Alvaro Cencini (Switzerland)

# For a new system of international payments

## Abstract

World-wide economic turmoil and uncertainty are threatening the development of our economies, and experts increasingly evoke the ghost of recession. The aim of this paper is to show that the present system of international payments is in disarray, and that a reform is needed to replace it with a system respectful of the principles of money and banking. The reform advocated in this paper calls for the institution of a world central bank acting as an international settlement institution designed to provide monetary stability without forcing countries to give up monetary sovereignty, and without the need for any kind of monetary policy intervention.

**Keywords:** money, banking, international monetary system, international payments.
**JEL Classification:** E42, F02, F33, F34.

## Introduction

It is widely agreed that the present system of international payments is no longer viable, and that a reform is needed to address the problem of a new international reserve currency. Yet, the terms of the problem are blurred, and it is often unclear whether it should be investigated from a political or a scientific point of view. The aim of this paper is to show that a reform is overdue for scientific reasons: namely, to replace the present non-system of international payments with a system respectful of the principles of money and banking.

In the second section we will present a brief analysis of the way domestic payment systems work based on the distinction between monetary and financial intermediation. We investigate the nature and role of money, and show what conditions are to be fulfilled for a homogeneous national payment system to exist. In the third section of the paper we address the need to extend at the international level a similar homogeneous system of payments. After a critical assessment of the present non-system for international payments, we propose an interpretation of the plan presented by Keynes at Bretton Woods based on Schmitt's monetary analysis (Schmitt, 1973, 1985, 1988). In particular, we will claim that, though it rested on the principles of banking, the Keynes Plan did not distinguish clearly enough the monetary from the financial intermediation, which is the main reason why it failed as a valid alternative to White's plan.

What the world needs is a system providing both a common numerical standard, and a mechanism for the final settlement of international transactions. Both the monetary and the financial problems have to be solved, a task that requires a reform reconciling the vehicular function of money with the liberatory character of final payments. In the last section of the paper we will summarize the leading principles of such a reform, and show how it could be implemented in stages, starting from a group of countries to end with all of them.

## 1. Money and banks

No one will dispute the fact that in all economies money is bank money. A lesser known, equally undisputable fact is that bank money is issued by every bank operating within a national monetary system. It is still widely believed that national money can be issued only by a country's central bank. This is not so. Central banks are the sole institutions entitled to issue banknotes, it is true, but they have no direct control over commercial or private banks deposits, which are unanimously considered as by far the most important component of the money supply. Money has its origin in the faculty of banks to use double-entry bookkeeping in order to issue their own acknowledgments of debt (their own IOUs – I owe you). The role of central banks is essential, but it relates to the need to transform the IOUs issued by each private and commercial bank into homogeneous units of a unique system, and we will deal with it in the fourth section of the paper. In this section we are concerned with the nature of bank money as issued by banks, and with its functions as a standard of value and means of payment.

What does it mean for a bank to issue money as its own acknowledgment of debt by using double-entry bookkeeping? The technical answer is that the bank enters a given number of units of account on its assets and its liabilities sides to the benefit of a client. In practice, this corresponds to the opening of a line of credit. No transaction has yet occurred, and no payment has been carried out by our bank. As a matter of fact, no money units have been created yet, since the result of the bank's double entry is zero. However, it would be mistaken to think that the meaning of this entry is nil. Zero is a number, to wit the first number of the series of integers, and double-entry bookkeeping allows to introduce it into economics as the result of a positive and negative entry of the same amount. Finally, it is the discovery of positive and negative numbers, and their

introduction into economics, that accounts for the origin of bank money.

The idea that bank money is essentially numerical should not be surprising, and is perfectly in line with the fact that neither individuals, nor their institutions can issue it as a positive asset. It is, therefore, immediately clear that money as such must be kept analytically separate from money income. By opening a line of credit, a bank simply tells its clients that it is able and ready to carry out a payment on their behalf if they can have access (directly or indirectly) to the money income required to finance it. Here it is important to understand that income is created by production, and not by credit. If no production occurs, no lending can be carried out by banks (Schmitt 1975, 1984a; Cencini 1988, 1997, 2001a, 2005; Rossi 2001, 2003, 2007, 2009b). The first transaction allowing for the creation of money is also the one which gives rise to a positive income, and to its lending by banks.

Let us consider the payment of wages for an amount of x money units carried out by bank B on behalf of its client F. Activating its client's line of credit, the bank enters workers W on the liabilities side of its balance sheet, and firm F on the assets side. As a result, W becomes the owner of a positive amount of income deposited with B, and F is indebted to B. The object of W's credit with the bank is the income formed at the moment wages are paid, which is also the object of F's debt to the bank. And what is the object of income, and by what is it defined? The answer to both questions is straightforward: produced output. Through the payment of wages an *absolute exchange* occurs, which transforms real output into money income, i.e. which identifies income with output (Schmitt, 1984a). As for money, it is created and destroyed at the very moment wages are paid.

