The Commodity Standard

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Introduction

Definition and role of standards of value

Every monetary system proceeds from a standard of value that governs its operation and characterises it. A standard of value is any good – even intangible - which performs the essential role of measuring values. The standard has other roles, enabling payments for example, or storing value, but these other roles should be considered accessory. It is the measurement of value that determines the various functions that are required of money. Both the ability of the monetary system to achieve the greatest efficiency of production, investment and consumption, and its ability to ensure a fair distribution of goods are entirely dependent on the choice of the standard.

With monetary exchange, the standard derives specific importance from its collective acceptance, as opposed to individual or bilateral standards. Consciously or not, every individual uses a personal standard to assess values. Robinson Crusoe himself – like a completely statist regime, by the way – needs an appropriate standard to measure his needs, current and especially future, in order to rationally organize his activity. With two people regularly exchanging merely two commodities, the question arises as to the common standard to be used, for each trader will want to impose his or her preferred standard (see p.13). When a community agrees to a common standard and moves from barter to monetary exchange, the significance of the standard increases because its collective character generates subjective effects. Not only does the collective standard determine the objective conditions of exchange, it also influences the subjective motives of the community by replacing in part or in whole its individual standards. In addition to economic alienation inherent in specialisation and trade, individuals suffer from psychological alienation due to their loss of independent judgement in relation to the valuation of goods and services which guides their decisions. Disconnected from their own standards, individuals will have to bear with fluctuations caused by an external standard not adapted to their needs and escaping their control. The serenity of the farmer living off his own production is due as much to his independence of judgement as to his lack of specialisation. He or she values his or her labour, stocks, livestock and other goods in terms of the unit of each good, and thus escapes the erratic effects of market disorders caused by an inadequate standard. Psychological alienation is necessarily stronger in monetary exchange than in barter where bilateral standards have limited influence. The strength of psychological alienation appears in people's irrational reactions even when they are not directly concerned by currency revaluations or stock market variations.

The monetary mirage can cause paralysis when the appreciation of the standard and the corresponding decline of prices account for a loss of income and capital. Conversely, an inflation-generating standard will unduly stimulate and misguide economic activity towards fictitious benefits.

Barter and monetary exchange

The advantage of monetary exchange over barter, or so-called bilateral exchange, is a matter of practicality. The former is more convenient than the latter. Where 100 countries exchange 100 goods, monetary exchange will need but 100 markets and the same number of prices, in fact only 99 if one of the commodities is the standard, whereas bilateral exchange will require 4 950 markets and as many

[1] *Economie appliquée* (July –September 1967); translated by Hélène de Largentaye and Bertrand de Largentaye (April 2018)

prices (100 X 99: 2, each of these commodities being valued in terms of all the others and each price being the inverse of another price). Though bilateral exchange can be streamlined by arbitraging, monetary exchange gives markets a scope that bilateral exchange can hardly achieve. Because the public can easily grasp their advantages, it will readily favour multilateralization and the expansion of markets, especially in periods of rapid technical progress, such as the 16th century, the middle of the 19th century or nowadays. Public opinion realises less readily that markets operate with a standard and assumes that the advantages of markets exist regardless of the standard. The public is hardly concerned by the choice of the latter, considered as just a matter of convenience, tradition or what not. Yet an inappropriate standard will hamper the market's operation and development, causing its advantages to become deceptive. Experience consistently shows that, where the standard fails to ensure a reasonable stability of prices and a reasonable fairness in exchanges and loans, the market is bound to suffer atrophy. Paralysed by restrictions of all sorts, transactions return to bilateral (or "tied") arrangements, similar to what commonly appears at the international level.

Classification of standards of value

Among the infinite number of standards of value that are possible, many have endured the test of time. Some have lived on during centuries and even millennia despite their serious defects. Their lasting quality is a testimonial to the continuous ignorance of monetary problems more than to the greed of political leaders or to the resignation of their subjects. The main lesson of history is that none of the standards that have been used has given satisfaction. Are those that are used today in international markets worth more than those used in the past? It doesn't seem so if one judges by the anarchy that prevails in capital movements and by the persisting obstacles to trade, despite the efforts to eliminate them. The absence of an appropriate standard is more deeply felt than in the past because of the boom in financial and commercial transactions which progress in methods of production in general and in facilities in communications in particular would permit in a free regime.

Standards of value can be classified according to their intangible or material nature. In the first category, we find the paper standard, credit standards which are universally used today and labour standards. In the second category we find gold, silver, bronze etc., and commodity standards. The latter, instead of consisting of a single commodity such as gold or silver, consist of a group of commodities which are suitably selected and which are associated in quantities proportional to a set scale (x kg. of copper + y kg. of zinc + z kg. of coffee + l kg. of wheat, etc.). These commodities determine the standard jointly and not alternatively. The importance of each of them in the standard is fixed in terms of quantity, weight or volume.

Such a clear-cut distinction however doesn't clarify monetary analysis much. The most fruitful criterion from this analysis's viewpoint is the fiduciary degree of standards. The fiduciary degree of a standard which is used to measure the value of goods depends completely or partially on its monetary functions. It is, in other words, the feature of a standard whose value is based on its indirect usefulness proceeding from the exchange and not only from its direct usefulness proceeding from what it is used for**.** For instance, the value of silver as a metal declined markedly compared to the one of other commodities when, at the end of the 19th century, its monetary functions were transferred to gold and credit. Silver as a metal was therefore a standard which was largely fiduciary. Metallic standards used in the past became quite rapidly fiduciary, which was the case in particular for gold. The credit standard, which, in the same way as the paper standard, is 100% fiduciary, comes at the top of the scale of fiduciary standards. At the bottom of the scale, we find the Theoretical Commodity Standard, the composition of which doesn't leave room for any arbitrariness, as it is qualitatively and

quantitatively determined by physical factors. The definition of this last standard is found in Mr. Piero Sraffa's works. One finds it in his book *Production of Commodities by Means of Commodities* published in 1960 (University Press, Cambridge)[2]. The Theoretical Commodity Standard is a precious instrument for economic analysis. It sheds light on the fundamental principles which real commodity standards must comply as much as possible with-within the limits of what is possible in practice- in order to satisfy the community's needs as much as possible.

Commodity standards are in fact bound by practical requirements. Their components must be homogenous and divisible. They must be accurately defined, in the same way as in commodity markets**.** They should be able to be stocked during a reasonable period of time without significant deterioration and without excessive costs. On the other hand, we will see that, for theoretical reasons, they must satisfy needs of the community that are quite substantial and permanent; they must also possess production and consumption elasticities that are great enough. In other words, in response to a decline in prices, their consumption must increase and their production must decrease significantly, and vice versa when prices increase. Mr. Benjamin Graham's books, in particular *Storage and Stability* (N.Y., 1937) and *World Commodities and World Currency (*N.Y., 1944) deal in detail with practical problems raised by the composition of commodity standards and by monetary stocks' management, renewal and geographical distribution.

The labour standard deserves a special comment. It is used by economists, statisticians and sociologists, to compare prices at different periods, and no doubt also by many individuals as a personal standard. For reasons given in the Appendix, we don't think it could play a major role in a market economy.

National aspect and international aspect

Some passages of this study are based on different countries' domestic monetary history. The lessons that can be drawn from them are also true at the international level. There is however a difference that shouldn't be forgotten when transposing them from one level to the other. International authorities have limited monetary powers whereas national authorities have considerable ones. It is more difficult for instance to impose the dollar's legal tender or forced course abroad than in the United States; the recent reactions of the French government prove this (see p.18). And, so long as fiduciary money will keep being used, national States will need to keep their monetary sovereignty in order to defend their most essential interests. An international standard will only be able to be established in a long-lasting way if it wholly satisfies efficiency and fairness requirements. The commodity standard is the only one which fulfils both these conditions as we shall see.

Neutrality of the standard

The standard of value's specific feature is to determine future prices. When we adopt, for example, a standard of length, we try to choose a concrete length which will be independent of temperature and

[2] The Theoretical Commodity Standard is composed of basic products, namely those that are inputs of at least one of them. They are set together in quantitative proportions equal to those that appear in the usual methods of production. If, for example, the production of *x* tons of steel requires y tons of coal and that z tons of coal require *w* tons of steel …, the composition of the standard will take account of *x, y, z, w*, etc. What makes the standard significant is the fact that it is physically reproducible. This indeed would be the case of an aggregate production where commodities produced would have the same composition as the commodities initially used. The difference between the quantity of the first aggregate of commodities and the quantity of the second one (they are comparable because their compositions are identical) would be the net domestic product. Such an aggregate would then have the same economic properties as a simple commodity.

other circumstances which can influence it. We achieve this quite satisfactorily for usual measurements. The choice of a standard of value is not as easy. In fact, the relative value of any good- and we know that in economics there is no absolute value- does not only depend on its own usefulness and scarceness, but also on those of other goods. And it depends, even in usual conditions, on its use to measure the value of other goods, because such a use creates liquidity needs. There are no goods whose value, compared to other goods, is independent of all these factors. We can however conceive – as Mr. Sraffa has demonstrated- a composite asset that is built in such a way that its value is not influenced by subjective, fortuitous or arbitrary factors that govern the usefulness and scarceness of goods but depends only on the physical conditions of their production. If, by using such an asset as a standard, we measure the values of other goods, prices which express these values will then only depend on objective factors, namely those which rule the costs of production. It is in this sense that we can consider them as "determined". It is also in this sense that we can consider the standard as neutral, because variations of each individual price expressed in such a standard come from reasons that are specific to the good to which it is related and not to reasons which are related to the standard. Neutrality, that is, the ability to determine future prices, is not only the feature which is necessary for a good standard of value, it is also a feature which is sufficient in itself. For all other features proceed from it: on the economic level, in particular, the property to maximize yields by providing the price mechanism with the stable basis which its action requires, and on the social level, the possibility to improve the terms of trade as well as the terms of loans by withdrawing from them the injustices due to monetary causes.

I. Economic efficiency of the commodity standard

A) STABILISING ACTION OF THE COMMODITY STANDARD

Fixity of the weighted average of prices in the monetary sector

The commodity standard's prominent feature, namely that it is the most neutral of all standards of value, results from the fact that it not only determines the prices of the commodities which are its components, but that it also stabilises the general price level that incorporates those prices. Under a currency convertible into gold, the price of gold is kept on par by purchases and sales of the metal to the monetary agency; when the price of gold tends to move away from par, purchases and sales constantly adjust the price to bring it back to par. In the same way, under a commodity standard, the price of the composite commodity, or of the aggregate of commodities which together make up the standard, is constantly kept on par. In other words, if we consider the individual prices of the commodities which make up the standard and if we multiply each one by a coefficient equal to the quantity of that commodity which is incorporated in the standard, and if we then add up the products obtained, the index thus weighted by the prices of the commodities will always remain equal to one. Of course, the individual price of a commodity which is part of the standard can vary, in response to changes in the physical conditions of its production. But variations are not entirely free, they are – so to speak – compensated, in the sense that any rise in one of the prices is necessarily offset by a countervailing drop of one or several others. In the monetary sector, which is made up of those commodities which are incorporated in the standard, and which we will call monetary commodities, there is no room for variations of the general price level similar to those that can be observed under a fiduciary standard. Whatever the variations of individual prices, the general price level, calculated as we have said above, remains unchanged. To keep this level at par, i.e. for the standard to actually be at par, there obviously has to be a monetary agency that buys and sells at par, give or take a small margin, all the lots of monetary

commodities that are supplied or demanded, under the sole condition that the lots have the same composition as the standard. When the weighted average of the prices of monetary commodities tends to rise above par, arbitragers buy lots from the monetary agency and sell the commodities that these lots contain on the individual markets. Conversely, when the weighted average of the prices of monetary commodities tends to decline below par, arbitragers buy up these commodities on the individual markets, incorporate them into appropriate lots and sell them to the monetary agency. Their action on individual markets of monetary commodities will suffice to boost prices to a level where their weighted average will be close to par. The monetary sector can be more or less extended depending on the composition of the standard. It does not include, of course, services nor in particular labour. It can nevertheless represent a significant share of the overall economy.

