A *Monetary Circuitist* Interpretation of the Nature and Role of the Shadow Banking System in Modern Economies

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Abstract

Over the last two decades, many scholars have argued that the financialisation process has modified the workings of capitalist economies by elevating the role of financial markets and players, and making the link between the financial and real sectors even more intertwined. In particular, the so-called shadow banking system (SBS) has gained a central position in the economic system. It has had a major impact on the process of financialisation of the economy, and in the propagation of financial crises. Prima facie, the role of the SBS in modern economies is at odd with the passive and residual role of financial intermediaries in the Monetary Circuit Theory (MCT). Yet, if any, the SBS has emphasised even more the main tenet of the MCT, namely the intrinsically monetary nature of capitalist economies.

A number of theoretical contributions have recently used the MCT in order to explore some features of the financialisation process, including the evolution of financial markets, and the role of the SBS and the securitisation process. Others have explored important features of the SBS by using a new empirical methodology closely associated with the MCT, namely the Stock Flow Consistent (SFC) approach. The analysis of this paper builds on these theoretical and empirical efforts.

This paper maintains that the monetary circuitist contributions of Augusto Graziani offers valuable lens for interpreting this new banking system, including the concepts of creation (initial finance), circulation, and destruction of money (final finance). Building on these concepts and by adopting a

functional classification proposed by the Financial Stability Board, the paper analyses the nature and different roles of the SBS on the process of creation, circulation, and collection of money, and more generally on the workings of modern economies.

Keywords: shadow banking, monetary circuit, initial finance, final finance, securitisation

JEL Classifications: B51; E12; E16; E44

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1. Introduction

The functioning of the economic system as a monetary circuit characterised by a sequence of stages describing the flux and reflux of money is a deep-rooted view in economic thought. There is indeed a long list of contributions to the development of this view, including the M-C-M' capital cycle described by Karl Marx in *Das Kapital* (1867), the pure credit model theorised by Wicksell in *Interest and Prices* (1898), the analysis of money, banks, and distribution set out by Schumpeter in *Theory of Economic Development* (1912), the alternative model of a wage and money system offered by Robertson in *Banking Policy and the Price Level* (1926), and the analysis of the instability of market economies made by Keynes in *The Treatise on Money* (1930). Since the mid-1970s, these contributions have been brought together, and used to develop the Monetary Circuit theory (MCT thereafter), which highlights the intrinsically monetary nature of capitalist economies (e.g. Parguez, 1975; Graziani, 1984, 1989; Schmitt, 1984).

The MCT explores the process of creation, circulation, and destruction of money in a monetary economy of production. It describes the workings of capitalism through the interactions of four groups of macroeconomic agents, namely firms (non-financial corporations), households (wage-earners), commercial banks (banks for short), and financial intermediaries (financial markets and players). The circuit opens when banks finance the production plans of firms. In the simplest representation, the amount of financing corresponds to the wage bill. The purchasing of labour services allows firms to carry out production plans, and selling output in the commodities market. The monetary circuit closes when firms reimburse banks, disposing of the excess liquidity previously injected into the economic system.

The MCT is developed around the concept of *initial finance* and *final finance*, conceived as the essential stages that open and close the monetary circuit, respectively. The theory emphasises the role of banks in the creation of new liquidity, while financial markets and players, including investment banks, perform the secondary role of circulating savings, including existing liquidity, between

households and firms. Another crucial but largely overlooked contribution of the MCT is the identification of the main groups of macroeconomic agents involved in the workings of capitalist economies. This identification is based on the specific functions that these macroeconomic agents, namely firms, banks, households, and financial intermediaries perform in the reproduction of the economic system over time (Graziani, 1984; 2003, p. 19).

Over the last two decades, many scholars have argued that the financialisation process has modified the workings of capitalist economies by elevating the role of financial markets and players, and making the financial-real side links even more intertwined (Epstein, 2005; Palley, 2013). In particular, the so-called shadow banking system has gained a central position in the economic system. It has had a major impact on the process of financialisation of the economy, and in the propagation of financial crises (Caverzasi *et al*., 2019). *Prima facie*, the role of the shadow banking system in modern economies is at odd with the passive and residual role of financial intermediaries in the MCT (Lysandrou, 2014).

As number of theoretical contributions have recently tried to include some features of the financialisation process in the MCT, including the evolution of financial markets (e.g. Fumagalli and Lucarelli, 2011; Seccareccia, 2012), the role of shadow banking system and the securitisation process (e.g. Sawyer and Veronese Passarella, 2014; Michell, 2017). Others have amended the MCT and/or explored important features of the shadow banking system by using a new empirical methodology closely associated with the MCT, namely the Stock Flow Consistent (SFC) approach (e.g. Godley, 1999; Lavoie, 2004; Godley and Lavoie 2007; Zezza, 2012; Botta *et al.*, 2015; Sawyer and Veronese Passarella, 2017).

This paper build on these theoretical and empirical efforts. It adopts a classification proposed by the Financial Stability Board (FSB, 2011; 2015; 2018; 2020) to describe the economic functions played by the shadow banking system. This functional classification approach shows a noteworthy resemblance and consistency with the MCT. It highlights the nature and numerous roles that the

shadow banking system plays in the workings of modern advanced economies. This paper uses this functional classification to amend the traditional MCT in order to explore the impact of the shadow banking system on *initial finance* and *final finance*, and more generally on the process of creation, circulation, and destruction of money in modern advanced economies.