Banks issue or create money with each payment, and money is immediately destroyed at the end of each payment. Since payments are logically instantaneous, money disappears as soon as it is created, leaving room for positive and negative bank deposits defining the formation, transfer or destruction of income. The role of money is twofold: it provides a numerical expression for produced output, and vehiculates economic payments (Schmitt, 1984a; Cencini, 2001a, 2003, 2005; Rossi, 2001, 2006, 2007). In its first function, money is a numerical form, and produced output is its real content, whereas, as a means of payment, money vehiculates income from clients to banks and vice versa. In our example, x money units are the numerical form of output, their numerical measure, as opposed to a dimensional standard of a hypothetical (and metaphysical) economic substance. At the same time, x money units enable the payment of wages and the formation of a money income that is instantly deposited with the bank.

Fundamentally, banks act as intermediaries. They also operate as firms, of course, but this is not what interests us here. To better understand the distinction between money and income it is worth making clear the double process of intermediation carried out by banks.

## 2. Monetary and financial intermediations

In order for economics to exist as a science it needs to have a specific and measurable object. As unanimously recognized, this object is produced output, and money is a necessary element to grant for its numerical expression. Without money, output would simply amount to a heap of physically heterogeneous objects, and would, therefore, remain totally undetermined. The difficulty here is to realize that in economics the unit of measure is both numerical and real even though money is purely numerical. Since Walras (1984/1874) it is well known that economic value is not a substance, which implies that the value of output cannot be determined by comparing it to the value of a given standard. We cannot express economic value by using a physical measuring rod. If economic value were a substance, money would have to be made up of the same substance as produced output. Since this is not the case, money has to be thought of as a numerical form that gives output its numerical expression when one (output) becomes the real content of the other (money). Money is a necessary element for economics to have its own measurement standard; the other necessary element is output (Schmitt, 1984a; Cencini, 2001a, 2005, 2008; Rossi, 2003, 2007). Numbers alone are not enough; they must be closely associated with produced output so that numerical form and real content become a unity. This is what happens when wages are paid out. The unity of money and output gives, thus, rise to the economic standard of measure: wages units.

In economics we do not have output on one side, and a measurement standard on the other side, but a unique object resulting from the integration between money and physical output. The presence of money is a necessary condition for the object of economics to exist in its numerical form. Issued by banks as an asset-liability (Schmitt, 1966), money is subject to their intermediation. This claim requires some further explanation.

Since the vast majority of economists (for example, Friedman, Clower, Johnson, Sayers, Goodhart, Graziani, Moore, Parguez, Wray) do not distinguish between money and income, the intermediation of banks is mostly identified with their interventions as

financial intermediaries. The existence of money as such is still somehow mysterious, and so is the idea that banks act as monetary intermediaries. Yet, double-entry bookkeeping is there to show that payments imply the presence of money as a flow. When bank B pays agent C on behalf of agent A, both A and C are simultaneously debited and credited by B. Correctly understood, double-entry bookkeeping entails the debiting and crediting of each economic agent taking part in a transaction, and not the simple debiting of one agent and crediting of another. In our example this means that money is created and destroyed for A as well as for C. The bank issues money every time a payment is carried out, and it does so by debiting and crediting both the payer and the payee. Hence, money is never in the possession of any economic agent: it flows from the bank to A, from A to C, and from C back to B. A circular flow is what best defines bank money, which clearly shows that such old physical concepts as mass, quantity and velocity are inappropriate to describe it. There is no such thing as a 'mass' of money, and it is ingenuous to believe that money can circulate at a certain speed. The numerical nature of bank money and the necessary compliance with the principle of double-entry bookkeeping leave no room for dispute: money is a simple flow facilitating transactions; it is a means of payment, and not its object or real content.

The monetary intermediation of banks consists in providing the economy with the money flow required to convey payments. Banks use double-entry bookkeeping as the specific technique eliciting a flow of money through a succession of creations and destructions (Schmitt, 1984a; Cencini, 2001a, 2005; Rossi, 2007, 2009b). This is not enough, however, for payments to be redeemable. A financial intermediation is also needed, in order for money to convey a real object from the payer to the payee. This cannot be done by banks alone. When it acts as an intermediary, a bank can create neither income nor credit. As we have known at least since the work of the Classics (such as Smith 1776/1991, Ricardo 1817/1951, 1951-5, Marx 1867-1894/1976-1981), it is production that gives rise to income. Now, as soon as it is created, income is deposited with banks. This is necessarily so, since income results from the association of produced output with money, and money flows immediately back to the bank by which it is issued. In compliance with the principle of double-entry bookkeeping, all deposits with banks are immediately lent. This is precisely what the necessary equality between debits and credits implies. The entry of a deposit on the liabilities side of a bank's balance sheet defines its debit to the depositor, and it is matched by an equivalent entry on the assets side, which defines its credit on the economic agent who benefits from the loan of the income deposited. From the moment income is formed, banks are involved as financial intermediaries.

Let us consider again what happens at the moment wages are paid (Table 1).

Table 1. The payment of wages

Bank

| *Assets* | | *Liabilities* | |
|---|---|---|---|
| Firm F | x | Wage earners | x |

As beneficiaries of the payment, wage earners are credited by the paying bank. The object of wage earners' credit on the bank is the income deposited with it. In other words, wage earners lend their income to the bank as soon as it is formed, and become the owners of a claim on the bank (a certificate of deposit). The entry of wage earners on the liabilities side of the bank's balance sheet is matched by the entry of firm F on the assets side. In fact, wages are paid on behalf of F, which becomes indebted to the bank. But what is the object of F's debt to the bank? What has F received from B? The answer is straight: the very same income deposited by wage earners. Bank B is a mere intermediary, it gets an income from wage earners and gives it to the firm. The income formed by production is instantaneously deposited with the banking system and lent to firms, which spend it on the (initial) purchase of output, i.e. a transaction that leads to the formation of a stock, and is an investment.

