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Rediscovering Fiscal Policy Through Minskyan Eyes

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Abstract

Recent developments in macroeconomic policy, both in terms of theory and practice, have elevated monetary policy while fiscal policy has been downgraded. The latter is rarely mentioned in policy discussion, apart from arguing to place limits on budget deficits and fiscal variables. This paper presents the opposite view of Hyman P. Minsky. Rejecting the orthodox assumptions of unbounded individual and collective rationality, Minsky places uncertainty and financial instability at the centre of his analysis. The limits of individual and collective rationality feed each other, generating deviation-amplifying mechanisms that make the economy unstable. The last one thus assumes a cyclical behaviour that drives it from the torrid summers of speculative booms to the gloomy winters of financial crises, debt deflations and deep depressions. Even if Minsky is generally considered as one of the main interpreters of Keynes, according to this work his economics is very different from Keynes's one in terms both of business cycles and of growth. In comparison with the Keynesian tradition, according to Minsky fiscal policy is even more important and effective. Government intervention is not only necessary to reach and maintain full employment; it is also indispensable to contain capitalism's instability and to avoid the disaster. The effect of fiscal policy is not only to underpin and stabilize aggregate demand, income and employment. It has also the task to protect the robustness of the financial system by stabilizing profits and by issuing government bonds. The opening up of the economy may increase its fragility, making fiscal policy even more important. The unprecedented growth of the domestic and international financial transactions, as well as the recent financial turmoil, confirm the validity of Minsky's insights and make his views on fiscal policy even more noteworthy and fruitful.

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1. Introduction

Drawing on *The General Theory*, of which he is one of the most famous and original interpreters, Hyman Minsky rejects the orthodox pillars of unbounded individual and collective rationality. In his view, the limits of collective and individual rationality feed each other, generating destabilizing deviation-amplifying mechanisms. As a consequence, the economy endogenously creates a cyclical behaviour. According to this contribution, Minsky's business cycles (while mirroring the same waves of optimism and pessimism envisaged by Keynes) are different from the ones described in chapter 22 of *The General Theory*. In terms of our perspective, Hyman Minsky may be considered as an author that has extended the economics of Keynes to a vibrant and euphoric economy, making it even more general and modern.

In comparison with the Keynesian tradition, Hyman Minsky's economics portrays fiscal policy as even more important and effective. Government intervention is not only necessary to reach and maintain full employment; it is also indispensable to contain capitalism's instability, avoiding financial crises followed by debt deflations and deep depressions. The effect of fiscal policy is not only to underpin and stabilize aggregate demand, income and employment. It can also protect the robustness of the financial system by stabilizing profits and by issuing government bonds.

In what follows, we begin in section 2 by considering the heterodox presuppositions of Minsky's analysis.¹ In section 3 we examine his 'financial instability hypothesis'. These sections prepare the analysis for the role that Minsky assigns to fiscal policy; section 4 considers fiscal policy in a closed economy, and section 5 extends the analysis to the open economy case. Section 6 examines the soundness of public finance in a Minskyian business cycle framework, before we turn our attention to the question of fiscal policy in terms of the evolution and prospects of capitalism. Finally, section 8 summarises and concludes.

2. The heterodox presuppositions of Minsky's economics

Over the last seventy years, the dominant macroeconomic theory has assumed ever new and more sophisticated facets. There seems to be, however, a continual thread in its evolution: the constant reference to General Equilibrium Theory (GET). It is thus this aspect that seems to qualify macroeconomic orthodoxy. Amongst other things,

standard GET is based on two fundamental pillars: (i) the assumption of unbounded individual rationality, according to which, at any given price vector, perfectly competitive agents are able to choose the quantities that maximise their target function and (ii) the assumption of unbounded collective rationality, according to which prices are able to lead to an instantaneous and generalized market clearing.

Seventy years ago, *The General Theory* rejected the perfect rationality assumptions. Firstly, in Keynes's world agents have a bounded rationality. The future, in particular, is totally unknown to them. Secondly, the equilibrium price vector may not exist. The existence of a positive interest rate level able to align full employment savings and investments is, for instance, not guaranteed. Moreover, even if the equilibrium price vector did exist, there would be no auctioneer that instantly leads prices to their equilibrium level.² The perfect rationality pillars, and with them GET, are thus totally unrealistic and have to be rejected. In short, this seems to be the essence of the Keynesian 'revolution'.

Revolutions, as we know, are usually followed by counter-revolutions. In the case under examination, the counter-revolution (the Neoclassical Synthesis) takes place immediately after the publication of *The General Theory*. In its course, which starts with Hicks (1937) and culminates with Patinkin (1956), the Synthesis ends up with recovering the GET as a benchmark. With this, GET is again proposed as a reliable approximation of reality. It is simply necessary to take into account that in the short-run some gears of the adjustment mechanism can jam, giving rise to deviations from general equilibrium. Specifically, the Synthesis believes that in the short-run nominal wages are rigid. In the presence of a recessionary shock, aggregate demand thus temporarily gains the faculty to contain economic activity below its full employment level.

Monetarism keeps adopting general equilibrium as a benchmark. This time, however, short-run deviations from general equilibrium become supply (rather than demand) phenomena. In addition, the maladjustment causing these deviations emanate from inflationary expectations in Friedman's Monetarism Mark 1 and from inter-temporal relative prices in Lucas's Monetarism Mark 2.³ In the latter case, unbounded

¹ See, also, Papadimitriou and Wray (1998).

² For a technical and illuminating critique of general equilibrium theory, see Velupillai 2005a and 2005b.

³ The definition of Monetarism Mark 1 and 2 is based on the fact that, in both cases, what determines economic fluctuations are the shocks concerning money supply. The main references are Friedman 1968 for Monetarism Mark 1 and Lucas and Rapping 1969, Lucas 1972 and Lucas 1973 for Monetarism Mark 2.

rationality takes the place of the auctioneer. Agents are now so clever and informed to find by themselves the equilibrium price vector. Except for unforeseeable random surprises, the system is in its general equilibrium. With the Real Business Cycle Theory, maladjustments disappear and shocks only determine general equilibrium fluctuations.⁴ With this, the rehabilitation of GET is complete.

Hyman Minsky's contributions cover the period 1954-1996 in which GET resurfaces, firstly as a benchmark and then as a direct representation of reality. Drawing on *The General Theory*, of which he is one of the most famous and original interpreters, Minsky (1975) rejects as unrealistic the unbounded rationality pillars. In Minsky's (op. cit.) view, the limits of collective and individual rationality feed each other, generating deviation-amplifying mechanisms that make the economy unstable.

Starting with the collective rationality, Minsky (1975, 1982a, 1986) radicalizes Keynes's arguments. He does not limit himself to reject the auctioneer (i.e. the omnipotence of the price mechanism) but banishes the concept of equilibrium itself. Hyman Minsky's economics is not unstable because it lacks the tendency to general (or any other) equilibrium. It is unstable because its structure and the qualitative characteristics of its dynamic behaviour autonomously evolve with the simple passing of time (Vercelli, 2001). It endogenously changes in the same way as seasons do, assuming a cyclical behaviour that drives it from the torrid summers of speculative booms to the gloomy winters of debt deflations and deep depressions.

