1. Introduction

1.1 A NEW TRIAD

This book analyses a triad of topics – aggregate demand, inequality and instability – that are usually considered separately in the literature. And what is worse, they seem to belong to different theoretical paradigms that apparently are difficult to reconcile.

Aggregate demand is the most important driver in the Keynesian tradition. It has been mainly studied within a short-run perspective, even though attempts to extend the temporal horizon have been made. Inequality is usually considered as an empirical subject associated with personal distribution of income and wealth, and it is normally studied within a welfare perspective (see Atkinson, 2015). Finally, instability is seen as a mathematical weakness of the formal models, for instance the dynamic stochastic general equilibrium (DSGE) model, but this is true for all the contributions based upon the rational expectation hypothesis, which deal with the so-called saddle point stability. Since instability can be excluded by convenient assumptions (see Azariadis, 1993), it follows that it is rather a ‘curiosum’ overshadowed by stable dynamical processes centred around steady state values and driven by exogenous stochastic shocks.

It is challenging to try to link these aspects within a unified macroeconomic framework. The attempt may be considered ambitious, yet it is worth pursuing. In fact, it seems to catch the zeitgeist prevailing in the world economy in the ‘new millennium’ more than the traditional triad – aggregate demand, income distribution and growth – which has been extensively studied by classical, Keynesian and post-Keynesian economists (see, e.g., Taylor, 2004; Pasinetti, 2007).

Inequality is a broader concept than income distribution; in fact, wealth must also be inserted into the picture. At the same time, instability refers to more complex dynamic patterns than those envisaged in the growth models which usually refer to steady state situations. Even though the present analysis does not cover fundamental problems such as the long-run trend of inequality, the relationships between inequality and productivity, or the links between ethics and inequality (see Sen, 2010), that remain
in the background, important analytical, methodological and empirical questions are raised so as to come closer to the research frontier.

1.2 A MEDIUM-RUN PERSPECTIVE

In order to study the new triad a different perspective is needed from that prevailing in the literature. In fact, a medium-run model capable of dealing with both economic fluctuations in their full evolution and bubble experiences is required (see also Toporowski, 2015). The term ‘fluctuations’ has been used instead of ‘business cycles’ in order to include those events that are characterized by longer duration and irregular volatility. Furthermore, it is also necessary to consider processes of growth outside steady state conditions, where the nature of the instability processes and the forces designed to thwart them can be so complex that it becomes difficult to separate cycles from trends.

The dichotomy of the short–long-run period is very popular in economics; it serves different analytical and practical purposes, and goes back to Marshall (see Hicks, 1965, 1989). Usually, macroeconomics is confined to the short run, following Keynes’s original suggestion. Normally, in the short run, the dynamics are exogenous, while wages and prices are often assumed to be predetermined. In contrast, the long run is at the centre of growth theory, where both prices and quantities adjust. In the middle, there is the medium run, which according to Solow (2000) is almost never considered (see also Blanchard, 2008). Minsky (1982) also insisted on the necessity of focusing on the analysis on this interval of time, generating ‘intermediate’ models. In this intermediate context there are five methodological tenets to be considered. The first is that it is unsatisfactory to suppose that dynamics are driven only by exogenous forces. Some kind of endogenous explanation must be put forward. The second is that markets are not necessarily in equilibrium; an assumption seldom questioned in the present state of macroeconomics. On the contrary, disequilibrium can be a permanent feature of the markets. Within this disequilibrium process, agents can modify both prices and quantities. It follows – and this is the third aspect – that the presence of some form of imperfect competition must be assumed (see Fazzari et al., 1998). Fourthly, the presence of heterogeneity, which is at the root of the inequality process, can make the process of disequilibrium very complex owing to the interaction between the various agents and the different markets, both real and financial. Finally, in this environment, uncertainty may become a dominant feature (see Vercelli, 2015). Agents have limited information and they are bounded-rational. In such a perspective, a learning attitude is more
in keeping with a situation of disequilibrium. This learning process contributes to strengthen the role of endogenous dynamics fed by the forces reflecting the fundamentals.