Price stability in the non-monetary sector

The second reason for which the commodity standard is the most neutral of standards is because it is able, thanks to the monetary commodity reserves which are stocked, to keep prices strictly determined if not part of a stable general price level, in the non-monetary sector, as is the case in the first sector. Under such a standard, admittedly, what one calls effective demand – namely all the expenses of the community – is not necessarily equal to output capacity. Gaps can appear between the two even when the volume of the means of payment does not change, due to a change in their velocity of circulation. But these gaps can only have a weak influence on prices as they cause changes in the stocks of monetary commodities which partially offset them as we shall see. Furthermore, they can only be accidental, since the monetary effects of the changes they produce on these stocks tend to cancel out the causes that generate them.

Let us first suppose that effective demand exceeds output capacity and that this excess tends to make prices rise. In order to respond to greater demand, commodities are withdrawn from all stocks and more particularly from monetary stocks, the unit price of which is constant. These withdrawals give rise to an increase of supply which partially offsets the increase in demand. And then, the cost of factors of production and of labour in particular, will tend to increase in the non-monetary sector whereas it will remain stable in the other sector. The factors of production, and especially the labour force, will tend to migrate from the monetary sector to the non-monetary sector, which will also contribute to an increase in supply in the latter and will compensate for the excess of demand. This double action, and in particular the second one which reduces the production of monetary commodities at a time when their use is increasing, causes a reduction in the volume of the means of payment. The ensuing increase of the interest rate slows down investment. It also slows down consumption insofar as it stimulates savings, i.e. income which is not consumed. It thus reduces the two elements of effective demand and tends to bring the latter back to the level of output capacity.

Conversely, let us suppose that effective demand falls under the level of output capacity and that this shortfall tends to make prices fall. Monetary stocks, the unit price of which doesn't fall, absorbs part of the production surplus, and their expansion gives rise to incremental demand which partially compensates for the shortfall. And then, the cost of factors of production will remain stable in the monetary sector whereas it will tend to decrease in the other sector. The factors of production will thus be inclined to migrate from the non-monetary sector to the monetary one where they will find all the employment they wish for. As a result, supply falls in the non-monetary sector which also contributes to compensate for the shortage in demand. This double action, and the second one in particular which increases the production of monetary commodities at a time when their use is decreasing, is accompanied by an increase in monetary stocks and by a corresponding increase in the volume of the means of payment. The ensuing fall in the interest rate stimulates investment; and it also stimulates consumption insofar as it discourages savings. It tends therefore to increase both elements of effective demand and to bring the latter back to the level of output capacity.

a) Effects of the reserve of liquid goods

Thus, the commodity standard exerts a triple stabilising effect on effective demand which is all the more remarkable as it does not take place spontaneously under any fiduciary standard.

Whereas, in the first place, a commodity standard regime is based on the existence of raw material monetary stocks which represent a real reserve of liquid assets operating as a fly-wheel regulating effective demand, regimes based on a fiduciary standard hinder the creation of such stocks. In the *Treatise on Money*, J.M. Keynes shows why such regimes abhor raw material stocks. The main cause is the unstable nature of the prices of raw materials; those who build up stocks must buy expensive insurance to cover themselves against the risk of a fall in prices. This cause disappears with a commodity standard. The small size of raw material stocks in regimes featuring a fiduciary standard, accounts for the wide and sudden variations in their prices when an unexpected change in supply or demand takes place.

The Korean War provides one example among many. During the summer of 1950, raw materials became so scarce that the Great Powers were led to allocate them in an authoritarian way and to believe that gold itself would no longer be sufficient to purchase them. Under the gold standard, gold reserves practically do not contribute to stabilising effective demand since, given the price levels reached due to the monetary functions of the metal, gold is not a raw material endowed with an industrially significant importance. In fact, it is only used for rare artistic, scientific or dental purposes. That is why the act of hoarding gold has undergone wild fluctuations in the past, with gold rushes followed by flights from the metal (gold scarcity and gold scares). Despite the fact that fiduciary money can be considered a reserve of purchasing power by members of a community taken individually, it does not have this feature for the community taken as a whole. This is because when a community wants to reduce its monetary assets by buying real goods, it does not find the corresponding stocks on the market to satisfy its demand and has to endure the frustration of seeing prices rise. The concept of monetary collateral, security or reserves, only makes sense when the latter are made up of commodities which are directly useful. When the concept is used to refer to gold or to other fiduciary values, its meaning is impaired and is often misleading. The “ratios” attached to it do not correspond to any objective criterion, and they can be arbitrarily changed as recent American legislation has shown.

b) Effects of the reserve of labour and employment

Secondly, whereas a commodity standard regime comprises a range of monetary industries, i.e. industries producing components of the standard and employing a significant part of the total labour force, and, finally, providing a fly-wheel mechanism regulating employment, no such stabilisers exist in fiduciary standard regimes. Under the credit standard, money creation in itself does not provide any employment other than to printers of notes and to book-keepers in banks. Under the gold standard, the production of the metal does not contribute at all, or only in a negligible way, to the employment of labour, except in the Union of South Africa. Under the fiduciary standard, workers, as Charles Rist showed in his book “*Deflation in Practice”*, have strong reasons to oppose salary reductions. These do indeed tend to get worse in a cumulative fashion, or to cause unemployment, or to produce both effects at the same time, as they cause a contraction of an effective demand which is not offset by any stabilizer, quite to the contrary. Under the commodity standard, workers don’t have the same reasons to oppose wage reductions, which can be necessary in certain firms if wages are greater than the marginal efficiency of labour. Such reductions would in no way cause unemployment. The labour force in any case is sure to find all the jobs it needs in the monetary industries at the going rate of wages. Under such a standard the labour market is therefore less rigid, and the redeployments of labour are easier, than under fiduciary standard regimes, where such redeployments can only take place in practice when wages are rising. Whereas under the former standard, monetary industries provide reserves of available employment (or of employment that could be made available) which contribute to stabilize prices

in either direction, under the latter, prices can only remain stable if there is a permanent reserve of people out of work.

c) Effects of the savings and investment reserve

The third stabilising effect of the commodity standard on effective demand and prices stems from the adjustment mechanism of investment to savings on the one hand, and of the quantity of money to the needs for liquidity on the other. This mechanism, which relies on monetary commodity stocks as a reserve for savings and investment, is automatic and doesn't require any changes in prices.

The natural rate of interest on which these two adjustments rely is determined by the return on the new investment. This return itself depends on the shortage of productive capital, i.e. on the scarcity of invested capital, and it has no other justification than this shortage. The natural rate of interest – an element of considerable importance for the analysis – is ruled by physical factors as we shall see; it only changes slowly, apart from the cases of natural scourges or of wars which destroy capital.

Under a commodity standard, the volume of new investment is ruled by the volume of savings and not the other way round as is the case, as we shall see, with a fiduciary standard. As for the volume of new savings, it depends on the level of the rate of interest, on the one hand, and on a large number of institutional factors on the other, including income distribution which is the most important.

Secondly, the quantity of money is ruled by the needs for liquidity which depend on the rate of interest and on institutional factors such as habits relating to the way payments are made. Let us suppose that for one reason or another, the quantity of money falls short of the needs for liquidity and that as a consequence its velocity of circulation increases and interest rises above the natural rate mentioned above. New investment slows down, which diminishes the demand for monetary commodities. Stocks of these commodities increase and, for that reason, the quantity of money adjusts itself to the needs for liquidity. The shortage of money relative to the needs for liquidity which we have supposed in our example can have different origins. It appears in the case of a change in the institutional causes of the needs for liquidity, for instance in the case where wages, instead of being paid on a weekly basis, start being paid twice a month. It also appears as a consequence of an accidental excess of the volume of investment over the volume of new savings, as such an excess increases the needs for liquidity while it reduces the quantity of money at the same time as monetary stocks. Conversely, when, for one reason or another, the quantity of money exceeds the needs for liquidity, the interest rate falls below the natural rate mentioned earlier. New investment is stimulated, which increases the demand for monetary commodities. Stocks of monetary commodities decline and, for that reason, the quantity of money adjusts itself to the needs for liquidity. The excess of money relative to the needs for liquidity can have different origins. It can be the effect of changes in the institutional factors that drive the needs for liquidity, such as more frequent periodic payments. Or it can result from an accidental shortage of investment relative to new savings, a shortage which increases both monetary stocks and the quantity of money, while it reduces the needs for liquidity.

Under a commodity standard, as money is produced – not created – new investment must be entirely financed by new savings or by old savings incorporated in money. It is therefore the formation of savings which rules the volume of this investment, and which, consequently, determines the rhythm of growth. When a community's savings is positive, which is generally the case in times of peace, above a certain level of wealth, the volume of productive equipment rises in a cumulative way. If the population doesn't increase faster than its capital equipment and if technical progress doesn't bring about new needs – requiring a great amount of capital in order to be satisfied – then the natural rate of interest will tend to decline gradually (cf. Bensusan Butt, 1960, *On Economic Growth*, Oxford).

B) DIFFERENCES WITH THE EFFECTS OF A FIDUCIARY STANDARD

Indeterminacy of investment and of the ensuing savings

Under fiduciary standards, the adjustments mentioned above are completely different and most of the time require prices to rise. Indeed, the general price level is not "determined"; over a period of, say, ten years, its variations can reach any order of magnitude. The financial return of new investment is thus no longer ruled by the sole physical productivity of the investment, namely the degree of scarcity of capital equipment. It also depends on profits and losses ensuing from variations of the general price level throughout the investment's lifetime. Furthermore, new investment is not dependent on the formation of available resources through savings. New investment can be financed through a pure creation of money and it itself creates, as we shall see, the savings that must correspond to it. The uncertainty of the motives which govern the inducement to invest, as well as the elasticity of the means to finance it, explain that the volume of new investment is subject to fluctuations of an indeterminate magnitude. J.M. Keynes went so far as to write that the volume of new investment depended on the nerves, the mood and even the digestion of businessmen. In fact, investments are dominated by the forecasts of future prices. Their volume expands, sometimes beyond any reasonable limit, when one expects prices to rise; their volume falls to an insignificant level, or even becomes negative, if we believe, on the contrary, that prices must decline. A strong probability of stable prices in the future is essential for investment to feature a degree of rationality.

