



Theories of Money Creation: From Post-keynesians to Circuitists. Review and Prospects

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Lecturas de Economía, 61 (julio-diciembre 2004), pp. 35-51.

Resumen: En comparación con la posición neoclásica, los post-keynesianos y los circuitistas desarrollaron el "enfoque endógeno" de dinero, destacando el papel de los bancos en la creación del dinero y considerando que la tasa de interés es exógena (fijada por el banco central). Los post-keynesianos y los circuitistas, desarrollan sus argumentos utilizando algunas perspicacias de Keynes: el "motivo especulación", su concepción del crédito, el principio de una demanda eficaz y la función de la incertidumbre. Debido a este fondo común la frontera entre estas corrientes de pensamiento es confusa y cambiante. Por lo tanto, a menudo es difícil apreciar las diferencias entre estas.

Palabras clave: dinero, post-keynesianos. Clasificación JEL: E40, E12

Abstract: *Contrary to the neo-classical position, post-keynesians and circuitists developed the endogenous money approach, emphasising the function of banks in the creation of money and considering that the interest rate is exogenous (fixed by the Central Bank). Both, Post-keynesians and Circuitists, develop their arguments using some of Keynes' insights: the "finance motive", his conception of credit, the principle of effective demand and the role of uncertainty. Because of this common background the frontier between these currents of thought is fuzzy and changing. Therefore, it is often difficult to appreciate the differences between them.*

Key words: money, post-keynesian. JEL: E40, E12

Résumé: *Par opposition à la position neo-classique, les post-keynésiens et le circuitists ont développé l'approche endogène d'argent, soulignant le rôle des banques dans la création de l'argent et considérant que le taux d'intérêt est exogène (fixé par la banque centrale). Tous les deux, Post-Keynésien et Circuitists, développent leurs arguments en utilisant certaines perspicacités de Keynes: "motif de spéculation", sa conception du crédit, le principe d'une demande effective et le rôle de l'incertitude. En raison de ce fond commun la frontière entre ces courants de pensée est brouillée et changeante. Par conséquent, il est souvent difficile d'apprécier les différences entre elles.*

Mots Clés: argent, post-keynésien.

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-Introduction. -I. Post-keynesian theory of money creation and its limits. -II. Circuitist theory of money creation and its limits. -III. Theory of system of payment as alternative background. -IV. Concluding remarks.

Primera versión recibida en abril de 2004; versión final aceptada en octubre de 2004 (eds.)

Introduction

The rise of heterodox currents of thought during the 1970's marks a turning point in monetary theory. During this period post-keynesians (Moore, Davidson, Kaldor, etc.) and Circuitists (Schmitt, Parguez, Lavoie, Graziani, Seccareccia, etc.) developed what has come to be known as the endogenous money approach. This theory, contrary to the neoclassical position,¹ emphasises on the role of banks in the creation of money and considers that the interest rate is exogenous (fixed by the Central Bank).

Post-keynesian and circuitist theories present similarities about three points: i.) their general purpose: whereas, General Equilibrium Theory aims at understanding the functioning of a non-monetary economy, these approaches deal with the working of a monetary economy. ii.) Their method: these approaches suppose

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1 Neo-classical approach rallies Hicks, Samuelson (Keynesian synthesis), Friedman, Meltzer (Monetarists), Benassy, Malinvaud (Keynesian theory of disequilibrium), Stiglitz, Blanchard (New-keynesian theory) and Lucas (New Classical theory).

money exists as an institution whereas General Equilibrium Theory aims at demonstrating the money integration (moreover, they are macroeconomic theories of production guided by Keynes's effective demand principle; they are not a simultaneous prices and quantities determination in accordance with General Equilibrium Theory). Finally, iii.) Their doctrinal results, namely money is central for economic processes (production, employment, investment) and money supply is considered as endogenous. Consequently, the importance of banks to launch production is underlined.

Both Post-keynesians and Circuitists develop their arguments using some of Keynes's insights: the "finance motive", his conception of credit, the principle of effective demand and the role of uncertainty. Generally, they ground their analysis on his monetary texts which are particularly heterodox (namely the *Treatise on Money* and articles from the *Economic Journal* (1937-1939) about the "finance motive").