1.3 FACTS IN SEARCH OF THEORIES

These analytical and methodological tenets can help to better deal with the economic experience of the new millennium that seems to be characterized more by bubbles than by canonical business cycles. In particular, three kinds of instabilities and bubbles have occurred:

1. The subprime bubble that developed especially in the United States (US), but also concerned other advanced countries. This turbulence has affected the housing market, the financial markets and consumer spending.
2. The sovereign debt crisis that was mainly centred in the euro-zone.
3. The raw material turbulence that is affecting mostly the developing countries, but is also impacting on world trade and growth.

This last experience is beyond the objectives of the present book, which will mainly concentrate on case (1), even though some references to case (2) will be put forward.

These episodes have generated stylized facts that are different from those identified by Kaldor (1961) for the golden age of capitalism, and lately extended by Jones and Romer (2009). Four of them are worth stressing:

1. an increasing capital share (see Karabarbounis and Neiman, 2014; Lawrence, 2015);
2. an augmenting wealth–output ratio (see Piketty, 2014);
3. a worsening inequality process (see Saez and Zucman, 2014; Gabai et al., 2015);
4. a volatile rate of growth.

These stylized facts are incompatible with the canonical ones. In order to reconcile them, it is necessary to think of these patterns as either temporary, or representing a transition to new equilibria (the so-called ‘traverse’, to use Hicks’s term). Or, they are simply manifestations of a period of turbulence that is not necessarily a short-run phenomenon and that indicates the existence of a new environment.

In this different context, there are some fundamental questions that these episodes and these stylized facts raise. The answers to them define the
1.4 THE MAIN QUESTIONS

If the Great Recession is considered in a unitary way, from its inception to its aftermath, five questions seem to be particularly important. One should ask:

1. Why has the role of aggregate demand been greater and longer-lasting with respect to previous experiences?
2. How have the instability processes generated bubbles in housing and equities (to quote the most important cases)?
3. How have these processes favoured inequality?
4. What has been the role of financial markets?
5. What have been the feedbacks from inequality to instability?

In order to answer these questions, some analytical principles are put forward. Firstly, it is fundamentally the nature of the growth model that it allows the possibility of instability and hence defines the area of impact on inequality. Secondly, inequality is studied in a macro perspective without referring directly to the personal income distribution of income or wealth. On the contrary, the process of inequality can be inferred by the particular conditions characterizing the wealth dynamics, as suggested by Piketty (2014).

Thirdly, monetary and financial policies can have side-effects on inequality. Finally, even though the broad theme of the relationships between inequality and productivity is beyond the scope of the present book, it goes without saying that some feedbacks between inequality, instability and growth will have to be considered. They differ not only according to the nature of the model used, but also depending on the values of the parameters used and the policy options pursued.

These questions and these principles challenge both the mainstream and heterodox literature. In fact, while the former insists on the stability properties of the model so that instability is attributed only to exogenous shocks, the latter tends to underestimate the working of thwarting forces, as suggested by Ferri and Minsky (1992).

1.5 A BIRD’S EYE VIEW OF THE LITERATURE

To review the literature on these topics is a difficult undertaking. An alternative strategy, however, is followed. It is based on two steps. Firstly, the authors
particularly considered in the book are presented in a synoptic way in order to favour comparison and to sketch the route to be followed. Secondly, other contributions will be cited in the course of the various chapters.

To this purpose, Table 1.1 contains a classification based upon the main analytical, methodological and empirical aspects previously mentioned. They belong to three different paradigms.

Table 1.1 is self-explanatory and serves to better understand the strategy of my approach, which is based on the path I C, II B and III A and B.

Differently from Piketty (2014), the emphasis is on both the relationship between growth and inequality and the feedback from the latter to the former. The reason is that the model of growth that is considered is totally different. However, like Piketty, the macro approach to inequality is followed. Stiglitz (2015d) suggests the same strategy. However, like Piketty, he refers to a supply-side model, where the impact of monetary policy is examined.

Finally, the extension of Cynamon and Fazzari (2016) to a dynamic environment completes the analysis. In fact, these phenomena take place within a dynamic monetary economy of production, where real aspects referred to both demand and supply have always to interact with financial disequilibria, as Minsky (1975, 1982, 1986) has stressed many a time. In certain circumstances, they assume a pivotal role.