Under a fiduciary standard regime, with no flying wheel of monetary commodities, the volume of new savings is strictly equal, during any given period to the total volume of new investment. And one should note that it is the latter volume which rules the former one and not *vice versa* as in the previous case. Furthermore, given that investors and savers are not in general the same people and that the propensity to save does not necessarily balance the inducement to invest, the equality between the two volumes is obtained through the variation of global income. Every change in the volume of new investment generates a greater variation of total income, because incomes directly created by investment, when they are spent, themselves create a chain of incomes following a process which economists call the multiplier. The variation of total income in turn generates a change in the volume of savings which is equal to the change in investment which has given rise to it. The variation of total income can correspond either to a change in the level of employment, in which case it reflects a *real* change in the level of economic activity, or to a movement in the price level, in which case it reflects only a *nominal* change in the level of economic activity. In the latter case, in order to cause a change in savings equal to that of investment, it must be accompanied by an adjustment in income distribution. If prices rise, firms' profits, and, more generally, higher incomes, increase so as to provide the required extra savings. This phenomenon, which has quite inappropriately been called forced savings when it is in fact a forced restriction of consumption of the poorer classes, increases income inequality. If prices fall, companies' profits and, more generally, higher incomes, fall, which leads to a degree of levelling of incomes. The effects of the variations of investment are not in general symmetrical nor are they reversible. The effects of a reduction in investment mainly take the form of a fall in employment, except in highly competitive sectors such as exist in agriculture and the production of raw materials. The effects of an increase in investment sometimes take the form of an increase in employment, sometimes that of an increase in prices, which is increasingly the case as one approaches full employment. When employment is kept permanently at a level well below its ceiling, let us say 95%, the unavoidable fluctuations in the volume of investment that are a feature of a fiduciary standard, because of the uncertainty regarding future prices and of the elasticity of the means of financing it, can result in reversible effects which more or less offset one another and which in the end do not jeopardize the stability of the general price level. When employment is higher, say above the 95% level mentioned previously, these fluctuations exert successive pressures on prices, of a magnitude all the greater as we approach full employment. They also aggravate income inequalities. It is in order to fight the effects of a fiduciary currency at high levels of employment that one resorts today to so-called incomes policies.

Non adjustment of liquidity needs to the quantity of money

When money is fiduciary, the adjustment of its quantity to liquidity needs raises the problem of the governance of money. This problem has never been solved in the past, causing increasingly serious cyclical depressions and finally the disaster of the 1930s. It is not solved today as the oscillations of the security price indexes and the commodity price indexes on the various exchanges will testify. This problem, as we shall see, cannot be solved as long as financial liquidity finds itself completely disconnected from physical liquidity.

Under a fiduciary standard, liquidity needs, indeed, include not only the needs for working capital but also those related to hoarding which have no monetary reason to exist under a commodity standard where prices cannot practically fall. Incidentally, these two classes of needs depend on the variations of the price level, and the second class exclusively so. Variations of the price level tend to influence the working capital liquidity need most when they are rising, and the hoarding need most when they are falling.

Demand for money to satisfy hoarding needs

Hoarding is a defence against losses resulting from falling prices, a natural reaction, in a way, against a possible rise in the standard of value. When a fall in prices is forecasted, one goes liquid, as one says, and sometimes for a large part of one's personal assets. Demand for money so as to satisfy hoarding needs has the specific feature of growing spontaneously, in a cumulative way, until it degenerates into a rush on the standard. A consequence of previous falls, it is also the cause of further falls, and it feeds on itself, so to speak, unless it is promptly satisfied. The falling prices that it generates bring to light losses on fixed capital that are not only nominal losses. Indeed, even if they were, they would be enough to discourage investment. The mere risk of incurring this type of capital losses is a permanent obstacle to the conversion of liquid assets into fixed assets. Some people believe however that the fall in prices resulting from hoarding outbursts play a useful role by checking future price rises and by inducing people to keep monetary assets as a means of protecting themselves against further falls. The Wall Street crash in June 1962 has not been forgotten in the United States, nor even the one that took place in October 1929. These reminiscences serve to dampen so-called "speculative" outbursts and thus allow a larger number of monetary assets to be kept in circulation.

Liquidity needs for working capital

Liquidity needs for working capital which are ruled as we have said by institutional factors and by the level of the rate of interest also depend on prospective price rises when money is fiduciary. They peak when expectations are that prices will remain stable or will rise only moderately. They will weaken as the rhythm of expected price rises accelerates. They can fall to a low level in nominal terms and to an even lower level in real terms if one believes that the rise in prices will turn into a stampede. Beyond a certain rhythm, a flight from money takes place – a defensive reaction by the holders of money against the fall in value of the standard and the concurrent losses that they incur. The flight from money is not always as radical as it was in Germany, in 1923. It can be only transient or partial in character, and be followed by a rush on the standard, as was the case in France, in July 1926, or in the United States, in October 1929. It always durably undermines confidence in the future stability of money. The surest way to avoid the risk of a flight from money is to maintain, as a matter of principle, the quantity of money below the level required to fully satisfy the needs for working capital, notwithstanding the resulting damage in terms of effective demand and employment. This seems to have been the policy implemented by the American authorities over the last ten years.

The case of credit money

When banks are run for profit, their activity, let us not forget, is destabilising by nature. They are induced either to create money when prices rise or to destroy it when they fall. In the first case, the expansion of their credits increases their profits and contributes, at the same time, by its stimulating effect on prices, to

reinforce the security of their loans and to enhance the value of their other assets. The immediate advantage it bestows on each bank is only offset by inconveniences that are diluted in the whole banking system and which, besides, remain potential rather than being certain to occur. In the second case, i.e. a fall in prices, pressing reasons of security, or even the lack of borrowers, generally compel banks to contract their operations. In order to prevent excessive monetary expansion, public authorities in almost all countries have deemed it necessary to submit the extension of bank credits to a whole set of regulations and controls. Monetary authorities are strongly armed to fight price rises, but they are far less equipped to fight against falls in prices. It is not excluded that this omission will be dealt with in the near future. The resort to public funds to support the value of shares traded on stock exchanges is said to have been authorised in Japan and in Italy in the course of the last months.

According to a provision adopted at the beginning of the 19th century, the rediscount privilege of the Central Bank was reserved in France, in the past, to three month bills backed by commodities. This rule, which established a certain link between the creation of bank money and the availability of commodities, has perhaps contributed to spare the franc some of the violent somersaults that other currencies have experienced. However, the standard of value was not made up of commodities, but of gold or silver. Since, on the other hand, bank credit favoured commodity circulation more than the building up of stockpiles of commodities, the latter activity did not develop. And so it was, that effective demand went through cyclical oscillations and long-lasting variations, as well as through a chronicle shortage that was especially pronounced during the first half of the century[3].

C) THE THEORY OF THE COMMODITY STANDARD

The mechanism enabling investment to adjust itself to savings under a commodity standard which has been briefly described above, is the one that appears in the economic theory developed in the last century by the Liberal School and which now goes by the name of the Classical Theory. There is nothing surprising about this. The Classical Theory, where, according to one of its authors, commodities are exchanged against commodities, is, indeed, a barter theory. And a commodity currency, on the other hand, is nothing but an institutionalised barter. If the Classical Theory never managed to explain all economic reality, and if it found itself seriously at fault in 1930, it is because it is based on the implicit postulate of the commodity standard whereas the existing currencies were already partially fiduciary before becoming almost entirely so after the First World War. Keynes's *General Theory* which replaced the Classical Theory is, on the contrary, grounded on the premise that the only currency in circulation is a fiduciary one. When it was published in 1936, its author believed that he was generalising the Classical Theory by adapting it to the possibilities of a fiduciary currency. It now appears that he was actually dismantling it by introducing a factor of indeterminacy that was incompatible with the rigour of his analysis. Keynes's book is not strictly speaking a theory, but rather a treatise on fiduciary money as a remedy to unemployment. It does not show the way to reconcile full employment and price stability using liberal methods any more than do the treatises on gold and silver currencies written by Mercantilists before the 19th century. Such a reconciliation is indeed impossible under fiduciary currency regimes. It will only take place when credit standards will be substituted by commodity standards. And economic systems will then abide by the constructions of the Classical Theory.

Despite the overwhelming influence of the *General Theory*, the nostalgia of classical maxims hasn't entirely disappeared in the present. Some people rebel at the idea, for example, that a balanced budget is a mere fetish, that taxes serve as a moderator of purchasing power, more than as a way to face up to public expenditure, and that such expenditure is itself more of a purchasing power stimulus than a way to satisfy collective needs. Yet, such a viewpoint, so contrary to ordinary principles of common sense, is the irrefutable

[3] 20th century; the author wrote this article in 1965 (T.N).

logical consequence of the use of a fiduciary currency. Perhaps after all, the use of such a currency would shock common sense just as much, if it did not proceed from a tradition that is more than a thousand-years old.

II. Equity in trade

The terms of trade

From a social standpoint, the quality of a standard of value is measured by the degree of equity that it can instill in trade and in loans. Let us suppose that two countries, let us say C and L, trade copper against lead, both countries being the main producer of one or the other of the metals, with each country using its metal as its standard. Trade is equitable when its terms, that is to say the ratio between the amounts of copper and lead that are traded, one against the other, correspond to costs. To measure the advantage derived from trade, its terms must feature the amount of acquired commodities as the numerator and the equivalent amount of commodities provided as the denominator.

The amount of a commodity that one obtains for a franc obviously varies inversely to the price of this commodity in francs. One can thus consider the terms of trade as the inverse of the ratio between the price of the acquired commodity and that of the commodity provided, with both prices being expressed in terms of the same standard. For instance, for C the terms of trade of copper and lead will be measured by the inverse of the ratio between the price of copper and that of lead, all of these prices being expressed, for example, in terms of working time of a given productivity. In the same way as the price of a commodity in terms of another is equitable when it is equal to the ratio between the cost of the first and that of the second, both being expressed using the same standard, the terms of trade between two commodities are equitable when they are equal to the ratio of costs, or to the inverse of that ratio, depending on whether one considers the viewpoint of one or the other trader. The concept of terms of trade can be extended to all of a country's foreign trade by resorting to a standard comprising an aggregate of the country's imports or again, in an approximate way, by dividing the index of the weighted prices of exports by that of the weighted prices of imports.

Monometallic standards featuring a low fiduciary degree

If we revert to trade between countries C and L, the choice of a mutual standard for trade, namely the choice of the metal, the amount of which will appear in the denominator of the ratio between equivalent amounts of the two metals, a ratio which expresses their prices, that choice, to repeat, is not inconsequential. If a kilogram of copper is traded against ten kilograms of lead, it may seem indifferent to says that the price of copper is ten in terms of lead or that the price of lead is 0.1 in terms of copper. And yet, that is not the case as we shall see shortly. Let us take an example where lead serves as the mutual standard, and let us suppose that for some technical reason, its cost decreases. As wages in country L are fixed in terms of lead, they will not change immediately, but lead producing companies will see their profits rise. The use of these profits will lead to higher wages and prices. When the adjustment is over, wages will have settled at a higher level than they previously were. Since the marginal cost of lead in terms of work has fallen, the marginal yield of work and, consequently, wages, will have risen in the lead industry. Other wages will align themselves with them. The prices of commodities will rise less than proportionately, or proportionately to wages, according to whether they contain lead or not. The trade balance of country L will feature a deficit while that of country C will feature a surplus. That will lead to a parallel adjustment in the economy of country C. Under the pressure of foreign trade, the surplus of which will act as an increase in demand in the non-monetary sector, prices, in a first stage, will rise. The mechanisms analysed on page 5 then bring them back to their previous level or even below that level because of the fall of lead. The value of country C's currency will rise in terms of lead and will settle at a price corresponding to the ratio between the cost of copper and the new price of

lead. The balance of payments will return to equilibrium and the terms of trade will settle at a different rate, but not a less equitable one, for it will correspond to the adjusted cost ratio. If one leaves aside the case of abnormal elasticities in both economies, the new terms of trade will be more favourable to country C and less favourable to country L.

