

## **The (too?) optimistic ‘financial Keynesianism’ of Hyman Minsky**

### 1. Introduction

In *Money, Interest and Prices* of 1956, Patinkin showed that the market mechanism produces a coherent -if not optimal- result. In this way the Neoclassical Synthesis came to maturity, reabsorbing the Keynesian revolution and restoring a trust in the market mechanisms that New Classical Macroeconomics and Real Business Cycle Theory would have later reaffirmed. From his first writings (again in the mid 1950s) and all his life, Minsky questioned the omnipotence of the market. To use his own words: “The general view sustained by the following analysis is that while the market mechanism is a good enough device for making social decisions about unimportant matters such as the mix of colors in the production of frocks, the length of the skirts, or the flavors of ice cream, it cannot and it should not be relied upon for important big matters such as the distribution of income, the maintenance of economic stability, the capital development of the economy and the education and training of the young.” (Minsky 1986 p. 101).

According to Minsky, the Synthesis succeeded in incorporating *The General Theory* into neoclassical theory since it had amputated the most innovative and revolutionary aspects of Keynes’ thought. In Minsky’s 1975 rereading, a Keynes without uncertainty (as interpreted by the Synthesis) is like a Hamlet without its Prince (op. cit. p. 57). Uncertainty mainly hits financial markets and the expected returns on capital assets. Instead of the Smithian paradigm of the ‘village-fair’, Keynes adopted the paradigm of ‘Wall Street’ (op. cit. p. 58). Subjective evaluations ruling financial markets and expected returns on real assets are changeable and consequently investment is volatile. The equilibrium continuously changes with the passing of time and the system never succeeds in reaching it. ‘Keynesian economics ..is the economics of permanent disequilibrium’ (op. cit. p. 68).

Starting from these presuppositions, Minsky resolved to ‘recover the revolutionary thrust of *The General Theory*’ (op. cit. p. v). To this end, he focused on financial relations in an advanced capitalist economy, on investments under conditions of uncertainty, on the destabilizing processes and the instability characterizing advanced capitalistic economies. The following five sections will examine these developments of Minsky’s thought, together with its recent applications to the real world. As we shall see, Minsky’s economics is endogenously unstable, tending in sequence to an expansion, to a speculative boom and to a financial crisis followed by a debt deflation and a deep depression. It is a vibrant economy whose fundamental instability is upward. This, however, raises the question (examined in section 7) of the relationship between the economics of Minsky and the economics of Keynes. The problem is relevant since Minsky is generally considered as one of the main Post Keynesian economists. The conclusions will be summarized in section 8.

## 2. Finance and the key role of the relationship between debt commitments and profits

The basic criticism made by Minsky against the Neoclassical Synthesis is that it neglected financial relationships, precisely those in which instability lurks. “In today’s standard economic theory, an abstract non-financial economy is analyzed. Theorems about this abstract economy are assumed to be essentially valid for economies with complex financial and monetary institutions and usages. This logical jump is an act of faith...Modern orthodox economics is not and cannot be a basis for a serious approach to economic policy.” (Minsky 1986 p. 173).

From the beginning, Minsky places finance at the centre of his analysis. Advanced capitalist economies presuppose large and expensive long-term investments that are debt financed. The underlying assumption is that investments generate profits greater than debt commitments. In a world dominated by uncertainty, this assumption is not necessarily confirmed by facts. Thus, the solidity of the financial system cannot be taken for granted. More generally, the coherence of a financially advanced economic system 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).

The relationship between debt commitments and profits is central to Minsky’s analysis. To start with, it allowed him to attack the dominant theory in the following three directions.

i) Minsky rejected the neoclassical dichotomy -which had been brought back as a long run equilibrium relationship by the neo-classical Synthesis- between monetary and real sectors and between the determination of absolute prices (in the monetary sector) and relative prices (in the real sector). From Minsky's viewpoint, monetary and real sectors are intimately connected since investments are financed by indebtedness. Analogously, absolute prices are as important as relative ones: through their mark-up component, they have to generate sufficient profits to allow the fulfilment of firms' debt commitments.

ii) Minsky questioned the efficacy of the price mechanism. According to Patinkin, unemployment implies a fall in money wages and prices that- by increasing real money balances- stimulates consumption and aggregate demand thus driving the system to the full employment equilibrium. Minsky objected that, in a world with inside business debt, the price mechanism might work in a direction which is opposite to the one envisaged by Patinkin. As in Fisher 1933, price deflation increases the real value of debts and therefore depresses aggregate demand. Above all, insofar as wage and price deflation is associated by a fall in profits, it decreases firms' ability to fulfil inherited debt commitments. In this way it jeopardizes the robustness of the financial system with possible depressing effects on long-term expectations and investments. In line with the experience of 1929-33 and the 'true' thought of Keynes, the fall in prices might thus accentuate unemployment instead of reabsorbing it (Minsky 1975, 1978, 1986).

iii) Lastly, Minsky pointed out that financial stability cannot be taken for granted by assumption as it is in the Neo-Classical Synthesis (and in the subsequent New Classical Macroeconomics). In his opinion: "Significant incoherence occurs because market processes do not assure that effective demand always will be sufficient to yield profit flows large enough to enable 'bankers' and 'businessmen' to fulfill their commitments on debts..." (Minsky 1980 p. 26).

The contraposition between debt commitments and profits is also the basis for the well-known distinction<sup>1</sup> between hedge, speculative and ultraspeculative (or Ponzi) finance, which Minsky used to measure the degree of financial stability. In the case of hedge units, creditors and debtors foresee that realized and expected cash receipts are more than sufficient to meet all debt commitments now and in the future. On the contrary, in the case of non hedge units, creditors and

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<sup>1</sup> For this distinction, see for instance Minsky 1986 pp. 206-7.

debtors foresee that the debt commitments exceed the realized and/or expected cash receipts for one or more initial periods. They, however, foresee that a future bonanza will reverse this relationship in subsequent periods. Non-hedge units in their turn can be divided into speculative and ultraspeculative (or Ponzi) units. In the case of speculative units, the expectation is that initially cash receipts will allow the fulfillment of interest payments but not the loan repayments. *Ceteris paribus*, speculative units are thus bound to initially roll over their debt. In the case of ultraspeculative or Ponzi units, the expectation is that initially cash receipts will not be able to meet both the loan repayments and the interest payments. *Ceteris paribus*, the indebtedness of these units is therefore destined to initially grow with the passing of time.

According to Minsky, the distinction between the three kinds of units can be traced back to the synchronization between assets and liabilities. From this point of view, the hedge units are those funding the purchase of their long-term assets with long-term liabilities such as shares or long-term (fixed-interest rate) bonds.<sup>2</sup> On the other hand, non-hedge units are those funding their long-term assets with short-term indebtedness. While their debt commitments are concentrated in the initial phase of the life of their investment projects, their expected returns are concentrated in the final phase. As a consequence, these units initially plan to roll over (speculative) or even to increase (Ponzi) their indebtedness. The result is that, while hedge units are vulnerable only to the possibility that realized cash receipts turn out to be less than expected, speculative and ultraspeculative (or Ponzi) units –that have to borrow in order to fulfill their debt commitments– are also vulnerable to the availability and the cost of credit.