### 1.6 AGGREGATE DEMAND, INVESTMENT AND INSTABILITY

The interaction between aggregate demand and supply, which is capable of generating complex dynamics, is studied within a monetary economy of production, to use Keynes’s definition. This interaction, although a property of the whole model, is mainly carried out by the dual role of investment, an essential feature of the ‘workhorse’ models considered in the book. In fact, investment is both a component of aggregate demand...
and a source of capacity growth. Since a monetary economy of production is postulated, investment is assumed to be driven by the difference between expected rate of profits and the real rate of interest. In equilibrium, the no-arbitrage condition must hold (if the risk premium is zero), but in a disequilibrium process the user cost – that is, the difference between the two above concepts – is not null. This mechanism is one of the drivers of aggregate demand, along with the more traditional ones. In a parallel way, investment increases capacity and so stimulates the potential growth rate. The interaction between these two forces is at the root of the instability process, without necessarily degenerating into runaway situations.

There are two more aspects that are worth considering. The first is that investment is also a catalyst of technical change, which, however, is outside the scope of this book. The second aspect is that the introduction of wealth in this context can have different impacts on inequality depending on the nature of the model, the values of the parameters and the policy effectively pursued. The same elements govern the feedback from inequality to instability.

1.7 INSTABILITY AND COMPLEX DYNAMICS

One of the reasons why growth models insist on steady state solutions is that they assume stability. Even though instability processes can also be envisaged within a supply perspective (see Stiglitz, 2015d), it is true that the introduction of demand increases their possibility, as Harrod (1939) taught some time ago.

The abandonment of the Harrod’s instability in the literature is due to many reasons that cannot be discussed at this stage of the analysis. One reason, however, can be mentioned: the empirical absence of runaway situations. Since these extreme dynamic phenomena cannot be met in practice, it is assumed that the only alternative is a stable equilibrium, possibly disturbed by random shocks.

As Hicks (1950) and Minsky (1982) have shown, this is not the only alternative. In fact the unstable dynamics of the system can be constrained. The nature and the working of these thwarting forces (see Ferri and Minsky, 1992) can be very different and have changed over time (see Ferri, 2011). Initially, they took the form of ceilings and floors to constrain dynamics. Later on, these physical barriers assumed a broader meaning to cover the possibility of changes in policies and institutions. Finally, the advent of chaos theory and the possibility of simulating complex nonlinear systems have shown how to generate processes of acceleration or deceleration without necessarily inducing runaway situations. In these cases, the system remains bounded and so the empirical objection is overcome.
The study of instability processes becomes strategic. In fact, they can impact on the process of growth itself, so blurring the traditional distinction between cycle (usually short-run and demand-driven) and trend (usually long-run and supply-determined). Furthermore, they can impact on the process of inequality.

1.8 INSTABILITY AND INEQUALITY

Within this perspective, also the relationship between instability and inequality may be analysed in a deeper way (see also Galbraith, 2012). As will be shown later on, the dynamics of inequality in a medium-run perspective are clearly sensitive to the presence of instability processes. It is enough to consider what happened in the Great Recession. In this book the relationship between instability and inequality is studied within a particular set of models capable of generating instability, on the one hand, and feeding inequality, on the other. Two general cases are put forward.

The first refers to the presence of capital gains and losses that typically occur in a turbulent environment. These refer to land, housing or financial markets, and are fed by a monetary policy operating through changes in the rate of interest. Two aspects are worth stressing. The first is that since wealth is more concentrated than income, it follows that instability can feed inequality. This is the basis of the macro inference of inequality. The second aspect is that the feedback from inequality to instability is not straightforward. In fact, it depends on the model, the kind of wealth changes considered, the values of the parameters and the policy option considered.

The second case refers to the presence of liquidity-constrained consumers within a particular monetary and financial regime. In this case, the presence of debt can increase inequality and the feedbacks can be destabilizing, as the experience of the Great Recession seems to indicate.