If it's the price of copper rather than the price of lead that is supposed to fall, for some technical reason, the same reactions will take place *mutatis mutandis.*

Thirdly, in the case where the cost of lead rises for some physical reason, say because of the depletion of a productive mine, the adjustment in country L will feature a fall in wages and prices. It will therefore be more difficult than in the first case. A decline in wages is indeed more subject to resistance. As to the rise in prices, not only does it translate into capital losses; it also reduces prices and discourages investment. Nonetheless, lead being a metal, the production and consumption of which are elastic, one can suppose that the adjustment will take place in the end. Wages will decline until they reach the level corresponding to the higher marginal cost of lead in terms of labour, i.e. when they become equal to the lower marginal yield of labour in the lead industry. Prices of other commodities will decline, either in the same proportion or in a lesser proportion if they contain lead. A similar adjustment will take place in the economy of country C via the trade balance which will temporarily be in surplus for L or in deficit for C. Prices will fall but only temporarily because wages – as they are set in terms of copper – will not change much. The value of the currency of country C will decline in terms of the mutual standard and will settle at the level determined by the ratio of the cost of copper to the higher cost of lead. The new terms of trade will normally be more favourable for L and less favourable for C.

In the fourth case, where, for some physical reason, the cost of copper rises in country C, changes will take place in the same way as in the third case *mutatis mutandis.*

Let us observe that the terms of trade move in favour of countries, the currencies of which appreciate or do not depreciate. In the opposite direction, the devaluation of a currency will hurt the terms of trade of the country subjected to it. Nevertheless, if it happens in stages, the terms of trade will remain unduly favourable during the transition. When the standard appreciates, i.e. when wages and prices fall as in cases 3 and 4, countries are induced to reduce their imports by resorting to any sort of restrictive measures in order to defend both their economic activity and their terms of trade.

The main element of asymmetry generated by the choice of a mutual standard, and it is not a very important one in the case of lead and copper, becomes apparent during periods when exchange rates between currencies are undergoing change, when trade balances are not in equilibrium. In order to facilitate the transition, both countries are led to help each other temporarily in different ways (credits, swaps, etc.). Country C will in general accept to store lead, because the value of lead is fixed on the international market. Even in the first case, where prices rise, the depreciation of the effective value of lead will be slow enough to be hardly noticeable, especially in the case where C, in order to help L, accepts to stock lead temporarily. Country L, on the contrary, will hesitate to store copper as the value of this metal is not fixed on the international market. Especially in case 3, where prices fall, it will prefer to open a credit line to country C, expressed in lead. The extension of such a credit will often allow country L to require country C to commit itself to taking measures which will accelerate the transition or else to refrain from resorting to restrictive measures contrary to L's interests. The equitable standard for both countries would be an aggregate of copper and lead in a proportion that would be fixed by foreign trade, or, more simply, by the price of one metal in terms of the other.

Fiduciary metallic standards

Taking French History as a guide, let us now imagine that the public authorities of country L decide to substitute silver for lead because they lack resources. The main difficulty of this undertaking lies in the fast appreciation of silver which it will trigger; contrary to that of lead, the production of silver is limited, while the monetary call on this production becomes unlimited due to hoarding. The fall in wages and prices, a reflection of the rise of the standard – for all that it is a mere illusion, just like the rise of silver itself – will not fail to paralyse the country's economy by the capital losses it will entail and which will bring down or lead to the disappearance of corporate profits. This illusion is therefore replaced by another one, not as dangerous, and consisting in the gradual introduction of another standard, the nature of which is also fiduciary and which serves to set the value of wages, prices and other contracts, the value of the two standards being periodically adjusted. In France, the pound, under different names and subdivisions, has played this role of a standard of account uninterruptedly ever since Charlemagne. Adjustments took the form of an appreciation of the metallic currencies in terms of the standard of account or, as we now say, of a devaluation of the latter in terms of metal. The first expression was incidentally more appropriate than the second since the value of the standard of account had a greater significance than that of the metal, but it also bore witness to a lesser attachment to a metal which had become precious. In order to meet the needs of the Public Purse, coins were minted, the face value of which was higher than their cost, in terms of the standard of account. The difference between that face value and the cost, which used to be called seignorage, is the difference between the said face value and the intrinsic metallic value of coins in circulation. It diminishes as silver appreciates and it increases as the value of coins is adjusted upwards. The metallic cover of coins is subject to the opposite variations.

As the monetary needs for silver are insatiable, the value of this metal will rise almost continuously whereas its industrial use will diminish. It will be in the Treasury's interest to accelerate this rise together with that of prices by frequent upward adjustments of the value of metallic currency. However such a system has its drawbacks. New coins, with a higher face value, or with a smaller silver content than that of old coins, will constantly have to be minted. When indeed the metallic value of coins is higher than par, the interest of their owners is to melt them if they have not yet been taken out of circulation by the authorities. Furthermore, such a system maintains a chronic shortage of metallic currency. Besides, the degree of the shortage is subject to cyclical variations. Coins disappear in nest-eggs when the rise of silver or the fall in prices in terms of the standard of account lead people to expect a coming upward adjustment of the metallic currency. Once the adjustment has taken place, the coins reappear to be melted or exported.

To avoid these drawbacks, public authorities, given the greater efficiency of tax systems, tend to be less inclined to sponsor the demand for silver. They accept, or even favour, the resort to monetary instruments that are not intrinsically backed up by anything, such as cheques or transfers, which date back to very ancient times, or such as the bank note, the poor man's cheque, the use of which only became fairly widespread in the 19th century, when technical progress became able to counter the issuing of counterfeit notes. In order to acquaint the general public with these new instruments, they were declared convertible into metal, notwithstanding the absence of a metal back-up for part of them. However, if there was a risk that convertibility should become effective, or if the Treasury had an urgent need to create monetary instruments, or again if the rise, or even the stability, of the value of the metal standard gave rise to a so-called "lack of liquidity", which weighed on the development of economic activity, public authorities did not hesitate to suspend the right to convertibility, thus depriving their subjects of the only means at their disposal to rein in the depreciation of the non-metallic standard. If they had the requisite authority and policy instruments, they will go so far as to prohibit the storing of the metal by private individuals, as is the case in the United States.[4]

[4] The Gold Reserve Act, voted on January 30th, 1934, under President Franklin D. Roosevelt, outlawed most private possession of gold, forcing individuals to sell it to the Treasury. It started being relaxed in 1964. By 1975, Americans could again own and trade gold freely.

However, the resort to cheques, transfers and bank notes gradually reduces the working capital demand for silver. Such demand would vanish completely, which would cause the depreciation of silver, were it not for official stockpiling. The Treasury would no longer be able to satisfy its needs by relying on the means provided by the gradual appreciation of silver. But it could, however, resort to purely fiduciary emissions, a more productive source.

The rise of silver however provides certain advantages to country L in its relations with the outside world. Its terms of trade with country C improve spontaneously and in a continuous way since wages and prices accompany silver in its rise in terms of copper, except in the case of an upward adjustment of the value of coins. Besides, it is the shortage of metallic currency resulting from the external payments deficit which often forces country L's authorities into an upward adjustment of their currency. The upward adjustment of metallic currencies is often unpopular because of its impact on the terms of foreign trade, when the volume of such trade reaches a certain level. The situation of country L can be analysed as in the third case examined above. Indeed it doesn't matter whether the appreciation of the metallic standard is due to a rise in its cost or to a greater demand for the currency of which it is a component. On the external level, the improvement in the terms of trade will be more noteworthy because of the upward adjustment in the exchange rate. On the domestic level, the economy will have lost its stability and its productivity since prices will fall and unemployment will appear. To a much greater extent than in the third case, country L will be induced to surround itself with protectionist barriers, in the mutual interest of its economic activity and of its terms of trade.

Country C furthermore will feel disadvantaged by country L's policy. Except in the case of an upward adjustment of the value of this country's coins, its terms of trade will indeed deteriorate spontaneously and in a continuous way as silver appreciates relative to copper. It would be better off by discarding copper in favour of a metallic standard the production of which is even less elastic than that of silver, gold for example. In order to develop the circulation and hoarding of gold, it will encourage its use as a mutual standard for external transactions. It will go so far as to urge L's authorities to adopt gold as a domestic standard by arguing that resorting to the same standard would accelerate its appreciation for the mutual benefit of the two countries. Country L could however hesitate between such a benefit and the monetary autonomy provided by the silver standard. If country C owns or controls gold mines, it will be all the more insistent in its recommendations in favour of the gold standard; this standard could be elevated to the status of a monetary doctrine.

Fiduciary appreciation of commodities

The previous examples show that the fiduciary appreciation of a metal – the one that is due to its monetary functions – is all the greater as its production is smaller and its elasticity of production is lesser. This fiduciary appreciation was not very noticeable in the case of copper and lead but it was continuously increasing in the case of silver and gold. This appreciation also depends on the elasticity of consumption of the metal, but when it rises above a certain level, the said elasticity becomes negligible. The specific feature of the commodity standard is to reduce to a minimum the fiduciary appreciation of its components due to their inclusion in the standard. Such a result is due to the fact that it is made up, not just of one, but of several commodities, together with the fact that some of those commodities account for a non-negligible share of aggregate production. Because it does away with fiduciary appreciation, or at least because it distributes it among a high number of beneficiaries, the commodity standard is the most equitable of all standards and indeed the only democratic one.

The action of the credit standard

The credit standard or paper standard is, on the contrary, the most unfair of standards because it concentrates the power to freely acquire any asset in so few hands. Since the currency's intrinsic value is

negligible, the seignorage, if we may say, is equal to 100% and does not necessarily benefit the Treasury. The leonine feature of fiduciary money appears in broad daylight when the State resorts to the printing press to buy goods and services. Even if it is less apparent, this leonine feature is no less real when money is issued by a bank – in the form of notes or cheques – to acquire new assets. From the standpoint of monetary analysis, there is no noticeable difference between paper money, i.e. bank notes, and a bank deposit, of which the cheque is a transient expression. Just like central banks, commercial banks enjoy an issuing privilege which allows them to acquire wealth for no reason at all, a privilege for which it seemed equitable in the past to charge a fee. At the international level, American banks are nowadays those which particularly exploit this issuing privilege, since capital transfers outside the United States are free and that the dollar is directly convertible into gold for other countries' Central Banks. They thus have the power to create not only dollars, but also yen, marks, bolivars and other currencies by transferring dollars created for that purpose to the Central Banks in charge of those currencies. Such a situation does not favour equality of wealth between nations. It would rather seem to lead to a division between banker states and proletarian states as was already the case in the previous century[5].

If the dollar is the most acceptable currency for Central Banks, it is mostly because it is legally convertible into gold. But it is also because, according to an agreement between former members of the European Payments Union[6] signed at the beginning of 1959, the dollar became the currency used for clearing operations between these countries this decision greatly increased the dollar's circulation outside the United States. After the war, these countries channelled many of their payments through bilateral accounts, sometimes making them creditors, and sometimes debtors. Reciprocity of advantages between countries of this group also existed within the European Payments Union insofar as each one of them could benefit from a monetary credit when its balance of payments featured a deficit. It disappeared in 1959 to the benefit of the United States when currencies became convertible. If today we broke down payments into accounts registering reciprocal settlements of these countries taken two by two, the said accounts would be cleared, except for those of the United States which would feature a permanent deficit. This example shows how the passage from financial bilateralism to monetary clearing by the market entails a sacrifice of equality of rights and of reciprocity of monetary advantages between countries. Equity requirements are better satisfied by a barter system than by monetary exchange when the latter is not based on a commodity standard.

The social effects of the credit standard

One sometimes holds that fiduciary money is not a source of costless enrichment by arguing that it is made up of bank debt, which does not essentially differ from any other debt whatsoever. The idea that the creation of fiduciary money gives birth to a debt supported by the issuer is indeed widespread. It can have a technical or legal meaning in the case of a private bank taken in isolation. But from a monetary viewpoint, it is nonsense. American bank notes are inscribed with the words "Pay the bearer X dollars on demand". Federal monetary authorities whom we have sometimes consulted on how to interpret in practical terms the meaning of these inscriptions have never been able to provide the slightest rudiment of an answer. It would indeed be absurd for a debt to be stipulated in terms of itself and thus form its own standard of account. To convince oneself, one only needs to consider the consolidated balance sheet of banks in a closed economy, or better still, to consider a community with only a single bank dealing with bank notes and deposits. The balance sheet of such a bank would show, on the asset side, its loans and investments, and on the liabilities side, bank notes, sight and other deposits and even bonds. "Loans make deposits and not the other way

[5] 19th century since this article was written in 1965 (T.N.)