The mixture of hedge, speculative and Ponzi units present in the economy becomes then a measure of the robustness of the financial system. Let us take the example of a table: the less vulnerable to shocks, the more robust it is.<sup>3</sup> The same holds for financial systems: a financial system is robust if dominated by hedge units and fragile if dominated by speculative and Ponzi units. In the first case, it is vulnerable only to real shocks; in the second case it is also vulnerable to financial shocks. Given the common practice of financing long-term positions with short-term indebtedness, firms, financial institutions and the government can be currently classified as

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<sup>2</sup> Minsky does not specify the clause of fixed-interest rates. In the absence of this clause, however, his reasoning would give rise to the ambiguity described in Arestis and Glickman 2002. A hedge-unit with long-term variable-interest rate indebtedness would remain vulnerable to the conditions prevailing in the financial markets. Thus, contrarily to what follows, the incidence of hedge units would not mirror the stability of the financial system intended as invulnerability to financial shocks.

speculative units. We thus live in a regime of financial fragility. In addition, any possible fall in profits or credit tightening is bound to reduce the hedge units and/or to increase the speculative and ultraspeculative units, thus rising the degree of financial fragility.

The relationship between debt commitments and profits is central to Minsky's theory. Quoting Minsky 1975 p. 86: "The fundamental speculative decision of a capitalist economy centers around how much, of the anticipated cash flow from normal operations, a firm, household or financial institution pledges for the payment of interest and principal on liabilities." The reason is that, if expectations go wrong, the unit might firstly become a necessitous borrower at penalty terms, then a forced seller of assets and lastly fail because it is unable to meet its commitments.

Given the limits of collective and individual rationality, in Minsky's world the recent experience is the main guide to the future. The ease with which payment commitments have been met in the recent past determines the confidence in the future fulfillment of debt commitments. This triggers an important deviation amplifying mechanism: "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." (Minsky 1986 p. 187). Expansion thus turns into a euphoric boom. Sooner or later, however, euphoria ends by clashing with reality: "As a previous financial crisis recedes in time, it is quite natural for central bankers, government officials, bankers, and even economists to believe that a new era has arrived. Cassandra-like warnings that nothing basic has changed, that there is a financial breaking point that will lead to a deep depression, are naturally ignored in these circumstances" (Minsky 1986 p. 213). Financing is often based upon the assumption that "the existing state of affairs will continue indefinitely" (Keynes 1936 p. 152). On the contrary, "each state nurtures the forces that lead to its own destruction" (Minsky 1975 p. 128).

### 3. Minsky's 'financial' theory of investment

As we have seen, Minsky questions the Patinkin thesis according to which the system spontaneously tends to a long-run general equilibrium. As if this were not enough, however, he also rejects the less ambitious concept of short-run equilibrium. As a consequence of the volatility

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<sup>3</sup> See Vercelli 2001.

of expectations, this is a constantly changing equilibrium that the system can reach only by chance and for an instant (Minsky 1975 p. 86). With this, Minsky totally rejects the ‘crutch’ represented by the concept of equilibrium. Instead of speaking of equilibrium or disequilibrium, Minsky 1986 p. 176– just like Joan Robinson (1971) – prefers to refer to states of tranquility hiding within themselves disruptive forces destined to gain strength with the passing of time. In his view: “instability is determined by mechanisms within the system, not outside it; our economy is not unstable because it is shocked by oil, wars or monetary surprises, but because of its nature” (Minsky 1986 p. 172).<sup>4</sup>

Minsky’s theory, as the theory that Minsky attributes to Keynes, is at the same time “an investment theory of the business cycle and a financial theory of investment” (Minsky 1978 p. 30). From the first point of view, it is a theory which identifies investment as the first cause of income fluctuations. According to Minsky, the role of consumption is minor and mainly consists in its multiplicative effects.<sup>5</sup> As far as investment determination is concerned, Minsky claims that the basic characteristic of a capitalist economy is the existence of two prices: the (more volatile and uncertain) price of capital assets and the price of current production. Belonging to both categories, investment has the function of aligning the two prices. By so doing, however, it attracts uncertainty passing it on to the rest of the economy.<sup>6</sup>

In Figure 1, the two prices at the basis of Minsky’s analysis are shown by the broken lines, which appear to be similar to those in Tobin's q theory of investment.<sup>7</sup> The broken horizontal line  $P_k$  gives at the same time the price of capital assets -equal to the present value PV of expected profits  $\Pi_e$ - and the demand price for investment goods. Capital assets are valuable since they are a source of expected profits which –depending on the scarcity of capital and therefore on expected demand instead of on the marginal productivity of capital<sup>8</sup>- are prone to a high

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<sup>4</sup> On this important aspect, see Vercelli 2001. According to Vercelli, Keynes referred to a short run unemployment equilibrium destined to fluctuate whenever current views about the future change. Minsky had in mind a system whose structure and whose dynamic behaviour endogenously change with the passing of time.

<sup>5</sup> To quote Minsky 1986 p. 171: “Investment is the essential determinant of the path of a capitalist economy: the government budget, the behavior of consumption, and the path of money wages are secondary. As we all know, the basic cyclical properties of our type of economy were evident when labor market institutions were very different and government was small.”

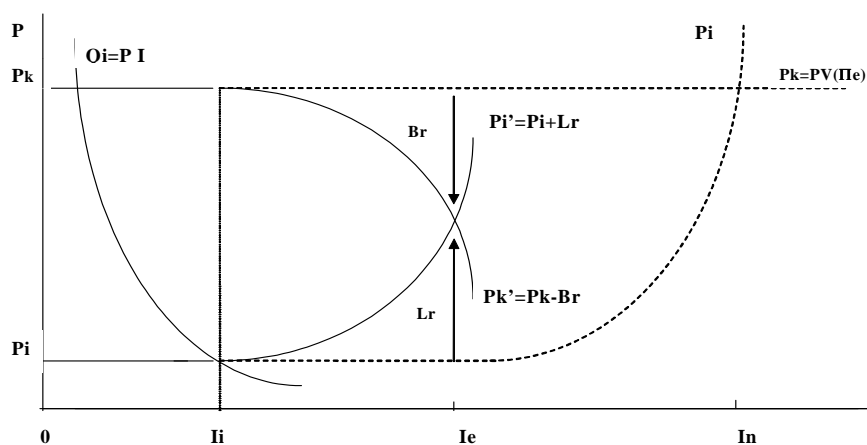
<sup>6</sup> On this, see Kregel 1992.

<sup>7</sup> On this, see for instance Tobin and Brainard 1977.

