CHAPTER 7

The Fallacy of the Reification of Idealization in Economic Research

Adam Czerniak

Abstract

The reification of idealization, i.e. using sophisticated formalized models without any proper concretization, is an immanent feature of economic as a science. When its existence is ignored it can cause large damage to economic research as well as to real economy through production of bad guidelines for policy makers. In this paper I argue that this flaw of economic methodology contributed to the recent global financial crisis. I show the consequences of applying econometric models such as Value-at-Risk (VaR) to account for systematic risk and market meltdowns. Furthermore I claim that large scale idealized econometric models like DSGE are usually not suitable to identify economic imbalances and analyze the effects of monetary policy on macroeconomic stability.

1 Financial Models and Market Crashes

Before the 1950’s the dominant approach in financial economics was old-fashioned institutional analysis (MacKenzie 2006). At that time the use of mathematical models was limited mainly to classical macroeconomics (Mirowski 1988; Birner 1994). In finance, the methodological revolution started in the late 1950’s and transformed this science into a theoretical, analytical and increasingly mathematical branch of economics. The shift had three main strands: (1) the investigations of Markovitz on the asset portfolio returns and risk; (2) the research of Modigliani and Miller on the dependence of capital structure and companies values; (3) the propositions formulated by Eugene Fama on stock-price movements. Those pioneers of modern finance introduced basic mathematical models and lay down methodological fundamentals for the modern theory of finance. For the purpose of this article I will skip a precise description of their research and concentrate purely on the description of the methodology that they used.

1.1 The Methodological Foundations of Modern Financial Models

Markovitz (1952) took up the problem of optimal asset portfolio choice. He stressed that, for an investor, it is more important to know the expected value
of an asset portfolio then the expected value of a given stock, since the probability distributions of different stocks are usually interdependent. Furthermore he argued that the optimal portfolio choice is not only about expected value but also about risk, which Markovitz defined as the variability of expected portfolio returns (MacKenzie 2006). Hence he came up with a formal model of asset portfolio choice in which he combined the risk and return of an asset portfolio with the investors attitude towards risk. The two basic implicit assumptions of this approach were: (1) there exist a finite and constant variance of asset price fluctuations; (2) there exists a constant (in a given period of time) relationship between the distributions of asset returns. Both assumptions can be seen as intuitively true or possibly true and hence they have not been widely discussed in the works of Markovitz and his followers. However, as statistical evidence suggest (see below), both assumptions are not met in financial markets. So – from a methodological point of view (Nowak 2000) – these assumptions are pure idealizing conditions and are not merely used for technical idealization purposes.

The works of Markovitz are also important for the development of financial research for a second reason. He was one of the first to use pure matrix algebra to solve problems of economic origin. He used it for the computation of correlations between changes in asset prices, introducing a whole new method of analyzing interdependence of asset returns. As Milton Friedman – a member of Markovitz PhD thesis defense commission – stated: “What he did was a mathematical exercise, not an exercise in economics” (MacKenzie 2006, p. 50).

Modigliani and Miller (1958) analyzed company-value determinants as if they were functioning in a "perfect capital market". This was a methodological breakthrough. Years before, a vast majority of financial academics concentrated on real-life case studies, in which they described the dependence of valuation, returns, dividends and other financial measures of companies' efficiency on institutional and economic factors. Modigliani and Miller proposed to use the theoretical and highly idealized concept of a "perfect capital market", i.e. a situation in which there are no transaction costs sensu largo – taxes, provisions, liquidity premia, bankruptcy costs etc. (Cools et al. 1994). Such an approach was directly borrowed from mainstream economics, where idealized-market concepts and models were widely used in sensitivity analysis since Alfred Marshall published his textbook “Principle of Economics”.

Presumably, the most influential concept in the theory of finance, that also influenced mainstream macroeconomics, was the efficient market hypothesis formulated by Eugene Fama (1970). It was based on research that could be traced back as far as to the works of Bachelier from 1900 and Wiener from 1923 (MacKenzie 2006). Both of them stated that stock prices move in line with