Götz Rohwer | Andreas Behr

Financial Capital. Data and Models

Dr. Götz Rohwer ist Professor (em.) für Statistik
an der Ruhr-Universität Bochum.

Dr. Andreas Behr ist Professor für Statistik
an der Universität Duisburg-Essen.

Götz Rohwer, Andreas Behr

Financial Capital.
Data and Models

Preface

This book has two goals. One is to provide a basic understanding of financial capital defined as consisting of contracts which, with some probability, provide a monetary profit. The definition is consistent with a distinction made between money and financial capital. We consider debt and saving contracts, stock and investment fund shares, and some forms of derivatives. The most basic and important form of financial capital consists of debt contracts purchased by banks and paid with self-generated money. This insight contradicts the still widespread belief in the loanable funds theory, which assumes that banks lend out previously received deposits. It also requires to distinguish between two money circuits: one originating from the central bank, and another one originating from private banks.

In order to illustrate the discussion of different forms of financial capital, we mostly use data from the euro area. This allows us to refer to a largely consistent body of data. To support the discussion, we use simple models consisting of symbolic references to economic units and formally defined relationships. In contrast to econometric models aiming to establish empirical regularities, these models are intended to serve the discussion of mechanisms, which contribute to the working of financial capital. They also help show that most of these mechanisms can be described as zero-sum games. Understanding these models does not require specific mathematical or statistical knowledge.

A second goal of the book is to contribute to the discussion of the financialization of capitalist economies. We focus on one particularly significant aspect, namely, the growth of financial wealth—both money and financial capital—that greatly exceeds increases in the production of goods and services. Banks play a decisive role in this aspect of financialization because they are the creators of almost the entire money supply except for a small part of cash money. Furthermore, in the institutional framework that we consider, banks mediate government expenditures, allowing them—indirectly—to purchase government bonds with their own deposit money. This con-

tributes significantly to making government expenditures exceeding receipts from taxes a driving force of financialization.

In order to discuss sources of the expansion of financial wealth, we use a model that basically consists in a macroeconomic accounting framework. Definitions of macroeconomic aggregates are, however, derived from references to individual economic units. This allows us to use the same framework also for a discussion of mechanisms which contribute to the huge inequality in the distribution of financial wealth.

Contents

1 Introduction

This chapter explains our understanding of some core concepts and then introduces notations, which are used in subsequent chapters to formulate models.

1.1 Markets, money, financial capital

Markets. We think of markets as institutions, meaning, organized environments in which actors (representing economic units) communicate and decide about transactions. Markets exist in many different forms. Most often, they are organized by enterprises as environments in which they can sell products or, more generally, offer transactions serving their profits. We distinguish between: markets for goods and services, including financial services, and financial markets where actors can sell and buy financial products which we define as contracts entailing, with some probability, a future monetary gain and thereby can be considered as capital. In both cases there is a basic asymmetry: only enterprises can create and extend markets, whereas customers can only visit already existing markets.

Money. Common understandings of money highlight three functions:

1) Money serves as a "means of payment" for the settlement of transactions.

2) Money serves as a "measure of value" that can be used to specify prices at which things might be or have been bought/sold for. The phrase "measure of value" is, however, easily misleading because it suggests an analogy with scales used for measurements. Yet money cannot be used to measure something and there is no measurement procedure that allows one to determine prices.

3) Money serves as a "storage medium of value", which means that a person who owns money can wait for some time before spending the money. The idea that something is "stored" relates to purchasing power, which is not a property of money but depends on prices and what a person wants to buy.

The lack of clarity in thinking of money as a "storage medium" is evident in definitions of a money supply. Relying on the idea that money is a means of payment, the public money supply only consists of peoples' cash and their deposit money in bank accounts. Instead, following the idea that a "value of money" can be stored, leads to a much broader definition, e.g., that: "Money is the stock of assets that can be readily used to make transactions." (Mankiw 2017, p. 80) The idea that anything that can be exchanged into money within a short period represents money obscures a basic difference between money and capital.

Money and capital. In this text, we systematically distinguish between money and capital. Before it is spent, the usage of money is undetermined. So it does not "have a value" but only purchasing power in regard to possible uses. Some of these uses consist in spending money on buying capital or something that can be transformed into capital. As a general definition we state: something is capital if, and insofar as, it is intended to serve generating a monetary profit.[1]

Financial capital. We define financial capital as capital, which exists in the form of contracts providing, with some probability, a monetary profit. Different from Hilferding's notion of Finanzkapital (1910), we do not presuppose a specific constellation of economic institutions. We distinguish between the following forms:

- saving contracts (including term deposits). A unit (most often a household) buys a saving contract from a bank or insurance company and thereby acquires financial capital.