<sup>8</sup> As Minsky 1986 p. 204 says: “To Wall Street the technical productivity of a Boeing 747 to deliver seat-miles is of secondary importance; what is important is the ability of an organization in a particular market and economic situation to operate 747s profitability.”

uncertainty. The price of capital assets is equal to the present value of these expected profits; by analogy, it also represents the demand price for investment goods. The rising broken curve  $P_i$  gives the supply price of investment goods, similar to the price of current production. It is composed by the technologically determined cost (which, given the productive capacity, from a certain point curves upwards) plus the interest on the short-run financing required by the production of investment goods plus the mark-up. The intersection between the broken demand price horizontal line  $P_k$  and the broken supply price curve  $P_i$  determines the level  $I_n$  of investments in Figure 1. This level could be defined as “notional” since –up to now- firms do not yet know if and how it can be funded.

Figure 1. The determination of investment



After having identified the profitable opportunities for investment ( $I_n$  in Figure 1) whose present value  $P_k = PV(\Pi e)$  is higher than the cost  $P_i$ , firms have to establish how to finance the purchase of new machinery. To this end, firstly they have to foresee the internal funds (gross profits minus taxes and debt commitments) they will be able to accumulate during the gestation period ‘between the decision to invest and the completion of investment’ (Minsky 1986 p. 185). The difference between the value of profitable investments and the expected internal funds will give the extent of external funds (loans, bonds or equities financing) demanded by firms at the moment of purchase. The supply of funds aligns itself to the demand of funds.

The above mentioned financial considerations are represented by the solid lines in Figure 1. The equilateral hyperbola  $Q_i = P \cdot I$  gives the combinations of  $P$  and  $I$  compatible with the internal funds  $Q_i$  that the firms foresee accumulating during the gestation period of investment. The intersection of the equilateral hyperbola  $Q_i$  and the supply price curve  $P_i$  gives the level of investment -  $I_i$  in Figure 1- that can be financed with the expected internal funds. For investment levels greater than  $I_i$ , firms will have to resort to indebtedness. Indebtedness in its turn involves the risk -a borrower's risk ( $Br$ ) for firms and a lender's risk ( $Lr$ ) for their financiers- that expectations go wrong and that, once installed, investment generates profits less than debt commitments. *Ceteris paribus*, this risk increases with debt commitments and therefore with indebtedness.

For investment levels greater than the one that can be internally funded, i.e. greater than  $I_i$  in Figure 1, the curve of the demand price for and the curve of the supply price of investment goods have to be adjusted for the increasing risks related to indebtedness. The result is again represented by the solid lines in Figure 1. The borrower's risk adjusted demand price curve, shown as  $P_k' = P_k - Br$  in Figure 1, is obtained by subtracting the borrower's risk  $Br$  from the original demand price  $P_k$ . To quote Minsky: "Borrower's risk shows up in a declining demand price for capital assets. It is not reflected in any financing charges; it mirrors the view that increased exposure to default will be worthwhile only if there is a compensating potential capital gain." (See Minsky 1986 p. 190). The risk adjusted supply price curve, shown as  $P_i' = P_i + Lr$  in Figure 1, is obtained by adding the lender's risk  $Lr$  to the original supply price  $P_i$ . To quote Minsky again: "The supply schedule of investment goods rises after some output. However, lender's risk imparts a rising thrust to the supply conditions for capital assets independent of technological-supply conditions. This rising thrust takes a concrete form in the financing conditions that bankers set. In loan and bond contracts, lender's risk is expressed in higher stated interest rates, in terms to maturity, and in covenants and codicils." (Minsky 1986 p. 192).<sup>9</sup>

The intersection between the solid line of the borrower's risk adjusted demand price  $P_k'$  and the solid line of the lender's risk adjusted supply price  $P_i'$  determines the effective level of investments,  $I_e$  in Figure 1. The excess of effective investments  $I_e$  over internally financed

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<sup>9</sup> To sum up in Minsky's words: "Both borrowers and lenders want protection, and the demand for protection by borrowers lowers the demand prices for capital assets and by lenders raises the supply price of investment output." (Minsky 1986 p. 188)



investments  $I_i$  shows the level of indebtedness. The gap between the original demand price  $P_k = PV(\Pi_e)$  and the original supply price  $P_i$ , corresponding to  $I_e$ , gives the safety margins required by firms and their financiers in the face of the risks related to indebtedness.<sup>10</sup> Together with the capitalization factor<sup>11</sup> used to calculate the original demand price  $P_k = PV(\Pi_e)$ , these safety margins are the channel through which uncertainty about the future fulfilment of debt commitments influences investment decisions.

In order to analyse the implications of the preceding analysis, let us see what happens if the rate of interest increases. The initial situation is represented by the solid lines in Figure 2. Following Minsky 1986 p. 195, the long-term rate of interest is used to actualize expected profits; it therefore negatively affects the original demand price for investment  $P_k = PV(\Pi_e)$ . The short-run rate of interest represents a cost for the producers of investment goods and thus positively affects the original supply price of investment goods. In the presence of a general increase in the level of interest rates, the original (and consequently the adjusted) demand price for capital assets thus falls as long as long-term interest rates increase, while the original (and consequently the adjusted) supply price of investment output rises as short-term interest rates rise. As shown by the shift from the solid to the broken lines in Figure 2, the over-all effect of an increase in interest rates is a fall in effective investments from  $I_{e0}$  to  $I_{e1}$ .<sup>12</sup> Minsky's analysis thus confirms the traditional negative relationship between investments and the rate of interest. Its novelty is that this relationship remains in the background. As we shall see, dominating the scene are expectations and the degree of confidence placed on them.

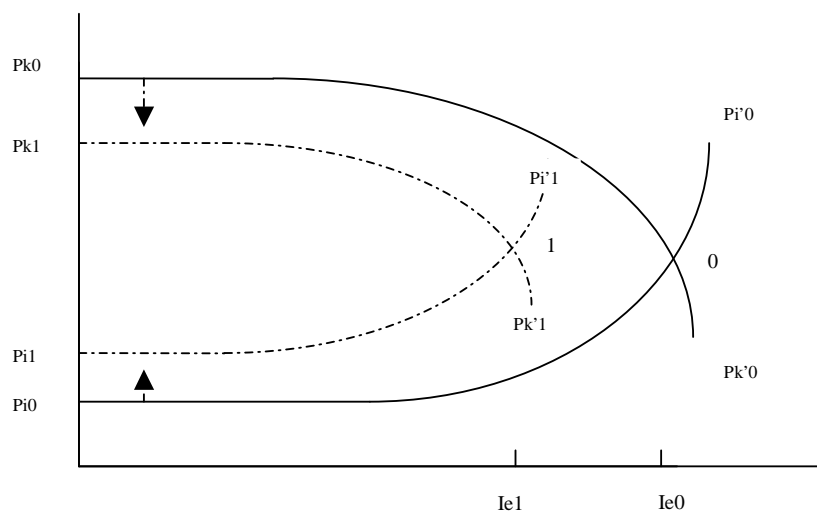
Fig 2. The effect on investments of an increase in interest rates.