There are also other approaches which belong to the same tradition such Aglietta-Orléan one (1982 and 2002) or Benetti-Cartelier one. In this paper, we study principally the theory of payments system developed by Benetti and Cartelier.

Because of this common background the frontier between these currents of thought is fuzzy and changing as noted Beaud and Dostaler (1993). Therefore, it is often difficult to appreciate the differences between them. Face to this theoretical situation, Davidson (2003-4) raises the basic question: "who is a Post Keynesian?"² (Davidson, 2003-2004, p. 246) and drifted as "how did the Post Keynesians construct their identity?" by Mata (2004, p. 241).³ A possible answer is one of Lavoie (2004) that post-keynesians represent a whole uniting those various approaches.

The aim of this article is twofold: it underlines the contrasts that exist between these monetary theories and it attempts to show that, despite these differences, they belong to the same framework. Accordingly, I first point out certain specificities that allow establishing a clear difference between them concerning their conceptions of money (asset or medium of exchange), their analyses of the behaviour of banks as regards finance and their notion of endogeneity. Then, I show that their shared framework is characterised by the conception of bank money creation as a monetization of capital (defined as a source of anticipated incomes). In this sense, the theory of payments system can be seen as a continuation of the two former

2 In his critical report on A history of post -keynesian economics since 1936 of John E. King (2002, Edward Elgar).

3 Mata (2004) underlines the role of the controversies for post Keynesian emergence.

approaches. Indeed, theory of payments system adopts circuitist hypothesis of the existence of an economic circulation based on monetary transactions. However, its background is distinct of circuit approach—and so of post-Keynesian one—because it allows disequilibrium situations.⁴

I. Post-keynesian theory of money creation and its limits

Contrary to the General Equilibrium Theory, the post-Keynesian approach (Kaldor, Weintraub, Rousseas, Moore, Davidson, Minski, Palley, Fontana, etc.) favours the production relation to the detriment of the exchange one. Production is possible thanks to money defined as credit money. post-keynesian theory is characterised by effective demand principle, primordial role of banks and uncertainty. Money supply is endogenous. So, banks' money supply is central. But, this conception of money is finally close to neo-classical theory because money is essentially characterised as the more liquid asset.

According to Post-Keynesians, money is supplied by banks through granting loans; it is credit.

Money is defined as an asset allowing linking the present and the future. Like Keynes (in the *General Theory*), post-keynesians consider money as a store of value referring to the preference for liquidity theory. By comparison with other assets, its unique specificity is the fact it represents *the* liquidity. Thus, money is demanded in the framework of finance: it is the result of a portfolio choice. Consequently, banking activities are interpreted as financial activities. Banks' function as finance intermediaries is underlined at the expense of their money creation function (Moore, 1997).

Considering money as asset post-keynesians apply logic in terms of supply and demand to money. Indeed, even if they examine critically the IS-LM model—mainly the LM curve, they maintain this reasoning.⁵ Moreover, they do not question the LM curve itself. They throw back into question only its form and its stability. Finally, the store of value function founds money demand on individual choices: possessing the more liquid asset is the best way to transfer value from a period to another in a world characterised by uncertainty about the future (Deleplace and Nell, 1996, p. 23).

4 Prices are determined by Cantillon's law. See Benetti and Cartelier (2001).

5 Excepted Moore (1988a) who does not assimilate bank activities and financial ones.

According to the post-keynesian approach, means of payment are issued by a bank when entrepreneurs demand money in order to produce.⁶ So, financing is not limited by available savings but by entrepreneurs demands. But, this issue is said *ex nihilo*, consequently, the monetary issuing operation is not explained, except by Minsky (1993) who insists on the necessity of a collateral.

Precisely, Horizontalists (Weintraub, Kaldor, Rouseas, Moore, etc.) consider an automatic adjustment between money demand and supply. The quantity of money is activated by credit and determined by money demand (Moore, 1988b). As firms, banks are supposed to operate this adjustment: with interbank competition, they accept risky loans. Finally, the quantity of money issued depends... of the borrowers goodwill!⁷

This conception results from the Central Bank's role. Even if the Central Bank does not follow to this competitive logic, it cannot really control banking money issue (Moore, 1988b). Moreover, instead of limit the quantity of money, it supports banks' activities, eventually injecting liquidity as a lender in last resort.

