Where did modern banking theory come from?

Microeconomics of banking from 1900 to 1970

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4/29/2014

Executive Summary

Why do financial intermediaries exist and what role do they assume in the economy? These questions have occupied a vast range of literature over the last century and are still a prominent field of study. In a world à la Arrow/Debreu, with a complete and frictionless market, there would be no need for financial intermediaries since investors and borrowers are able to achieve efficient risk allocation on their own. Therefore, one needs to modify the assumptions underlying this traditional framework to presume the existence of frictions capable of justifying the existence of these financial institutions. While these frictions were justified in the earlier theory of financial intermediation by the presence of transaction costs, the modern theory of banking assumes that frictions arise from information asymmetries.

The last quarter of the twentieth century experienced a spectacular boom in the theory of banking. Stimulated by the work of George Akerlof on asymmetric information, several authors started to analyze banking and its economic relevance. This contemporary theory of banking has overturned the traditional view of the banking sector. Instead of studying these financial institutions through monetary aspects and their macroeconomic consequences, the modeling of banking behavior started to be studied at a micro level. The microeconomic theory of banking that emerged with the new paradigm (the asymmetric information paradigm) has proved to be a powerful tool in diverse economic areas. In particular, it has been used to model financial intermediaries' behavior, offering a new interpretation of their role in the economy. However, until recently, less attention was given to the literature underlying the development of these banking theories. The *modern banking theory* is often directly related to the works published by Douglas Diamond and a rigorous investigation of the analytical tools and methodologies applied in these models is often not available.

This work provides a guide of this new microeconomic theory of banking, focusing on the main issues and providing the necessary tools to understand how these approaches have been modeled. Our aim is not just to focus on the analytical background of the microeconomic models, but also to consider a macroeconomic perspective of their development, highlighting the most relevant historical episodes related to these theories. Our contribution shall therefore identify the ideas and approaches that can be regarded as milestones on the way to *modern banking theory.*

We restrict our research to the years between 1900 and 1970, since we believe that this period shows the greatest historical and economic relevance for our analysis. Moreover, in

order to allow for a structural overview of the banking theories, this work focuses on three main subjects. In a first step, this analysis is concerned with the origin of the financial intermediation literature, covering the historical and macroeconomic aspects with regards to the study of financial intermediation, before we turn to the formal explanation about the fact that banks are useless in the Arrow/Debreu world. Furthermore, we approach an analytical investigation of the microeconomic banking models, first by studying the *bank/lender* relation, and second the *bank/borrow* relation. While the first relation accounts for the analysis of the consumption and savings behavior of individuals interacting with a financial intermediary, the *bank/borrow* relation explores the activity of a financial intermediary acting between entrepreneurs and capital suppliers.

Through this work, we were able to observe that many of the tools underlying these contemporary banking theories go back to the first three quarter of the twentieth century. We show that the microeconomics of banking is not only related to the study of the banking behavior at a micro level, but also to macroeconomic monetary studies. While Fisher (1933) played a prominent role in investigating the interaction between the financial and real sector, Friedman and Shaw further promoted the relevance of *money* and *financial intermediation* in the economy.

The study of the *bank/lender* relation highlights that the individual's *maximization problem* stated in Bryant's (1980) and Diamond and Dybvig's (1983) analysis was built on the theory of the *pure loan consumption models.* The Overlapping Generation (OG) model, first introduced by Samuelson (1958), experienced diverse adaptations over the years, leading to the final version suggested in contemporary theories. Originally, the simplest version of OG models stands for the consumption path of an individual over time. However, the introduction of a *financial intermediary, money, bonds* and *uncertainty* into the OG model enables it to replicate a more complex and realistic financial system. Moreover, the study of the *intermediation's problem* emphasizes that the existence of financial intermediaries is explained by the theory of *indivisibility of assets*. Further, we also show that the reason why modern banking theorists can apply *neoclassic* theory of firms to financial institutions is because they account for the risk of the intermediaries' industry. Finally, we were able to trace analogies between earlier models of *reserve management* and Diamond and Dybvig's analysis.

The analysis of the *bank/borrow* relation identifies diverse works that contributed to the development of the *information imperfections* theory. Furthermore, we highlight two main instances of literature related to Diamond's (1984) *delegated monitoring* model. On the one

hand, the *agency/ principal* theory is seen as a key element of Diamond`s work. On the other hand, the *diversification* effect that banks can achieve in a portfolio of risky projects is also of great importance when justifying banks' role as delegated monitor.

By highlighting the analytical frameworks underlying microeconomic banking theories, we question some of the models' assumptions and statements. First, we believe that a world of *complete markets* and *decentralized decision making,* cannot further be supported. Second, due to the current evolution of informational technology, the theory of information asymmetries might lose part of its relevance. Finally, the current vulnerability and strong regulation attributed to the banking sector contributes to a debatable acceptance of the validity of the diversification power of a bank's portfolio as well as bank's role as monitor.