Let us now come to the limits of individual rationality. Minsky's (1975, 1982a, 1986, 1996) world endogenously changes at a pace quicker than the one compatible with learning processes. Agents do not succeed in knowing the model and (above all) are conscious of this. To quote Minsky (1996): "The uncertainty that permeates the economics of Keynes and the economics of bounded rationality is due to the unsureness about the validity of the model that enters in the decision process" (p. 2). What matters is not only the expectation about the future, but also the confidence placed in it. Both of them are based on recent past and consequently end up with performing a deviation-amplifying role. As Minsky (1986) argues, "A history of success will tend to diminish the margins of safety that business and bankers require and will thus tend to be associated with increased investment; a history of failure will do the opposite" (p. 187). The limits of collective and individual rationality thus feed each other performing a deviation-amplifying role.

⁴ Contrary to Monetarism Mark 1 and 2, this time shocks are real and concern productivity. See Kydland and Prescott 1982.

Drawing on *The General Theory*, Minsky (1975) places uncertainty at the centre of his analysis. Uncertainty mainly hits perspective yields on financial and real assets. Investments external financing thus becomes a crucial issue.⁵ Advanced economies presuppose large and expensive long-term investments that are debt financed. The underlying expectation is that investments generate profits greater than debt commitments. This expectation, however, is not necessarily confirmed by facts.⁶ More generally, the coherence of a market economy does not require only the clearing of all individual markets. It also requires that investments actually generate profits greater than debt commitments (Minsky 1986, p. 141).

Starting from these presuppositions, Minsky (1975, 1978, 1982a, 1986) launches his attack on the dominant theory. Even if general equilibrium did represent a reliable approximation to reality, the price mechanism would not necessarily be able to coordinate the system. Let us consider a situation of unemployment. Insofar as wage and price deflation is associated by a fall in profits, it decreases firms' ability to fulfill inherited debt commitments. In this way it jeopardizes the robustness of the financial system, with depressing effects on long-term expectations and investments. In conformity with the experience of 1929-33 and to the 'true' thought of Keynes, the fall in prices can thus depress aggregate demand, accentuating unemployment instead of reabsorbing it.

In addition to the realism and stability of the general equilibrium, however, Minsky also questions the less ambitious concept of short-run equilibrium. Subjective evaluations ruling financial markets and expected returns on real assets are changeable and consequently investment is volatile. Short-run equilibrium continuously changes with the passing of time and the system never succeeds in reaching it. Instead of speaking of equilibrium or disequilibrium, Minsky (1986, p. 176), just like Robinson (1971), argues in terms of states of tranquility, which hide in themselves destabilizing forces destined to gain strength with the simple passing of time. As in case of the seasons, every state nurtures the forces destined to change it.

By relying on the rationality pillars, the dominant theory has amputated crucial aspects of the reality as uncertainty, the external financing of capital accumulation, the relevance of monetary and financial factors, the financial instability of capitalism and the crucial role of institutions. The originality and the importance of Minsky's

⁵ To quote Tobin 1989 p. 107: "He is right to stress that monetary and financial institutions and market make a big difference and to reject Modigliani-Miller theorem that assets and debts which wash out in accounting aggregations wash out in economic effects as well."

⁶ As a consequence, the robustness of the financial system cannot be taken for granted.

contributions lies precisely in recovering these issues and placing them at the centre of his financial instability hypothesis.

3. Minsky's financial instability hypothesis

Minsky (1975) presented his financial instability hypothesis as an authentic interpretation/a legitimate extension of Keynes' thought.⁷ As we have seen, the basic vision of the two authors is actually the same. In bringing back Keynes's theory to its cyclical perspective, however, Minsky (op. cit.) introduces an upward instability, which seems entirely extraneous to *The General Theory*.⁸ Specifically, Minsky's starting point is that "stability...is destabilizing" (p. 12), and that "the fundamental instability is upward" (p. 165). A period of tranquillity (in which the financial system is robust and there are no relevant shocks, so that profits are systematically greater than debt commitments) increases the confidence in the future, giving rise to a wealth re-allocation from money to other assets. The result is an increase in investment financed with indebtedness. With this, stability turns into an expansion.

Expansion triggers a deviation-amplifying mechanism primarily based on the link investments-profits-investments. An initial increase in investment provokes an income expansion, which partly turns into a rise in profits. Besides validating past investment decisions, this improves profit expectations and confidence and thus gives rise to a further increase in the volume of investment financed by indebtedness. The money and financial markets strengthen the above-mentioned deviation-amplifying mechanism. Expansion implies an endogenous increase in bank credit and money supply that strengthens the expansion itself. With the growing optimism, the speculative demand for money shrinks in favour of other assets inducing expansionary effects on credit, investments, income and profits. Through its wealth effects, the rise in asset prices stimulates credit and capital accumulation as well. Lastly, as we have seen, expectations and confidence also perform a deviation-amplifying role. Thanks to the aforementioned processes, expansion turns into a debt-financed investment boom.

⁷ In Minsky's (1975) view, since John Maynard Keynes lived through the experience of the Great Depression he thereby dwelled upon the particular case of an economy, which, as a consequence of a financial crisis followed by a debt deflation, fell into a deep depression. Despite not fully developing it, however, in Minsky's (op. cit.) view Keynes had in mind a cyclical perspective.

⁸ This might be the reason why Minsky (1975) prefers to speak of a financial instability 'hypothesis', rather than of a financial instability 'theory'. This aspect is developed in De Antoni (2007).

At this point, Minsky (1975, 1978, 1982a, 1982b, 1986) focuses on two drawbacks of such a boom. The first one refers to the general euphoria, whereby firms' debt commitments increase more rapidly than profits, ending by rising above them. Given the expectation of a future bonanza, firms start financing the principal by indebtedness (speculative financing) and also interest payments (ultra-speculative or Ponzi financing). The fulfilment of debt commitments is based no longer on profits but, respectively, on the rolling over or the automatic increase in indebtedness. From being initially robust, the financial system becomes fragile.⁹ Turning to the second drawback, the persistence of the boom inevitably ends up creating either bottlenecks in the financial system or inflationary pressures in the goods market that push the central bank in a deflationary direction. In both cases, the result is an increase in the rate of interest.¹⁰

The rise in the interest rate ends the boom, turning the investment-profit-investment chain into a downward spiral. The unexpected increase in the cost of funds is associated with the unexpected fall in (the yet insufficient) profits. Given the situation of financial fragility, the fulfillment of inherited debt commitments would require an increase in (the already high) indebtedness. This solution, however, is neither desirable nor possible since the confidence underlying indebtedness fades away. We, thus, come to the financial crisis, defined (Minsky, 1982b) as a situation in which firms' debt commitments cannot be fulfilled any more in the normal way, i.e. by profits (hedge finance) or indebtedness (speculative and Ponzi finance).

