

## CHAPTER III — MONETARY SYSTEMS

### I. THE MAKING OF A MONETARY SYSTEM

The first thing to be done in making a monetary system is to choose the monetary *unit* that is to give its name to the money of the country. In the case of measures of length, capacity, or weight, there are certain data that serve to guide us, such as the human limbs, or the weight that a man can carry; but in the matter of a measure of value the choice is more arbitrary: are we to say, for instance, that the unit is to be the value represented by the mean daily minimum consumption? But that involves a further difficulty, for by reason of the gradual depreciation of money owing to the law already noticed, such a primitive kind of unit diminishes more and more in value until it becomes insufficient.

That is why the monetary unit varies from one country to another, from the English pound that is worth just over 25 francs, to the Brazilian *reis* that is worth (at par) about 1/400 of a franc — a difference between the two extremes of 1 to 10,000.

The earliest French monetary unit was the pound, so called because originally, in the time of Charlemagne (742-814), it represented an *actual pound weight* of silver. The pound at that time was equal to 408 grammes, nearly 82 times the weight of the modern franc (5 grammes) into which the pound gradually changed. This descent from 408 grammes to 5 grammes was caused entirely by a continual series of emissions of lighter and lighter money: each king made a slight reduction in the weight of the old pound, while trying at the same time to keep up its old legal value.

The history of the English pound is very much the same, but somewhat more honourable to the English government, for, starting from the same point as the French pound, it stopped in its descent at the value of 25 francs — its modern (pre-war) value.

The franc, in its turn, became in process of time too small a unit to act as a measure of value. Its submultiples are of very little use, except to waste an enormous amount of clerks' time.

The American dollar, equivalent to 5.18 francs or 4.11 shillings, seems to be the monetary unit that best answers the needs of economic life. It stands about midway in the scale, and admits equally well of the coining of multiples like the five-dollar piece and of submultiples like the cent. It is also the unit that has been most often

copied by other countries and that stands the best chance of being adopted as the international unit, if the oft-cherished project of an international monetary system is ever realized.

Once the unit is chosen, a sufficient number of multiples and sub-multiples must be set up to cover all degrees in the scale of values. It is obviously best to arrange them on a decimal system, for this very much simplifies all calculations of prices.

Every monetary system ought to include a sufficient number of coins to correspond to the various degrees in the scale of values, and hence to the needs of everyday payments. Thus in the English system there are eleven coins of different values, ranging from the farthing to the sovereign. But this results in a great complication, namely, the necessity of having recourse to different metals — gold, silver, and copper or other metals. In fact, if only one metal were used, it would be necessary, in view of the imperative rule that in every sound monetary system the weight of each coin must be proportional to its value (see above, p. 219), to coin multiples and submultiples that would be too big or too small to be conveniently circulated. We could not think of employing only gold: the half-sovereign is quite small enough, and a gold penny, weighing half a grain, would be impossibly small. Still less could we imagine ourselves using only copper, unless we transport ourselves to the days of the Roman *as*, for a sovereign made of copper would have to weigh something like thirty pounds! Even silver by itself would not do, although it would be less inconvenient on account of its intermediate value. The five-shilling piece is already too large, and the threepenny piece too small, to be commonly employed. It is a matter of real necessity, therefore, to make use of at least three metals at once.

But by using several different metals we overcome one difficulty only to be faced by another that is even more serious. For the coins minted out of these different metals must obey the law that we have already stated: their weight must be exactly proportional to their value. Now there is a natural scale of relative values among these metals, but it bears no relation to the decimal system. We should have to assign fractional weights, therefore, to the multiples and submultiples.<sup>1</sup>

<sup>1</sup> Thus if the value of gold when the system is established is  $15\frac{1}{2}$  times that of silver, and the (silver) franc weighs 5 grammes, then the gold franc would have to weigh ( $5 \div 15\frac{1}{2}$ ) grammes, which is .3226 gramme. This would be too small a coin to be of any use, but it would correspond to a weight of 3.226 grammes for the gold 10-franc piece, and 6.452 grammes for the 20-franc piece.