The paper is structured as follows. Section 2 presents the standard representation of the MCT, its main features and recent developments in light of the financialisation process. Section 3 discusses the nature and different function of the so-called shadow banking system, deepening the economic functions (activities)-based approach provided by the FSB. Section 4 illustrates the monetary circuit in the era of shadow banks. Section 5 provides some concluding remarks, discussing the implications on the initial and final finance concepts as well as on the endogenous money theory, in terms of creation and circulation of money highlighted by the interaction between the traditional monetary circuit and the financial sphere.

2. The monetary circuit theory

2.1 The standard model

The MCT (Graziani, 2003) describes the functioning of a monetary economy of production through a sequence of stages. It involves the presence of four macro agents, namely firms, households, banks, and financial intermediaries, which operate in the commodities and financial markets. In the simplest scheme of a pure credit economy[4] represented in Figure 1, the monetary circuit opens when banks create money *ex nihilo*, providing firms with the so-called *initial finance* for starting the production process. Ignoring internal transactions, then firms use the entire initial finance to buy labour services from households, who in return receive money in the form of nominal wage. At the end of the production process, households can decide to allocate their wages either for consumption or for savings, and the latter then by hoarding liquidity in bank deposits or investing it in financial markets.

To the extent that households spend all of their wages in the commodities markets and in the financial markets, i.e. no savings are not held in bank deposits, firms are able to collect all initially created liquidity as the so-called *final finance* and to repay their bank debts.[5] According to this standard version of the MCT, financial markets perform the secondary role of circulating existing liquidity between households and firms. Through financial markets, firms collect the liquidity previously injected into the economy and not spent in the commodities markets by households.

[FIGURE 1]

2.2 Main features

There are two main features of the MCT as described above, namely: (i) the endogenous creation of money, since loans are created and granted by banks to creditworthy firms; and (ii) a functional distinction of the macro agents involved in the money supply process. The first feature is well-know (Graziani, 2003), while the second is largely overlooked. In the MCT, the identification of the main groups of macroeconomic agents involved in the workings of capitalist economies is based on the specific functions that these macroeconomic agents perform in the reproduction of the economic system over time. The economic functions performed by firms, households, banks, and financial intermediaries give meaning to their socio-political identity. Banks are banks because by making loans they transform a bilateral promise of payment between firms and households into generalised final means of payment, namely money, which can then be used as initial finance for starting the production process. Firms are firms because through the access to bank loans in the initial stage of the circuit, they can carry out the production of goods and services. Households are households because they offer labour services to firms, and decide how to allocate their income between consumption and savings.[6] Finally, financial intermediaries are financial intermediaries because they allow firms to collect savings from households, and hence to get the final finance (in addition to money received for the sale of goods and services) for paying back their bank debt.

2.3 Recent developments of the MCT

In the last few decades, the strength of the MCT in interpreting the workings of modern advanced economies has been questioned by the growing impact of the financialisation process (Lysandrou, 2014). The term financialisation covers a large range of phenomena, including the increasingly central role of financial markets and players in modern economies (Bhaduri 2011; Epstein, 2005; Fine, 2012; Palley, 2007), the emergence of new financial products and the influence of shareholders value in driving the behaviour of non-financial corporations (Dallery, 2008; Onaran, Stockhammer and Grafl 2011; Krippner, 2005; Stockhammer, 2004), and more generally the dominant role of finance into everyday life (van de Zwan, 2014). Recognising these recent transformations implicitly lead to question whether the MCT, with its secondary role for financial intermediaries, can accurately capture the financialisation process.

The first systematic study of financialisation through the lens of the MCT was carried out by Seccareccia (2012; orig. 2009), who highlighted the innovative roles played by firms in the process of circulation of existing liquidity, and by households in driving the demand for bank loans, especially in the US and UK (Stockhammer, 2004; Crotty, 2005). Building on this, Fumagalli and Lucarelli (2011) argue that financialisation should be explained in light of the change in the technological paradigm experienced by firms, namely the shift towards the production of intangible assets. They explore the dynamics of the financialisation process through the interaction of two different types of monetary circuits. In the first circuit, financial markets promote investment in technological activities, via changes in the capital assets of firms, and preferential access to bank loans. In the second circuit, financial markets increase the liquidity that circulates in the system in line with real estate bubbles. Finally, Sawyer and Veronese Passarella (2014; 2017) explore the securitisation process and the increasing growth of household debt in modern advanced economies. They embed the standard MCT in a richer set of institutional arrangements, which allow for an analysis of banks and financial intermediaries *vis-à-vis* some of the fundamental changes produced by the financialisation process.