[6] The European Payments Union (E.P.U.) was created in July 1950 by the Organisation for European Economic Cooperation (O.E.E.C), in order to replace barter by multilateral trade, thus making it possible to increase the total volume of trade of its members. It lasted until December 1958, when currencies became convertible; over the 8 year period of its duration, the total volume of trade doubled. (T.N.)

round" used to say Withers and Mireaux[7] forty years ago. We could just as well say that it is loans and purchases of securities made by banks or other financial institutions that create fiduciary money. Operations of the single bank which we have considered in our example, namely loans and the purchases of securities on the one hand, and sales of securities and loan refunds on the other, will necessarily and immediately increase, in the first case, or decrease, in the second, the money supply. The bank can therefore choose to increase or to contract the total money supply by increasing or decreasing the total volume of its assets. It can also influence the allocation of the money supply among its components by modifying the interest rates that are attached to each one of them. By issuing bonds for instance, it can, with the intent of reining in price increases, block part of the money supply, and thus reduce the part which remains liquid, namely bank notes and sight deposits. But what it cannot do is to modify the total money supply by contracting or refunding loans. The money supply has none of the features of a debt.

This consolidated scheme of a banking system is not only useful to show how it works. It also goes to show the extent to which the power to create money is exorbitant with regard to common law and is inequitable. It also highlights the threat it poses for the financial independence of members of the community if it is not tightly controlled by a political authority as is the case at the international level.

Besides, a debt produces interest at a normal rate. Nowadays, bank notes don't yield interest for their owners, nor do most bank deposits. On the international level, where competition among banks is quite free, interest served on deposits tends to rise, as the Eurodollar market shows. On the domestic level also, competition among banks and other institutions that "transform" deposits helps to improve the way the latter are remunerated through different devices designed to slow down their rotation. Insofar as interest is paid on monetary assets, the costless enrichment of issuing institutions is only partial, as was the case in the past of the enrichment of kings and feudal chiefs brought about through the minting of metallic currencies. This enrichment subsists nevertheless so long as the rate of interest served on deposits, remains lower than the natural rate added to the probable rate of depreciation of the standard. Even if the rate served on deposits reached this ceiling, the issuing institutions would still enjoy the appreciable privilege of being able to create new resources as and when they needed them.

Finally, a debt must be refundable, as perpetual debt has now disappeared together with the illusion of a stable fiduciary standard, to which it owed its existence. We have seen that fiduciary money, strictly speaking, namely bank notes and sight deposits in banks, cannot be refunded, anymore, incidentally, than the total money supply. At most, these two amounts can be reduced, either through the action of banks reducing their assets or through the action of bank debtors who reduce their debt when, for instance, they fear a fall in prices. Such a reduction, one can note in passing, can only be accidental in nature. If it became permanent or more serious, it would cause an unbearable damage to economic activity. Indeed the amount of fiduciary money grows in an almost uninterrupted fashion at a rhythm that varies with the employment level, except in the case of a deep depression. Bank credits get incorporated into prices and the rise of the latter increases, in turn, the demand for credit. In the same way as one was obliged in the past to mint a growing amount of metallic coins, today's banks are obliged to constantly increase the volume of their credits. One sometimes says that a country's money is backed by its wealth. Such an expression is no doubt misleading. Only stocks of commodities endowed with physical liquidity and held by banks, or by bank debtors as security against bank loans, can back fiduciary money. Other bank assets can in no way back fiduciary money. They cannot be "consumed" in response to a possible demand from monetary asset holders wishing to convert their holdings into real assets. If, therefore, these monetary asset holders, taken as a whole, want to discard their liquid assets, either because they consider it too costly to keep a large amount of them, or because they have real needs to satisfy, all they can do is to increase velocity of circulation of these liquid assets, and,

[7] Withers H. (1909) *The meaning of money;* Mireaux E.(1930) *Miracles du credit*, Paris, Edition des Portiques (T.N.)

consequently, prices, which will lead them to abandon part of the purchasing power that they had previously exchanged for the said monetary assets. The holding of fiduciary money is therefore a source of losses which, even if they are not always noticeable in the short term, are nonetheless real and unavoidable in the long run. India and the countries of Latin America experienced this after the last war, when they wanted to use the pounds and the dollars that they had accumulated in their reserves during the conflict.

III. Equity in loans

Conditions for making loans equitable

In a loan contract, equity requires that the purchasing power that was initially transferred should be recovered at maturity, together with compound interest paid on the basis of the natural rate of interest. These conditions would all be satisfied if contracts were stipulated in an appropriate commodity standard, since, as we have said, prices would be stable and interest rates would be kept near the natural rate of interest. Capital would spontaneously flow towards countries with the scarcest equipment. International loans would then be as advantageous for lenders as for borrowers, since the natural rate of interest is higher, say, in India than in the United States. They would thus cease to be a form of aid and could be removed from the sphere of politics. As they would no longer be driven by monetary creation, but only by savings, capital flows would be ruled by objective factors and by fixed psychological parameters of the market. They could no longer be directed from poor to rich countries, as occasionally happens today. Speculation would only have a limited scope; it would incidentally play a useful role to correct temporary and limited distortions of the rate of interest and of prices. The resources of the United States, and of rich countries in general, in terms of production and savings, would allow a rapid bridging of the gap separating the degree of capital equipment of these countries, on the one hand, from that of poor countries, on the other, provided the population of the latter does not grow too rapidly. Such prospects offer a sharp contrast with the situation which prevails today, where the development of poor countries is in large part dependent on the benevolent aid of rich countries. Such aid is not appreciated by the former countries and even less so by the taxpayers of the latter. Its use, furthermore, does not respond to efficiency criteria, and, finally, its amount appears paltry next to the needs of the first group and the physical possibilities of the second.

The external investment of savings under the fiduciary standard

Fiduciary standards, on the contrary, impede the external investment of savings and they also favour undesirable flows of bank credits across borders. Because of the indeterminacy of future prices under these standards, the fulfilment of long term contracts can only give an unjustifiable advantage to either lenders or borrowers. The gold clause proved to be oppressive for borrowers during the last century [8]and so unbearable in the 20th that it is now forbidden by many legislations. Gold and silver standards' characteristic of making the burden of debtors excessively heavy has, incidentally, been manifest throughout history, and has very often been the reason behind the forced upward appreciation of metallic currencies. The franc clause, on the contrary, was responsible for the despoiling of a large number of lenders in the 20th century. As for the dollar clause, which has replaced the gold clause in many international loans, it would probably reveal itself to be onerous for lenders, if the dollar ceased to be effectively convertible into gold for foreign countries. Only the commodity standard is capable of guaranteeing the equitable treatment of the parties contracting a long term loan, as farm leases indexed on commodities, which are clearly implemented to the mutual satisfaction of lessors and tenants, already testify. Contracts indexed on commodities would not fail, incidentally, to supplant official standards in long term contracts if they were not, again, forbidden by legislation.

[8] 19th century (T.N.)

Refunding difficulties

The domestic use of a fiduciary standard raises a second hurdle against a country's investment of its savings abroad when the defence of its standard requires a significant degree of underemployment. That has been the case for more than ten years in the United States, as we have seen. In order to refund their dollar loans, Chile for example should sell more copper to the United States, Egypt more cotton and Iran more petrol. These countries risk being impeded from doing so by restrictions set up by the United States, in the interests of its domestic production, against imports of copper, cotton and petrol. These examples serve to illustrate a difficulty of a general nature. The conditions required to ensure the stability of a fiduciary standard act as a brake, hindering the extension of foreign loans.[9]

The gold standard and the gold exchange standard

Before we examine cross-border capital flows, let us first examine how such capital movements take place. When an American bank wants to buy, say in Canada, a building, or any productive asset, it creates American dollars and transfers them to the Canadian Central Bank by crediting the account of the latter, and it receives in exchange the necessary Canadian dollars for its purchase. The Central Bank of Canada, for its part, following the practice of the gold exchange standard, adds the newly created American dollars to its reserves and, in exchange, it creates Canadian dollars which are transferred to the American bank. The Central Bank of Canada thus effectively finances the acquisition of a Canadian asset by the American bank. Following the same process, the American bank can buy an asset in any country. It can, in particular, buy French francs and thereby a French asset. However, France has recently discarded the gold exchange standard and is now only subject to the gold standard. It therefore asks the American authorities to convert the dollars that have been transferred to it into gold. It no longer directly finances acquisitions of French assets by American banks. But the gold exchange standard only needs to be put into practice by a few countries to favour the use of American bank credit to purchase fixed assets in all countries. The transfer of a bank credit to any country can, indeed, be financed through a process that spares American authorities from having to part with their gold. When an American bank wants to purchase assets in France, it can obtain a direct conversion of dollars into francs, which entails a transfer of gold, or it can convert its currency into Canadian dollars or deutschmarks and then convert these currencies in turn into francs, which will not entail transfers of gold, if Canada or Germany keep the dollars they have acquired in their reserves. The difference between the gold exchange standard and the gold standard is that the former, even if it is not put into practice by all countries, gives the United States additional facilities for financing the transfer of dollars abroad since, unlike gold, the dollars used for such transfers can be created. During periods when the United States' gold reserves are abundant, this difference doesn't add up to much. But it becomes increasingly significant when these reserves diminish and more specifically when they are no longer sufficient to guarantee a possible conversion into gold of all the dollars held by foreign central banks. The United States is then compelled to restrain capital outflows as has been the case since 15 July 1963 through an interest equalization tax[10] levied on purchases of foreign securities by their nationals. Only in the last few months has the United States also tried to restrain capital outflows proceeding from banks – the outflows that weigh most heavily on its balance of payments – by implementing voluntary restrictions. The Bretton Woods conference, which confirmed the status of the gold standard, had sensed that the resort to such a standard was liable to generate undesirable

[9] See answer to ISEA enquiry (1954)

[10] Interest equalization tax: a domestic tax measure implemented by President John F. Kennedy in 1963 so as to reduce the balance of payments deficit; by taxing purchases of foreign securities, it was supposed to make it less profitable for US investors to invest abroad. It lasted until 1974. (T.N.)

cross-border capital flows, and it had adopted a provision, article VI of the Treaty, the purpose of which was to authorize and even to favour the restriction of such movements.

Long term bank assets in foreign countries

Among cross-border capital flows, let us first consider American long term credits abroad. These can take two distinct forms depending on their object, either buying an existing asset or producing a new asset. An American bank can, first of all, by resorting to the transfer mechanism we have just described, buy, say in Canada, a building or any productive asset. It can, secondly, order the construction of a building, a factory or a machine in Canada. As in the first case, it will have acquired a Canadian asset. But in this last case, the bank long term credit immediately gives rise to the creation of durable wealth, to the materialisation of an investment. Actually, foreign investments in Canada are more often undertaken by American companies than by banks. But if companies benefit from the creation of dollars in their favour by banks, they act as intermediaries and the results are not very different.