The payment of wages is only one example of banks' financial intermediation. As a matter of fact, banks carry out a financial intermediation (as well as a monetary one) each time a payment occurs. Hence, when A asks its bank B to pay C, the bank debits A and credits C with the same amount of income. To be precise, B does much more than that: it credits and debits A **and** C. If B simply balanced A's debit with C's credit, it would not comply with the logical requirements of double-entry bookkeeping: each entry would be simple and not double. In reality, this is not the case, since in order to pay C the bank has first to credit A with a positive amount of income (previously deposited by A or by somebody else), and then debit him/her with the same amount. Analogously, B credits C with the income paid by A, and immediately debits the same (C), since the income is deposited with the bank at once. Finally, A either balances his position (if he pays C with his deposits) or incurs a debt to the bank (if B lends him the deposit of some other client), and C either increases his deposits with B or compensates a previous debt with the bank.

At this stage it would be redundant to consider other examples of financial intermediation, for they could

all be brought back to the ones we have just analyzed. Let us just emphasize the fact that banks' monetary and financial intermediations obey the laws of double-entry bookkeeping, and represent the building blocks of our systems of payments (Moore, 1988; Deleplace and Nell, 1996; Parguez and Seccareccia, 2000; Graziani, 2003; Rossi, 2007). Both intermediations are present in every payment, a fact that has to be clearly recognized if one wants to understand the logical structure of a monetary system. Today too many economists still mix up money and income, and are, thus, led to confuse the monetary with the financial intermediation of banks. Most of the time, no distinction is drawn between the emission of money and the granting of credit, and it is claimed that banks grant credit by issuing money, as if they could issue money as a net asset. This is a widespread mistake that has its origin in the concept of commodity-money, and which shows how little we know about the nature of bank money. An important progress was made by Schmitt (1960, 1966, 1975), but his definition of bank money as an asset-liability is still poorly known. Nor have economists sufficiently considered the logical impossibility for banks (or any other institution) to create monetary or financial assets. Most likely, economists are misled into identifying money and credit by the fact that a monetary intermediation is always accompanied by a financial intermediation (Schmitt, 1984a; Gnos, 1998, 2003; Cencini, 1997, 2005, 2008; Rossi, 2007, 2009b). For example, when wages are paid, the bank carrying out the payment lends to F the income deposited by wage earners, so that it is correct to say that F benefits from a credit granted by B. Yet, this does not mean that B grants a credit to F by issuing money. The origin of the credit is the income formed through production and deposited with B.

The emission of money is required for payments to be conveyed from payer to payee, while the presence of income is necessary for payments to have a real content. Every payment implies a circuit of money and a circuit of income, and banks are there to grant for the existence of these two circuits through their monetary and financial intermediations.

## 3. The national payment system

Since money is issued by banks as their spontaneous acknowledgment of debt, a problem arises as to the heterogeneity of each bank's IOU. In order for a unique, national monetary system to exist, the monies issued by each single bank must be made homogeneous. This is done through a system of inter-bank settlement, usually operated by the central bank.

When a client of bank B1 pays a client of another bank B2, B1 does not pay B2 directly, because if it did B2 would be paid by B1's acknowledgment of debt, while it should be clear that nobody pays by getting indebted. The non-payment is avoided by the central bank, which pays B2 on behalf of B1. The central bank acts as a catalyst through which the monies issued by commercial banks are made homogeneous, i.e. they are given the form of central or national money. Central banks are not the initial issuers of money, yet their presence as settlement institutions for any transaction on the interbank market is crucial, since it is through their intermediation that a homogeneous monetary space can exist at the national level.

Today's system of inter-bank payments is a real-time gross settlement system, which implies that each payment carried out by the central bank on behalf of commercial banks must be settled at the very moment it takes place. This is perfectly in line with the law of the logical identity between each single agent's sales and purchases derived by Schmitt (1975) from the vehicular nature of bank money. According to this law, when a given agent acts as a purchaser, he also necessarily acts as a seller, and vice versa, which is simply another way of saying that he cannot be debited without being credited, and vice versa. Apparently absurd, Schmitt's law becomes clear as soon as it is specified that the identity between sales and purchases is verified on the labor, financial and output markets taken as a whole. Hence, wage earners are sellers on the labor market and purchasers (of certificates of deposit) on the financial market, while firms are purchasers on the labor market and sellers (of bonds) on the financial market. Likewise, consumers sell bonds or certificates of deposit and purchase output, whereas firms sell output and purchase certificates of deposit. By acting as a settlement institution, the central bank applies this principle to commercial banks, asking each of them to compensate its payments (purchases of goods, services and financial claims) with equivalent receipts (sales of goods, services and financial claims). Finally, while commercial banks act as monetary and financial intermediaries on behalf of their clients, the central bank acts as a monetary and financial intermediary with respect to commercial banks: it issues the (central) money required to convey inter-bank payments, and it makes sure that payments are settled through compensation (clearing).