This, of course, is only a minor inconvenience: the general public pays no attention to the weight of coins, and does not mind if the weights are fractional. But what is more serious is that the value of these metals varies at different times, so that when the weight of a coin is once fixed its value may come to disagree with that weight; one of the two sets of coins — either the gold or the silver — becomes too heavy; Gresham's Law comes into play; and we are faced by all the difficulties that have made the term *bimetallism* so notorious, as we shall see in the next section.

So far as coins of lower denominations are concerned — copper coins, and even silver ones — the difficulty can be avoided by deliberately rejecting the principle of agreement between weight and value — that is to say, by giving them an arbitrarily chosen weight. But in that case we must cease to allow them to be legal tender and reduce them to the rank of token money. But we cannot treat gold coins in this unceremonious fashion.

## II. DIFFICULTIES IN THE WORKING OF A BIMETALLIC SYSTEM

We have just said that in any monetary system coins of different metals must be employed. But this does not mean that they must all rank as legal tender, with the two attributes mentioned above: compulsory acceptance, and free coinage. Some of the coins may well be reduced to the inferior rank of subsidiary or token money, current only below a certain amount, and only coined at the pleasure of the State. That is the case everywhere with copper and nickel coins. But what is to be done about silver? Is silver to be legal tender as well as gold? That is the question that used to be known as the question of "the single or double standard," and that is more correctly described nowadays as the question of *monometallism* or *bimetallism*.

If the right of being legal tender is conferred upon only one of the two metals — gold, for example, — then there is no difficulty. Silver money is relegated, like copper, to the rank of token money; a purely conventional value is attributed to it, but no one is compelled to receive it in payment of debts. Gold money is the only money that is legally current — the only one also for which perfect equivalence must be maintained between its legal and its intrinsic value.<sup>1</sup>

If we wish to make *two* kinds of money legal tender at the same time,

<sup>1</sup> [This is, of course, the normal English currency system.]

the position becomes far more complicated. To get a better understanding of these difficulties let us take the French system, which may be regarded, especially from the point of view of its origin, as a typical bimetallic system. We will go back to the starting-point of that system (the law of the 28th March, 1803).

The monetary unit was the ancient pound transformed into the franc. It was a silver coin, so silver was taken as the standard or legal money. At that period no one thought of contesting its right to this privilege. But the government could do no less than to confer the same privilege upon gold.

For the sake of clearness we will take two similar coins that still exist in the French monetary system, — the silver five-franc piece and the gold five-franc piece. We wish them both to be legal tender, so they must both have a metallic value exactly equal to their legal value. That, as we have seen, is a condition *sine qua non*. There is no difficulty in fulfilling this condition in the case of the silver five-franc piece. At the period we are dealing with, silver was worth 200 francs per kilogramme, so an ingot weighing 25 grammes was worth exactly 5 francs. Consequently, we must make our five-franc piece weigh 25 grammes and, so far as that goes, the required condition is satisfied.

But what weight are we to give to the gold five-franc piece? A kilogramme of gold ( $9/10$  fine) was worth 3,100 silver francs. If, therefore, we coin a kilogramme of gold into 620 pieces, each will be worth exactly 5 francs (because  $620 \times 5 = 3,100$ ) and each will weigh 1.613 gramme; here, too, the condition is fulfilled.

Now let us take these two coins and put them in the two scales of a balance. We shall find that *to balance the silver five-franc piece we must put in the other scale  $15\frac{1}{2}$  gold five-franc pieces*. This proves that the operation was properly performed. The kilogramme of gold was worth at that time just  $15\frac{1}{2}$  times as much as the kilogramme of silver (3,100 francs against 200 francs). So we must stick to this ratio of  $15\frac{1}{2}$  to 1, the legal ratio between the values of the precious metals — as celebrated in political economy as the famous geometrical ratio between the diameter and circumference of a circle,  $\pi = 3.1416$ .

So far, therefore, everything is going smoothly. But wait a bit!

In 1847 the gold mines of California were discovered, and, in 1851, those of Australia. The annual production of gold increased four-fold. Silver, on the other hand, grew scarce, owing to the development of trade with India, which absorbed large quantities of it. The result was that the relative values of the two metals altered: to obtain a kilogramme of gold it was no longer necessary to give

15½ kilogrammes of silver, as before: 15 was enough. This is the same as saying that gold had lost more than 3% of its value. Thereafter it is clear that these little ingots of gold called coins must have undergone a corresponding depreciation: the gold five-franc piece came to be worth only 4.84 francs.