Thus, in a hierarchised system, endogenous characteristic is twofold. First, according to Horizontalists, Central Bank provides money to commercial banks without limit.⁸ This operation is interbank. Secondly, commercial banks accommodate credit demand if borrowers are solvent.⁹ This operation concerns commercial banks and agents.

The unlimited character of money aggregate creation is justified by the possibility for banks to draw resources from financial markets. Those resources are supposed to allow issuing new loans. Thus, endogenous finance leads to endogenous money in the sense that money is endogenous as a consequence of finance (finance resulting from economic activity itself) (Deleplace and Nell, 1996).

The evolution of financial markets with new financial instruments is interpreted as an adaptation to banks' finance needs (to get round the lack of funds). This situation results from individual needs of financing appearing on markets or

6 Credit for consuming is neglected.

7 Kaldor (1985), Weintraub in Stephen Rouseas (1991), Post keynesian monetary economics, M. E. Sharpe Armonk.

8 There are many modalities: commercial banks can directly borrow to Central Bank, Central Bank can practice open market operations or place money at a commercial bank. A directing rate of interest is fixed by Central Bank.

9 Solvency depends on borrowers' past, activities financed by credit, dept ratios, cash flows, rate of interest, etc. These conditions refer to risk and asymmetric information.

indirectly on banks. However, such an approach neglects the distinction between monetary creation and savings collect-placement activity.

After analysing the post-keynesian definition of money, the Circuitist conception will be studied. This study allows to compare those two approaches and then to emphasize the contribution of the theory of payments system.

II. Circuitist theory of money creation and its limits

The Circuit School is composed by various tendencies, which are focused on the study of monetary circulation.¹⁰

Deleplace and Nell (1996) notice four common elements: i.) economic analysis is a study of the monetary circulation. ii.) Banks' credit is considered as the preliminary condition to produce. iii.) Entrepreneur acts are decisive to determinate the level of production. iv.) Economic activities are organised through a "circulation period" (distinguishing intra-periodic phenomenon and inter-periodic phenomenon). These elements are of course dependant. But, the second point is emphasised because it deals with monetary creation.

Our aim is to show that *ex nihilo* money creation is an obstacle to explain the conceptual link between money and capital.¹¹ However, this is probably an unfortunate expression, which veils a common conception of monetary creation.

A. "*Ex nihilo*" money creation

According to Circuitists, money is defined as a medium of exchange: it is banks' credit.¹² Their idea is: i.) that money allows production and ii.) that production is realised following a logical process during a period.¹³ Banks' specificity is their monetary creation activity (not financial intermediation).

However, the idea of *ex nihilo* money creation is the same than post-keynesians' one: banks issue credit "*ex nihilo*", to answer to entrepreneurs' money demand from finance motive. Credit is supplied in order to finance entrepreneurs'

10 There are mainly three tendencies: the production theory, the distribution theory (Graziani, 1989, et Schmitt, 1972) and the coordination theory (Benetti-Cartelier, 1980).

11 Deleplace and Nell (1996) and Rochon (1999) remark that Circuitists and post-keynesians employ this expression.

12 This conception comes from Keynes's Treatise on Money rather than his General Theory. Bauvert (2003a) shows that Keynes adopts an original conception of money in the Treatise on Money where money is considered as a medium of exchange whereas it is well known that it is a store of value in the General Theory. Marcuzzo (2001) proposes a few suggestions to understand the progress of Keynes's thought, notably through Khan's influence.

13 The period begins with money creation and finishes with money destruction.

decisions: the bank-entrepreneur relation is then central for the endogenous money process (called *initial financing*). Entrepreneurs pay back their debt with the receipts from their production (or from financial operations). Consequently, they are in relation with consumers (called *final financing*). There are two ways to obtain money: with bank's credit (*initial financing*) or with production's receipts (*final financing*).

During initial financing, money is demanded by entrepreneurs to pay inputs whereas they don't realise their production yet. This point of view is very different from the General Equilibrium Theory one. Here, production is not paid by preliminary savings but by banks' credit. Idem for investment. This idea comes from the monetary tradition of XXth century summed up by Schumpeter: "entrepreneurs borrow "funds" they need to create and implement their factory—that is to say, to acquire their capital. [...] Those "funds" consist in means of payment created *ad hoc*." (Schumpeter, 1964, p. 83, Diatkine, tr., 2002, p. 54). "[...] because entrepreneurs haven't got their own means of payment and because—until now—there is no saving" (Schumpeter, 1964, pp. 84-85, Diatkine, tr., 2002, p.55).