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<sup>10</sup> If realized profits turn out to be less than those expected, safety margins will increase firms' capacity to meet debt commitments. They consequently increase the robustness of the financial system, intended as its capacity to absorb the shocks under conditions of normal functioning (i. e. without implying the sale of assets). If realized profits turn out to be equal to or greater than expected ones, safety margins will represent a compensation to firms and their financiers in the face of the respective risks.

<sup>11</sup> To quote Minsky 1986 p. 183: "As sketched in the previous section, the quantity of money, the value placed upon liquidity, and the income and liquidity characteristics of the various capital and financial assets lead to the set of prices of capital and financial assets." As we shall see, according to Minsky the value placed on liquidity is positively related to the level of uncertainty.

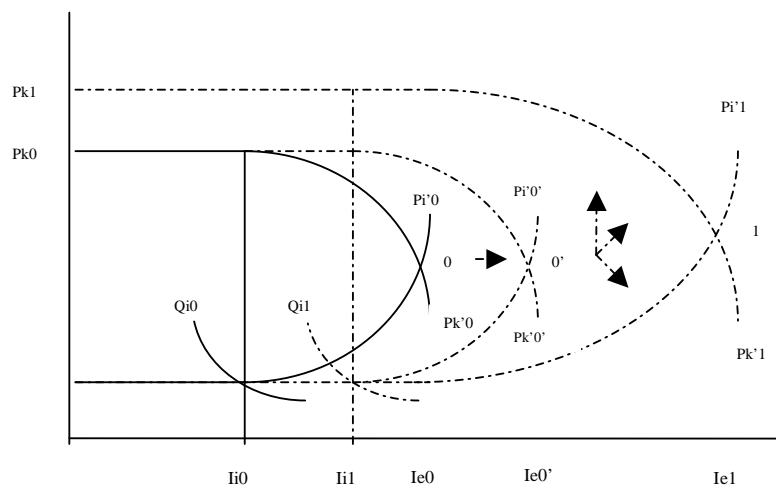
<sup>12</sup> In Figure 2, the level of investments  $I_i$  (from which borrower's and lender's risks start) that can be financed by the given internal funds  $Q_i$  falls if the original supply price  $P_i$  increases. This is the reason why, in the shift from the solid to the broken lines, the bifurcation between the original and the adjusted curves moves leftwards.



The role of the determinants of investment that are different from interest rates –given, respectively, by profit expectations ( $Q_i$ ,  $\Pi_e$ ) and by uncertainty about the future fulfilment of debt commitments ( $Br$ ,  $Lr$ )- is summarized in Figure 3, which shows the case of an unexpected increase in realized profits. The initial situation is again represented by the solid lines. To start with, following Minsky 1986 pp. 193-4, the increase in profits gives rise to an increase in the available internal funds  $Q_i$ , thus causing a rightward shift of the equilateral hyperbola  $Q_i = P I$ , of the level of internally financed investments  $I_i$ , and of the borrower's and lender's risks starting from  $I_i$ . As shown by point  $0'$ , the result is an internally funded increase in effective investments (from  $I_{e0}$  to  $I_{e0}'$ ). This, however, is not yet the end of the story. By increasing profits expected after the installation of the investment goods  $\Pi_e$ , the rise in current profits has two further effects. Firstly, it increases the original demand price for investment goods  $P_k = PV(\Pi_e)$ . Secondly, it increases the confidence in the future fulfilment of debt commitments, thus reducing the borrower's and lender's risks.<sup>13</sup> In both cases, the result is a further increase in effective investment (from  $I_{e0}'$  to  $I_{e1}$  in Figure 3) that this time is financed by indebtedness. *Implicitly*, Minsky is thus assuming that the unexpected rise in current profits is perceived as permanent. If it were not so, according to his analysis, current profits would not have any effect on externally financed investments in Figure 3.

Figure 3. The effects on investments of an unexpected increase in profits

<sup>13</sup> Obviously, the fall in the lender's risk ( $Lr$ ) turns into a decrease in the lenders' risk adjusted supply price ( $P_i'$ ) only if the financing contract allows the lender to modify the terms of the financing (see Minsky 1986 p. 194).



Minsky's theory is a 'financial' theory of investment under conditions of uncertainty, a theory inspired by Keynes (Minsky 1972) which focuses on the ways in which investment is financed and on the perceived risks connected to indebtedness. Its main implications emerge from Figure 3. An increase in profits gives rise to an increase in both internally and externally financed investments. In its turn, the higher indebtedness is associated to lower safety margins. Economic growth thus leads to a more fragile financial system. The just mentioned implications, however, are anything but granted. They are the result of the particular role assigned to profits and of the particular shapes assigned to the Pk and Pi curves.

To start with, it is worthwhile recalling that the equilateral hyperbola  $Q_i$  in Figure 3 refers to expected internal funds and therefore profits.<sup>14</sup> Since expected internal funds are given by assumption, higher investments inevitably require higher indebtedness. In his subsequent works, Minsky recognizes that investments are a source of profits and thus of internal funds. In some passages (Minsky 1975 p. 114, Minsky 1986 pp. 193-4, Minsky 1980), he then tries to incorporate this phenomenon in his investment function. Firstly, he assumes that -once realized- effective investments  $I_{e1}$  cause an unexpected increase in internal funds analogous to the one shown by the rightward shift of the equilateral hyperbola from  $Q_{i0}$  to  $Q_{i1}$  in Figure 3. By so doing, he *implicitly* assumes that investments can only partially self-finance themselves. In addition, Minsky *implicitly* assumes that the increase in profits is perceived as permanent. This increase

<sup>14</sup> For this important aspect, see Lavoie and Seccareccia 2001.

thus raises both profit expectations and confidence, stimulating externally financed investments from  $Ie_0'$  to  $Ie_1$  in Figure 3.<sup>15</sup> The whole aforementioned procedure does not seem fully convincing; the same obviously holds for Minsky's conclusions.

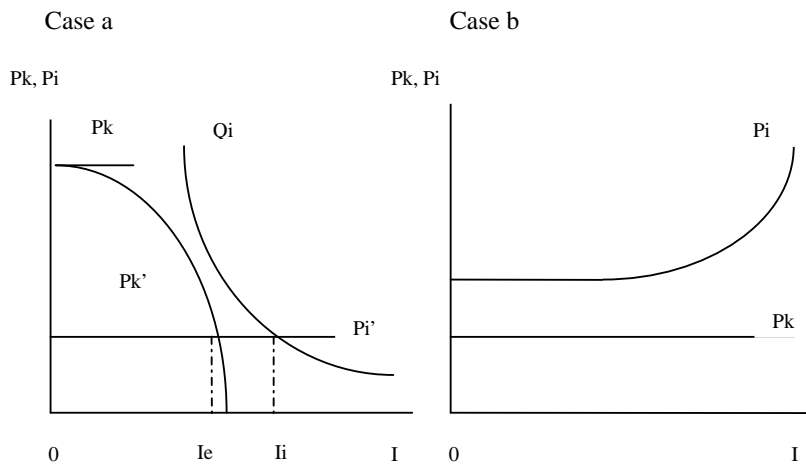
Turning to the shapes of the functions, let us imagine that the adjusted demand price curve  $Pk'$  is downward sloping from the beginning and/or that the adjusted supply price curve  $Pi'$  is upward sloping from the beginning. In such a case, the effective level of investments ( $Ie$ ) determined by the intersection between the two curves might turn out to be less than the level that can be internally financed ( $Ii$ ). Internal funds would be used not only to finance investments, but also to reduce indebtedness or to accumulate financial assets. Above all, the increase in profits would not cause any rise in investments and might be used to reduce indebtedness, instead of stimulating it. Indeed, Minsky takes into account the case (case a in Figure 4) of an adjusted demand price curve downward sloping from the beginning which gives rise to effective investments  $Ie$  smaller than the level that can be internally financed  $Ii$  (Minsky 1975 p. 127).<sup>16</sup> Minsky takes also into account the case (case b in Figure 4) of 'present value reversal', in which the original demand price falls below the original supply price and consequently firms have no profitable opportunity to invest (Minsky 1975 p. 127; Minsky 1986 p. 195). In Minsky's opinion, however, these are exceptional cases characterizing the situations after a crisis (Minsky 1975 p. 115, Minsky 1986 p. 195). Under normal conditions, the investment function is the one described above.