Twenty years later, in 1871, a change took place in the opposite direction. The annual production of gold decreased by a half, in consequence of the exhaustion of the Californian and Australian mines. At the same time the output of silver increased by a half, owing to the discovery of mines in Western America. Moreover, Germany just then adopted a gold standard, demonetized its silver, and poured on to the market the thalers she no longer required. Once more the relative values of the two metals changed, but this time in the opposite way: in the bullion market a kilogramme of gold would purchase not only 15½ kilogrammes of silver but 16, 17, 18, and even as much as 20 kilogrammes. This means that the silver had lost more than a quarter of its value, relatively to gold. Obviously each ingot of silver constituting a silver coin suffered a proportional depreciation: so the silver five-franc piece became really worth only 3.8 francs.

What is to be done, then? If we wish to maintain the standard character of both kinds of money — that is to say, an exact equivalence between their intrinsic and their legal value, must we be continually recoinng now one and now the other, to make their weight agree with the varying values of the two metals? That seems to be the conclusion to which we are driven.<sup>1</sup> But this is not practicable. We shall see in the next section what expedient is adopted.

### III. HOW BIMETALLIST COUNTRIES COME TO HAVE REALLY ONLY ONE MONEY

Every bimetallic system, as we have just seen, suffers from the serious inconvenience of never being able to maintain, for both metals

<sup>1</sup> Strictly speaking it would not be necessary to vary the weight of *both* moneys, but only of one of them, taking the other (always the same one) as the unit. For instance, if the five-gramme silver franc were taken as the unit, the weight of the gold coins could be altered, sometimes above and sometimes below the legal weight according to the changes in the value of gold. But even with this simplification the plan would be scarcely more practicable.

Another solution of the problem would be to keep the weight of the gold coins unchanged, and to erase from them the inscription that declares their legal value, leaving their value to oscillate freely according to the law of supply and demand. The value of the piastre used to vary thus in some countries — quite recently, for instance, in Indo-China.

at once, that equivalence between intrinsic and legal value that should characterize all good money. One of the two will always be too heavy or too light, according to the changes in the relative value of the two metals.

It might be thought, perhaps, that this drawback is more theoretical than practical. "What does it matter," it will be said, "if the legal value of our gold or silver coins is slightly higher or lower than their real value? No one pays any attention to the matter, and in any case no one suffers by it."

That is a mistake; the situation involves a very real inconvenience — and, more than that, an actual danger, for this reason: the lighter of the two moneys will gradually drive the heavier out of circulation, so that every country that nominally has a double standard finds itself, as a matter of fact, in the peculiar position of *never keeping in circulation more than one of its two kinds of money, and that one the worse of the two*. A periodical ebb and flow carries away the metal that rises in value and brings back the one that falls. This is simply and solely an application of Gresham's Law that we have already studied, but the history of the French monetary system since the middle of last century has offered an extraordinary proof of it.

When, under the second Empire (1852-1870), gold fell in value, owing to circumstances indicated in the last section, the French silver money began to disappear and to be replaced by gold money — those beautiful "napoleons" that people were little accustomed to, and that were admired and welcomed by the courtiers as signs of the wealth and brilliance of the new reign. In reality, however, they were only so abundant because they were coined out of a depreciated metal.

This replacement of one metal by another is very easily explained. If a London banker wanted silver to send to India, he tried to buy it in the cheapest market, for silver and gold are traded in like any other commodities. Since gold had fallen 3%, he could only obtain 15 kilogrammes of silver with 1 kilogramme of gold. But by sending his kilogramme of gold to the Paris Mint he could have it coined into 3,100 francs, and then exchange these 3,100 gold francs at any bank or shop for 3,100 silver francs, which weighed exactly  $15\frac{1}{2}$  kilogrammes ( $3,100 \times 5$  grammes = 15,500 grammes). He would manage in the end, therefore, to obtain  $15\frac{1}{2}$  kilogrammes of silver with his kilogramme of gold.

It is easy to see that this kind of business led to the export of a certain amount of silver money from France, and its replacement by an equal quantity of gold money. It was merely the operation

of Gresham's Law — the substitution of light money for heavy money. Whole shiploads of French silver coins were transported to India. They were bought for their weight of silver, to be sold to the mints at Bombay and Madras for conversion into rupees. During this period these Indian mints turned into rupees more than two thousand million francs of French money.