It is now time to turn our attention to the international system of payments.

## 4. The present non-system of international payments

Today, payments between nations are carried out in one or more national currencies, and without the

help of any international settlement system. It is not surprising, therefore, to find that the lack of a true system of international payments is the cause of serious disturbances that hamper the development of both developed and developing countries. Two closely related considerations are enough to show why the decisions taken at Bretton Woods gave rise to a non-system of international payments. The first is that, since they are issued by different national banking systems, national monies are heterogeneous. The second is that each national money defines the acknowledgment of debt of the banking system that issues it. If heterogeneity is not dealt with, it is impossible to speak of a 'system', and an acknowledgment of debt can never be the object of a payment. Without the presence of a common standard, and without a mechanism ensuring that payments have a real content, no system of international payments can ever exist. If country A pays country C in money A neither of these two requirements is satisfied. What C gets in exchange for its real exports is a mere acknowledgment of debt, a promise that is erroneously taken to define a net asset. So much so that today money A is entered on the assets side of C's banking system, which issues, as a balancing item, an equivalent amount of money C. Two mistakes are made in this regard: a simple amount of money is identified with an asset, and an inflationary emission of money is elicited in country C (Schmitt, 1984b).

Even though the non-payment of country A is matched by the non-payment of country C when trade is balanced, the disorder caused by the use of national monies as international means and objects of payment cannot be reabsorbed. In both A and C an inflationary gap appears, which is the mark of their reciprocal non-payments. Internationally originated inflation takes a particular form when country A runs up a trade deficit and its national money is a reserve currency. In this case A's payment leads to a duplication, which increases the amount of financial capital held in the creditor countries without curtailing A's financial deposits. Originally pointed out by Rueff (1963), the phenomenon of duplication explains the origin of euro-currencies, and is a key element for the understanding of the pathological capital formed internationally and feeding financial speculation (Schmitt, 1984b, Cencini, 2001a).

In the absence of a true system of international payments, transactions between nations are settled in money (Schmitt, 1985). Apparently, there is nothing wrong with this consideration. Yet, it must be remembered that money is not identical with income. Within every national economy, payments are conveyed by money, yet their redeeming power is not given by money itself. It is income that, by identifying itself with produced output, makes up for the final payment. In an orderly-working system of payments, money would always convey income, and there would be no reason to worry about the risk of money alone being the content or the object of a payment. However, nowadays the world operates otherwise. If we consider international payments only, it is immediately clear that money is dealt with as if its nature could drastically change by shifting from a national to an international context. Instead of considering it as a numerical form or vehicle of no intrinsic value, money is seen as a kind of commodity, an asset that can be bought and sold, and which has a price (Aizenman and Lee, 2007; Bordo and James, 2008; Caballero et al., 2008; Dooley et al., 2009). Very few economists seem to realize that money is required for prices to be numerically expressed, and cannot, itself, have a price. Can we really think that by moving from a national to the international level money is transformed from a simple numerical form into an object of exchange? This drastic change in nature should appear all the more absurd that outside its national boundaries money is no longer related to income. When a sum of money A enters the banking system of country C, not even a fraction of A's income leaves its banks. The total of A's income is deposited within its banking system, which is precisely why the money A entered by C's banks is nothing more than a mere acknowledgment of debt.

Another serious disorder caused by the present non-system of international payments concerns the payment of net interests on debt by less developed countries (LDCs). A scientific breakthrough shows that indebted LDCs are bound to pay twice their net interests on external debt: the payment of interests equal to x has a total cost of 2x (Cencini and Schmitt, 1991; Schmitt, 2006). As absurd as it might appear, today's non-system of international payments multiplies by two the burden of net interests. This is so, because the payment carried out by the indebted residents (State included) has to be conveyed to the creditor countries. Since no system of international payments exists that can provide at zero cost the international money required to convey this payment, indebted countries must sacrifice part of their national resources to find the foreign currencies needed to vehiculate the payment of their residents in the international monetary 'space'.

The simplest proof of the double payment of net interests given by Schmitt (2009) goes as follows. We start from the balance of payments identity EX = IM, where EX and IM represent the total exports and the total imports of goods, services and financial claims of the indebted country, B. The payment of net interests (**in**) increases B's foreign exchange

expenditures, which are now equal to IM + **in**. Since the increase in B's expenditures is not matched by an equivalent increase in its purchases (**in** is a net transfer entered into B's current account), the **in** sum paid by B pays for an equivalent part of the total imports of the creditor countries, R and decreases B's receipts. All together, B's foreign exchange expenditures amount to IM + **in**, while its receipts are equal to EX – **in**. The decrease in B's receipts is the direct effect of the increase in its expenditures owing to the payment of **in**. The total gap created by the payment of **in** is, therefore, twice the amount due to B's creditors.

It is important to observe that B's indebted residents pay only once, and that R's residents are also paid only once. The second payment of **in** concerns the indebted country considered as a whole. It is B's macroeconomy that suffers from the loss of resources caused by the second payment, and it is R's macroeconomy that benefits from it. Official statistics published by the World Bank confirm that, from 1976 to 2007, the official reserves of indebted countries suffered an unjustified loss equal to the amount paid in net interests (for a detailed analysis see Schmitt, 2009).