The works described above, among many others, make remarkable contributions for the understanding the impact of the financialisation process through the lens of the MCT. However, they do not provide a comprehensive depiction of the nature and different roles of financial markets and financial intermediaries in modern advanced economies. They describe the expansion and transformation of financial markets holding all the entities of the shadow banking system under the generic and aggregated label of "other financial intermediaries" or "financial system". As a result, the different and specific roles performed by the institutions making the shadow banking system, and their relationships with the macro groups of the standard MCT are left unexplored, if not overlooked. When a more detailed and disaggregated approach is adopted (e.g. Botta *et al*. 2015; Michell, 2017), the analysis is tied to the specific features of the financial intermediaries considered. This means missing the transformations of a phenomenon, namely the shadow banking system, which is constantly evolving over time, and is likely to emerge under different forms in the future.

3. The shadow banking system in the MCT

3.1 The definition of the shadow banking system

Shadow banks have been commonly conceived as financial institutions acting as (commercial) banks which are however not supervised like banks. When the shadow banking system phenomenon broke out, its identification was mainly related to the boundaries with the traditional banking system and to a matter of regulation (Adrian and Ashcraft, 2012; Adrian and Shin, 2010; Gorton *et al.*, 2010). In the run-up to the global financial crisis of 2007-2008 and after the collapse of Lehman Brothers, the intertwined interconnections of the shadow banking universe with the regulated banking sector, households, and firms drew the attention of international institutions and academic community. Monitoring the potential source of risks that the engagement of the shadow banking system in bank-like activities may pose for the stability of both banking and real sector become a key priority (FSB, 2011).

Defining the shadow banking is not straightforward. The expression was coined during the meeting of the US Federal Reserve in Jackson Hole by Paul McCully (2007), who defined it as "the whole alphabet soup of levered up non-bank investment conduits, vehicles, and structures. Unlike regulated real banks, who funds themselves with insured deposits, backstopped by access to the Fed's discount window, unregulated shadow banks fund themselves with un-insured commercial paper, which may or may not be backstopped by liquidity lines from real banks" (McCully, 2007, p. 2). Since then, several definitions of the shadow banking system have been provided. Part of the literature focused on the *entities* that compose the shadow banking system; some authors analysed the *activities* that shadow banks engage in; others suggested an *instrument*-based definition (e.g. Adrian and Ashcraft, 2012; Bakk-Simon *et al*., 2012; Gabor, 2013; Gorton and Metrick, 2010, 2012; Nabilou and Pacces 2018; Nesvetailova and Palan, 2013; Pozsar *et al*., 2010, 2013).

According to the FSB (2020), the shadow banking system can be classified applying an economic function, activity-based approach. Through a funnel-shaped identification path,[7] the shadow banking system is categorised into five economic functions (EF).

EF1 concerns management of collective investment vehicles, having features that make them incline to the potential risk of runs. One of its main functions is distributing clients' assets and savings across a pool of different types of financial instruments, minimising the risk exposure.

EF2 takes account of entities involved in the provision of loans based on short-term funding, such as consumer finance, auto finance, and retail mortgage provision.

EF3 considers the market intermediation activity based on short-term funding, such as secured funding of client assets and securities borrowing and lending.

EF4 includes entities, which facilitate the activity of credit creation, providing different types of guarantees to banks and non-bank financial entities. It offers credit protection and/or insurance for credit instruments (e.g. collateralised debt obligations) that improve the creditworthiness of the

borrowers, protecting lenders and investors from the likelihood that borrowers will not be able to repay in full their obligations.

EF5 consists of entities that engage in securitisation-based credit intermediation function, especially through the issuance of through the issuance of asset - or mortgage-backed securities (ABS and MBS, respectively).

Table 1 summarises the economic functions and gives some examples of the type of entities that might belong to them.

[TABLE 1]

The economic functions, activity-based approach allows a more flexible categorization of the shadow banking system, formalising the plethora of non-banks institutions, which operate in financial markets (Claessens *et al.*, 2012). It gives the possibility to go behind the standard distinction between regulated banks and shadow banks, as the former can be involved in shadow banking through different types of activities (Gabor, 2013); to categorize the non-bank financial space in more than one economic function, according to the activities performed in each transaction. Moreover, it is a forward-looking approach that overcomes the idea of listing shadow banking entities and activities. Indeed, it captures functions, institutions, and risks that are constantly evolving over time and might emerge in the future. More importantly, the classification proposed by the FSB (2020) shows a remarkable consistency with the methodology of the MCT (Graziani, 2003), highlighting how the nature and the role of macroeconomic agents become crucial in the shadow banking identification. Endorsing the classification provided by the FSB, the paper proposes a reinterpretation of the MCT, which builds on the functions played by macroeconomic agents.

Figure 2 shows the traditional agents of the MCT, namely firms, banks, and households, and the interactions with the five EF of the shadow banking system. It offers an example of a typical entity type belonging to each EF. More specifically, EF1 (i.e. management of collective investment vehicles

with features that make them susceptible to runs) is mainly represented by money market funds (MMF); EF2 (i.e. loan provision that is dependent on short-term funding) is embodied by finance companies; EF3 (i.e. intermediation of market activities that is dependent on short-term funding or on secured funding of client assets) is represented by broker-dealers; EF4 (i.e. facilitation of credit creation) and EF5 (i.e. securitisation-based credit intermediation and funding of financial entities) are jointly considered, representing securitisation-based creation and transmission of credit. This latter economic function is embodied by Special Purpose Vehicles (SPVs).