Under these circumstances, for firms the only solution is the sale of assets, which after the boom are mainly illiquid assets. The fall in the asset prices reduces the net wealth of firms and financial intermediaries. This reinforces the need to squeeze indebtedness by selling assets. Asset prices fall precipitously. The fall of capital asset prices strengthens the fall of investments and profits, and vice versa.¹¹ The financial crisis, thus, turns into a debt deflation, which in Minsky's (1982b) framework is an asset price as well as a profit deflation. The debt deflation will end by making the

⁹According to Minsky (1986, pp. 206-207 in particular), a robust financial system is dominated by hedge units, which by definition are able to fulfil their debt commitments by profits. A fragile financial system is instead dominated by speculative and ultra-speculative (or Ponzi) units. Having to fulfil their debt commitments by indebtedness, speculative and Ponzi units are more vulnerable to the conditions prevailing in financial markets.

¹⁰ Minsky (1978) puts it as follows: "However, the internal workings of the banking mechanism or Central Bank action to constrain inflation will result in the supply of finance being less than infinitely elastic leading to a rapid increase in short term interest rates" (p. 45).

¹¹ According to Minsky (1975, 1978, 1982a, 1986), investments are a positive function of the gap between the demand price for investment goods (the present value of expected profits) and the supply price (the price of current production).

fulfilment of debt commitments impossible. The consequence will be a wave of bankruptcies, which in its turn will end in a deep depression.

Destruction, however, is creative. Only hedge units (units still able to fulfil debt commitments by profits) survive. Under these circumstances, a phase of tranquility will suffice to increase confidence and to reactivate the sequence just described. According to Minsky's (1975, 1986) financial instability hypothesis, the system will again experience an expansion, a speculative boom, a financial crisis and a debt deflation, along with a deep depression.

Turning to the real world, Minsky (1982a, 1986) finds confirmation of his analysis. The financial instability of the American economy, which he had previously denounced (Minsky, 1963), surfaced in the middle of the sixties giving rise to the crises of 1966, 1970, 1974-5, 1979, and 1982. Financial instability had, however, characterized also the periods preceding the two world wars. This confirms that financial crises are systemic and not idiosyncratic (Minsky, 1991). Looking ahead, Minsky (1982a) wonders whether 'It' can happen again. 'It' is the Great Depression and Minsky's (op. cit.) answer is affirmative. Starting from these presuppositions, a crucial role to economic policy institutions is assigned. As Minsky (1986) suggests, "even though all capitalisms are flawed, we can develop a capitalism in which the flaws are less evident than they have been since 1967" (p. 295).¹²

From this point of view, Minsky does not place much faith in monetary policy. Given that a great part of the money supply is endogenously created by banks and given the innovative capacity of the financial system, the central bank has only a limited control over the supply of money. In any case, its intervention may turn out to be harmful as well as ineffective. As Minsky (1986) argues, "Monetary policy to constrain undue expansion and inflation operates by way of disrupting financing markets and asset values. Monetary policy to induce expansion operates by interest rates and the availability of credit, which do not yield increased investment if current and anticipated profits are low" (p. 303-4). Instead of aiming to control the money supply, the central bank should thus focus on its function as a lender of last resort. By enabling the funding of financial institutions and by sustaining asset prices, it might prevent or reabsorb financial crisis, so removing the threat of debt deflations and deep depressions. In any case, "Fiscal policies are more powerful economic control

¹² The task Minsky (1992) assigns to economic policy institutions is anything but easy. They must be continuously revised and kept up to date, since the flaws of capitalism are always evolving (Minsky and Whalen, 1996). It follows that Minsky (1992) strongly disagrees about the adoption of fixed rules in economic policy.

weapons than monetary manipulations” (p. 304). The task to stabilize and to support the economy has to fall on the government. This is the main message of Minsky’s famous 1986 book: *Stabilizing an Unstable Economy*.

Setting aside the relative importance assigned to monetary or fiscal manoeuvres, Minsky (1975, 1986) proposes a more general rethinking of the final targets of economic policy. Specifically, he questions the dominant model based on investment and growth. Being a determinant of mark up and profits, investment increases the price level. It also represents a highly unstable component of domestic aggregate demand. Above all, it may turn out to be a failure and compromise the stability and growth of the system.¹³ It follows that “an economy that aims at accelerating growth through devices that induce capital-intensive private investment not only may not grow, but may be increasingly inequitable in its income distribution, inefficient in its choices of techniques, and unstable in its overall performance” (Minsky, 1986, p. 292).

4. Fiscal policy in a closed economy

After the Keynesian revolution, the progressive rehabilitation of market mechanisms has not only implied the downsizing of fiscal policy as a support and stabilizing economic weapon. The dominant theory has also deployed ever-new arguments to show that budget deficits are ineffectual or undesirable. Arestis and Sawyer (2003a mainly, but see, also, 2003b, 2004) criticize these arguments one by one. In their view, the free market is not necessarily able to align full employment savings and investments. A government deficit is thus necessary to fill the gap between the two.

Drawing on the same Keynesian tradition, Minsky (1975, 1982a, 1986) further extends the role of the government. If we abandon the equilibrium framework making room for the endogenous instability of capitalism, “laissez-faire is a prescription for economic disaster” (Minsky and Whalen, 1996, p. 161). Government intervention is not only necessary to reach and maintain full employment. It is indispensable to avoid the worst; in Minsky’s (1982a) words: “The most significant economic event of the era since World War II is something that has not happened: there has not been a deep and long-lasting depression” (p. xi). One of the main reasons is that “Big government capitalism is more stable than small government capitalism” (Minsky, 1986, p. 292).

¹³ Bad investments may generate profits lower than debt commitments and thus foster a wave of bankruptcies that depress expectations, confidence and economic activity.

The afore-mentioned extension of the role of fiscal policy is associated with a widening of its effects. To the traditional impact on the goods market, Minsky adds two important repercussions on the robustness of the financial system. As Minsky (1986) argues: “The first effect is familiar and is dealt with in models that set out how GNP is determined. The second and third effects are often ignored; they are important, however, because the economy is both an income-producing and -distributing system and a complicated, interdependent, and sophisticated financial system” (p. 21). The three effects that Minsky (1986) assigns to fiscal policy are discussed in detail immediately below.

(i) The traditional income and employment effect, which consists in stimulating aggregate demand, output and employment up to their full employment levels. In an advanced society, all those wishing to participate in the productive process should have the opportunity to do so. Given the unreliability of market mechanisms, the State has to take on the function of “employer of last resort” (Minsky and Whalen, 1996, p. 163).¹⁴ Specifically, it has to give rise to a perfectly elastic public-sector demand for labour at a wage significantly lower than in the private sector (Minsky, 1986, p. 308). Public-sector workers should be employed to increase the physical and intellectual infrastructures.¹⁵ To quote Minsky (op. cit.): “The overall policy perspective is to substitute resource creating public spending for the multitude of transfer payments and entitlements that now make up a major part of non-military spending” (p. 300). According to Minsky (1986), in this way the burden for the government budget of the employment of last resort strategy is destined to be small.

(ii) The cash flows effect, which operates by affecting the sectoral surpluses and deficits. In his works, Minsky (1986, 1992) adopts a conception à la Kalecki-Kaldor-Levy according to which income distribution mirrors the level and composition of aggregate demand rather than input productivity. In clearing the goods market, income fluctuations align aggregate profits to the sum of investments, government

¹⁴ Recent years have seen a flourishing of the debate on the employment of last resort strategy. See, for instance, Aspromourgos (2000), Forstater (1998), Gordon (1997), Mitchell (1998, 2000), Mitchell and Watts (1997), Mosler (1997), Sawyer (2003), and Wray (1998a, 1998b, 2001).