## 5. The need for an international money

The use of one or more national currencies as international monies is inconsistent with the need to create a homogeneous monetary system of international payments. The inherent heterogeneity of national currencies can be dealt with only by reducing them to a common standard. This is the first task of a true international money: to provide for an international standard issued according to the principles of banking.

In his plan of reform presented at Bretton Woods in 1944, John Maynard Keynes advocated the creation of an International Clearing Union (ICU) and the use of an international money called *bancor* issued by the ICU. Keynes refers explicitly to the rule of double-entry bookkeeping: '[t]he idea underlying such a Union is simple, namely, to generalize the essential principle of banking as it is exhibited within any closed system. This principle is the necessary equality of debits and credits' (Keynes 1980, p. 171). As a matter of fact, Keynes's plan is not entirely consistent with the principle of double-entry bookkeeping, since it rests on the idea that, in order to satisfy the necessary equality of debits and credits, it is enough for the ICU to balance its credits in bancor on one country with its debits in bancor to another country. Yet, this is not what the principle of double-entry bookkeeping stands for. What is required is the necessary balancing of each country's debits and credits, a condition implying the circular use of money. Keynes erroneously believed that international payments could have been settled in bancor, which explains why his plan was rejected in favor of White's plan. If the bancor was to be considered as any other national currency, then why not use straightaway the currency of the richest and most powerful country in the world? Replacing the US dollar with another currency is no radical change, and does not represent a viable alternative unless the bancor is conceived and used as a circular means of payment.

Keynes's plan would have been up to its task if it had advocated the need for an international money issued by the ICU by simultaneously crediting and debiting every country involved in an international payment. As in any national system, the role of money is to convey payments, and not to make up for their final settlement. Keynes implicitly recognized that the bancor would have been issued as the ICU's spontaneous acknowledgment of debt. This should have taught him that, as such, the bancor could never have been the object of international payments.

In the same way as national payments between banks cannot be settled directly, payments between nations require the use of a money of a higher degree (Schmitt, 1975; Cencini and Schmitt, 1991, 1992; Cencini, 2005; Rossi, 2007). If bank A were to pay bank C directly by crediting it with money A (the acknowledgment of debt issued by bank A), the payment would be aborted, since nobody pays by getting indebted. This is one of the reasons why the payment is carried out by the central bank, in central bank money, on behalf of bank A. The other reason is that, without the intervention of the central bank, money A and money C would remain heterogeneous. The central bank acts as a catalyst and gives the common form of central bank money to the monies issued by any commercial bank operating within a national system. An analogous process must take place internationally: national currencies must be made homogeneous through the world central bank's intermediation.

To provide the world with an international money playing the role of the common standard of national currencies is the first undertaking of a reform allowing for the creation of an orderly system of international payments. Yet, this will not be enough. An international money is required to convey payments between nations, but cannot be itself the object of payments. It is, thus, necessary to explain how, through the circular use of the international money, payments can be settled in real terms.

## 6. The financial problem

Within any domestic system, payments are effective if the payee is credited with a sum of money

associated with current output, i.e. with a sum of income. If money had no real content, it would convey no payment, and its use as an object of payment would be a cause of disorder. Money is a necessary, yet not a sufficient element for payments to be carried out. Banks create money, but they cannot create its purchasing power, which results from its association with produced output. At the outset, the financial problem consists in providing for the purchasing power of money. Nationally, this is done by production. What the payee gets in exchange for its sales of goods, services and/or financial claims is a sum of money-income defining part of current output. Internationally, however, no production takes place, and there is no output that can endow an international money with a positive purchasing power (multinational production takes place in various countries and is not truly international). How are we to deal, then, with the financial problem at the international level?

Here a hasty reader might be tempted to advocate the use of a national currency as international money. Yet, this is far from being a correct solution since a national currency, which acquires its value from its association with domestic output, conveys final payments only within its national borders. Outside these borders, a national currency is just an acknowledgment of debt, and, as such, it cannot finance any final payment. To base the bancor on deposits of gold and foreign exchange constituted with the ICU is no solution, since it amounts to define the bancor as a mix of commodity-money and national currencies. As is widely recognized, gold is of no use to bank money, whose value is no longer thought to be derived from it, and the bancor would not be substantially different from a national currency if it were to depend on foreign exchange.

Now, Keynes clearly stated that the bancor was to be kept distinct from national currencies, and that it had to be issued as a bank money. If the bancor has no intrinsic value, and if it cannot be associated with any international production, where does it derive its redeeming power from? How can it have any purchasing power at all? Keynes did not provide a straight answer to these questions. Yet, his choice to name the new international bank International Clearing Union, as well as his emphasis on the need for a multilateral settlement system, help us to solve the financial problem satisfactorily.