[FIGURE 2]

3.2 Channels of liquidity

The first step towards a reinterpretation of the MCT in the era of shadow banks is to recognise the unique role played by banks in monetary economies of production. Banks create money when they provide firms with loans needed to finance their productive activities. The monetary circuit sequence starts. Production is carried out and households allocate their wages either in consumption, or investing in financial markets or hoarding deposits. The recent development of financialisation enhances the structure of the standard MCT. It is shown that financialisation highlighted the propensity of households to get into debt, while firms increasingly become net lenders (Seccareccia, 2012; Veronese Passarella, 2012, 2014; Veronese Passarella and Sawyer, 2014). In order to finance consumption beyond the limit of their disposable income, households might obtain loans by commercial banks or engaging with the shadow banking system. *EF2* (i.e. finance companies) might provide households with loans based on short-term funding, that is *recycling finance* for consumption reasons. Households might spend both the flow of loans and their wages in the commodities market.

All the institutions embodied in *EF2* operate outside of the banking sector, providing loans to both households and firms, and compete with banks. However, while banks create money *ex nihilo* granting loans, *EF2* are mere intermediaries that lend out already existing liquidity. In fact, *EF2* generally collect existing liquidity from different sources, such as issuing and selling short-term

securities, bonds, and commercial papers in the market or borrowing from banks, MMFs, and firm. Figure 2 shows that *EF2* can finance their lending activity by borrowing from banks. This means that banks may provide liquidity to finance companies (*EF2*) that, in turn, will lend to borrowers to whom banks may not be able to lend directly, due to their internal policies or prudential regulatory requirements (FSB, 2013). Consequently, there will be a monetary flow, i.e. liquidity from banks to finance companies (*EF2*), which represents creation of *money ex-nihilo*. Put in other words, loans provided by EF2 are funded by the deposits, which were financed by an *ex-nihilo* money creation made by banks.

Finance companies can also find other sources of liquidity by issuing commercial papers (CP) and drawing on institutional investors embodied in *EF1*. Finance companies can make loans to firms, allowing the circulation of existing liquidity in the financial markets. Moreover, finance companies might also be owned or sponsored by firms. For instance, firms like as automobile companies might own captive finance companies through which they extend credit to their own clients which, in turns, will buy their own products, e.g. cars (FSB, 2013). In this case, *EF2* should be considered as subsidiaries of firms and the connection between firms and *EF2* would be the opposite, namely a monetary flow from firms to *EF2* and a real flow that goes through households towards firms.

The presence of the shadow banking system affects the initial finance stage of the MCT. While in the traditional monetary circuit the initial channel of credit is related to the interaction between banks and firms, the financialised monetary circuit opens three additional flows of liquidity that amplify the initial finance phase. Specifically, banks provide loans to the household sector - whose debt exposure was trivial before the financialisation era. Banks also engage with the shadow banking system entities - i.e. *EF2* -, granting loans created *ex-nihilo*, which are then used to offer financial services in niche markets, where banks are not active players. Finally, banks make loans by entering in repo[8] contracts with *EF3*, namely broker-dealers – as described in Section 3.4. Therefore, the process of endogenous money creation is intensified by three new channels of cred it, namely banks-households, banks-*EF2*,

and banks-*EF3*. This increases the supply of money, amplifying the initial finance step (Botta *et al.*, 2015; Caverzasi *et al*., 2019; Gabor, 2020).

While the channels of money creation opened by banks increase, the functions performed by the shadow banking entities do not affect the money creation process itself, calling on the traditional concept of *money multiplier*. Consider the case of the institutions embodied in the *EF2*, such as finance companies. Although providing loans to households and firms, those shadow entities do not create money *ex-nihilo*, as banks do by means of making loans. They are mere intermediaries that collect funds from savers and lend them out to borrowers, i.e. households or firms. In fact, loans granted by *EF2*, based on short-term liabilities, primarily need the accumulation of funds for then lending to borrowers. This is the case of: entities that take deposits from retail and wholesale customers; non-bank financial entities, providing credit based on wholesale funding markets or short-term commitment lines from banks; and entities dependent on funding by parent companies (FSB, 2015). This makes clear that the liquidity provided by *EF2* is not money created *ex-nihilo*. The activities performed by those shadow entities rely on the prior access to the liquidity of banks (Bouguelli, 2018, 2020; Botta *et al.*, 2015; Michell, 2017). Therefore, they boost the circulation of *recycling finance*, which ultimately depends on the process of money creation *exclusively* performed by the traditional banking sector.

However, the expansion of money supply given by the creation of money substitutes by the shadow banks might change according to the level of their activity, i.e. to the market demand for their instruments. For this reason, it might be valuable going back to the concept of flexible multiplier (Realfonzo, 1998). It means that the quantity of money substitutes introduced into the economy by shadow banks is not a rigid multiple of the banks money collected, but it changes over time. The flexibility of the shadow banks' multiplier increases the endogenous character of money supply in current time.