It was not long before there was a veritable famine of silver money in France. In olden times, prohibitive measures would certainly have been resorted to, in order to stop its flight, and perhaps penalties would have been inflicted on those who exported silver money. But economic science, by pointing out the cause of the trouble, made it possible to apply a far more efficacious remedy. Silver money was disappearing because it was too heavy; it was sufficient, therefore, to weaken it by diminishing its weight or merely reducing the proportion of fine metal it contained. This was certain to clip its wings and restrain its flight. This step was taken jointly by France, Italy, Belgium, and Switzerland, by the Agreement of the 23rd December, 1865.<sup>1</sup> The standard of fineness for all silver coins, *except five-franc pieces*, was lowered from 900/1000 to 835/1000, which lowered their value by rather more than 7%. *All these coins, therefore, became, and have remained, token money.* According to the invariable principles that prevail in this matter, they have lost their character of legal money and have only been received since then as subsidiary money or "change."<sup>2</sup> Why was an exception made in favour of the five-franc piece? It was demanded by France, out of respect for the bimetallic principle, for to turn all silver coins into token money would have been to abandon silver money entirely as legal tender. It would have meant adopting frankly a gold monometallist system, as in England, and such a revolution in the monetary system terrified the French government. So the five-franc piece was retained with its former weight and fineness and its character of legal money. It naturally continued to leave the country, but it could be dispensed with more easily than the smaller change; and, if necessary, it could be replaced by the gold five-franc piece.

<sup>1</sup> This is what is called the *Latin Union*, though it included neither Spain nor Portugal. Greece joined it shortly after. It was originally agreed that the coins of each of these five countries should be allowed to circulate in all of them, but this right of free circulation was withdrawn by one country after another as soon as variations in the rates of exchange between them gave rise to speculation in these moneys.

<sup>2</sup> Up to 50 francs between individuals, and 100 francs in the government treasuries. They are received without limit, as a matter of fact, in this latter case, for the State can hardly refuse to accept money it has itself issued.

After 1871, as we have seen, an opposite change occurred in the respective values of the two metals, and the French monetary system was again thrown out of order, this time in the opposite direction. It was the gold money that became too heavy, and consequently began to emigrate; the silver became too light and began to increase in circulation. The operations explained above were renewed, but in the opposite direction. To avoid all obscurity on this essential point we will go over the explanation again.

A Paris banker procured 3,100 gold francs, either in twenty-franc or ten-franc pieces, no matter which. That makes exactly a kilogramme of gold. He put the money in a bag and sent it off to London. In the London bullion market 20 kilogrammes of silver could be obtained with a kilogramme of gold, so he bought 20 kilogrammes of silver, and had it sent back to Paris and turned into coin at the Mint. As the Mint coined a kilogramme of silver into 40 five-franc pieces (200 francs), it handed our banker  $20 \times 200 = 4,000$  francs, in five-franc pieces. His gross profit was 900 francs. Deduct the cost of transport, seigniorage, etc., and also the premium necessary for obtaining gold coins, since they had become scarce, and the operation was none the less a very profitable one. It is plain, too, that for France this business resulted in a decrease of gold money and an increase of silver money. If repeated indefinitely, the inevitable result would have been the entire substitution of silver money for gold money in circulation.

The nations belonging to the Latin Union (which Greece had joined in the meantime) had, therefore, to take concerted measures for averting this new danger. Just as in 1865 they had stopped the flight of silver money by lowering its fineness, so now they could have arrested the departure of the gold money by the same means or by diminishing its weight. But the frequent recoinage, first of one money and then of another, would have ended in the disorganization of the whole monetary system, so it was thought better to resort to a simpler but cruder proceeding — the cutting of the Gordian Knot. *By the Agreement of the 5th November, 1878, the coinage of silver money was suspended.*<sup>1</sup> Henceforward the kind of transactions described above became impossible: there was no longer any profit to be made from buying silver abroad, for it could no longer be converted into money in France.