¹⁵ While being a great supporter of the government, Minsky (1975, 1982a, 1986) is perfectly aware of its limits. Like investments, government deficit is a determinant of mark up and profits and thus sustains the price level. Government intervention is often inefficient. Above all, by stabilizing the economy, government (as well as the central bank) may legitimize speculative behaviours. To avoid the aforementioned drawbacks, Minsky (1975, 1982a, 1986, 1991) suggests intervening in two directions. Firstly, it is necessary to qualify government intervention in order to increase investments in the physical and intellectual infrastructures, thus stimulating the productivity and efficiency of the system. Secondly, he suggests hindering speculative behaviours by carefully regulating the balance sheets of firms and financial intermediaries.

budget, net exports and capitalists' consumption net of workers' savings.¹⁶ In order to guarantee the coherence of a capitalist economy, profits thus determined have to exceed firms' inherited debt commitments. It is here that fiscal policy comes into play. In reabsorbing unemployment, fiscal policy stimulates profits to their full employment level, thus strengthening the economy's financial robustness. The task to hinder the destabilizing tendencies present in the system then falls on automatic fiscal stabilizers: changes in the government budget have to compensate for investment fluctuations in order to stabilize income and profits. By avoiding the rise in profits due to an investment expansion, automatic fiscal stabilizers might hinder the euphoric tendency to a speculative boom and a financial crisis. By sustaining profits above inherited debt commitments during an after crisis investment slow down, automatic fiscal stabilizers might defuse the threat of a financial crisis that might degenerate into a debt deflation and a deep depression.

(iii) The portfolio or balance-sheet effect, which operates through regulating the liquidity and solvency of the financial system. Minsky (1986) denies that the main characteristic of money lies in having a fixed price (the prices of goods and assets from which its purchasing power depends is variable) or in being the medium of exchange (in socialist countries money was the medium of exchange but did not have any special role in the economy). According to Minsky (op. cit.) the peculiarity of money lies, instead, in that payment commitments connected to indebtedness, to productive activity, to taxation are denominated in money itself. By allowing the fulfilment of such payment commitments, money offers "insurance services against bankruptcy" (p. 181). Government bonds can be easily converted into money. Thus, they too offer insurance services against bankruptcy. Together with money, they increase the robustness of the financial system.¹⁷

The complexity of Minsky's (1975, 1982a, 1986) financial instability hypothesis gave rise to numerous formalizations that focused on one aspect or another. A model, which brings to light the crucial importance of the government budget for the support and stabilization of income and profits (and thus of the financial system) is the one

¹⁶ Following Minsky (1986, 1992), aggregate saving S is the sum of workers' saving (S_w) and capitalists' saving (S_c), equal in its turn to the difference between capitalists' profits (Π) and capitalists' consumption (C_c). This means that $S=S_w+(\Pi-C_c)$. By substituting into the goods market equilibrium condition, $I+DF+NX=S$, and rearranging we get: $\Pi=I+DF+NX+C_c-S_w$. The relationship connecting profits to investments obviously holds only at an aggregate level. At a microeconomic level, profit generated by investment does not usually go the investing firm.

¹⁷ The argument in the main text puts forward an additional argument in favor of automatic fiscal stabilizers. Through the government budget anti-cyclical behaviour, they imply an increase (decrease) in government bond issues during recessions (expansions), thereby stabilizing the financial system.

proposed by Nasica and Raybaut (2005). Apart from the assumption of endogenous money, the model leaves the financial and credit variables behind the scenes. Nevertheless, it contains some of the typical ingredients of Minsky's (1975, 1982a, 1986) financial instability hypothesis. We refer to the deviation-amplifying mechanisms based on the link investment-profit-investment, on the adaptive nature of profit expectations and of the state of confidence. The model under examination is composed by the following equations.

1. $I_t = h(P_{Kt} - P_t^*)$
2. $P_{Kt} = \Pi_{t+1}^e / (1 + i_t)$
3. $\Pi_{t+1}^e = \Pi_t^e + \alpha(\Pi_t - \Pi_t^e)$
4. $i_t = i^* + ax_t + b\varphi_t$
5. $\varphi_t = \Phi(I_t - \rho\Pi_t)$
6. $x_{t+1} = \theta x_t + (1 - \theta)(\Pi_t - \Pi_t^e)$
7. $\Pi_t = [I_t + D_t - (1 - c)W^*] / [1 - c(1 - \rho)]$
8. $D_t = \gamma(I_t) (C_t + I_t)$

The first six equations show Minsky's (1975, 1978, 1982a, 1986) 'financial theory of investment'. Investment I_t (equation 1) is a positive and increasing function h of the gap between the demand price for investment goods P_{Kt} and the given supply price (the price of current production) P_t^* . The demand price P_{Kt} (equation 2) in its turn is equal to the present value of expected profits (Π_{t+1}^e) in the next period, where i_t stands for the discount rate. Expected profits in the next period Π_{t+1}^e (equation 3) are adaptively given by expected profits in the current period Π_t^e plus a positive fraction α (where $0 \leq \alpha \leq 1$) of the current forecasting profit error $\Pi_t - \Pi_t^e$. The firm's discount rate i_t (equation 4) is equal to the given risk less interest rate i^* set by the central bank plus the parameter $a < 0$ times the degree of confidence x_t and the parameter $b > 0$ times the borrower's risk φ_t . The latter is the risk that expectations can go wrong so that realized profits might not allow the fulfilment of debt commitments. The risk φ_t (equation 5) is specified as an increasing function Φ of externally financed investments $I_t - \rho\Pi_t$, where ρ is the rate of profit retention. The degree of confidence x_{t+1} (equation 6) depends on its previous value x_t and on the profit expectations errors $\Pi_t - \Pi_t^e$. These first six equations show that realized profits higher than the expected ones not only do they validate past investment decisions, but also improve profit expectations Π_{t+1}^e and confidence x_{t+1} . They, thus, stimulate the demand price for, and

the level of, investment. A fall in the cost of investment goods P_I^* and of the risk less interest rate set by the central bank i^* also lead to an investment expansion. Even taking into account the endogeneity of profits, an aspect we discuss below, the increase in investment is associated with an increase in indebtedness.

While the first six equations describe the expansionary effect that profit has on investment, equation (7) introduces the expansionary effect that investment has on profits. Assuming a consumption function of the type $C_t = c[W^* + (1-\rho)\Pi_t]$, where c is the propensity to consume, W^* is the given total wages and $(1-\rho)\Pi_t$ represents distributed profits, the Kalecki relation (equation 7) tells us that, in clearing the goods market, income fluctuations relate aggregate profits Π_t to investment I_t , government deficit D_t , and total wages W^* . In this way, equation 7 establishes an interdependence between profits and investment which represents the milestone of Minsky's deviation amplifying process. Higher investment implies higher profits, which in their turn improve profit expectations and confidence; the latter further stimulate investment. The seventh equation, also brings to light the support that government deficit provides for income and profits, with the well-known positive effects on economic activity and financial robustness. The last equation introduces the automatic fiscal stabilizers. Government deficit D_t (equation 8) is a fraction γ of private expenditure $C_t + I_t$. By assumption, γ is a decreasing function of I_t included between $-\sigma$ and $+\sigma$ (with $0 \leq \sigma < 1$). It thus captures the negative relationship between the government budget and investments to which Minsky (1986) assigns the crucial task of stabilizing the economy.