Long term credits from foreign banks in a country, as well as other foreign capital inflows, which it is often difficult to disentangle from the former, are subject to different judgements in the said country. Especially in the case of the purchase of existing assets, some people take the view that they are an appropriation of parts of the national estate by foreign interests, an appropriation that is all the more unfortunate as it involves no cost, as it takes place, so to speak, without disbursing a penny. Furthermore, domestic companies complain that the credit conditions on offer by their country's banks are not as favourable as those made available to their foreign competitors. Other people believe, on the contrary, that foreign capital inflows are profitable for their country. Besides often serving as a vehicle for introducing innovative techniques, such foreign capital inflows raise the employment level, especially in the case of new investments and they usefully compensate for the dearth of national savings. In fact, the weakness of the employment level and the alleged lack of savings are just one of the consequences of credit restrictions implemented to counter the rise in prices. Besides, judgements on foreign capital inflows vary from one period to the next, often in the minds of the same people, and more specifically according to the state of the balance of payments, which, as we shall see, is not illogical.

Foreign loans under the commodity standard

Under a commodity standard, foreign loans cannot be a source of costless enrichment. An essential difference between this standard and the credit standard is, as we have said, that under the former, savings are an autonomous fact, preceding investment. Savings flow into the reservoir made up of money, and it is from this reservoir that financial resources are drawn, as well as the equivalent of the physical resources that are required for the investment. Under the credit standard, on the contrary, savings are generated by investment, they proceed from it, in the full meaning of the word "proceed", and since savings could not exist in the absence of investment, they are always, as it were, commanded, they are never entirely free. Under a commodity standard, any international capital flow is irretrievably tied to a legal, if not a material, transfer of real wealth. Any American credit to Canada, for example, would transfer to that country an equal amount of the commodity aggregate contained in the international standard, and these commodities could be used directly, or exchanged against other equivalent goods, as and when the credit was used. The same result would occur, in the absence of any international monetary system, if Canada, endowed with a commodity standard, would abstain from including fiduciary currencies in its reserves. In order to extend a credit to Canada, the United States would be compelled to purchase its currency, by selling the commodities contained in its standard. As every loan or foreign financial inflow would then be linked to imports of monetary commodities, the global balance of payments would always be in equilibrium. The necessary counterpart of a net inflow of foreign capital would be a deficit of the current account balance and specifically

of the trade balance. Thanks to the net inflow of foreign capital, Canada would accelerate its development by undertaking larger investments than those it could undertake by relying only on the resources of its domestic savings. The net intake of capital would last as long as the country's capital goods equipment would be less developed – i.e. the country's natural rate of interest would be higher – than that of the United States. The current account deficit, which would be the corollary of the capital inflow, would measure, for any given period of time, the difference between domestic investment and savings. If savings became negative, as in times of war, and if new investment did the same, but to a lesser extent, in absolute terms, then foreign loans would again serve to bridge the gap between savings and investment; such loans could then be characterised as consumption loans.

The effect of capital inflows on the issuing of money

For the recipient countries, the consequences of foreign loans, or of the other financial inflows, are very different under a fiduciary standard. These consequences are never entirely beneficial and they can be particularly undesirable. From the standpoint of their effects, it doesn't matter very much whether these inflows serve to buy an existing asset, say a house, or to undertake a new investment, to construct, for example, a building, a factory or a machine. In the second case, they create income directly, of an amount equal to that of the investment, and indirectly, through the working of the "multiplier", as and when these incomes are spent, with the total income thus generated being higher than the initial income, and all the more so as the propensity to consume is itself higher. In the first case – buying an existing asset – capital inflows create purchasing power which will perhaps remain for some time on the capital goods market, but which will soon finance, in turn, an investment, most likely in real estate, and will generate incomes, since the initial purchase of a house will make prices rise in the building sector and will lower the rate of interest. The common effect of the two sorts of foreign capital inflows, an immediate and necessary effect it has to be said, is to create an amount of money equal to the inflow in the recipient country. Thus, by the working of the gold exchange standard or of the gold standard, as long as capital flows are free, American banks (and the banks from other countries, though the action of the latter is mainly theoretical and will be neglected) have the power of issuing money in foreign markets. Therefore, in all countries that submit themselves to these standards, there exist two sources which provide for the issuing of money: on the one hand, the domestic banking system and on the other, American banks. Whereas the issuing of money by the former is strictly controlled and is limited by domestic authorities, the issuing of money by the latter enjoys a rather large degree of freedom, especially when it takes place through intermediate companies. American banks even operate outside the control of their own authorities when they issue money outside the United States, on the euro-dollar market. Countries which are proud of their monetary sovereignty do not always realize that they have given it up to various degrees, and especially in favour of the United States, when they subscribed to the gold standard or to the gold exchange standard. The dual source of the money issuing function and the fact that one of those sources is, so to speak, out of control, do not fail to complicate the governance of national currencies other than the dollar and they produce a number of damaging consequences which we will just illustrate through a few typical examples.

The case of France and Germany

When facing major foreign capital inflows, some countries, say Germany or France, react by restricting credit. On the one hand, they fear that the issuing of money caused by this inflow will cause prices to rise. On the other, by doing so, they try to reduce the current account deficit, which is the corollary of the capital inflow, out of a fear that such a deficit will impoverish their country when, on the contrary, it bears witness to the strong state of investment activity. In the current economic situation, foreign capital flows to these countries generate an accumulation of foreign monetary reserves in their banks. Credit restrictions accelerate this accumulation to the extent that foreign capital is attracted by the higher interest rates that they give rise to. The asset side of the banks' consolidated balance sheet shows a rising proportion of dollar assets compared

to the truly domestic assets that the banks possess or control through their loans. Foreign capital inflows are therefore accompanied by an expropriation of national banks by American banks. The latter in a sense take hold of the real assets of the former since they are the ones that take the initiative of immobilising their credits abroad. If, for example, an American bank decides to buy a house in Germany, and if the German Central Bank restricts credit to mop up the new marks created by the purchase, the German banking system will be led to divest itself of a building, for instance, or to refrain from buying another one. The buildings just mentioned will replace the house acquired by the American bank on the real estate market, whereas assets of German banks will comprise one building less and more dollars. The superfluous part of German monetary reserves measures the surplus of domestic investment that the banks could have undertaken without altering the monetary situation, their unrealised gain, one could say. Clearly, credit restrictions cannot be pursued indefinitely since they encourage capital inflows and since, furthermore, the amount of banks' real assets is limited. In an extreme case, the banking system would only have foreign assets on the asset side of its balance sheet as, for example, happened in Cuba in former times, or in those British colonies where a currency board was in operation. In fact, to try to guard against capital inflows, Germany resorted to administrative restrictions, to fiscal discriminations and even, in 1961, to a revaluation of the mark.

The case of Brazil

Rather than retreating when faced with the issuing of money resulting from a foreign initiative, an option which they see as a dead end, banks in some countries, say Brazil, prefer resisting and even moving to the offensive. Such a policy leads to inflation. The latter is all the less inevitable as in poor countries the propensity to consume is strong. In other words the multiplier is high; a small additional investment generates a considerable increase in aggregate income. In response to this increase in income, production capacity cannot be extended much, because of the lack of capital equipment and of the low productivity of part of the labour force. Under these conditions, foreign investments cannot be accompanied, as in the previous case, by an increase of foreign monetary reserves. The inflow of dollars which they imply is absorbed by the additional imports triggered by inflation, sometimes before the capital inflows materialise. Brazilian goods and services are then exchanged against real assets, not against monetary symbols, the value of which is illusory.

However, in another way, that of the deterioration of the terms of trade, foreign investments still contribute to the exploitation of Brazilian workers. The nominal increase in the Brazilian aggregate income which results from an excess of investment leads, as we have said (see p. 8), to a change in income distribution. It increases the share going to the richest sector, which mainly comprises companies, and it decreases the share going to the poorest sector, mainly comprising workers. This change is ample enough to enable the additional savings generated by the richest sector to balance out the additional investment that is the source of inflation. On the financial level, this change will become apparent as price rises outpace the rise in wages Of course Brazilian prices cannot rise for very long before a fall in the cruzeiro[11] brings them back into line with foreign prices. Thus, Brazilian wages depreciate gradually in dollar terms, and foreign investors can acquire services provided by the Brazilian labour force at a cost which becomes lower and lower.

The case of Canada

In Canada, finally, the proximity of the United States and the country's attachment to free trade as well as to unrestricted foreign payments both constrain the scope for monetary creation. When the latter surpasses a comparatively small amount, money spills over into the American market and gives rise to a balance of payments deficit which is not always easy to bridge. The same happened in Cuba before Castro's government.

[11] The *cruzeiro* was the Brazilian currency from 1942-67, from 1970-81 and from 1990-93; it was replaced by the *real* in 1993 (T.N.)

In similar circumstances, the issuing of money originating from abroad offers the advantage, over the issuing of money by the domestic banking system, of providing the same amount of dollars. And that is why it has shown a marked tendency to expand. In Cuba, after the war, monetary circulation took place almost entirely in dollars. The introduction of a domestic currency a few years later had to cope with the most serious difficulties. Furthermore, a significant share of national wealth ended up in American hands. Canada, on its part, in order to avoid being dispossessed of its banking system and of its national wealth, found itself compelled to resort to administrative restrictions, and to monetary expedients: raising or lowering the exchange rate, or abandoning it altogether in favour of a floating exchange, etc. These measures were not sufficient to efficiently protect Canada from the encroachments of United States capital, nor from the contagion, in an aggravated form, of American unemployment.

Monetary imperialism

Dollar imperialism is an expression that serves to illustrate, in a picturesque form, the political and social consequences of resorting to fiduciary money at an international level, as well as the exorbitant power that issuing such a currency gives to the most economically powerful country in the world, as long as that country manages to maintain a reasonable stability of its standard. Monetary imperialism has always existed. In the past, it used to be exercised by British banks, today it is by American banks. Transferring the issuing power to the International Monetary Fund, as has been suggested by Mr. Triffin, would only change the form of imperialism and, even so, in a more apparent than real way. Returning to the gold standard would probably moderate this imperialism, but would not suffice to eliminate it, for it is likely that, except for periods preceding the rise in the price of gold, the metal would be concentrated in the reserves of the richest country. Indeed monetary imperialism will only disappear with the credit standard itself, which is its source, the day that standard is replaced by a commodity standard.

Short term capital flows

Short term international capital flows tend to develop in fiduciary monetary regimes where money can be "created". Unlike long term credit which we have just looked into, these flows, when they originate in the United States, do not imply an American appropriation of other countries' capital. But they do have a disruptive effect on the domestic money issuing operations of these countries, similar in nature to that of long term credit, though, generally, more marked, because of their volume and instability. As a matter of fact, they take the form of an inflow or an outflow of capital depending on the circumstances, and, in particular, when one expects an appreciation or, on the contrary, a devaluation of the national standard. Over the periods where exchange rates have little chances of changing, they usually move from rich countries where prices are stable, from the United States in particular, towards countries that are less rich and where prices are less stable. In these countries, indeed, not only is the natural rate of interest higher, but the effective rates of interest incorporate a premium covering the risk that the standard will depreciate. Short term capital flows therefore tend to reduce the differences between interest rates in the various financial centres that give rise to them in the first place; and they would end up by aligning those rates with those prevailing in the United States if they were left to develop freely on their own. We have seen that it was not possible for other countries' monetary authorities to oppose the inflationary effects of capital inflows by resorting to monetary means. They are thus led to set up administrative hurdles against them when, to fight against a rise in prices, they want to raise the interest rate by contracting credit.

Let us point out however that in some countries such as Canada or Ireland, capital flows tend to move in the opposite direction when they want to stimulate employment by expanding the money supply. The close trade and financial links that unite these two countries to the United States and to the United Kingdom respectively account for a price level, and economic conditions in general, that are little different from those that prevail in the neighbouring country; we have said that the United States, in order to defend the international role of

the dollar, maintains interest rates, especially short term interest rates, that are incompatible with a high level of employment. British authorities are also compelled to keep interest rates high because sterling periodically suffers from sudden attacks that weaken it. Although they don't have an international currency to support, Canada and Ireland are therefore incapable of bringing down their interest rates below the prevailing levels in the neighbouring country and this contributes to permanently maintain their unemployment rate at an abnormally high level.