3.3 Securitisation procedure

The process of securitisation plays a central role in the evolution of the shadow banking system (Gorton and Metrick, 2012). In the last decades, it became common practise downsizing banks' assets side, pulling, and moving part of their assets off balance sheets (Pozsar *et al*., 2010). Securitisation has allowed banks to overcome regulatory reserves requirements set by law, to improve their balance sheets, and to extend their activities (Botta et al., 2018). It has contributed to the rise of the so-called "originate-to-distribute" model of banking, allowing transferring the default risk on granted loans to other financial institutions. Banks have moved away from the traditional "originate-to-hold" model of lending towards the adoption of practices that: i) rely on fees and commissions, rather than interest earnings; ii) widen the provision of loans to potential borrowers, paying less attention to the assessment of their creditworthiness; and iii) increase the financial fragility of the economic system (Wray, 2009; Lavoie, 2012).

The essence of securitisation is that loans originated by banks and EF2 - i.e. mortgage loans, credit cards, student loans -, are sold to a variety of investors in the financial markets. Different vehicles, engaged in the securitisation-based credit intermediation function (*EF4 + EF5*), play the role of collecting banks and EF2's assets. More specifically, Special Purpose Vehicles (SPVs) package, slice, and dice those assets, creating a bundle (i.e. tranches) of financial derivatives tailored with unique and customised risk characteristics (Goda and Lysandrou, 201; Nesvetailova, 2015). SPVs create and sell Asset Backed Securities (ABSs), Mortgage Backed Securities (MBSs) to other EF, namely to *EF4+EF5* sector itself, to *EF1* (such as MMFs), and to *EF3*, i.e. broker-dealers.

SPVs purchase the assets portfolio by issuing bonds and CP. In transforming illiquid assets (i.e. mortgages) into tradable financial instruments (i.e. ABS, MBS), SPVs are able to: i) repay their original debt to loans originators; ii) distribute the cash and the interest flows to investors; iii) and buy loans from banks and finance companies (*EF2*), indirectly feeding the provision of loans and recycling credit to households and firms (Lysandrou and Nesvetailova, 2015).

3.4 Further expansion of the financial markets

The relationships between the shadow banking system and the traditional agents of the MCT open alternative channels of investment that imply a further expansion of the financial markets, in a circuitist perspective. EF1 and EF3 activate those channels, interacting with other players of the financial and real markets.

In the standard MCT, households do not spend all of their income in the commodities market but they save part of their wage income for investing in financial markets. Those savings are collected by *EF1* such as MMFs. Although investors in MMFs can be divided in retail and institutional investors (Bakk-Simon, 2012), Figure 2 shows that MMFs represent here the main points of connection with households. MMFs are usually considered as an alternative to bank deposits and a relatively safe option for short-term investment, given the prohibition for MMFs of investing in long-term risky assets.

Figure 2 exhibits that MMFs lend the collected liquidity out, purchasing commercial paper (CP) issued by finance companies (*EF2*) and providing short-term funding to the latter. In doing so, they play a significant role in feeding the lending activity performed by EF2 and stressing the circulation of recycling finance. MMFs invest in financial instruments, i.e. *ABSs*, issued by *EF4+EF5*, and in shares of traditional financial institutions.[9] They also provide short-term collateralised loans, namely repos to *EF3* (Bakk-Simon, 2012; Macey, 2011; Rosengren, 2014).

EF3 activate other channels of investment, performing intermediation activities dependent on short-term liabilities to fund long-term assets - hence, highly associated with liquidity mismatches risk. Broker-dealers are the most prevalent entity included in *EF3* (FSB, 2020). They provide brokerage services, buying and selling securities and derivatives on the market.

Figure 2 shows that EF3 symbolise the connection with the firms sector[10], highlighting the points of interaction with other EF. They invest in equities of firms, in shares of other Traditional Financial Institutions (TFI); they issue obligations and enter in repos with MMFs (*EF1)* and banks. In this

regard, repos represent one of the main sources of credit among financial institutions, as short-term means of financing (Adrian and Shin, 2010; Gorton and Metrick, 2009, 2010). In the last decades, the use of repos has considerably grown, shedding lights on the concept of endogenous money, previously mentioned. Through repos, banks provide EF3 with money, amplifying the initial stage of money creation. However, this process is different from the repo agreements provided by MMFs, as collateralised lending to give liquidity to the financial sector. In this latter case, repos make circulating *recycling finance*, i.e. existing liquidity.

The activities performed by EF3 are strictly related to the process of securitisation. EF3 engage with SPVs (*EF4* + *EF5*), purchasing ABSs that are used to produce complex financial instrument sold to investors. Moreover, broker-dealers might represent a channel of investment for firms that can allocate their funds in *EF3* shares and products.