We may now turn our attention to the conclusions of Nasica and Raybaut (2005). Their model admits a 'nirvana' stationary state ($I_t = \bar{I}$) that shares many ingredients of the standard macroeconomic approach: perfect foresights ($\Pi_t = \Pi_t^e$), irrelevance of indebtedness ($I_t - \rho\Pi_t = 0$), irrelevance of the borrower's risk ($\varphi_t = 0$), and irrelevance of uncertainty ($x_t = 0$). This stationary state, however, turns to be locally asymptotically stable if and only if automatic fiscal stabilizers are strong enough. In other words, for the system to converge to the stationary state, government budget changes have to offset investment fluctuations sufficiently. Lastly, for given parameter values, the model may generate endogenous cycles similar to the ones envisaged by Minsky.¹⁸

5. Fiscal policy in an open economy

Hyman Minsky's analysis mainly refers to a closed economy, although here and there one does come across references to open economy (see Minsky, 1979, for such an example). However, his analysis can easily be extended and sufficiently generalised to an open economy. The merit of such an extension mainly consists in the relevance it assigns to international credit-debt relationships and to the fulfilment of the related debt commitments.

In an open economy, firms (as well as financial intermediaries) have the opportunity to borrow abroad. This opportunity on the one hand favours growth. On the other hand, however, it also paves the way for a situation of over-indebtedness prone to the 'disruptive events' in the way described by Arestis and Glickman (2002). The aforementioned scenery is strengthened by the striking increase experienced by international financial transactions in the last couple of decades or so. In this context, the international financial transactions influenced by differential interest rates and by the prospects of exchange rate movements have grown relative to the exchange transactions related to international trade. This phenomenon is not unconnected with the volatility of exchange rates (real as well as nominal) observed in post Bretton Woods era. This volatility obviously introduces an additional source of uncertainty.

In a Hyman Minsky perspective, the opening of the economy fuels economic instability in the following ways.

(i) For many countries, international trade accounts for a quarter or more of GDP. Under these circumstances, exchange rate volatility may imply a high volatility of net exports and domestic incomes.

(ii) Given the Kalecki-Kaldor equation (Minsky 1986, 1992), the volatility of domestic incomes also implies the volatility of domestic profits. The fulfilment of debt commitments thus becomes more uncertain.

(iii) In the presence of foreign borrowing in foreign exchange, the exchange rate volatility turns into the volatility of debt commitments denominated in foreign currency. The financial system becomes vulnerable to exchange rate, in addition to the interest rate, fluctuations. In other words, it becomes more fragile.

(iv) Debt commitments on loans incurred in a particular currency have to be repaid in that currency. Thus, not only does there have to be sufficient profit flows to fulfil debt commitments, but those profit flows have also to be, or to be able to be, converted

¹⁸ To quote Nasica and Raybould (2005, p. 143): "Notice that since $\text{Det}(J^*) > 0$, the model can admit two complex eigenvalues, which may generate, for the relevant set of parameters, endogenous cycles. This

into the relevant currency. There are numerous examples of countries indebted in foreign currency (e.g. many Eastern European countries in the second half of the 1980s and some Asian economies in the late 1990s¹⁹) where a trade surplus did not emerge and access to capital inflows faltered, threatening the ability to repay foreign loans.

v) Given the high and increasing international financial integration, and as shown by the recent financial turmoil, financial crises tend to spread from one country to the others, thus increasing the overall instability.

To sum up, Minsky's approach suggests that the opening up of the economy may accentuate its coordination problems and increase its fragility. Under these circumstances, the role and the international coordination of fiscal policy become even more important. The same holds for the necessity to regulate the balance sheets of firms and financial intermediaries, including foreign indebtedness.

6. The soundness of public finance and Minsky's business cycle

Giving his support for the functional finance²⁰ and the state money (or chartalist) approach,²¹ Minsky (1963, 1975) initially does not consider government debt as a problem for the economy. On the contrary, he argues that government bonds are an important source of liquidity and solvency and thus of financial stability. With the explosion of the government debt relative to gross domestic product during the Reagan-Bush administration, however, Minsky (1986) begins to express concerns

issue will not be dealt with in this paper”.

¹⁹ For a Minskyan interpretation of the Asian financial crisis, see Kregel (2001) and Arestis and Glickman (2002).

²⁰ According to Lerner (1943), fiscal variables must be evaluated on the basis of their effects on the economy rather than on the basis of a priori criteria of sound finance. In this perspective, government expenditure and revenues must be considered as aggregate demand control devices whose task is to align the latter to its full employment level. Government bonds sales must in their turn guarantee the desired level of the interest rate (and thus of investments). The remaining part of the government deficit (including the interest payments on government debt) can simply be financed by money. In Lerner's view, below full employment there is no inevitable link between money and the price level. His conclusion is that government deficit and debt present “no danger to society” (p. 42).

²¹ According to the state money or chartalist approach, fiscal authorities first define what money is by stating that which is necessary to pay taxes and then create (destroy) money through the government deficit (surplus). The US federal government funds itself by writing cheques on its central bank account, which once deposited turn into new bank reserves (Wray, 1998b; Bell and Wray 2002-3). Bond sales by either the central bank or the treasury are properly seen as part of a ‘horizontally’ oriented monetary policy designed to prevent the interest rate from falling below its target value. Bonds are not sold to borrow but to drain excess reserves. If markets do not want government bonds, then bonds must simply not be sold.

about the credibility of government bonds.²² “A government can run a deficit during a recession without suffering a deterioration of its creditworthiness if there is a tax and spending regime in place that would yield a favourable cash flow (a surplus) under reasonable and attainable circumstances” (p. 302). Minsky (1991) adds: “The government is no different than any other organization in that it needs revenues to validate its debts” (p. 28). Minsky’s (1986) conclusion is that, save exceptional situations, the full-employment government budget must be balanced or in surplus. As he puts it: “Any deviation from a government budget that is balanced or in surplus must be understood as transitory- the war will be over, the resource development program will be finished, or income will be at the full employment level” (p. 304). Minsky’s (1986, 1991, 1996) acknowledgement to sound finance risks being inconsistent with the key role that he continues to assign to fiscal policy.²³ Surprisingly, Minsky ignores this crucial problem. In the ‘Agenda for Reform’ that closes his famous 1986 book, the compatibility between the so-called sound public finance (p. 302) and the fiscal stabilization (p. 297) and support (p. 308) of the economy is implicitly taken for granted. In what follows, we shall try to explain why. To this end, we shall focus on Minsky’s business cycle, thus integrating the Nasica and Raybaut (2005) model. By comparing the business cycle à la Keynes (1936) and à la Minsky (1975, 1982a, 1986), we shall show that the compatibility between the so-called soundness of public finance and the soundness of the entire economy may be a problem in the first case, but not in the second. This might then explain why Minsky (1986) is not concerned about it.