Short term capital flows under a floating exchange rate

Under a floating exchange rate regime, on the other hand, short term capital flows do not have the same nature. They are less frequently exclusively motivated by differences between the prevailing interest rates in different financial centres, because they have to be hedged by forward transactions in the opposite direction, the cost of which reduces their attractiveness. But they are more often motivated by the attraction of a possible change in the exchange rate. They then have a destabilising effect since, in themselves, they contribute to making effective, or to aggravating, the exchange rate variation they anticipate. On exchange rates, as with commodities, buildings or securities, the uncertainty attached to the future value of fiduciary standards is eminently conducive to speculation of a destabilising nature. Floating exchange rates thus risk accelerating the rise in prices, since every fall in the value of the currency, even a temporary one, is accompanied by price raising pressures, the effects of which are irreversible. Since Bretton Woods, an on-going controversy is centred on the comparative merits of fixed and floating exchange rates, with several economists, including Mr. Meade[12] , positioning themselves in favour of the latter. But in truth, neither of the two is capable of remedying the inherent flaw of fiduciary standards.

Difficulties encountered by raw material producing countries

Because of the relatively free competition among producers that generally prevails on agricultural markets and on markets for raw materials, poor countries that produce these commodities are the main victims of price variations stemming from the use of fiduciary standards. Except during periods of war between the main industrial powers, their terms of trade are subject to a chronic tendency to fall below par. It is to improve those terms of trade that international commodity standard projects have been repeatedly submitted to the United Nations, notably in 1953, in New York, by Mr. Goudriaan[13], and in 1964, in Geneva, by Messrs. Tinbergen, A.G. Hart and Kaldor[14]. Actually, the commodity standard's effect of stabilising the prices of raw materials is just a partial aspect of its general stabilising features. It is on the grounds of these features, and with regard to their economic and political significance, that the commodity standard deserves to be assessed.

IV. Costs of the commodity standard

[12] James Meade (1907-1995) , economist ,member of JM Keynes's Cambridge Circus in the 1930s ; his contribution to the theory on international trade and capital flows was rewarded by the Nobel Prize which he won in 1977 with the Swedish economist Ohlin.(T.N.)

[13] Jan Goudriaan (1893-1974) Dutch economist

[14] *The Case for an International Commodity Reserve Currency* , Geneva, UNCTAD, 1964.Kaldor, who drafted this report, acknowledged that it was inspired by Benjamin Graham's idea of an international commodity reserve-currency (Kaldor Nicholas, *Essays on Economic Policy* II, p. 143) (T.N.)

Is the cost of the commodity standard too high to make its use affordable? That is the question that comes to mind when one does not have a clear idea of its advantages. A currency based on such a standard would, to be sure, have a production cost, a financial conservation cost and a physical storage cost, whereas none of these costs exists in the case of an intangible fiduciary currency. Let us observe right away that among known monetary systems, none exempts holders of money, i.e. members of the community other than banks, from the first two costs. Only the third would therefore be a new burden for them under a commodity standard. Let us nonetheless examine the first two.

Production cost of money

Like gold, but unlike the dollar, a commodity currency would have a production cost, which would be that of all the components of the standard. With the exception of American banks, no one has the power to create dollars, nor, naturally, gold. Those who need such currencies must earn them, either by producing gold if they can, or, if they cannot, by selling immediately available services or real goods or, if they borrow, services or real goods to be made available later. The cost of gold is its cost of production from marginal mines, and the use of the metal as a standard gives its extraction an unlimited outlet. But as its elasticity of production is small, its extraction is mainly a source of rent for the owners of non-marginal mines. France, as it doesn't have the power to issue money at an international level – other than in the franc zone – and as it doesn't own any profitable gold mines, does not benefit from the use of present day standards, from the point of view of their production costs.

The cost of the conservation of the currency

The financial cost of the conservation of the currency, which is the cost of liquidity as such, is the gain foregone by owners of wealth when they keep their wealth in the form of money, yielding a small interest or no interest at all, instead of keeping it in the form of productive assets. Under a commodity standard, the yield of loans that are correctly guaranteed would be close to the natural rate of interest, whereas money would yield nothing at all. The cost of liquidity would therefore be close to this rate. In fact, as we shall see, the unit cost of liquidity would not be very different from that now borne by the holders of money, but, as prices would be stable, there would be no reason to keep large amounts of liquidity and the total cost would be significantly smaller. The present large amount of monetary assets is due to the uncertainty over prices and future interest rates -the feature of a fiduciary standard -that makes every financial investment risky. The risk of losing part of the gold value of invested capital is the reason why Central Banks refrain from reducing their reserves by investing abroad, when those reserves reach a level that surpasses their needs. In the absence of such a risk, they would have no reason to forego the interest they would draw from the investment of those reserves. In the same way, on the domestic level, French savers are led by the uncertainty of financial investments to keep their assets in liquid form, such as deposits at the savings banks. Under an international commodity standard, Central Banks could earn an income close to the natural rate of interest, while running no other risk than the minimum one attached to an increase of that rate. The volume of international liquidity would thus be smaller than it is today.

The cost of liquidity taking the form of gold differs from the preceding cost by an amount corresponding to the variations of the real value of gold, which is to say its value in terms of all the other goods. That value rose regularly over the centuries preceding the 19th century. In spite of marked fluctuations it has not changed much since the end of the 18th century and 1914. It rose by 75% in 1934 and has constantly declined since 1939. Thus, it is that the cost of gold liquidity, after having been below the natural rate of interest for centuries, is now above that rate.

The conservation of the dollar as a form of international liquidity dates back to the Genoa conference of 1922. Its cost is the same as that of gold liquidity, except that it has not been compensated in 1934 by a large profit due to revaluation. The cost of dollar liquidity is admittedly reduced by the interest that Central Banks derive from certain of their dollar holdings. But that interest is low and indeed one can be surprised that Central Banks should accept to hold dollars, thus allowing foreigners to benefit from the issuing of their national currency at rates that are notably below those that they demand from their nationals in order to create money in their favour. Theoretically, as we have seen, banks can create deposits without taking the risk of incurring losses, as long as the interest served to depositors remains below the natural interest rate. Central Banks could thus legitimately demand, in order to hold dollars rather than gold, an interest rate equal to the natural rate in their country, topped up by a premium to cover the possible depreciation of the dollar in terms of other commodities. During periods when a dearth of gold compels the United States to restrict its capital outflows and, more particularly, those capital outflows originating in banks, such an attitude on the part of other countries' Central Banks would have the advantage of giving them back an almost complete control over the issuing of their national currency. At the same time, it would shelter their countries from undesirable foreign investments and from the risk of being dispossessed of their national estate, a risk that accompanies such investments. Finally, it would protect their companies from the unfair competition of American companies. Of course, these advantages would disappear if an upward adjustment of gold were to put an end to America's shortage of metallic reserves and to the transfer restrictions it gives rise to.

The highest interest rate that Central Banks obtained in the Eurodollar market appears to have been of the order of 4%. If American banks were to offer a higher interest rate on foreign Central Banks' deposits, a rate close to the natural rate of interest in each country, supplemented by a premium designed to cover a possible depreciation in the real value of the dollar, the issuing of international money would cease to provide an abnormal profit and it would assume the character of an investment of savings. This last activity was the only one that banking houses exercised before the use of bank money spread, which is to say, the end of the 18th century in England and the middle of the 19th century in France. The fact that banks did not create money in those times does not appear to have harmed their prosperity. One knows that one of those houses so enriched a family that it was able to accede to the throne of Florence and, by way of women, to the throne of France. Be that as it may, one should not expect American banks and, even less, British banks, to willingly forego their power to issue money on foreign markets. The use of a commodity standard in the European Economic Community would not prejudice established positions as much as its use in a wider framework. It would therefore not be as strongly opposed by vested interests.

Storage cost of commodities

The physical storage cost of monetary commodities is the specific cost, and, consequently, the only really significant cost linked to the use of a commodity standard. It would obviously vary according to the composition of the standard, but it would always be higher than the conservation cost of gold, except if the standard were composed of rare products such as platinum, which would reduce its efficiency. For a community wanting to benefit from all the advantages of monetary exchange, the storage of monetary commodities is an essential public service and its cost is an indispensable expense for markets to work without causing injustices; no artificial device will allow eluding it. One should not, in any case, exaggerate its importance. Even if the standard comprised bulky commodities or commodities requiring frequent replacements, it would probably not surpass 2 or 3% of the value of the stocks (cf. Benjamin Graham's studies). Now this last amount, as we have seen, would be far lower than that of present day monetary assets. It would only grow if the natural rate of interest were to fall to a low level. That would imply a high degree

of capital equipment in all the countries of Asia, Africa and Latin America, a prospect that is still distant. The day it happens, there will be, as we shall see, a technical way to remedy an excessive accumulation of the commodity currency.

Financing the storage cost

The simplest way of financing the cost of monetary commodities would be to subject the buying and selling of the commodities – the transactions with the agency in charge of administering them – to the payment of a commission or margin, at a low rate, to a brewing fee[15] as one used to say. This method would however have the major drawback of weakening the stabilising action of the standard. Despite its simplicity, one should therefore resort to it only in a moderate way. A more satisfactory method would involve the submitting of holdings of monetary titles to a levy proportional to their amount and to the duration of the holding. This second method would be the most equitable one, since it would require from each user of money a contribution equivalent to the advantage drawn from it. The levy – a sort of negative interest rate – would adjust the financial cost of holding money to the physical cost of storing monetary commodities. It would incidentally contribute to limiting the accumulation of monetary commodities if the natural rate of interest fell to a low level in the circumstances we have just mentioned. Finally the countries that export commodities incorporated in the standard could be called upon to provide a contribution to allow the use of the said commodities in the standard. In order to give or keep a monetary outlet for wool, coffee or gold, for instance, Australia, Brazil or the Union of South Africa, respectively, would probably not refuse, at least over the initial period, to cover part of the operating costs of a standard which would make room for these commodities.

The social cost of fiduciary standards

The cost of a commodity standard, which is apparent and measurable, must be assessed with regard to the damages, most often insidious, caused by fiduciary standards. The extent of those damages is so vast that one can only offer a mere glimpse of them here. Almost all economic problems, and a large number of political difficulties, can be ascribed to the flawed standards in use today. Before congratulating ourselves on any economic progress, we should always wonder if, in the current state of the physical possibilities of production, an even larger progress would not have been possible under a different standard. The answer would seldom be negative.

The market for savings abroad is the one, the paralysis of which, gives rise to the most serious consequences. Though there are abundant savings resources in the United States, and savings resources which are not completely used -as testified by the existence of unemployment- and since, on the other hand, almost limitless outlets for those savings exist in poor countries, the natural forces of the market which should channel these outlets towards American savings resources – are not, in fact, operating. It is the absence of suitable standards of value, more than any other cause, that accounts for this market failure. The International Bank for Reconstruction and Development, which was established to act as a substitute for private initiative in this field, did not take long to realize that operations based on the principles that govern that initiative were limited in scope. It had to create a subsidiary to help poor countries in a way related to free assistance. Furthermore, the protection of nascent industries in new countries, a necessity which

[15] Brewing fee or "*droit de brassage*" in French : a licence used in the Middle Ages in the kingdom of France , allowing people or bodies such as monasteries to brew beer (T.N.).

international bodies ended up accepting, shows that under existing standards the widening extension of markets is not always useful or desirable. And, finally, the production of poor countries does not always find the free outlets it needs in rich ones. If coffee is admittedly no longer burned in locomotives, a number of major powers continue to turn to beet sugar, a more costly source, to satisfy their sugar consumption needs, instead of resorting to cane sugar, the technical superiority of which would justify its preferential use. Churchill's slogan "trade, not aid" will always serve to characterize the conditions created by the use of fiduciary standards. Such standards must be seen as one of the main causes accounting for the widening gap between the wealth of industrial powers and that of countries that are not very developed.