Figure 4. The situations after a crisis.

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<sup>15</sup> Quoting Minsky: "If the actual cash flows....exceed the anticipated cash flows...., then the amount of external financing actually required will be smaller than expected. When this occurs, the balance sheet with the newly acquired capital assets will be less encumbered by debt than originally anticipated. Such a better-than-anticipated balance sheet means that both the firms and its bankers view the investing units as having unused borrowing power, and the financing conditions for subsequent investments will be more favorable."(Minsky 1986 pp. 193-4).

<sup>16</sup> Minsky refers this case to an individual firm characterized by a high sensitivity of borrower's risk to investments. However, how can investments imply a borrower's risk if they do not require any borrowing?



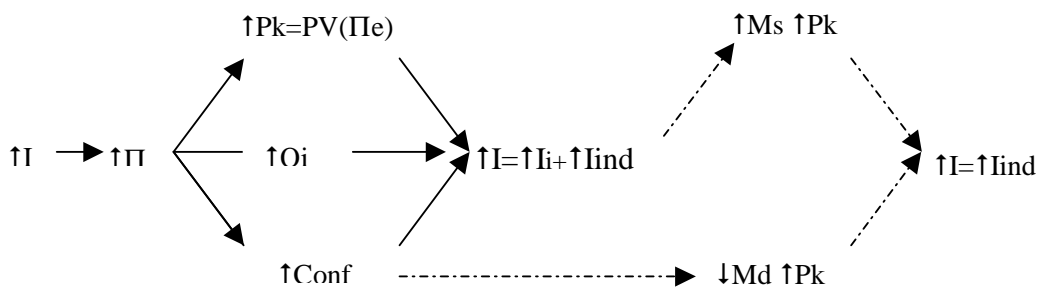
Which are, then, the ‘normal conditions’ that Minsky has in mind? As we have seen, Minsky refers i) to a horizontal original supply price curve  $P_i$  and ii) to an original demand price curve  $P_k$  placed above the  $P_i$  curve and again horizontal. Minsky is thus referring, respectively, to an economy with inutilized resources and profitable investment opportunities, in which firms and their financiers expect with certainty that any increase in output will find its own demand.<sup>17</sup> Under these circumstances, firms use all their profits and borrow in order to invest. Investment is limited by the safety margins required to offset the risks connected to indebtedness, not by the insufficient profitability of investments or by the risk of negative yields. Any increase in profits is not merely reinvested. Being perceived as permanent, it improves expectations and confidence thus stimulating indebtedness and externally financed investments. To sum up, what Minsky seems to consider as normal is a vibrant and euphoric economy with unitilized resources.

#### 4. The interdependence between investments and profits and the related deviation amplifying processes

<sup>17</sup> Keeping returns and costs as given, let us assume that firms have in mind a given expected demand for their products. Under these circumstances, the increase in investments might imply i) the expectation of an excess supply of goods and thus of falling good prices and of falling investment yields and ii) an increasing ‘economic’ risk that the excess supply might remain unsold giving rise to losses. The expectation of decreasing yields would imply an original demand price curve  $P_k$  –and thus also an adjusted demand price curve  $P_k'$ - decreasing from the beginning. The appearance of the economic risk of investment projects would accentuate the downward slope of the adjusted demand

Minsky guessed the financial instability hypothesis from the beginning (Minsky 1957). To justify it analytically, he first introduced his investment theory with the related relationship from profits to investments (Minsky 1972). Then, he added the relationship from investments to profits (Minsky 1975 p. 114). The resulting interdependence (Minsky 1980, Minsky 1986) became the “keystone” of the deviation amplifying processes underlying Minsky’s financial instability hypothesis. Making reference to a vibrant and euphoric economy, Minsky writings generally dwell longer on the expansionary phase of the cycle. Following Minsky, Figure 5 thus assumes an initial increase in investments.

Figure 5. The deviation amplifying processes



Let us consider the initial link (from investments to profits) in Figure 5. In his works, Minsky adopts a conception à la Levy-Kaleki-Kaldor 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 profits to the sum of investments, government budget, net exports and capitalists’ consumption net of workers’ savings.<sup>18</sup> The initial increase in

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price curve  $P_k'$ . For investment levels greater than  $I_i$ , it would also increase the lender’s risk and thus the upward slope of the adjusted supply price curve  $P_i'$ .

<sup>18</sup> Aggregate saving  $S$  is the sum of workers’ saving ( $S_w$ ) and capitalists’ saving ( $S_c$ ), equal to the difference between capitalist profits ( $\Pi$ ) and capitalist 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:  $\Pi = I + DF + NX + C_c - S_w$ . Profits  $\Pi$  are therefore determined by investments  $I$ , government deficit  $DF$ , net exports  $NX$  plus capitalists’ consumption  $C_c$  net of workers’ saving  $S_w$ .

investment thus generates an equal increase in profits in Figure 5.<sup>19</sup> Profits, however, in their turn affect investments. According to the investment function, the increase in realized profits has three effects: i) raises profits expected during the gestation period of investment, thus increasing expected internal funds ( $Q_i$ ), ii) raises profits expected after the investments are installed and used in production ( $\Pi_e$ ), thus increasing the original demand price of investments  $P_k = PV(\Pi_e)$ , and lastly iii) raises the confidence (Conf) in future profits exceeding debt commitments, thus reducing the borrower's and lender's risks. As shown in Figure 5, the three effects imply a second increase in investment, which is financed partly internally (Ii) and partly by indebtedness (Iind). This new increase in investments bring us back to the starting point in Figure 5, giving rise to further increases in profits and investments. As shown by the solid arrows in Figure 5, the interdependence between investments and profits becomes thus the basis of an upward spiral involving all the variables concerned.

