real sectors of the economy, and the use of financial accounts in econometric models and for economic forecasts.

According to Keynes, the demand for money depends on income instead of wealth; in the speculative motive framework the individual chooses to hold either only money or only securities. Tobin progressed from demand for money to demand for financial assets, where the latter are chosen according to their risk-return profile: this is the theory of portfolio choices.

Wealth consists of money, other financial assets and real assets. Tobin looked not so much at the link between the money demanded and income as at the way operators distribute wealth between financial and real assets. The emphasis shifted to the capital account in the balance sheet of individual operators, partly because of the importance of the wealth effect debate in those years. Wealth in its various forms influences not only the demand for new financial assets, but also aggregate demand: consumption and investment do not depend on income alone (Tobin 1952, 1961). An examination of the total financial assets exchanged in an economy prompted Tobin to ponder the differences between banks, on the one hand, and non-bank intermediaries, on the other. Together with the work of Gurley and Shaw (1960), that of Tobin (1963) is one of the first contributions on the specific or non-specific role of banks, an issue often examined by the Yale school.⁴⁰

In 1962 Duesenberry remarked that 'the Keynes' of flow-of-funds analysis had not yet made an appearance.⁴¹ The flow of funds was an accounting system, but there was no complete body of behavioural equations that could use the statistics. In the following years Tobin presented stock-flow models of the financial sector and its interactions with the real sector.⁴² In particular, Tobin (1969) centred his analysis on the capital account of the institutional sectors. An economy's relationships are summarised in a table that is the same as the normal financial accounts table, with

⁴⁰ Hester and Tobin (1967a), (1967b) and (1967c) collected the school's most important contributions in three volumes, published by the Cowles Foundation.

⁴¹ 'The national income analysis had Keynes...[but] the Keynes of flow-of-funds analysis has not yet revealed himself', Duesenberry (1962).

⁴² As Buiter (2003) noted, 'Tobin's mistrust of the representative agent approach and his relaxed attitude towards micro foundations are consistent with his decision to pursue the empirical implementation of complete systems of portfolio balance and flow-of-funds models using asset demand specifications that were eclectic or ad-hoc as regards the selection of arguments.'

different sectors appearing in the columns and financial instruments in the rows. Tobin stressed that the financial sector and the real sector are interdependent. Initially, the real variables and the stocks of financial assets are assumed to be exogenous and determine the financial instruments that each sector wishes to hold. According to the logic of a general economic equilibrium model, the financial inputs to the real sector must have the same values as the initial real inputs to the financial sector.

If we turn now to the use of financial accounts in econometric models and financial forecasts, we may distinguish between four approaches. The first sought to build tables of the financial sector of the economy which were sometimes incorporated in the large macro-econometric models.⁴³ This research field was boosted by the paper by Brainard and Tobin (1968); they presented a scheme of the financial sector in which the flows, stocks and yields of financial assets were determined, the policy variables or real aggregates were assumed to be exogenous.⁴⁴

A second line of research, mainly undertaken by central banks, used financial accounts to predict future flows of funds, and savings and investments of the various sectors were assumed to be exogenous; the flows of financial assets and liabilities of households, enterprises, general government and the rest of the world were estimated. One aspect that differentiated between national experiences was the form of the feedback from the financial sector to the real sector. In the forecasts, there was a consistent behaviour of the various sectors.⁴⁵ The forecasts were used in the programming of financial flows which many industrialised countries, including France and Italy, attempted with varying degrees of success.

A third category of models stressed the connection between sources and corresponding uses of funds. An economic system can be summarised in input-output tables, taking a certain financial instrument as input for the production of a given output. The amount of each input required to produce one unit of output is a fixed technical coefficient of the system. Richard Stone was probably the most prolific builder of such models: based on the idea that in an economy stable relations exist between financial liabilities, on the one hand, and financial and real assets on the other, in terms of both stocks and flows (see Stone 1966). The main problem with this approach was that in advanced economies the technical coefficients were not fixed because innovation – principally in the methods of financing business and general government, and international activity – altered

⁴³ The applications were heterogeneous, a feature they shared with the Keynesian macroeconomic models (see Visco 2005).

⁴⁴ One Italian application is Modigliani and Cotula (1973). Regarding the incorporation in the Bank of Italy's econometric model see Fazio et al. (1970).