Thus, entrepreneurs can obtain credit because their expenses get back incomes for themselves allowing them to pay back their debts.

Keynes' demand effective principle and Kalecki principle allow to understand how credits issued at the beginning of the period become flows of incomes during the considered period.

The profits formation explains this logic. Bank's credit changes entrepreneurs' constraint: with credit, they can spend incomes they anticipated although they don't possess them yet. According to Kalecki (1943), by spending their credits, they produce profits for themselves as a whole. Indeed, the totality of their expenses (consumption and investment) goes back to entrepreneurs who are producers of those goods. If capitalists anticipations are validated—that is to say if they have the capacity to pay back their debt because they really receive their anticipated incomes, Kalecki principle is verified.¹⁴ In this case, consumption and investment expenses of capitalists determinate their profit, i.e.: *capitalists earn what they spend although employees spend what they earn*.¹⁵ Kalecki principle underlines the

14 In a closed and without State economy, employees are generally supposed to consume the completeness of their wages. However, Kalecki principle is also valid when there are a State and foreign countries (Cartelier, 1995). Also when employees save a part of their wages (this is Pasinetti paradox: a part of profits comes back to employees).

15 This principle evokes Keynes (1930)'s intuition called the widow's cruse.

asymmetry entrepreneurs-employees.¹⁶ This asymmetry is due to the difference of nature of incomes that both groups perceive.

Thus, investment is not financed by saving. As a consequence, the relation $I=S$ becomes an equilibrium condition and disequilibrium is possible (different interest rates for Wicksell, windfall profits for Keynes and forced saving for Hayek). Actually, investment determinates saving.

However, there is an ambiguity: generally, circuit school (and post-Keynesian school too) considers that money is created *ex nihilo*. To our opinion, this expression is not appropriate to describe monetary issue because this conceals an important mechanism. For both approaches, we noticed that banks afford credits not "*ex nihilo*", but after the entrepreneur programmed his level of production (which depends *effective demand*) and the price of his output. That is to say money is created as credit "from a debt" of entrepreneur towards a bank.

Then, money circulates as a medium of exchange and allows the distribution of incomes. At the end of the period, it is destroyed by the pay back of the debt (Seccareccia, 1996).

Thus, the idea is clearly that monetary issue is endogenous as a result of needs of entrepreneur's production—and not as a result of another agent's decision (employee or Central Bank) —and that entrepreneur's needs of financing is the *stimulus* of money. However, the foundation of credit issuing (modalities and consequences) should be more explained. In other terms, there's no reference towards the concept of capital whereas all theoretical elements are here to do this.¹⁷ Indeed, the idea that credit finances an activity susceptible to provide future incomes, namely production, is explicit (and even fundamental) for most of the circuitists.¹⁸

In summary, the notion of capital is absent from this analysis although it appears logically.¹⁹

B. Endogenous money, an interesting perspective?

Circuitists consider money differently towards post-keynesians logic (seen in I,B). Indeed, money is endogenous intrinsically (and not as a consequence of

16 About this asymmetry, see the comparative analysis of structural division of economics according to post-keynesians and circuitists by Deleplace and Nell (1996).

17 Except certain post-keynesians who consider capital as a collateral (Minsky,1993).

18 This refers to keynesian finance motive which is also used by post-keynesians (see point I, A).

19 Except Parguez who sometimes considers a collateral as a guarantee for the bank (Parguez, 1996, p. 159).

finance). This conception is due to the proper method of circuitists: money is extracted from the market logic, that is to say from the correlative approach in terms of supply and demand. In other words, money is not conceived as a commodity.²⁰

Banks monetary issue becomes confused with money demand, money being determined by financial demand from entrepreneurs. Thus, this approach questions the foundations of LM curve analysis. The comparative study of Deleplace and Nell shows and criticizes this point emphasising the fact of the logic in terms of money supply and demand.