In contrast to the misery that exists today in most of the latter countries, waste is an increasingly apparent feature of developed countries' economies. We know that in the United States, there are permanently more than three million people who are out of work, a figure which is equivalent to 5% of the available labour force. The revenue foregone due to this lack of employment of the labour force is far greater than what would be lost by substituting monetary commodity stocks for productive investments. The conservation of such stocks, as a means of stabilising prices, instead of resorting to a reserve of unemployed labour, would thus yield a financial advantage, over and above its interest from a human point of view. Registered unemployment is, incidentally, just a sign among others of a more general underemployment or Malthusianism. The productive capacity of capital equipment is rarely put to use completely; in certain branches, it is known to have fallen to 60%. A reluctance to lay off employees, furthermore, often reins in the improved productivity that would result from technical progress. Latent overproduction appears under many other guises: uncontrolled advertisements so as to root superfluous needs in people's minds, planned obsolescence by the producers of so-called durable consumer goods, an exaggerated expansion of the tertiary sector, and, in particular, of the bureaucracy, etc.. Furthermore, the agricultural slump, which has a chronic nature in peacetime, compels public authorities to resort to price supports by stocking farm goods. Under a commodity standard, stocks of agricultural products would stop being undesirable and would play their normal role, which is to ensure that supplying is regular and secure. And, from a national perspective, one should add that a commodity standard would allow a reduction in the stocks that are presently being held for military security reasons.

For countries which cannot accept to maintain an unemployment rate as high as that of the United States, waste becomes more widespread as a consequence of inflation and also often, as a matter of fact, as a consequence of measures taken to forestall inflation or to remedy its effects. The specific feature of inflation is, indeed, to sacrifice the most socially useful investments to others that are less so. We can see this, for instance, in Brazil, where luxurious buildings crop up in the midst of poverty. But, even if it is less visible, such an effect cannot be ruled out in the absence of any inflation. When an investment can be financed at no cost by the creation of money, any investment is profitable provided it has a physical productivity, however weak. Now an investment will always appear useful to its promoter, even if by nature it is a luxurious one. The only investments that are, however, comparatively efficient are those,the yield of which is higher than the natural rate of interest, and, incidentally, they are profitable in the long run, when they cease to be financed by bank credit. One too often sees the emergence of investments that have a weak or questionable social utility at a time when more urgent needs, let us say in the housing sector, are not satisfied. Some companies do indeed benefit from some of the facilities that banks derive from their power to create money. These facilities, however, have the drawback of allowing low productivity investments, investments that are socially undesirable and that often turn out to be disappointing for their promoters. For all companies, incidentally, including those that are not helped by banks, the resort to fiduciary standards substantially increases the investment risk, due to the uncertainty it bestows on future prices and interest rates.

In order to correct all the disorders and injustices due to inflation- generating standards, the government is led to expand the scope of its economic interventions in the market. Its action itself risks going astray, especially as regards investments, because of the aberrations the standards give rise to. Under the most favourable of hypotheses, such government action cannot replace the action of the natural forces which an appropriate standard would generate on the market. Even under the standards currently in use, economic freedom still appears in general as a guarantee of efficiency.

Final remarks

Fiduciary standards are, historically, the only ones to have been tried. That explains the precarious nature and the rapid disintegration of the monetary systems to which they have given rise when those systems were not buttressed by a strong political authority. Two main standards, the dollar and gold, prevail on the international market today. The present day dollar is, by its nature, a fiduciary asset. The value of gold seems also to have been fiduciary since the remotest of times; from the electrum, a composite currency made up of gold and silver that was in circulation in the seventh century B.C., to the golden "*sou"*[16] which served for military purposes at the beginning of the Christian era – its name, "solidus", relates it to the words "*solde*[17]" and "soldier"; from the "*écu*"[18] the florin [19]and the "*ducat"*[20], which were minted with gold proceeding from the pillage of Constantinople by the Crusaders in 1204 and which served to strengthen monarchic authority, to the guinea, which prevailed in England during the 18th century. Silver coins had been retired from circulation in that country as a consequence – or so it is said – of a mistake made by Newton, when he was Director of the Mint, who had overvalued silver with respect to gold. Had that error not been made, we would perhaps be living today under a silver standard, or under a composite standard such as the electrum.

Even if they share their fiduciary character, the dollar and the gold standards differ by their physical nature. One is immaterial, its production is not subject to limits, and it tends to depreciate to relieve debtors. The other is material, its elasticity of production is low and it tends to appreciate. On the international level, the two standards, far from being rivals, are closely associated and they lend support to one another. If the dollar were entirely detached from gold[21], it would run the risk of depreciating at an accelerated rhythm, thereby losing its international functions. That is probably why the most convinced detractors of the gold standard in the United States do not propose to give it up completely. Conversely, if gold were solely used as an international standard, its tendency to appreciate, and the ensuing deflationary consequences, would necessitate frequent upper adjustments of the metal. The deflation risk, inherent to the gold standard, is,

[16] « *sou* » used to be a currency in France worth a fraction of an *écu* or of the *franc* (100 *sous* = 1 é*cu= 5 francs , see footnote 17)*; it has now become a French word meaning "money" in everyday language (T.N.)
[17] « s*olde »* : a soldier's allowance
[18] « *écu* » :the gold *écu* and the silver *écu* were currencies which circulated in France from the 13th century (under the reign of Louis IX) until the Revolution (1795) when it was replaced by the *franc*; the silver *écu* was worth a fraction (1/5th or 1/6th) of the gold *écu* (T.N.)
[19] florin : a currency made out of gold and minted in the 13th century, first in Florence and then in different European countries until it was replaced by national currencies ; the Netherlands' national currency remained the florin until it was replaced by the euro, at the turn of the 21st century (T.N.)
[20] « *ducat* » : a currency made out of gold and silver which circulated from the 12th century in Europe, until the beginning of the 20th century in the Austro- Hungarian Empire (T.N.)

[21] President Nixon suspended the qualified convertibility of the dollar into gold in August 1971 (T.N.)

incidentally, the main argument and, as a matter of fact, the only one which one puts forward in favour of the international use of the dollar standard. However incorrect it may be, since it assumes that the two standards are the only two available options, this argument is not without bearing, for the public is generally not aware that there is an alternative to these two standards, namely a commodity standard. Be that as it may, history teaches us that the maintenance of a rigid parity between two fiduciary standards – the dollar and gold- periodically runs into difficulties when one of the two is immaterial while the other is made of a material the elasticity of production of which is small. Such difficulties are being felt today as a consequence of the excessive creation of dollars on foreign markets since 1959; and some people wonder if one should not resort once more to an upward adjustment of gold, of the kind that is provided for in article IV, section 7, of the Bretton Woods Agreement. In seeking a response to such a question, governments face a dilemma. The upward adjustment of gold would stimulate economic activity. But on the other hand it would exempt American authorities from the obligation of restricting capital outflows, which, as we have said, are a threat to the financial independence of other countries under a gold standard.

The preceding question will lead once more to a confrontation between anti-inflationary and anti-deflationary arguments, the former against an upward adjustment of gold, the latter in favour. It is fertile ground for doctrinal quarrels, for political controversies and for diplomatic manoeuvres. As early as 1896, William Jennings Bryan, who was standing for the presidency of the United States, based his campaign on countering the proponents of the gold standard who, according to him, wanted “to crucify mankind upon a cross of gold”. The real problem is not to know whether the dollar should be preferred to gold as the international standard, or whether the two standards should be associated on a different basis: the question is whether it is desirable, or even possible in the long run, to maintain the use of the two standards in international transactions. Why, indeed, should one perpetuate the use of fiduciary standards which generate, alternatively, inflation and deflation, overemployment and unemployment, accompanied in both cases by a ruinous uncertainty, when neither of these evils is necessary and when it would be simple to avoid them by using natural standards? Is it reasonable, furthermore, to resort to fiduciary standards, which have proved throughout history how harmful and inefficient they are, and which perpetuate misery and injustice under our eyes, when technical progress gives us the physical means today to remedy the situation? Finally, can international co-operation be extended under standards which generate imperialism? If Western democracies persevere in not wanting to face realities, if, in the monetary field, a field of paramount importance, they persist in resorting to expedients and refuse to enact the necessary reforms, one can, in truth, be concerned as to what their future influence will be, and as to the very survival of their institutions.

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Appendix on the labour standard

Under the labour standard, the unit of value is a given duration of a defined type of labour (with the price for that duration of work being the unit), in other words the defined wage unit. The cost of commodities which depends on the marginal productivity of labour diminishes in terms of labour when productivity rises. Technical progress therefore translates into lower costs. National income takes on an unusual significance; it measures, above all, the amount of work or employment, which depends on the number of workers employed and on the duration of their work. It also, less importantly, varies with the distribution of national

income between labour, on the one hand, and the other parts of the population, on the other. It is all the smaller as the share of labour in aggregate income is large and vice versa. If rent were to rise, due, let us say, to a population increase, so would national income. If the natural rate of interest were to fall because of an increase in capital equipment, national income would also fall.

Under the labour standard, costs are therefore relatively stable. But effective demand and prices can fluctuate. At high levels of employment their fluctuations are of a cumulative nature and the magnitude of those fluctuations depends on the quantity of monetary symbol*s* in circulation. When effective demand overtakes the production capacity, prices rise in an accelerated fashion as does the nominal value of effective demand itself. Public authorities are inclined, in order to maintain a high level of employment, to introduce price ceilings and to ration commodities. If they prefer to ration credit, the process known as forced savings leads to a reduction of real wages and, consequently, of consumption, and therefore ends up triggering a decline in effective demand. In the absence of government interventions, the fall in effective demand continues until consumption expenses can no longer be reduced. Equilibrium may be found at a low level of employment due to the action of unemployed labour reserves.

If there exists, next to the labour standard, a payments currency linked to a fiduciary material standard, say silver, the hoarding of such a currency would bring down effective demand to the point where the inflows of silver proceeding from a balance of trade surplus (or from mines) would suffice to satisfy it. Upwards adjustments of the value of silver would probably be periodically necessary to stimulate a chronically deficient economic activity.

The labour standard could, admittedly, be employed next to a payments currency linked to a commodity standard. The two standards would then have comparable, if not identical, stabilising effects, and it is likely that eventually, the labour standard would be superseded by the commodity standard. We have pointed out that under a labour standard, prices would fall as a result of technical progress. Under a commodity standard, aggregate prices would remain fixed in the monetary sector and stable in the non- monetary sector. The resort to a labour standard would therefore have the drawback of reining in investment by a constant and general fall in prices, which would mean a heavier burden for debtors. Such a drawback would not exist under the commodity standard, since the latter would ensure price stability. As for wages, they would be fixed under the labour standard. They would rise, on the contrary, under the commodity standard, *pari passu*, with increasing labour productivity in those industries producing monetary commodities. Wage rises could facilitate the necessary restructuring of the work force to respond to changes in the demand for goods and services. Wage rises, it should be pointed out, could only be real; there would be no room for nominal rises. Labour, as well as companies, would therefore have reasons to prefer the commodity standard to the labour standard and it is likely that the latter would fall into disuse.