The literature generally classifies Hyman Minsky as one of the main exponents of the Post Keynesian School. Minsky (1975, pp. 79-80) himself presents his financial instability hypothesis as an authentic interpretation, a legitimate extension even, of *The General Theory*. In bringing back *The General Theory* to its cyclical perspective, however, Minsky (1975, 1982a, 1978, 1980, 1982a, 1986) introduces an upward instability which seems entirely extraneous to Keynes’s book. From this perspective, the two authors may be considered as two faces of the same coin looking in opposite directions. Minsky (1975, 1982a, 1978, 1980, 1982a, 1986) considers a vibrant economy, naturally inclined to over-investment and over-indebtedness. Keynes

²² To quote Minsky (1996, p. 4): “The explosion of the government debt relative to gross domestic product over the 12 years of Reagan-Bush was largely due to an irresponsible fiscal policy....In the present circumstances, the role of tax policy is to assure that a downward trend in the ratio of Federal Debt to Gross Domestic Product rules, so that over a span of years the ratio of debt to income is lowered from the present 65% to about 50%”.

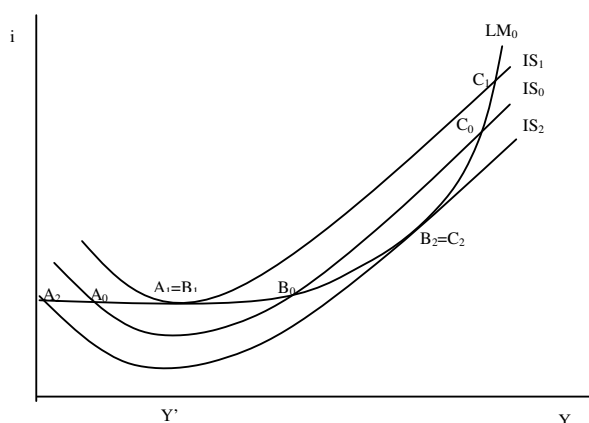
²³ For an interesting critique of Minsky on this issue, see Wray (2006).

(1936), on the contrary, considers a depressed economy tending to chronic under-investment and under-consumption and thus prone to high and long-lasting unemployment. Looking at the last fifteen years, useful examples might be the USA and the UK economies in the first case and the European economy in the second. Starting from these premises, Minsky (1975, 1982a, 1978, 1980, 1982a, 1986) may be considered an author who has extended *The General Theory* to a vibrant and euphoric framework, making it even more general and modern.

To show the different views about the cycle of Minsky and Keynes, it may be useful to refer to the graphical representation of the business cycle proposed in Hudson (1957). The starting point is the IS-LM model with rigid money wages and prices shown in figure 1. Its distinctive feature is that, while the LM curve is the usual one, the IS curve is U-shaped. Let us consider, for instance, the IS_0 curve. Let us also assume that Y' is the corresponding income level that ensures the normal utilization of the existing capital stock. The given capital stock will thus be under-utilized on the left of Y' and over-utilized on the right. Starting from these presuppositions, Hudson (op. cit.) assumes that, for lower (higher) than Y' income levels, the income sensitivity of investments is so low (high) that it falls (rises) below (above) the income sensitivity of saving. Starting from a point of IS_0 on the left (right) of Y' , an increase in income thus induces an excess of saving (investments) over investments (saving) whose re-absorption requires a fall (rise) in the interest rate. The IS_0 curve is then negatively sloped on the left of Y' and positively sloped on the right. The intersection between the U-shaped IS_0 and the LM_0 curve identifies three equilibrium points A_0 , B_0 , C_0 in figure 1. Points A_0 and C_0 represent stable equilibriums. The reason for this becomes evident if we assume that the adjustment process is instantaneous in the money market, while it implies lags in the goods market. On the left (right) of A_0 and C_0 , the interest rate determined by the LM_0 curve is lower (higher) than the one required by IS_0 . The goods market thus experiences an excess of investments (saving) over saving (investments) that stimulates (depresses) income towards the corresponding equilibrium value. Following an analogous line of reasoning, it is evident that B_0 instead represents an unstable equilibrium: income tends to fall on its left and to rise on its right.²⁴

²⁴ As shown by Hudson (1957), the stability of the model requires that the slope of the IS curve be lower than the slope of the LM. The model is thus stable if the IS curve has a negative slope (as in A_0) or if its slope is positive but lower than the slope of the LM curve (as in C_0). By contrast, the model is unstable when the slope of the IS curve is positive and higher than the slope of the LM (as in B_0).

Figure 1. Hudson's representation of the business cycle



While implying a sophisticated non-linear dynamics, Figure 1 allows a simple and effective representation of the business cycle.²⁵ Let us start with the stable equilibrium point A_0 given by the intersection between the IS_0 and LM_0 curves. Let us also assume that in A_0 investments are so low that they do not allow the replacement of the existing capital stock. The progressive fall of the capital stock will eventually create a lack of capacity that will stimulate investments. This will give rise to an upward shift of the IS curve (from IS_0 to IS_1) that will expand the economy from A_0 to $A_1=B_1$. In the tangency point $A_1=B_1$, however, there is upward instability. The interest rate given by the LM_0 curve is lower than the rate required by the IS_1 . This denotes an excess of investments over saving that stimulates the economy.²⁶ The rise in income is proportional to the imbalance of the goods market shown by the vertical distance between the IS_1 and LM_0 curves. Income thus rises first at an increasing and then at a decreasing rate, finally docking in the new stable equilibrium point C_1 . This time, the high investments increase the capital stock. The progressive rise of the capital stock will eventually create a surplus capacity that will depress investments. This will give rise to a downward shift of the IS curve (from IS_1 to IS_2) that will depress the economy from C_1 to $B_2=C_2$. In the new tangency point $B_2=C_2$, however, there is downward instability. The interest rate determined by the LM_0 curve is higher than the rate required by the IS_2 . This denotes an excess of saving over investments that depresses the economy. The fall of income is proportional to the unbalance of the goods market shown by the vertical distance between the LM_0 and IS_2 curves. Income

²⁵ We are grateful to Kumaraswamy Velupillai for signalling Hudson's interesting article.

²⁶ According to Hudson (1957), point C_1 implies a level of income no higher than the full employment one. In the opposite case, the rise of income above full employment would raise prices, the demand of money and the interest rate. The consequent upward shift of the LM curve would move point C_1 to the left, ending by aligning it to the full employment level of income.

thus falls first at an increasing and then at a decreasing rate, finally docking in the stable equilibrium A_2 from which the business cycle starts again.

Our succinct exposition of Hudson's article requires two important qualifications. Firstly, the IS curve shifts in the turning points of the cycle presuppose a change in expectations. In A_0 (C_1), the progressive fall (rise) of the capital stock ends up by raising (depressing) current profits. This gradually implies an improvement (worsening) of profit expectations that shifts the IS curve upwards (downwards). Figure 1 is thus compatible with the waves of optimism and pessimism that inspire the views of the business cycle of both Keynes (1936) and Minsky (1975, 1982a, 1978, 1980, 1982a, 1986). Secondly, Hudson (1957) keeps the LM curve unchanged only in order to simplify the exposition. Liquidity preference depends on the state of confidence. As a consequence, the wave of optimism (pessimism) striking point A_0 (C_1) would not only shift the IS curve upwards (downwards) as in Figure 1. It would also move the LM curve downwards (upwards). The result is that the money market ends up by accentuating the upward (downward) instability.