- bank loans. A unit sells to a bank a debt contract and by buying this contract the bank acquires financial capital.

- bonds emitted by firms or state institutions become financial capital owned by units buying the bonds.

- stocks which can be bought and sold on stock markets (both inside

---

[1]In order to illustrate this view, Karl Marx (1990, p. 126) cited the then famous bishop Butler: "The value of a thing is just as much as it will bring."

and outside of a stock exchange). Stocks represent financial capital in the form of company shares.

- shares of investment funds.

- derivatives.

An important similarity between the different forms of financial capital is that they can be bought and (not always but very often) also sold on markets. The development of financial capital, therefore, makes possible a specific kind of investment, which consists in buying something that already is capital (and need not be transformed into capital by entrepreneurial activities).

1.2   Notations for models

To support our discussion we are using, in several places, simple models consisting of symbolic references to economic units and formally defined relationships. They mainly serve the purpose of representing economic mechanisms which are not immediately conceivable and to make the assumptions of our arguments explicit. The present section explains some basic notations; additional notations will be introduced when needed.

Economic units. We distinguish between three kinds of units:

1) households. In the present text this always means private households and non-for-profit organizations.

2) firms, which: employ wage labor in order to receive revenues by selling goods, services or financial products; use financial capital in order to receive gains; organize investment funds accumulating financial capital for share holders.

3) state institutions serving politically defined purposes. In contrast to firms, which by definition intend to make profits, the activities of state institutions depend on political decisions.[2] They also depend on political decisions regarding public tasks organized by

---

[2]Of course, these decisions can also serve, partly or even primarily, the interest of firms. See, e.g., Rügemer (2008), Häring (2010: Chap. 6).

U_i refers to a unit indexed by i

$\mathcal{U}$ index set of all units

$\mathcal{F}$ index set of firms

$\mathcal{H}$ index set of households

$\mathcal{S}$ index set of state institutions

$\mathcal{B}$ index set of banks

$\mathcal{N}$ index set of nonbanks (households, firms without banks)

$\mathcal{F}\backslash\mathcal{B}$ index set of firms without banks

τ refers to a point in time

t refers to a period of time

$t_{ij,\tau}$ payment from U_i to U_j at time τ

$t_{ij,t}$ sum of payments from U_i to U_j in period t

state institutions or private enterprises. However, in order to get a clear distinction, we also consider enterprises owned partly or completely by state institutions as belonging to the category of firms.

We use the symbol U_i to refer to units, where the index i identifies the unit. Index sets serve to distinguish between groups of units. $\mathcal{U}$ denotes the set of indices of all units, and consists of three subsets: $\mathcal{H}$ (households), $\mathcal{F}$ (firms) and $\mathcal{S}$ (state institutions). We also use $\mathcal{B}$ for banks (considered as a subset of $\mathcal{F}$) and $\mathcal{N}$ for households and firms other than banks, briefly referred to as "nonbanks".

The time framework. We assume a sequence of periods denoted by $t = 0, 1, 2, 3, \ldots$ Durations are, e.g., days or months, and depend on the purpose of a model. A large number of transactions, occurring at specific points in time, can take place during a period. For referring to points in time we use the symbol τ. The beginning and the end of a period will be considered as points in time.

**Transactions and money.** Transactions take place at specific points in time. As a generic notation we use:

$t_{ij,\tau}$ meaning the amount of payment given by unit U_i to unit U_j at the point in time τ.

The set of transactions, which have taken place during a period, can be described as a flow. As a generic notation we use:

$$t_{ij,t} = \sum_{\tau \in t} t_{ij,\tau}$$

The notation "$\tau \in t$" means that the summation covers all points in time within the period t at which transactions have taken place.

Plots of time series. Throughout the text we use numerous plots of time series, where the time axis (abscissa) is a sequence of years. For example:

2000   2005   2010   2015   2020
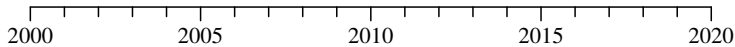
Labels indicate the beginning of a year. Monthly data is therefore placed at $y + m/12$, whereas yearly data (both flows and stocks at the end of a year) at $y + 1$.