This measure succeeded completely, too, in preserving for France

<sup>1</sup> At least for five-franc pieces, the only silver legal tender money. Each State reserved to itself the right to coin small silver pieces in fixed quantities, determined by the size of its population. The number has considerably increased since the war.



her fine stock of metallic gold, which had not yet been perceptibly encroached upon. But, as may well be imagined, this Agreement by which silver was excluded from a market of nearly eighty million people and its sale proportionally restricted, had the effect of hastening its depreciation; in other words, it aggravated the evil. Silver, which until then had scarcely lost more than 10% or 12% of its value, fell lower and lower till it reached 77 francs per kilogramme in 1903, a price that represented less than  $\frac{3}{8}$  of its legal value (200 francs) and corresponded to a ratio of 1 to 40 between the values of the two metals. In other words, the five-franc piece was worth only two francs, and the franc, by reason of its diminished fineness, about 36 centimes.

In these circumstances the free coinage of silver has not been resumed, and no one can tell whether it ever will be. We may say, therefore, that although the countries of the Latin Union are still legally under a system of bimetallism, they have in reality practically adopted gold monometallism. *Of all their silver coins only one is still legal tender, and that is the very one that is no longer coined!*

#### IV. WHETHER IT IS ADVISABLE TO ADOPT MONOMETALLISM

After the foregoing explanation there seems to be no room for hesitation. The monometallist system is infinitely simpler, and avoids all the difficulties that we have just enumerated. Then why not adopt it?

Most countries have already done so: first England (1816), then Portugal (1854), Germany (1873), the Scandinavian States (1875), Finland (1878), Roumania (1890), Austria (1892), Russia (1897), Japan (1897), and Peru (1901). And even in those States that are still nominally bimetallic, such as those of the Latin Union (France, Italy, Belgium, Switzerland, and Greece), Spain, the United States, and India, gold is in reality the only standard money. Even in Asia, where silver monometallism used to prevail — which caused Léon Say to remark that the yellow metal was sought after by the white races and the white metal by the yellow ones — gold has more and more taken the place of silver.

Still, bimetallism has not yet entirely lost the game. It still has advocates among economists. Here is the main argument in its favour, and in our opinion it is not wanting in force.

We know that every variation in the value of money results immediately in a variation in prices in the opposite direction (see above,

p. 198). Now when there is only one kind of money, these variations are liable to be frequent and sudden, to derange the entire organization of commerce, and to provoke incessant crises. If, on the other hand, we use two kinds of money as measures of value, then a *sort of compensatory action is set up between them*, which is very favourable to the stability of prices, and consequently also to the prosperity of trade, for in business it is stability above all that has to be considered. The explanation of this compensatory action is rather subtle, but it is easy at any rate to obtain some idea of it.

It must be observed, to begin with, that the variations of value in the two metals will necessarily be mutually dependent, as if there were only one. This is merely a special case of the law of substitution (see p. 36), by which whenever one product is able to take the place of another in consumption, their values are necessarily equal. If electricity is a perfect substitute for gas for lighting purposes, and conversely, then the price of the one is bound to be determined by that of the other. Now there is no more perfect example of substitution than that of the silver franc for the gold franc (and conversely) under a true bimetallic system — that is to say, when the coinage of both metals is free. So far, therefore, as one can be used indifferently in place of the other, one cannot be worth either more or less than the other.

If this be admitted, it must be remembered that the cause of the superiority of the precious metals as the measure of values lies in the fact that their variations in quantity are small compared with the total amount in existence (see above, p. 208). Now the greater the stock of metal and the more numerous the sources from which it is fed, the better will this condition be fulfilled. When it is made up of two metals it is a double stock to begin with; and, moreover, the variations in it will be less perceptible, since it is unlikely that the same causes will operate to bring about an increased output of *both* metals. In the same way a river rises less suddenly and dangerously when its tributaries are more numerous, and when they rise in regions more distant and more different in geology and climate. From this point of view it is better that our metallic reservoir should be fed by two tributaries of different origin — gold and silver — than by one alone. If there were three or four sources, its level would be still more stable, so that theoretically *polymetallism* would be even better than bimetallicism. In fact, if gold had been the only metal, the discovery of the Californian and Australian mines would have caused the utmost disturbance through an enormous rise in prices, and such might have been the effect of the discoveries

in the Transvaal and the Klondyke. The exhaustion of these mines would cause a yet more formidable disturbance in the opposite direction. It hardly matters whether prices are high or low: what does matter a great deal is that prices should not suddenly fluctuate between high and low. The ideal of a good monetary system is *stability of prices*.