The aforementioned deviation amplifying mechanisms are amplified by their repercussions on the money market. This brings us to the broken arrows in Figure 5. The first upward sloping broken arrow refers to the supply side of the money market. In Minsky's view, money is endogenously created and influences the demand of non-monetary assets, rather than of goods. Insofar as the increase in indebtedness implies an increase in bank credit, it also implies an increase in money supply  $M_s$ . The result is an increase in the price of capital assets  $P_k$  which, according to Minsky's investment function, determines a new (this time externally financed) increase of investments on the extreme right of Figure 5.

The horizontal broken arrow in Figure 5 refers to the demand side of the money market. As a premise, 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, the main characteristic of money is that it allows the fulfilment of the payment commitments connected to indebtedness and productive activity. Money is mainly demanded since it offers 'insurance services' against bankruptcy (op. cit. p. 180). The value of these insurance services depends on the confidence in

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<sup>19</sup> Minsky, however, carefully underlines that -since profit has to cover overheads and ancillary expenses, financial commitments and so on- the remaining internal funds  $Q_i$  are less than the investment. The implication is that, even if investment generates an equal amount of profits, it is not able to self-finance itself and thus needs indebtedness.

the future. In Figure 5, the greater confidence due to the rise in profits thus determines a portfolio reallocation from money to non monetary assets that increase capital asset prices. The result is a new increase in externally financed investments on the extreme right of Figure 5. This increase brings us back to the starting point in the Figure; where the aforementioned deviation amplifying mechanisms start again.<sup>20</sup>

To sum up, if we consider Figure 5 as a whole, the initial increase in investments triggers an upward spiral that involves all the variables concerned (with the only exception of the demand for money, which falls). According to this spiral, growth is associated not only with increasing indebtedness but also with an increasing confidence, i.e. with decreasing safety margins. With the passing of time, the financial system becomes more and more fragile. Sooner or later, a growing economy will become prone to financial crises. As we have seen, however, this conclusion presupposes a vibrant and euphoric economy in which profits are not only reinvested but are also perceived as permanent, thus stimulating indebtedness and confidence.

## 5. Minsky's financial instability hypothesis

In 1936 Jacob Viner proposed the rigidity-based interpretation of Keynes destined to become dominant thanks to the Neoclassical Synthesis. In 1937, Keynes rejected that interpretation, pointing out that *The General Theory* was a theory of the fluctuations in production and employment originating from financial markets. Minsky traced back his financial instability hypothesis to the reply of Keynes to Viner (Minsky 1977). Such a hypothesis found its most mature formulation in Minsky 1986 volume *Stabilizing an Unstable Economy*.

The starting point of Minsky's financial instability hypothesis is that "Stability - or tranquillity - is destabilising" (Minsky 1975 p. 127, Minsky 1978 p. 37), and that "the fundamental instability is upward" (Minsky 1975 p. 165, Minsky 1986 pp. 119-220). 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 of firms and financial intermediaries, thus decreasing both the value placed upon liquidity and the borrowers'

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<sup>20</sup> Minsky adds that the increase in the price of capital assets fuels expectations of capital gains that stimulate the demand for capital assets giving rise to further increases in their price. By rising the net worth of firms and financial



and lenders' risks.<sup>21</sup> This means, respectively, that the price of capital assets increases and that the desired safety margins decrease. According to Minsky's investment function, the result is an increase in investment financed by indebtedness. This increase, in its turn, triggers the deviation amplifying mechanisms described in the previous section. In this way, the expansion turns into a boom financed by indebtedness.

At this point, Minsky focuses on two drawbacks of the boom. The first one refers to the general euphoria. The increasing confidence implies decreasing safety margin. Firms' debt commitments increase more rapidly than profits, ending by rising above them. Indebtedness does not only grow fastly, but increasingly takes the shape of short-term debt, which requires the repayment of principal at a faster pace than the cash generated by the underlying operation permits. Given the expectation of a future bonanza, firms start financing by indebtedness not only the principal (speculative financing) but also interest payments (ultra-speculative or Ponzi finance). The fulfilment of debt commitments is based no longer on profits but, respectively, on the rolling over or the increase in indebtedness. From being initially robust, the financial system becomes fragile. Turning to the second drawback, we observe that the persistence of the boom inevitably ends up creating either bottlenecks in the financial system or inflationary pressures pushing the central bank in a deflationary direction. In both cases, the result is an increase in the rate of interest.<sup>22</sup>

The rise in the interest rate does not just end the boom, turning the investment-profit-investment chain into a downward spiral. In a now fragile financial system, it sets off the financial crisis: firms are no longer able to fulfil their debt commitments in the normal way, i.e. by profits or indebtedness (Minsky 1982b). The unexpected increase in the cost of funds is associated with the unexpected fall in (the yet insufficient) profits. The fulfilment of inherited debt commitments would thus require an increase in indebtedness. This solution, however, is

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intermediaries, the increase in the price of capital assets also stimulates both the propensity to borrow and the availability of credit, thus strengthening the tendency to increase indebtedness.

<sup>21</sup> To quote Minsky, "...but tranquility diminishes the value of the insurance (liquidity) embodied in the dollar, so that a rise in the absolute and relative prices of capital and financial assets that are valued mainly for income will take place. Tranquility therefore leads to an increase in acceptable debt to equity ratios even as it raises the value of inherited capital assets. The endogenously determined value of liquidity means that each possible equilibrium of the economy contains disequilibrating forces." (See Minsky 1986 p. 183)

<sup>22</sup> Quoting the author: "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

neither desirable nor possible since the confidence underlying indebtedness fades away. Given this situation, the primary aim of firms (shared by their financiers) becomes to fulfil inherited debt commitments and to reduce indebtedness rather than financing new investments. The only way to reach the new target is the sale of assets, that after the boom are mainly illiquid assets. This, however, implies a fall in the price of the assets which, by reducing the net wealth of firms and financial intermediaries, reinforces the need to squeeze indebtedness by selling assets. Assets prices fall precipitously. The fall of capital asset prices strengthens the fall of investments and profits, and viceversa. The crisis, thus, turns into a debt deflation, which in Minsky's framework is an asset price as well as a profit deflation. The progressive fall in profits and asset prices will end by making the 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 (able to fulfil their debt commitments by profits) survive. Under these circumstances, a phase of tranquility will suffice to reactivate the sequence just described. According to Minsky's 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 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 (Minsky 1986). 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 wonders whether 'It' can happen again (Minsky 1982a). 'It' is the Great Depression and Minsky's answer is affirmative.

Given the tendency of capitalist economies to financial crises, followed by debt deflations and deep depressions, the issue of the efficacy of economic policies acquires a crucial role. 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 money influences the demand for assets, rather than for goods. Thus, the central bank intervention may turn out to be harmful as well as ineffective. Quoting Minsky (1986), "Monetary

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interest rates." (See Minsky 1978 p. 45) The reference to the Central Bank, however, is not clear since Minsky

policy to constrain undue expansion and inflation operates by way of disrupting financial 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 or the behaviour of the economy, the central bank should focus on its function as lender of last resort. By enabling the financing of financial institutions and by sustaining asset prices, the central bank might prevent financial crisis, so removing the threat of debt deflations and deep depressions.