In what follows, we shall keep the LM curve unchanged and utilize Hudson's (op. cit.) framework to analyse the differences between Keynes and Minsky. A careful reading of the two authors suggests that, whilst both are at the mercy of waves of optimism and pessimism, Minsky 'fights' against the upswing while Keynes 'fights' against the downswing. With very few exceptions, Minsky's writings focus on the inconveniences of the boom, taking the consequent disaster and (above all) the subsequent recovery for granted. Minsky (1986) himself argues that "The spectacular panics, debt deflations, and deep depressions that historically followed a speculative boom as well the recovery from depressions are of lesser importance in the analysis of instability than the developments over a period characterized by sustained growth that leads to the emergence of fragile and unstable financial structures" (p. 173). On the contrary, chapter 22 of *The General Theory* stresses the precariousness of the recovery, the need to support it at all costs, the systemic inadequacy of the level of investments with respect to the target of full employment, and the precariousness of a full employment situation supported by investments arising from the depressive effect of accumulation on the marginal efficiency of capital.

On this basis, let us return to Hudson's (1957) framework. Between the lines, the economy described by chapter 22 of *The General Theory* is characterized by a high

liquidity preference and by a low marginal efficiency of capital.²⁷ At the extreme, the relevant curves may then be LM_0 and IS_2 in Figure 1. This means that the fundamental instability is downward. The systematic excess of saving over investments depresses the system to point A_2 . Keynes (1936) explicitly agrees with Hudson (1957) that in A_2 the fall in the capital stock will end up by stimulating investments and thus the economy. His concern, however, is that the recovery may be slow and, above all, so weak that it is unable to turn into an expansion. In figure 1, for instance, the IS curve may shift from IS_2 to IS_0 rather than to IS_1 . The system may thus strand in the stable unemployment equilibrium A_0 and the business cycle may break down in the neighbourhood of its trough.

By contrast, Minsky (1975, 1982a, 1978, 1980, 1982a, 1986) expressly considers an economy whose fundamental instability is upward. The profitability of investments is high with respect to the interest rate determined by the money market. At the extreme, the relevant curves may be LM_0 and IS_1 in Figure 1. The systematic excess of investments over saving stimulates the economy to C_1 . We thus come to the problems of greatest concern to Minsky. Why does such a vibrant economy stop growing (Minsky, 1965)? Why does it not stop in point C_1 or in its neighbourhood in Figure 1, plunging into the great depression represented by point A_2 (Minsky, 1982a, 1986)? After all, if the IS curve shifted downwards from IS_1 to IS_0 rather than to IS_2 , the system might settle in the stable point C_0 and the cycle would break down in the neighbourhood of its ceiling.

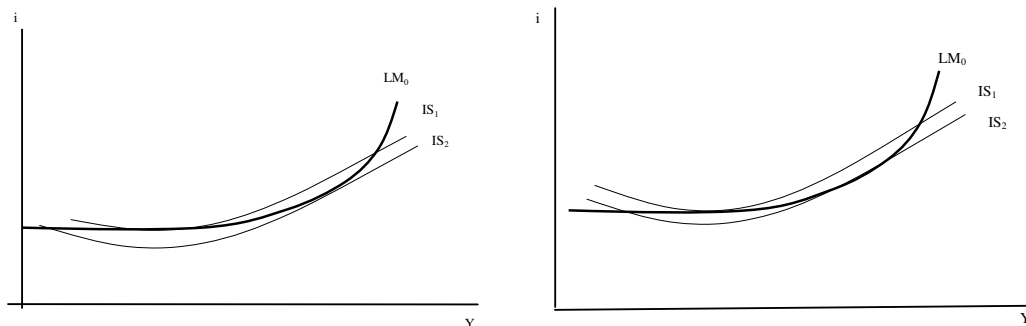
The originality of Minsky (1975, 1982a, 1978, 1980, 1982a, 1986) is that he looks for answers in the financial dimension of the economy. Amid the growing euphoria of the upswing, indebtedness rises so rapidly that the financial system becomes fragile. Thus, towards the end of the boom, the increase in the rate of interest not only slows down the expansion: it also triggers the financial crisis. Under the threat of bankruptcy, firms interrupt their investment activity and sell assets in order to redeem and reduce their debt. The assets price fall strengthens the need to squeeze indebtedness and vice versa. The consequent debt deflation and the recession feed each other. In figure 1, the IS curve shifts violently downwards, from IS_1 to IS_2 ,

²⁷ Keynes (1936) argues as follows on the under-consumption schools of thought: "In existing conditions –or, at least, in the conditions that existed until lately- where the volume of investment is unplanned and uncontrolled, subject to the vagaries of the marginal efficiency of capital as determined by the private judgment of individual ignorant or speculative, and to a long-term rate of interest which seldom or never falls below a conventional level, these schools of thought are, as guides to practical policy, undoubtedly in the right....If it is impracticable materially to increase investment, obviously

driving the system in the tangency point $B_2=C_2$. Here, the downward instability gains the upper hand and the system plunges into the deep depression represented by point A_2 . According to Minsky (1975), however, the downswing has a cathartic function. The speculative units fail, and the financial system becomes once again robust. Together with the tranquillity of A_2 , this will reactivate confidence. In Minsky's (1975, 1982a, 1978, 1980, 1982a, 1986) vibrant economy, the recovery is not even under discussion.

Let us now return to fiscal policy. According to the previous analysis, it seems plausible to assume that the most important phase in terms of intensity and length is the downswing in the economics of Keynes and the upswing in the economics of Minsky. Figure 2 shows the prevalence of the downward phase (the area between LM_0 and IS_2) in the left-hand panel and of the upward phase (the area between IS_1 and LM_0) in the right-hand one. In the latter case, it is plausible that the government surplus required to prevent the increase in income and profits during the upswing offsets (or more than offsets) the government deficit required to prevent the fall in income and profits during the downswing. Thus, in an economy à la Minsky, the fiscal stabilization of the business cycle does not necessarily represent a burden in terms of government budget and debt.

Figure 2. Business cycles à la Keynes and à la Minsky

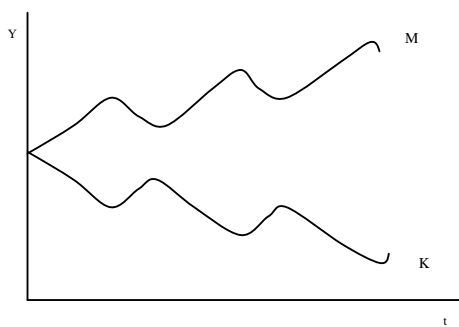


Let us now consider the fiscal support to the economy. As we have seen, during the business cycle an economy à la Keynes (1936) risks remaining trapped in the neighbourhood of the trough, while an economy à la Minsky (1975, 1982a, 1978, 1980, 1982a, 1986) risks settling in the more appealing neighbourhood of the ceiling. In the latter case, a full-employment oriented fiscal policy is thus much less onerous in terms of government budget and debt. Let us assume, however, that the cycle does

there is no means of securing a higher level of employment except by increasing consumption" (p. 324-

not break off. In Hudson's framework, there is no stable equilibrium growth path. In the absence of the invisible hand, growth is a product of the cycle. Figure 3 applies this principle, respectively, to an economy dominated by the downswing à la Keynes (1936) and to an economy dominated by the upswing à la Minsky (1975, 1982a, 1978, 1980, 1982a, 1986). The result is that, while the former experiences a falling income, the latter grows reaching higher income levels.²⁸ In an economy à la Minsky, a fiscal policy oriented toward full-employment is again less onerous in terms of government budget and debt.