1.9 INEQUALITY AND THE FINANCIAL INSTABILITY HYPOTHESIS

The role of financial aspects in the Great Recession is well documented (see, e.g., Reinhart and Rogoff, 2011; Hall, 2011; Cynamon et al., 2013). What is important to stress at this stage of the analysis is the relationship of monetary and financial policy with inequality. As has already been mentioned, this is the topic deepened by Cynamon and Fazzari (2016).

A more detailed analysis will be carried out later on. However, the following aspects are worth stressing. The first is that the process of instability
characterizing the particular process of growth has fed a process of rising inequality in the personal distribution of income. This divergence – and this is the second aspect to be underlined – has occurred largely due to slower income growth for the bottom 95 per cent of population. Thirdly, instead of cutting consumption, these people increased their debt-income ratio and this contributed to overheat the economy. The fourth aspect refers to the changes in the credit market that allowed these debts to increase. A variety of technological, institutional and policy changes increased the credit flow to the US households, especially mortgage lending. In fact, according to Fazzari and Greenberg (2015, p. 56):

Innovations in both information technology and the ability to share electronic information made possible the individual score. The standardized measure improved household access to credit. It also facilitated securitization of household loans because they could now be viewed as a generic commodity rather than the outcome of personal relationship between borrower and lender.

The increasing values of housing also increased the value of the collateral and this implied that the credit lines had a lower cost, also because of the tax benefit. Furthermore, this stimulated the so-called second mortgages that favoured non-housing expenditures. It was easy for homeowners to refinance their mortgages, and that became a regular habit, so contributing to increase the debt ratio.

This interaction between demand and supply in the credit markets has generated a financial instability \textit{à la} Minsky, that is, a spillover from the financial market to the real one. Synthetically, the financial instability hypothesis (FIH) is characterized in the following way. Firstly, there are endogenous forces that transform an environment of stability into an unstable one. Secondly, these forces, even though originally applied to investment, can easily be referred to consumers, where inequality is an important driver. Thirdly, the ensuing deleveraging helps in explaining the presence of headwind to growth in the aftermath of the Great Recession. These points are worth considering because they have deep analytical implications that go beyond the episode of the Great Recession. The challenge is to put them into a dynamic framework.

1.10 THE STRUCTURE OF THE BOOK

This book is composed of five parts. Part I deals with the basic concepts. Along with a review of the most recent literature, it considers some preliminary notions concerning measurement problems. Finally, the link
between inequality and aggregate demand in a static context in discussed in the presence of a wealth effect.

Part II analyses the relationship between aggregate demand, growth and instability. It starts by considering Harrod’s contribution and then analyses the various solutions offered to check instability. Chapter 6 extends the analysis. It introduces public debt, and this is important to understand the distinction between private wealth and private capital. It also analyses the role of fiscal policy, which is usually neglected.

Chapter 7 presents different ‘workhorse’ models based upon the strategic role of aggregate demand and investment, along with different ways of introducing wealth into the analysis. The possibility of obtaining instability without runaway situations is verified.

Part III deals with the impact of different changes in wealth on the dynamics of the system. Personal wealth, for instance, can be represented by public debt, land or equities. Different combinations can generate different instability processes and therefore different kind of inequalities that feed back on the dynamics of the system. In particular, Chapter 8 considers the case of the capitalization of (fixed) rents, Chapter 9 refers to the housing bubble and considers a two-sector model, and Chapter 10 deals with capital gains in the financial markets.

Part IV analyses the relationship between inequality, finance and instability. Different analytical models are also presented, where finance impacts on both inequality and instability in an endogenous way (see Chapter 11). Furthermore, Minsky’s financial instability hypothesis is considered within a regime-switching model in Chapter 12.

Part V concludes. It includes a synthesis of the results (Chapter 13) and looks at the challenges that remain to be faced (Chapter 14).

NOTES

1. See also Grossman et al. (2016) who have extended the analysis in order to consider the role of endogenous human capital.
2. The relationship between Keynes’s definition and recent developments is studied in Wray (2012).
3. Stiglitz stresses the role that heterogeneous capital goods in the absence of a full set of future markets extending into an infinite future (or without perfect foresight extending far into the future) can play in generating dynamic instability.