Finally, Figure 2 shows the role of the so-called Traditional Financial Institutions (*TFIs*). They identify those institutions that allow firms to collect final finance and pay the debt to banks, as in the traditional MCT. Therefore, they represent those financial intermediaries that are classified neither as banks nor as shadow banking entities, such as pension funds. During the last decades, they have become even more involved in the financial markets, investing and diversifying their strategies among different types of activities (Davis, 2018). Indeed, pension funds can: (i) operate in derivative, equity, and security markets; (ii) transfer the title of securities to another party, such as broker-dealers (*EF3*); (iii) hold shares of investment funds (*EF1*) and attract investment by households, representing a safe alternative to banks deposits (BIS, 2010). Therefore, *TFIs* interact with: households, collecting their savings; *EF1*, investing in their shares; *EF3*, attracting their funds in exchange for shares; firms, buying their equities as a form of investment.[11]

Interestingly, clarifying the role played by TFIs reveals that the shadow banking system represents a modern evolution of the financial intermediaries described in the standard MCT. The function of intermediating saving between households and firms is still at the centre of TFIs. However, this

function is enriched by the interactions of TFIs with shadow banks. The shadow banking system rather gets involved at different levels, connecting all the macroeconomic agents of the circuit. It acts in the shadow of the regulation, operating in an opaque way, amplifying the points of contact among banks, firms, households, and financial intermediaries.

These points of contact produce an impact not only on the process of money creation - as described in Section 3.2 – but also on the circulation of liquidity. In fact, once the provision of initial finance has been made, the activities performed by non-banks financial entities, such as securitisation and intermediation of financial instruments, contribute to intensify the velocity through which money circulates into the system. Take the case of households that are paid for their labour services by firms. The money balances will wind up in the deposit accounts of households. The latter can save part of their income, spend their money balances on consumption, and/or acquiring interest-earning assets issued by non-bank financial intermediaries, say MMFs (EF1). Correspondingly, MMFs will use their deposits to purchase ABSs, issued by SPVs (EF4+EF5), and shares of TFI, and/or to provide repos to EF3. In turn, all these entities will get involved in the additional intermediate phases of the circulation of money, created by the interactions among all the macroeconomic agents.

The presence of the shadow banking system in the MCT confirms that the velocity of circulation of money is volatile. It is influenced by expectations, uncertainty, and, specifically, by changes in the endless arrays of money substitutes that the financial system can produce.

Finally, the points of contact among the macroeconomic agents affect the final stage of the MCT. After circulating into the system and being notably emphasized through financial market mechanisms, initial finance embodies the source of money for the closure of the circuit. Final finance has been already defined as the liquidity collected by the firms sector to extinguish the debt to banks. It appears on the commodities market or in the financial markets, in the relationship with consumers household and financial intermediaries. In the traditional scheme, by getting rid of money - that is increasing consumption or buying firms' equities - households allow firms to collect final finance and to

extinguish the debt with banks. Deposits will decrease and so does the amount of loans owned by the firms sector. Hoarding money - that is increasing the liquid money balance of households - will reduce the capacity of firms to reimburse initial loans. Money will then remain into the circuit.

In the era of shadow banks, the final stage of the circuit is similarly amplified, counting more sources of reimbursement, which make the closure of the circuit tricky. The presence of the shadow banking system increases the channels through which households can get rid of money, allowing firms to collect liquidity and to obtain final finance. Money goes through the different point of contact that connect the shadow banking system and the traditional agents of the circuit sequence, until it is used to extinguish the initial debt. Nonetheless, by allocating wealth in the financial markets, which might be disconnected from the real sector, money enters the financial circuit, being potentially trapped into the circuit. The more the propensity to engage with non-bank financial intermediaries, the greater the velocity of circulation of money, and the larger the impact on final finance, which eventually flows back to banks.

4. Concluding Remarks

This paper developed the MCT in order to understand the growing role and impact of the shadow banking system in modern economies. It adopted a functional classification of the shadow banking system, which shows a noteworthy resemblance and consistency with the MCT.

In the MCT, the identification of the main groups of macroeconomic agents involved in the workings of capitalist economies is based on the specific functions that these macroeconomic agents - namely firms, banks, households, and financial markets -, perform in the reproduction of the economic system over time. The shadow banking system has gained a central position in the economic system, by elevating role of financial markets and players performed in the standard MCT. The presence of the

shadow banking system has produced changes in the structure of macroeconomic agents with implications on the creation, circulation, and destruction of money.

The initial finance refers to the relationship between banks and firms that gives rise to the creation of money, employed for production motive. In the era of shadow banks, money enters the circuit sequence through the lending activity of banks, which finance business plans of firms, *but* the initial finance step is enlarged by other channels of lending, activated by presence of the shadow banking agents and by their relationships with households and firms. Banks create money by providing loans to households, engaging with *EF2*, and entering in repo contracts with *EF3*.

While the channels of money creation opened by banks increase, the functions performed by the shadow banking entities do not affect the money creation process itself, calling on the traditional money multiplier. However, the expansion of money supply given by the creation of money substitutes by the shadow banks might change according to the level of their activity, i.e. to the market demand for their instruments. For this reason, it might be valuable going back to the concept of flexible multiplier (Realfonzo, 1998). It means that the quantity of money substitutes introduced into the economy by shadow banks is not a rigid multiple of the bank money collected, but it changes over time. The flexibility of the shadow banks' multiplier increases the endogenous character on money supply in current time.

Alongside the effects on the creation of money and the money multiplier, the inclusion of the shadow banking universe has an impact on the circulation of liquidity. It confirms that the velocity of circulation of money is volatile, influenced by expectations, uncertainty and, specifically, by changes in the endless arrays of money substitutes that the financial system can produce.