In the same way as inter-bank payments are conveyed by central bank money, international payments will be conveyed by the international money issued by the world's central bank acting as an international settlement institution. Likewise, the purchasing power of international payments will be granted by a mechanism of multilateral clearing similar to that operated nationally by central banks. The principle to be applied here is that of the necessary equality between each agent's sales and purchases. What is true for any domestic agent is also valid for countries. Internationally, each country is a single agent, and it is subject to the same law applying nationally to each economic agent. The mechanism of international settlement will be the means through which this law will be enforced. Hence, a country will be able to pay only to the extent that it is itself paid by other countries. This can be illustrated by means of a simplified example concerning two countries only, A and C. In this particular case, the principle discovered by Schmitt (1975) establishes that A can purchase from C only if C purchases from A. The equality between A's sales and C's purchases, and between A's purchases and C's sales is a tautology. The equality between A's sales and A's purchases, and between C's purchases and C's sales is a law. A mechanism of clearing (bilateral in our example) based on a gross real-time settlement system will ensure that this law will be respected. According to this system (already widely applied within countries), the world central bank will pay C on behalf of A as soon as A benefits itself from an equivalent payment.

A's debits and credits with the world central bank must balance, and so must C's credits and debits. This does not mean, however, that country A (C) must balance commercial imports with commercial exports. A balanced current account is neither a necessary nor a sufficient condition for country A's credits to match country A's debits. The equality between A's (C's) sales and purchases must be verified on financial and product markets taken together, and not on each of them separately. In our example, country A may well run a trade deficit and balance its net purchases of goods and services with a net sale of financial claims. If this is the case, A's trade deficit is financed by C through its purchase of A's financial claims. The simultaneity of A's and C's purchases and sales shows that, in this particular case, it is thanks to C's investments that A covers the cost of its net commercial imports. In general, the real-time gross settlement system will allow countries to find in their sales of goods, services and financial claims the real financing of their purchases on the output and financial markets.

## 7. Proposals for a solution

The requirements necessary for a sound system of international payments to see the light are as follows:

1. The creation of an international money in compliance with the principle of double-entry bookkeeping.
2. The use of this money as a circular means to convey payments between nations.

3. The bookkeeping distinction between the world central bank's monetary and financial intermediations.
4. The distinction between each country's monetary and financial accounts.
5. The implementation of an international multilateral settlement system consistent with the need to respect the necessary equality between each country's sales and purchases.

It is worth observing that the circular use of the new international money will impede its transformation into an object of exchange, and permit the passage from today's regime of erratic exchange rate fluctuations to a system of stable exchange rates. In the present non-system of international payment, currencies are considered as if they were goods or assets, and their exchange rates are assimilated to relative prices determined through the adjustment of supply and demand as is supposed to take place in the foreign exchange market. In the new system, neither the existing national currencies, nor the new international money will be transformed into tradable goods. This will be so because in every international payment each country will be simultaneously credited and debited both in national and in international money. National currencies will no longer be subject to a process of duplication (Rueff, 1963 1980; Schmitt, 1984a; Cencini, 2001), and, being created and destroyed in each payment, the new international money will not circulate on the foreign exchange market. As for the new regime of exchange rates, defined by Schmitt (1984b) as a system of absolute exchange rates, it should be clear that its stability will be granted by the necessary balancing of the world central bank's monetary account. Using the traditional terms of supply and demand we could say that, because of the circular use of international money, in each payment between countries every national currency will be simultaneously supplied and demanded in terms of the new international money, and vice versa. The immediate balancing of supply and demand leaves no room for any adjustment, and guarantees the stability of the new exchange rates regime.

As a matter of fact, in an orderly system of payments money would immediately be replaced by real goods, services or financial assets, its intermediation lasting a mere instant. This means that the reform advocated in this paper could be implemented without the need for the creation of a new international money. What really matters is that no money is used as a positive asset. If the new system is apt to grant for payments to have a real content, then any national or international money can play the role of unit of account and means of payment. The implementation of a system of double-entry bookkeeping between nations is what is needed to guarantee the neutral use of money at the international level. Such a system would withdraw national monies from the realm of real goods, and make certain that they will no longer be exchanged for one another on the foreign exchange market. The stability of exchange rates will make it perfectly conceivable to use national monies as units of account of international payments (Cencini and Schmitt, 2010). The creation of a true international money would be preferable from a formal point of view, of course, yet it is by no means a necessary condition for the reform to work. If, for any reason, agreement on a new international standard proved too difficult, the impasse could easily be avoided by allowing for the double-entry (or circular) use of national currencies.

The constitution of a world central bank responsible for issuing an international money and the implementation of a mechanism of multilateral clearing based on a real-time gross settlement protocol would require general agreement among nations about the need for a radical reform of the present system of international payments. This could pass through the call for a new Bretton Woods Conference where countries would be asked to definitively give up the use of the US dollar or that of any other national currency as international reserve asset. Put in these terms, the solution is most likely to be opposed by the US, and even by the EU. It is a fact that, since the early 1950s, the US has almost always run a conspicuous trade deficit, which it has paid by crediting the exporting countries in dollars. This has permitted the US to pay for its net purchases of foreign goods and services simply by transferring its own acknowledgment of debt. As already claimed by Rueff (1963, 1980), the dollars thus paid never abandon the US banking system, where they remain necessarily deposited, which clearly explains how it has been possible for US domestic demand to be maintained at the levels observed over the last sixty years. Part of the dollars entered as assets in the creditor countries' banking systems is invested in the US (through the purchase of Treasury bills, securities, or other financial claims), thus giving a real content to the US payment of their net commercial imports. Yet, another part is not converted into US financial claims, and defines the amount of commercial imports that remains unpaid. Why should the US (or the EU in a foreseable future) give up the privilege of buying without paying?