"Hence industrial firms are always able to finance their activity, whatever the state of the financial markets. Besides, as banks themselves create money, they do not need to rely on innovative financial markets for resources. Bank money is endogenous by itself, not as a result of endogenous finance" (Deleplace and Nell, 1996, p. 25).

The theoretical link between money and capital is not through supply-demand logic. Monetary creation comes from banks exclusively, independently of finance. As a consequence, the unique way for entrepreneurs to provide the *initial financing* of their activity is to appeal to banking system. Financial markets²¹ are just a possible way to obtain savings incomes. They do not represent a competitive mode of financing towards banks *initial financing*.

Thus, external money is endogenous because the banking system is conceived as a web of hierarchised relations between commercial banks and Central Bank. Money issued by commercial banks is connected to money issued by the Central Bank (by a convertibility constraint for example).²² Commercial banks aim at doing profits granting credits (private interest), but the Central Bank is responsible of the system of payment perpetuity, determining monetary interest rate (Aglietta, 1996, Cartelier, 1996b, Deleplace, 1996, Renversez, 1996).

Consequently, circuit theory considers monetary issue as the result of interaction of three causal relations: bank-entrepreneur relation (which is privileged),

20 In the sense that it refers to supply and demand.

21 Finance plays its traditional role of financing purchases of investment goods and provides new modes of financing with financial innovations.

22 This is an old idea. Smith developed it in the *Wealth of Nations*. This idea refers to the reflux law and a lot of authors have evoked it. According to Schumpeter for example: "The obligation to pay back bank debt or bills in legal money [...] restricts obviously their power to issue them." (Schumpeter, 1964, p. 95).

entrepreneur-employee relation (payment of wages and expenses of consumption) and, finally, commercial bank—central bank relation (interest rate) (Rochon, 1999).

Breaking with the definition of money as an asset, circuitist approach offers probably a more appropriate framework to conceptualize a link between money and capital than post-Keynesian one. But, it doesn't develop foundations of monetary creation; so, it does not establish a link between those concepts. Thus, it is interesting to show how the theory of payment systems allows overtaking this limit.

III. Theory of system of payment as alternative background

The theory of systems of payment is inspired by Keynes, Marx (for his reproduction plans), Wicksell and Hawtrey (for their analysis of a pure credit economy), Kalecki (for his principle concerning the relation profit/investment) and Schumpeter (for his study of banks' influence on decisions about production and his analysis of disequilibrium).²³

According to Benetti and Cartelier approach, money is especially a medium of exchange (and not an asset); this perspective is closer to circuitist theory than post-Keynesian one.

However, theory of payment systems is different of previous approaches as far as it is an overtaking (III, A) and a deepening (III, B). That is why it is qualified as heterodox rather than circuitist.

It clarifies monetary creation foundations.²⁴ Benetti and Cartelier (1980) consider then the link money-capital through the *monnayage*, keystone of the theory of payment systems.

Considering money as a system, Benetti and Cartelier (1980) propose a unitary conception of the organisation of payments. In this optics, whatever its particularities, payment systems are defined by three important elements: the nominal unit of account,²⁵ *monnayage* and settlement of monetary balances. The unit of account

23 See Lakomski-Laguerre (2002) who proposes an original interpretation of Schumpeter's papers, insisting more on the concept of disequilibrium than on the role of entrepreneur.

24 This is also due to the fact that theory of payment systems established a theory about prices formation (founded on Cantillon law) and that it offers a particular vision of markets functioning where production, exchanges and monetary regulation are conceived as a whole.

25 Adopting a market mechanism as Cantillon law, the unit of account function is intrinsically connected to medium of exchange one. See Bauvert (2003b).

allows expressing prices in reference to social field and politics.²⁶ *Monnayage* is “the way individuals obtain means of payment” (Cartelier, 1996a, p. 75). The existence of positive or negative balances appears at an individual level. It is then necessary to settle those balances in order to restore equivalence principle. This settlement is defined as “the reorganization of *monnayage* medium, that is to say the redistribution of social wealth among individuals, cancelling debit and credit balances.” (Cartelier, 1996a, p. 77).