In fact, Minsky assigns to fiscal policy the task of promoting full employment and stabilizing the economy. As he puts it, “Fiscal policies are more powerful economic control weapons than monetary manipulations” (1986 p. 304). According to Minsky, the role of fiscal policy is not only to underpin demand and to drive the system to full employment, so offsetting the essential failure of a capitalist market economy to provide sufficient aggregate demand. Through fiscal stabilizers, ‘Big government’ can protect the robustness of financial system by supporting profits and by issuing government bonds during recessions. Finally, big government has the function to reduce inequality and insecurity 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.

According to Minsky 1982a p. xi, “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.” In Minsky’s view, the merit of this success goes to the lending of last resort by the Central Bank and to the presence of a big government. We must thus proceed in this direction, since “laissez-faire is a prescription for economic disaster” (Minsky and Whalen 1996 p. 161)

## 6. The applications of Minsky’s financial instability hypothesis to the real world

Minsky's analysis has been recently utilized to interpret important instability episodes, which are obviously related to situations of upward instability. As we have seen, during his life, Minsky himself saw a confirmation of his analysis in the numerous financial crises experienced

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assumes an endogenous money supply.

by the American economy. Some authors extend Minsky's preoccupations about the financial stability of the USA to the present. Together with other economists of the Levy Economics Institute, Godley, Izurieta and Zezza 2004 focus on the financial imbalances currently characterizing the American economy. Given the heavy indebtedness of the private sector and the large government and external deficits, the maintenance of a satisfactory growth in the medium term will require a consistent devaluation of the dollar. This will be coupled with a fall in the domestic absorption of goods and services which will impart a deflationary impulse to the rest of the world.

Sawyer 2001 criticizes the European single currency from a Minskyan perspective. Minsky's approach would have implied rather different policy arrangements for the European monetary union. The primary task assigned to the European Central Bank would have been financial (rather than price) stability. The importance of lender of last resort interventions in aborting and containing debt deflations (and therefore the thrust towards deep depressions) would have been recognized instead of being ignored. The role of fiscal policy in ensuring financial stability and in supporting the economy would have been recognized, instead of subordinating fiscal to monetary policy in controlling inflation. The scope of fiscal policy would have been expanded through the institution of a European federal budget instead of being limited through the introduction of constraints on national government budgets. The deflationary impacts of fiscal constraints that led to the recent loosening of the Growth and Stability Pact would have been recognized in advance of their taking place.

Minsky's financial instability theory was mainly developed in the context of a closed economy. Its extension to the open economy, however, gave rise to stimulating interpretations of the crisis that took place in Southeast Asia in 1997-8. According to Arestis and Glickman 2002, the threats emanating from the financial system are much intensified in open, liberalized, developing economies. The possibility of borrowing abroad offered by an open economy fuels both the upward instability and the tendency towards financial fragility. In the absence of capital controls -and especially if interest rates are low in the major financial centres- liquid funds will switch into the growing economies. Capital inflow will thus reinforce the upward instability of these economies. Through the increase in domestic deposits and in domestic security prices, capital inflow will also stimulate both the availability of credit and the propensity to borrow, thus

strengthening the tendency to a higher indebtedness. In addition, units which borrow abroad will have to fulfil their debt commitments in foreign currency and thus will also become vulnerable to movements in the exchange rate. The increase in indebtedness, together with the denomination in foreign currency of part of it, will stimulate the tendency towards financial fragility. The economy will thus become prone (i) to a crisis that is domestic in origin but impacts on its external situation (a '*d to e*' crisis) (ii) to a crisis that is external in origin but impacts on its domestic situation (a '*e to d*' crisis) and (iii) to deviation-amplifying interactions between (i) and (ii).

The '*d to e*' crisis is essentially the one described in section 5. Once more, however, the openness of the economy accentuates the problems. When the crisis evolves into a debt deflation and a big depression, a flight towards liquidity will break out. Some investors will seek to diversify the now larger liquidity by shifting into other currencies. Others will act in anticipation of behaviour of this kind. The domestic currency will be sold heavily and this will trigger an exchange rate crisis. The devaluation will increase the difficulties of the units with debts commitments in foreign currency and cash receipts in domestic currency, thus intensifying the crisis.

The opening of the economy introduces also the possibility of an '*e to d*' crisis. Capital inflow sustains the domestic exchange rate and thus worsens the current account. As the ratio between foreign indebtedness and foreign reserves grows, speculators may begin to doubt the ability of the state to support the currency and move, possibly on a massive scale, against the currency concerned. As a consequence of the devaluation, units with debt commitments in foreign currency and cash receipts in domestic currency will experience more difficulties in fulfilling their debt commitments. Capital outflow will imply the sale of domestic assets and thus a fall in their prices. As a consequence, the rolling over of domestic debts will also become more difficult. The devaluation can thus trigger a financial crisis. Under the pressures emanating from the international financial system, during both the '*d to e*' and the '*e to d*' crises, the central bank will raise interest rates in order to bolster the exchange rate. In an open economy, monetary policy thus ends up accentuating the debt-deflation processes instead of mitigating them as Minsky suggested.

According to Arestis and Glickman 2002, the crisis experienced in Southeast Asia in 1997-1998 is an '*e to d*' crisis. Its distinctiveness is that the crisis experienced by the various countries

coincided with the spread of financial liberalization processes. Financial liberalization sweeps away the rules and conventions which previously governed the financial system, speeding up the process by which debt ratios rise. It also weakens the barrier of financial conservatism which, in Minsky's view, acts to contain speculative behaviours. From a Minskyan perspective, the connection between liberalization, financial instability and financial crises is thus perfectly understandable. As Minsky claimed, controls on domestic financial systems and on capital movements preserve the stability of the financial system.

Kregel 2001 also offers a Minskyan interpretation of the Asian financial crisis. Both directly and through its effects on the exchange rates, a rise in foreign interest rates increases the debt commitments in the indebted developing countries. Whether this greater fragility turns into instability and crises will depend on the willingness of foreign banks to extend foreign currency lending. If foreign banks are unwilling to do so, the 'normal functioning' of the financial system will be compromised. The result will be a Minskyan debt-deflation process. Firms and banks will try to liquidate their stocks of goods and assets in order to fulfil their debts commitments and reduce their debts. The consequent fall in the price of their products, in the price of their assets and in the value of the domestic currency, however, will further diminish their ability to fulfil debt commitments and to reduce debts.

Mistaking the crisis for a traditional balance of payments crisis, the IMF required a reduction in government expenditure and tight monetary targets. This, however, was the opposite of what was required from the point of view of stopping a Minskyan debt-deflation crisis. A slowdown in domestic demand could only decrease the cash receipts of firms, while the increase in interest rates could only increase their financing costs. A more reasonable response would have been to attempt to slow down the withdrawal of foreign lending and to ease the conditions of payment. At the same time, expansionary monetary and fiscal policies should have been adopted in order to reinforce the financial system and hinder debt deflation.