The answer to this question is rather simple and rests on the observation that an orderly system of payments will benefit even those countries that have been less hit by the present disorder. A world in which indebted countries are getting poorer, and exchanges are jeopardized by the debt crisis and the

monetary anomalies resulting from the partial non-payment of net commercial exports is not propitious to economic growth. Growth in industrialized countries is highly dependent on that of their counterparties, and a monetary system allowing for a substantial increase in foreign trade is clearly preferable to one hampering international transactions. Further, it is absurd that such a powerful and developed country as the US keeps running up an extensive trade deficit. Logic requires order, and an orderly system will see an inversion in the US trade balance.

Technically speaking, the reform of the international payment system would require:

- the institution of a world central bank acting as an international settlement institution;
- the distinction between two departments within each national central bank: one dealing with the country's commercial banks, and the other dealing with the world central bank;
- the implementation of a real-time gross settlement system of multilateral clearing administered by the world central bank.

The reform advocated here could also be implemented in stages (Cencini, 2001b, 2005, 2008). In a first phase, it could be adopted only by a restricted number of neighboring countries sharing economic interests. For example, a group of Asian countries could create a regional central bank whose task would be to issue a money used to convey payments between them, and to run a system of multilateral clearing. Each country would carry on using its national money within its national boundaries, thus, preserving its monetary sovereignty. The new common currency would not circulate nationally, and would not be available on the foreign exchange market. If the rest of the world did not follow the example of these Asian countries, this would not be enough to guarantee total stability to their exchange rates. Yet, exchange rates stability would be greatly increased (it would be total between the currencies of the countries adopting the new system), and so would internal monetary stability as well as trade.

It is easy to foresee that these benefits would soon encourage other sets of countries to implement the same structure of payments. A plausible scenario could, therefore, be represented by a series of 'monetary areas', each having its own common currency and its own central bank, and whose reciprocal payments would be carried out by a world central bank using an inter-regional supra-national money. For example, we could have the Asian, the American, the African and the European areas. Payments between the countries of each area would be made in the Asian, the American, the African and the European supra-national monies, while payments between areas would be conveyed using money issued by the world central bank.

## Conclusion

Today's financial and economic crises are a clear symptom of the disarray of a system of payments that has its origin in the Conference of Genoa (1922), and is based on the use of one or more national currencies as international reserve assets. Time has come to re-think the very foundations of the system of international payments. The reform advocated here is basically the same as the one proposed by Schmitt back in 1973. It calls for the institution of a world central bank designed to provide monetary stability without forcing countries to give up monetary sovereignty, and without the need for any kind of intervention on the foreign exchange market or on interest rates.

Let us conclude with an example of how payments are channelled in the new system. Suppose that a resident of country A (RA) asks her/his bank to carry out a payment on her/his behalf to the benefit of a resident of country B. The commercial bank of RA debits her/his account, and conveys the payment to country A's central bank. Once credited by RA's commercial bank, the central bank of country A asks the world central bank (WCB) to credit the central bank of country B. According to the principle of real-time gross settlements, the WCB carries out the payment to the benefit of B's central bank as soon as the account of A's central bank is credited with an equivalent amount. As the international settlement system run by the WCB is multilateral, this will occur when the residents of another country, C, ask their bank to pay, via C's central bank and the WCB, for their imports of A's commercial goods, services and/or financial assets. The implementation of an international settlement system run by the WCB ensures that the payments of A have a real content (the purchase of commercial goods and services is balanced by an equal sale of goods, services and/or financial assets). It also guarantees the vehicular use of the money chosen as international means of payment and issued by the WCB.

## References

1. Aizeman, J. and J. Lee (2007), 'International reserves: precautionary versus mercantilist views, theory and evidence', *Open Economies Review*, 18(2).
2. Bordo, M. and James H. (2008), 'The U.S. dollar and its role in the international monetary order', mimeo, December, http://michael.bordo.googlepages.com/dollarhegemonydec1.pdf.