Not only are bimetallists unwilling to abandon their system, but they would also like to convert the gold monometallist countries, and they claim that none of the difficulties that are feared would arise if bimetallism were established by international agreement among all the great nations, on a basis of  $15\frac{1}{2}$  to 1 or any other fixed ratio.

This assertion seems outrageous to economists of the classical school. It cannot rest, they say, with the will of any government, or even of all governments combined, to fix the value of gold and silver *ne varietur*, any more than the relative values of oxen and sheep, or of wheat and oats. The value of things is determined solely by the law of supply and demand, and is wholly beyond the scope of legislative control. The precious metals, they assert, are no exception to this rule.

This argument appears to us to involve too sweeping a generalization. Gold and silver are not commodities that can be compared to oxen or sheep or any other kind of goods, for this reason: that their main use, as we have seen, is to be made into money. When, therefore, we speak of the demand for the precious metals we mean almost exclusively the demand made by the mints of a dozen great nations. Now there is nothing absurd in thinking that if these dozen buyers agreed in fixing the prices of the two metals, they could, in fact, succeed. If they declared that they would all buy gold at 3,100 francs per kilogramme, and silver at 200 francs, it is highly probable that they would impose this price on the market.

It would be absurd, they say, to decree that an ox should always be worth ten sheep, or that a bushel of wheat should always be worth two bushels of oats. It certainly would, for the market for these commodities is an immense one, and their price is determined by the wants of each one of us — by the wants of millions of consumers. But if in the whole world there were only a dozen persons who consumed beef or mutton, it would probably rest with them to fix the price, in concert among themselves, either at the ratio of 1 to 10, or on any other basis that they desired. A similar result has very often been obtained, in spite of far less favourable conditions, by the commercial coalitions already described under the name of cartels and trusts.

Of course this line of argument must not be carried to absurd extremes. It is plainly not in the power of governments, even if they were unanimous, to decree that the ratio between gold and silver should henceforth be equality, and still less that it should be reversed and that an ounce of silver should in future be worth  $15\frac{1}{2}$  ounces of gold! Such a decree would be inoperative, because the industrial use of the precious metals, though of less importance than their use as money — it absorbs about half the annual production, none the less — would suffice to prevent the choice of an extravagant ratio like those just indicated. All the governments in the world could never make silver worth as much as gold; men and women would never pay the same price for a silver ring as for a gold one — unless silver were to become as rare as platinum.

But within reasonable limits we have no hesitation in believing that an international agreement would be efficacious in fixing the relative values of the two metals, and consequently in eliminating the principal disadvantage of bimetallism — namely, the disappearance by flight of one of the two metals. Whither, indeed, could it fly, if in all countries it were subjected to the same law?

Is such an international agreement practically possible, however? That is another question. It does not appear so, for each country makes it a point of honour to adopt a gold standard. The English government in particular, whose aid would be indispensable in re-establishing bimetallism, has always set its face against it.

Since the war the position of the bimetallists has been strengthened in one way, because the value of silver has risen considerably, almost to the old ratio of 1 to  $15\frac{1}{2}$ . Consequently there is less fear now of the disturbances that arise from Gresham's Law.<sup>1</sup>

On the other hand, the question of bimetallism has lost much of its interest because the return to metallic money (gold or silver) looks very far off, not only (and inevitably) in the countries that were at war, but in neutral ones as well. The gold remains in the vaults of the banks, and is only used in the settlement of debts and transactions abroad. It seems to be reserved henceforth for the double part of a security for the issue of bank-notes and an international form of money, while paper money remains the only national currency. Here, then, we must speak of paper money.

<sup>1</sup> Silver has risen in price, like all other metals, and from about 2s. an ounce, the price to which it fell in 1902, it rose to 17s. 6d. in 1919. At the same time it must not be forgotten that this rise was due for the most part to the depreciation of the paper note, for the price is expressed in terms of [French] paper money [converted into sterling at the pre-war rate of exchange]. If the price were given in terms of gold, silver would not appear to have risen beyond 4s. 6d. or 5s. In 1920-21, however, it again fell considerably and became worth only about 3s.