Arestis 2001 compares the Southeast Asia crises of 1997-1998 with the crises of the period 1977-1996. All these crises have some features in common. They were preceded by a process of financial deregulation that prompted a climate of euphoria and speculation. However, those of 1997-1998 were currency speculative-induced crises while those of 1977-1996 were balance of payments speculative-induced crises. The crisis of 1997-1998 was triggered by the devaluation

caused by the reversal of capital flow due to the rise of the ratio between foreign indebtedness and foreign reserves. The origin of the crises of the period 1977-1996 was, instead, the balance of payments deficit due to an unsustainable speculative consumption boom. In any case, both kinds of crises are perfectly understandable from a Minskyan perspective.

The frequency and the enormous costs of financial crises point to the need for a reform of the international financial system. The massive increase in the volume of foreign exchange transactions over recent years, relative to the volume of international trade, implies that the financial transactions influenced by differential interest rates and by expected exchange rate movements have grown relative to transactions related to international trade. According to Sawyer 2001, this is not unconnected with the higher volatility of exchange rates observed in the post-Bretton Woods era. In the presence of foreign indebtedness, the exchange rate volatility can threaten the calculations of either the lender or the borrower thus increasing financial instability. On this basis, Sawyer 2001 suggests i) measures to reduce international financial flows not related to trade or to foreign direct investment, for instance the introduction of a Tobin tax ii) the regulation of global financial institutions iii) the institution of an international lender of last resort and iv) the international coordination of domestic and exchange rate policies.

## 7. Minsky as an interpreter of Keynes.

Many objections can be raised about Minsky's financial instability hypothesis.<sup>23</sup> Between the lines, sometimes Minsky seems conscious of them. This might be the reason why he prefers to

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<sup>23</sup> Some of the possible objections are the following.

- i. If the shapes of the demand and supply price curves were different, current profits would not stimulate either investment or indebtedness. Even if tranquility gave rise to an increase in investment, this increase would not trigger a boom financed by indebtedness.
- ii. According to the financial instability hypothesis, during the boom debt commitments increase more rapidly than profits. Internal funds thus fall. This might slow down investments, activating a deviation counteracting mechanism that might hinder the boom itself.
- iii. The bottlenecks leading to the peak might take place before the financial system has become fragile. If the financial system had enough safety margins to offset the rise in interest rates, the boom would not imply any financial crisis.
- iv. Following Minsky, depression implies a 'present value reversal' according to which the original demand price of investment goods falls below the original supply price, causing a collapse in investments and profits. Under these circumstances, however, tranquility does not necessarily lead to a recovery. Even if tranquility ended by increasing the demand price of investment goods, this increase might not be sufficient to push the demand price of investment goods above the supply price.

speak of a financial instability ‘hypothesis’ rather than of a financial instability ‘theory’. Objections aside, an interesting question is: what is the relationship between Minsky and Keynes?

Minsky is currently classified as one of the main exponents of the Post Keynesian School (see King 2002 and the following debate in the *Journal of Post Keynesian Economics*). Minsky himself presented his vision as an authentic interpretation/a legitimate extension of Keynes’ thought. In Minsky’s rereading, Keynes lived through the experience of the Great Depression. He thus 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. Under these circumstances, the demand price for investment falls below the supply price, resulting in a collapse in investments and thus in profits. Pessimism gives rise to a perfectly elastic demand for money: it is the liquidity trap according to which money loses the ability to influence the interest rate. The only way out is represented by government expenditure.

According to Minsky, however, Keynes considered the Great Depression to be only an extreme case. Despite not developing it, Keynes had in mind a cyclical perspective: “The evidence that it is legitimate to interpret The General Theory as dealing with an economy that is cyclical by reason of its essential institutions is spread throughout the volume. References to cyclical phenomena occur not only in chapter 22 of The General Theory, “Notes on the Trade Cycle”, which explicitly deals with business cycles, and in the rebuttal to Viner in The Quarterly Journal of Economics of February 1937, but throughout his book. When the General Theory is read from the perspective that the subject matter is a sophisticated capitalist economy, whose past and whose future entail business cycles, the ratifying references for an interpretation within a cyclical context are everywhere evident.”(Minsky 1975 p. 58).

From a cyclical perspective, recessions can be traced back to the preceding boom. Quoting Minsky “In some important sense, what was lost from the insights of the 1920s and 1930s is more significant than what has been retained..... 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 lead to the emergence of fragile and unstable financial structures.” (Minsky 186 p. 173).



We thus come to the main point: Minsky's fundamental instability is upward (Minsky 1975 p. 165, Minsky 1980 p. 518). The aim of Minsky was to bring back Keynes' theory to its cyclical perspective: "The old ideas, of which Keynes warned in his introduction, take over at least partially in chapter 17. At a crucial juncture in the argument, stagnationist and exhaustion-of-investment-opportunity ideas take over from a cyclical perspective in which investment, asset holdings, and liability structures are guided by speculative considerations. In order to bring out the power of the ideas involved, we will undertake to adjust the argument of chapter 17 by explicitly considering liability structures and by setting the argument in a cyclical and speculative framework." (See Minsky 1975 pp. 79-80.) With his financial instability hypothesis, however, Minsky introduced an upward instability which seems to be totally foreign to Keynes' thought. What are then the relationships between Minsky and Keynes?

Undoubtedly, the basic vision of the two authors is the same. Let us think for instance about the relevance attributed to uncertainty and accumulation, about the refusal of the assumption of individual and collective rationality, about the crucial role assigned to institutions and about the attention paid to the socio-political dimension. According to the present rereading, however, Minsky and Keynes refer to different realities. Minsky looks at a vibrant economy with upward instability, naturally inclined to overinvestment and overindebtedness. Keynes looks at a depressed economy, tending to chronic underinvestment and thus to high and long lasting unemployment.

Taking into account the analogies and the differences, the two authors might be considered as two faces of the same coin, two faces that look however in opposite directions. From this perspective, Minsky might be considered as an author who has extended the economics of Keynes to a vibrant and euphoric economy, making it even more general and modern and influencing a whole generation of Keynesian economist. If Keynes had observed the U. S. economy of the last fifteen years, perhaps he too might have started to worry about upward instability.

## 8. Conclusions.

In Minsky's rereading, a Keynes without uncertainty is like a Hamlet without its Prince. Uncertainty mainly hits financial markets and the expected returns on capital assets. Minsky thus

focused on financial relations in an advanced capitalist economy, on investment under conditions of uncertainty and on the cyclical nature of the economic process. By so doing, he became one of the main exponents of the Post Keynesian School.

Our presentation of Minsky's thought shows, however, that there are important differences between Minsky and Keynes. Minsky looks at a vibrant economy with upward instability, naturally inclined to overinvestment and overindebtedness. Keynes looks at a depressed economy tending to chronic underinvestment and to high and long lasting unemployment. The two authors might, however, be considered as two faces of the same coin, two faces that look in opposite directions. From this perspective Minsky might be considered as an author who has extended the economics of Keynes, making it even more general and modern.

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