3. Caballero, R.J., E. Farhi and P.-O. Gourinchas (2008), 'An equilibrium model of "global imbalances" and low interest rates', *American Economic Review*, 98(1).
4. Cencini, A. (1988), *Money, Income and Time*, London and New York: Pinter Publishers.
5. --- (1997), *Monetary Theory. National and International*, London and New York: Routledge.
6. --- (2001a), *Monetary Macroeconomics. A New Approach*, London and New York: Routledge.
7. --- (2001b), "What future for the international and the European monetary system?", *Quaderni di ricerca*, No. 4, Lugano-Vezia: Research Laboratory in Monetary Economics.
8. --- (2003), 'Micro, macro et l'analyse du circuit', in P. Piégay and L-P. Rochon (eds) *Théories monétaires post Keynésiennes*, Paris: Economica.
9. --- (2005), *Macroeconomic Foundations of Macroeconomics*, London and New York: Routledge.
10. --- (2008), *Elementi di macroeconomia monetaria*, Padova: Cedam.
11. Cencini, A. and Schmitt, B. (1991), *External Debt Servicing. A Vicious Circle*, London and New York, Pinter Publishers.
12. --- (1992), 'Per la creazione di uno spazio monetario europeo garante della sovranità di ogni singolo paese', in R. Chopard (ed.) *Europa '93! e la piazza finanziaria svizzera?*, Centro di Studi Bancari, Lugano: Meta Edizioni.
13. --- (2010), 'Towards a new system of international payments', *Quaderni di ricerca*, Lugano-Vezia: Research Laboratory in Monetary Economics, forthcoming.
14. Deleplace, G. and Nell, E.J. (eds) *Money in Motion. The Post Keynesian and Circulation Approaches*, Basingstoke and New York: Macmillan and St. Martin's Press.
15. Dooley, M., Folkerts-Landau, D. and Garber, P. (2009), 'Bretton Woods II still defines the international monetary system', *NBER Working Paper*, No. 14731.
16. Gnos, C. (1998), "The Keynesian identity of income and output", in P. Fontaine and A. Jolink (eds), *Historical Perspectives on Macroeconomics: Sixty Years after the General Theory*, London and New York: Routledge.
17. --- (2003), "Circuit theory as an explanation of the complex real world", in L.-P. Rochon and S. Rossi (eds), *Modern Theories of Money: The Nature and Role of Money in Capitalist Economies*, Cheltenham and Northampton: Edward Elgar, pp. 322-338.
18. Graziani, A. (2003), *The Monetary Theory of Production*, Cambridge: Cambridge University Press.
19. Keynes, J.M. (1980), *The collected Writings of John Maynard Keynes*, Vol. XXV, *Activities 1940-1944. Shaping the Post-War World. The clearing Union*, London and Basingstoke: Macmillan.
20. Marx, K. (1867/1976), *Capital, Vol. I*, Harmondsworth: Penguin.
21. --- (1885/1978), *Capital, Vol. II*, Harmondsworth: Penguin.
22. --- (1894/1981), *Capital, Vol. III*, Harmondsworth: Penguin
23. Moore, B.J. (1988), *Horizontalists and Verticalists. The Macroeconomics of Credit Money*, Cambridge: Cambridge University Press.
24. Parguez, A. and Seccareccia, M. (2000), 'The credit theory of money: the monetary circuit approach', in J. Smithin (ed.) *What is Money?*, London and New York: Routledge.
25. Ricardo, D. (1817/1951), *On the Principles of Political Economy and Taxation*, Cambridge: Cambridge University Press.
26. --- (1951-5), *The Works and Correspondence of David Ricardo*, edited by P. Sraffa, Cambridge: Cambridge University Press.
27. Rossi, S. (2001), *Money and Inflation: A New Macroeconomic Analysis*, Cheltenham and Northampton: Edward Elgar.
28. --- (2003), 'Money and banking in a monetary theory of production', in L.-P. Rochon and S. Rossi (eds), *Modern Theories of Money: The Nature and Role of Money in Capitalist Economies*, Cheltenham and Northampton: Edward Elgar.
29. --- (2006), 'The theory of money emissions', in P. Arestis and M. Sawyer (eds), *A Handbook of Alternative Monetary Economics*, Cheltenham and Northampton: Edward Elgar.
30. --- (2007), *Money and Payments in Theory and Practice*, London and New York: Routledge.
31. --- (2009a), 'A common currency for Middle Eastern and North African countries? Lessons from the European Monetary Union', in D. Cobham and G. Dibeh (eds), *Monetary Policy and Central Banking in the Middle East and North Africa*, London and New York: Routledge.
32. --- (2009b), 'Monetary circuit theory and money emissions', in J.-F. Ponsot and S. Rossi (eds), *The Political Economy of Monetary Circuits: Tradition and Change in Post-Keynesian Economics*, Basingstoke and New York: Palgrave Macmillan.
33. Rueff, J. (1963), 'Gold exchange standard: a danger to the West', in H.G. Grubel (ed.), *World Monetary Reform: Plans and Issues*, Stanford and London: Stanford University Press and Oxford University Press.
34. --- (1980), *Oeuvres completes*, Paris: Plon.
35. Schmitt, B. (1960), *La formation du pouvoir d'achat*, Paris: Sirey.
36. --- (1966), *Monnaie, salaires et profits*, Paris: Presses Universitaires de France.
37. --- (1973), *New Proposals for World Monetary Reform*, Albeuve: Castella.
38. --- (1975), *Théorie unitaire de la monnaie, nationale et international*, Albeuve: Castella.
39. --- (1984a), *Inflation, chômage et malformations du capital*, Albeuve and Paris: Castella and Economica.
40. --- (1984b), *Les pays au régime du FMI*, Albeuve and Paris: Castella and Economica.

41. --- (1985), 'Un nouvel ordre monétaire international. Le plan Keynes', in F. Poulon (ed.) *Les écrits de Keynes*, Paris: Dunod.
42. --- (1988), *L'ECU et les souverainetés en Europe*, Paris: Dunod.
43. --- (2006), 'Théorème de l'intérêt', *Quaderni di ricerca*, *Special Issue*, Lugano-Vezia: Research Laboratory in Monetary Economics.
44. --- (2009), 'Payment of external debt interests – Once: yes but Twice: no', Lugano: University of Lugano.
45. Smith, A. (1776/1991), *The wealth of Nations*, New York and Toronto: Everyman's Library.