Figure 3. Business cycles and growth



To sum up, Minsky (1986) seems to have good reasons to believe that a 'good' fiscal policy is compatible with the so-called soundness of public finance and that only a bad fiscal policy (misdirected, inefficient, corrupted) is not.²⁹ These considerations obviously apply to an economy à la Minsky (1975, 1982a, 1978, 1980, 1982a, 1986). What would Hyman Minsky have proposed with regard to an economy à la Keynes (1936), for instance the European economy of the last fifteen years? Given its unsatisfactory performance in terms of employment and growth, he would have probably privileged the soundness of the economy over the soundness of public finance, prescribing an active and careful use of fiscal policy and fiercely opposing the Growth and Stability Pact. To the objection that the issuing of more and more government bonds might become a problem, Minsky would have probably answered that –given the increasingly unbalanced income distribution– the burden of the

5).

²⁸ In a dynamic context where the ceiling and floor change with the passing of time, it would be the growth rate (rather than the income level) to increase and to fall.

²⁹ This section focuses on the income and cash flows effect of fiscal policy. As far as the portfolio effect is concerned, however, one of the novelties of Minsky's (1975, 1982a, 1986) approach lies in reminding us that government bonds are assets to the private sector representing an important source of liquidity and solvency and therefore of financial stability. If wealth grows with the passing of time giving rise to a growing demand for government bonds, financial market equilibrium requires a growing government bonds supply. Such an equilibrium is thus incompatible with a government balanced budget or surplus, be it referring to full-employment or not.

soundness of public finance must be shouldered by the rich. For instance, he might have suggested the introduction of a constraint on financial intermediaries, which would compel them to invest a given fraction of their portfolio in government bonds. As he puts it (1986): “finance cannot be left to free markets” (p. 292). However, these last considerations are mere conjectures, even if based on a careful reading of Minsky’s writings.

7. Fiscal policy and the evolution and prospects of capitalism

Minsky and Whalen (1996) argue that “Capitalism is a dynamic, evolving system that comes in many forms. Nowhere is this dynamism more evident than in its financial structure” (p. 156). With regard to the evolution of the financial structure of the American economy, Minsky and Whalen (1996; see, also, Minsky, 1993) identify the following phases:

(i) *commercial capitalism*. This was the initial phase of capitalism, during which external finance was mainly used for trade and manufacturing.

(ii) *industrial capitalism*. This was the phase of the first decades of the previous century, during which external finance was used mainly to finance long-term capital development. The nineteenth century was the first great era of capitalism, which required expensive and durable capital assets. The funds were made available through commercial banks, investment banks and the flotation of stocks and bonds. The great crash of 1929-1933 brought this second stage to an end.

(iii) *paternalistic capitalism*. The New Deal restructuring ushered in the paternalistic era, based on the low interest rates due to a Federal Reserve unconstrained by gold-standard considerations and on countercyclical fiscal policies. In this period, the government took over the responsibility for the adequacy of profits. As a consequence, internal cash flows of firms could finance their investments. Firms rather than bankers were the masters of the private economy. The stabilization of profits, however, spread optimism and thus boosted speculative behaviours.

(iv) *money manager-capitalism*. This is the current stage of capitalism, resulting from the evolution of speculative financial practices and from the emergence of plans that have supplemented social security with private pensions. As the label money-manager capitalism suggests, in such a system money managers dominate financial markets.³⁰

³⁰ Money-manager capitalism introduces a new layer of intermediation into the financial structure. The largest proportion of the liabilities of corporations are held either by financial institutions, such as bank

Their aim is the maximization of the value of the investments made by the fund holders, i.e. the maximization of the total return on assets (the combination of dividends and interest received and the appreciation in per share value). Today's money-managers are but little concerned with the development of the capital assets of an economy. They do not conform to Schumpeter's vision of bankers as the ephors of capitalism, who assure that finance serves progress. Today's financial structure is more akin to Keynes' (1936) characterization of the financial arrangements of advanced capitalism as a casino.

When one considers the pressure due to the rapidly evolving financial system and to the economy's other structural changes, it is not surprising that current economic insecurity is so widespread. Looking ahead, Minsky (1986) envisages two different futures for American capitalism. *Fortress capitalism*, a system with declining fortunes for all but a few who must seek protection behind walled and gated communities; this is the result of a return to *laissez-faire*. The alternative is a *shared-prosperity capitalism*, characterized by public intervention in the economy.

In the current era, economic success does not only require economic growth, low unemployment and minimal inflation. It also requires that prosperity be available to the whole of society and that economic insecurity be reduced. Thus, the task of big government is also to reduce inequality and insecurity. To this end, the government has to provide full employment and to promote a high performance path to competitiveness (as an alternative to the low-wage path). This requires not only incentives for private investment but also public investment in education and training, science and technology, and infrastructure.

8. Summary and conclusions

Drawing on *The General Theory*, of which he is one of the most famous and original interpreters, Minsky (1975) rejects the orthodox assumptions of unbounded individual and collective rationality, placing uncertainty and financial instability at the centre of his analysis. In his view, the limits of individual and collective rationality feed each other. As a consequence, the economy assumes a cyclical behaviour that drives it from an expansion to a speculative boom followed by a debt deflation and a deep depression. In bringing back Keynes's theory to its cyclical perspective, however,

trust companies, or by pensions or mutual funds. Individual wealth holdings increasingly take the form of ownership of the liabilities of the managed funds.

Minsky introduces an upward instability which seems entirely extraneous to *The General Theory*. In terms of business cycle and growth, an economy à la Minsky (1975, 1982a, 1978, 1980, 1982a, 1986) seems thus to be quite different from an economy à la Keynes (1936). Looking at the last fifteen years, useful examples might be the USA and the UK economies in the first case and the European economy in the second. In this perspective, Minsky may be considered an author who has extended the economics of Keynes to a vibrant and euphoric economy, making it even more general and modern.

In comparison with the Keynesian tradition, in Hyman Minsky's economics fiscal policy is even more important and effective. Government intervention is not only necessary to reach full employment; it is also indispensable to contain capitalism's instability and to avoid the disaster. The effect of fiscal policy is not only to underpin and stabilize aggregate demand, income and employment. It has also the task to protect the robustness of the financial system by stabilizing profits and by issuing government bonds. Finally, big government has the function of reducing inequality and insecurity and of promoting a high performance path to competitiveness (as an alternative to the low-wage path). Although Minsky's (1975, 1982a, 1986) analysis mainly refers to a closed economy, it can be easily extended to an open economy. The opening up of the economy increases its fragility in many ways. As a consequence, the stabilizing role of the government becomes even more important.

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