Clearly, the initial finance - after circulating into the system and being notably emphasized through financial market mechanisms - embodies the source of money for the closure of the circuit. In fact, the final stage of the circuit is similarly amplified, counting more sources of reimbursement, which make the closure of the circuit tricky. The presence of the shadow banking system increases the

channels through which households can get rid of money and allows firms to collect liquidity and to obtain final finance. Money goes through the different links that connect the shadow banking system and the traditional agents of the circuit sequence, until it is used to extinguish the initial debt. Nonetheless, by allocating wealth in the financial markets, which might be disconnected from the real sector, money enters the financial circuit, getting potentially trapped into the circuit. The more the propensity to engage with the non-bank financial intermediaries, the greater the velocity of circulation of money and the larger the impact on final finance, which eventually flows back to banks.

This paper has shown that the shadow banking system enlarge the process of endogenous creation, circulation, and destruction of money, capturing modern capitalist economies. At the same time, the analysis has made clear that shadow banks can change the money supply thanks to its effects on the flexible multiplication of money substitutes as well as on the variation of the velocity of circulation of money. The MCT allows fully understanding the role of the shadow banking system and its effects on the endogeneity of money, questioning the ability of the Central Bank in controlling money supply.

Finally, the paper shows that the classification of the macroeconomic agents theorised the standard MCT is still valid. The shadow banking system represents a modern evolution of the financial intermediaries, which operates in the shadow of the regulation and amplifying the points of contact among banks, firms, households, and financial intermediaries.

Footnotes

[1] University of Sannio (Italy)

[2] University of Leeds (UK) and University of Sannio (Italy)

[3] University of Sannio (Italy)

[4] In the basic representation of the circuit (Graziani 2003), the presence of the State and the Central Bank are assimilated to those of firms and banks, respectively. In a pure credit economy, the role of the central bank is to set the interest rate and grant credit to commercial bank. In the circuit scheme, this role is ascribed to banks. Following Graziani (2003), the presence of the Central Bank and the role of public expenditure would imply the injection of additional liquidity in the monetary circuit sequence without altering its essential structure and the credit nature idea of money it is based on. For a different perspective on the role of the government sector and the banking system, see among others Kregel (1984), Rochon and Rossi (2004), Rochon and Vernengo (2003), Wray (1990, 1998, 2003).

[5] The closure of the circuit has generated an interesting debate among scholars that highlights different points of view (e.g. Bellofiore and Passarella, 2009; Bossone, 2001; Forges Davanzati and Patalano, 2011; Graziani 1994; Keen, 2010; Lavoie, 2004; Messori 1985; Messori and Zazzaro, 2003; Rochon, 2005; Parguez, 2003; Zezza, 2004, 2012).

[6] It is worth noticing that consumer credit is not excluded in the standard circuit theory. Households can access bank credit for consumption but not for production. "Credit […] is not granted to anyone presumably able to repay his debt, but only to selected agents, usually being productive firms. Only firms have actual access to bank credit and therefore enjoy a purchasing power exceeding their present wealth. As a rule, instead, wage earners can enter the market only after they have sold their own labour and received the corresponding pay" (Graziani, 2003, p. 20).

[7] The FSB (2015, 2020) identifies the shadow banking system throughout two phases. The first phase allows capturing an aggregate measure of the financial assets of entities that engage in non-bank financial intermediation - the so-called "Monitoring Universe of Non-bank Financial Intermediation" (MUNFI). The latter includes insurance corporations, pension funds, OFIs and financial auxiliaries. The second phase identifies the narrow measure of the shadow banking system, considering non-bank financial entities engaged in financial and credit intermediation activities, which pose potential risk to financial stability. This second phase is implemented classifying the MUNFI entities in five economic functions.

[8] Repo is an agreement that implies the sale and consequently the repurchase of a security at a specified time and price. From an economic perspective, repos are considered similar to security lending, as the title is temporarily transferred to a third party (see Adrian et al. (2010), Gabor (2014, 2016), Ruchin (2011) for the functioning of the repo market). On the

debate about repo contracts ability in increasing the liquidity within the financial system see, among others Caverzasi *et al*. (2019), Gabor (2020), Michell (2017), Murau and Pforr (2020).

[9]In our narrative we do not focus on this last point.

[10] In Figure 2, the connection between EF3 and firms - that is the act of buying firms' equities - is shown through the intermediation of traditional financial institutions. This is made in order to graphically simplify the circuit representation.

[11] As we exclude the presence of the State, we might consider this as a safer investment compared to financial market activities.