Thus, the existence of a unitary theory of money is asserted and grounded on three principles: whatever concrete shape of money (golden coins or banks credits), a unique theory offers a common framework for all monetary systems (Benetti and Cartelier, 1980, Cartelier, 1996b). The advantage of such a conception is to present a global point of view concerning money and to compare different monetary systems (gold standard or credit system). But such a comparison is not the subject here.²⁷

Consequences of this approach are the major stakes in our study. They concern economic policy and the functioning of the markets economics.

To our opinion, this unitary theory prolongs circuitist approach, even if those visions of economy are different (Benetti and Cartelier conception is disintegrated because of price rule of Cantillon, contrary to that of circuitists). It allows to consider credit as a particular case of a payment system which principles are more general and to extend certain circuitist properties and logic to metal payment system (Cartelier, 1996b, Deleplace, 1996).

One of the particularities of the theory of payment systems concerns monetary creation. According to Benetti and Cartelier, foundations of monetary issue are clarified. As a consequence, money creation is not qualified by the expression “*ex nihilo*”.

Monetary creation relies on *monnayage*, second constituent of a payment system. In a metallic system, coins issue depends of the quantity of golden-commodity brought to the issuing institution. In a credit system, *monnayage* is a more subtle operation. In order to emit means of payment (in the shape of credit), it is indispensable for banks to evaluate capacity of repayment of borrowers. That is to say, banks have to anticipate flow of future incomes of borrowers. As a

26 To justify a common unit of account in an economic system, Turgot clarifies that a unit of account can inform and allows comparing different prices. He refers to a political authority, agreements and jurisdiction. “Money [...] is a sort of language which is different according populations, in an arbitrary and conventional way, but which comes close and identifies [...] with a common term or standard. (Turgot, 1769, pp. 79-80).

27 See Cartelier (1996a, 1996b, 2002).

consequence, money is not created *ex nihilo* but, on the contrary, it can be created only from capital, in the sense of flow of future incomes (Cartelier, 1996a).

In comparison with post-Keynesian and circuitist analysis, theory of payment systems is clearer. According to us, this approach represents a conceptual deepening concerning endogenous money. Thus, *monnayage* reveals the fundamental link between money and capital.

Concluding remarks

Post-keynesian, Circuitist and payments system theories propose a common framework inspired by Keynes and Kalecki concerning the primordial role of banks and credit into the economic circuit. Nevertheless, they are distinct because of their different conceptions about nature of money and their conception of endogenous feature of money in relation with finance or without it.²⁸

Studying these theories, I put emphasis on their common conception of money issue, namely the fact that it is the result of a *monnayage*. This process consists in a transformation from an asset, which existed previously (as currencies) or not (as project of production). This principle, which can be extended to other kind of payment systems,²⁹ represents the fundamental link money-capital. The definition of *monnayage* is general: it is the monetization of a capital. It is more generally the monetization of what may generate flows of incomes in the future. It is materialized by registration on the accounts books of banks. It is no limited in itself in a system of payment of credit.³⁰

28 It is a store of value according to post-keynesians, a medium of exchange according to Circuitists and payments system theory.

29 See Cartelier (1996a, 2002b).

30 However, there are limits in the issue of means of payment. We have already evoked them. There are legal limits (policy of the compulsory reserves, policy of refinancing, policy of credit restriction). These limits are connected to the request of conversion of the banking money in central money and to the constraint of equalization of the monetary interest rate with the rate of return on investment (which is bound to economic activity). These limits are naturally connected between them because the first one, notably supported by the guiding role of the central bank, is supposed to respect the second (to insure price stability). The constraint exists under the shape of the interest rate determined by the central bank which is a constraint on all the set. But there is also an intrinsic limit in the capital through the competition between the interest rate of the banking loans and the rate of return on the financial capital. Commercial bank aims at aligning its interest rate with the rate of return on the financial capital. Besides, the central bank influences the interest rate by leading operations of open market on financial markets and by establishing interest rates of short term.

At last, it is important to notice that only payments system theory considers transactions in disequilibrium.³¹ To sum up, Circuitists introduced the idea of a monetary circulation into post-Keynesian analysis. Doing so, they distinguish money from a store of value. Payments system theory adopted this point of view deepening the explanation of the link between money and capital through *monnayage* and considering disequilibrium situations (Benetti and Cartelier, 2001).

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31 I have to mention the post-Keynesian Minsky who is interested in disequilibrium situations too.

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