⁴⁵ Regarding the United States, '... we see more and more clearly one of the ways in which everything depends on everything else ... as Bob Solow once put it', Taylor (1963). As far as the United Kingdom is concerned, 'The whole is reasonable only if the parts are', Bank of England (1972).

the balance between financial assets and liabilities. This financial input-output approach was thought to be more promising in planned or developing economies, in which regulation and public intervention, not capital market developments, determined the allocation of financial flows.

The fourth group of models relates to forecasts of interest rates by private institutions in the United States and Canada. The models were based on flow-of-funds statistics and hypotheses about the future behaviour of the monetary authorities. By comparing the economic sectors' demand for finance with the supply of funds, it was possible to obtain estimates of interest rates.

The three surveys we draw on – Cohen (1972), Roe (1973) and Bain (1973) – list some 250 works on flow of funds which were published in the 20 or so years after Copeland. In the middle of the 1970s the interest in financial accounts waned, and no survey of recent developments is available. Factors such as the abandonment of Keynes's approach; the growing emphasis on the microeconomic foundations of macroeconomics; the difficulties encountered by macro-econometric models, including the assessment of the interactions between financial and real sectors; the justified disappearance of economic planning and programming of financial flows; the abandonment of administrative monetary policy controls and the growing role of prices in attaining market equilibrium, conversely to the quantities considered in the financial accounts; the unsuccessful empirical application of flow-of-funds models, partly because of collinearity of yields on financial instruments used as independent variables in the demand functions of financial assets (see Walsh 1981); the growing role of monetary and credit aggregates as tools for the conduct of monetary policy; the progressive focus of central banks on the objective of price stability, sometimes to the detriment of a general analysis of the financial system; and the difficulties of achieving international harmonisation of statistics, partly because the process of European integration stalled until the middle of the 1980s, are some of the causes of the decline in importance of financial accounts.

In recent years financial accounts have made a comeback as an important source of information for economic analysis. Eurostat has published annual financial account of the EU countries since 1995. Renewed interest was linked to the development of official statistics for the purposes of the European monetary union. The European Stability and Growth Pact introduced a specific form of budgetary surveillance, based on strict monitoring of the development of government deficit and debt and which was accompanied by plausibility and validation checks. In this context, the financial accounts of the government sector played a major role as the only analytical tool able to cross-check the simultaneous plausibility of the debt and deficit figures, often derived from different sources of data and by separate institutions. The reconciliation of deficit and debt through the financial account (or 'stock-flow reconciliation') is one part of the official statistical reporting foreseen by the European Treaty (Excessive deficit procedure notification).

The European Central Bank (ECB) has collected quarterly financial accounts from euro-area national central banks since the end of the 1990s and has published quarterly euro-area financial accounts since 2007. The ECB looks at financial

accounts as a cross-checking between the two pillars of monetary policy strategy, i. e. as a way to link economic and monetary analysis (Papademos and Stark 2010). Projections of financial assets and liabilities for the euro area are similar in scope and methodology to the central banks' exercises of the 1960s and the 1970s we discussed earlier. Since 2007 the ECB has also commented every quarter on the integrated euro-area accounts: they provide consistent information on the income, spending, financing and portfolio decisions of the sectors of the economy.

The financial crisis shed new light on the importance of monitoring financial flows and stocks not only for the conduct of monetary policy but also to try to ensure financial stability (see Palumbo and Parker 2009; Be Duc and Le Breton 2009; Gonzalez-Paramo 2009). Financial stability or soundness indicators are normally collected and commented using the financial accounts. The European Commission is devoting attention not only to public debt but also to private debt of households and firms in evaluating economies' performance.

The history of ideas is a history of the sudden vanishing of lines of research that later resurface in a new form, like underground rivers. The recent revival of interest in financial accounts is due not so much to theoretical developments as to a new acknowledgement of their usefulness. Efforts to revamp the financial accounts have been made by Eurostat, national statistical institutes, the Eurosystem, other national central banks including the Federal Reserve Board and the Bank of Japan, and the OECD. It is a confirmation of the role that institutions play in the history of science, without losing sight of the relevance of the theoretical approach. Indeed, one of our aims in these pages has been to recall the great economists on whose shoulders rests the present-day work on financial accounts.

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