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Figures and Tables

Figure 1. Traditional Monetary Circuit

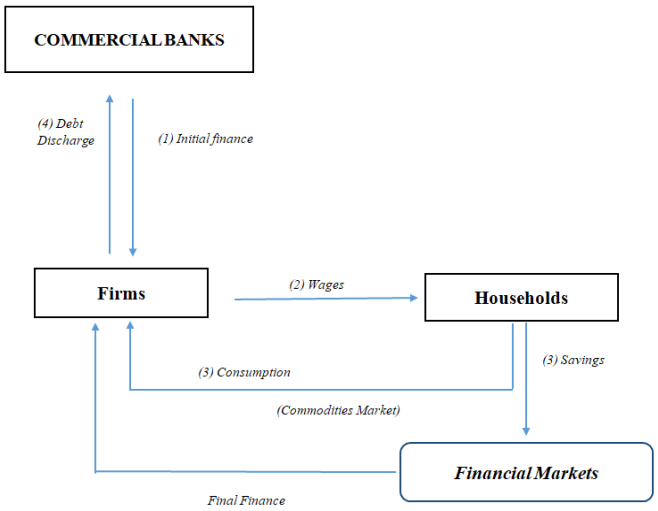

Figure 2. Shadow banks in the MCT

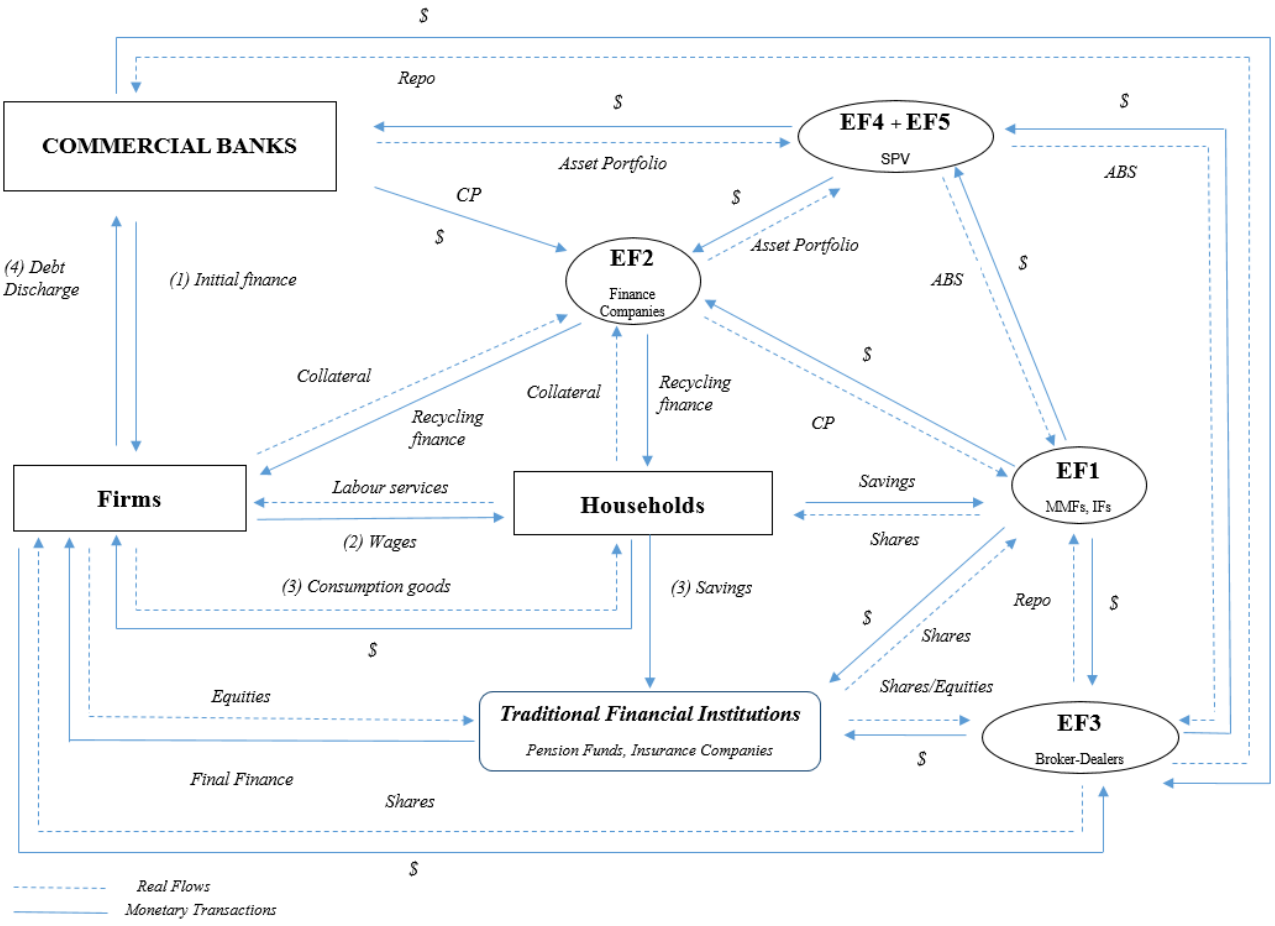

Table 1: Shadow banking system classification by economic functions (EF)

Economic Functions	Definition	Typical entity types
EF1	Management of collective investment vehicles with feature that make them susceptible to runs	MMFs, fixed income funds, mixed funds, credit hedge funds, real estate funds
EF2	Loan provision that is dependent on short-term funding	Finance companies, leasing companies, factoring companies, consumer credit companies
EF3	Intermediation of market activities that is dependent on short-term funding or on secured funding of client assets	Broker-dealers
EF4	Facilitation of credit creation	Credit insurance companies, financial guarantors
EF5	Securitisation-base credit intermediation and funding of financial entities	Securitisation vehicles, structured finance vehicles, asset-backed securities

Source: FSB (2020)