APPENDIX E

ON THE VALUE AND STABILITY OF CURRENCY

*οὐ γὰρ ἀεὶ ἴσον δύναται (*sc. *τὸ νόμισμα)· ὅμως δὲ βούλεται μένειν μᾶλλον.*

["for currency does not have always an equal (purchasing, exchange) power; yet it has the intrinsic tendency to be the steadier (among all utilities)"].

Aristotle, *Nicomachean Ethics,* E, 5, 1133b14-15

Aristotle, at the end of his discussion on economic justice, makes the connexion between the function of money as store of value and its maximal stability pregnantly clear. Money would not be a good store of value if its value fluctuated markedly. *NE,* E, 5, 1133b10-15: *ὑπὲρ δὲ τῆς μελλούσης ἀλλαγῆς, εἰ νῦν μηδὲν δεῖται, ὅτι ἔσται ἂν δεηθῇ, τὸ νόμισμα οἷον ἐγγυητὴς ἐσθ' ἡμῖν· δεῖ γὰρ τοῦτο φέροντι εἶναι λαβεῖν. πάσχει μὲν οὖν καὶ τοῦτο τὸ αὐτό· οὐ γὰρ ἀεὶ ἴσον δύναται· ὅμως δὲ βούλεται μένειν μᾶλλον.* [«But with a view to future exchange - that if one stands in need of nothing now he shall have what he wants when he will need it - money (currency) is as it were our surety; for it must be possible for one to get what he wants by bringing in the money. Now the same thing happens to money itself (as to all concrete utilities) - it does not always have the same (purchasing, exchange) power; yet it has the intrinsic tendency to be the steadier»]. This virtual fixation of the internal exchange (i.e. purchasing) - power of money (in the surrounding of a natural economy preeminently, but in all contexts, too, relatively) makes it the ideal security-instrument, the proper vehicle for the storage of value, and,

therefore, renders its functions as universal measure of value and means of exchange the more imperative: the continuous operation of exchange is thereby secured, that is, the permanent existence of the market, and, hence, the very foundation of political society in State. Aristotle goes on observing; *NE,* E, 5,, 1133b15-23: *διὸ δεῖ πάντα τετιμῆσθαι· οὕτω γὰρ ἀεὶ ἔσται ἀλλαγή, εἰ δὲ τοῦτο, κοινωνία. τὸ δὴ νόμισμα ὥσπερ μέτρον σύμμετρα ποιῆσαν ἰσάζει· οὔτε γὰρ ἂν μὴ οὔσης ἀλλαγῆς κοινωνία ἦν, οὔτ' ἀλλαγὴ ἰσότητος μὴ οὔσης, οὔτ' ἰσότης μὴ οὔσης συμμετρίας. τῇ μὲν οὖν ἀληθείᾳ ἀδύνατον τὰ τοσοῦτον διαφέροντα σύμμετρα γενέσθαι, πρὸς δὲ τὴν χρείαν ἐνδέχεται ἱκανῶς. ἓν δή τι δεῖ εἶναι, τοῦτο δ' ἐξ ὑποθέσεως· διὸ νόμισμα καλεῖται· τοῦτο γὰρ πάντα ποιεῖ σύμμετρα· μετρεῖται γὰρ πάντα νομίσματι* [«*This is why all things must have a price set on them; for then there will always be exchange; and if there is exchange, there will be political society as State.* Money (currency) indeed, like a measure of things, equalises everything by making them commensurate. And, in fact, neither would there be political society if exchange did not exist, nor would there be exchange if equality (equalization, equilibration) did not exist, nor would there be equality (equalisation) if commensurateness did not exist. Now in truth it is impossible that things so widely different should become commensurate; but this can happen to a sufficient degree if they are all referred to need (want and utility). Obviously (the common measure) must be one certain thing, stipulated by convention; and this is why it is called *νόμισμα* (coinage, currency - literally: what is currently

sanctioned by positive enactment or customary observance). For it makes all things commensurate; for everything is measured by money (currency)»]. We have here a recapitulation *of the preceding Aristotelian analysis of real and financial market economy.* Noteworthy is the clarity in the series of presuppositions: *political society (State) presupposes exchange, which presupposes an equalisation, which presupposes commensurateness, which presupposes a common measure of need and utility, which is money (as common standard and measure of wealth).*

We saw above that money as standard of value is not conventional, or, if conventional, it is so in a trivial sense; while money as means of exchange is indeed a matter of stipulation, and thus involves essentially a *fiat* element - it is fiduciary in an important sense even if it is commodity-money. Correspondingly, the value of money in its first function is theoretically absolute, or, rather and better, the question about the value of money in its capacity as measure of value is senseless. On the contrary, the question about the value of money as means of exchange, i.e. as *currency,* is very material and important. The explanation of this apparent paradox lies in the fact that currency has a constitutive *use* (as means of exchange), thus, carries a *utility,* and so has a *value* determined by that *utility,* i.e., in practice and for a given embodiment of the means for exchange, by the relationship between supply and demand. This value, consequently, may, and will, vary for money just as it does in the case of all concrete utilities (goods or services). It is as if the standard of distance (length) was itself variable with time. Walras, similarly, emphasised this

crucial difference between all other (units of) measurement and that of value (unit of currency); v. *Elements of Pure Economics or the Theory of Social Wealth,* (Engl. Tr. by W. Jaffé, 1984[2]), pp. 186-188. But the ground of his explanation for that difference is sandy. He maintains that whereas in measuring e.g. the length of a facade, there are three things to be taken into account, namely "the length of the facade, the length of a ten-millionth part of a quarter of the earth's meridian [which is by definition the unit of length = 1 m] and the ratio of the first length to the second, which is the measure of the facade" (*ibid.,* p. 187); in the case of a measure of value, by contrast, "say the value of a hectolitre of wheat at a given moment and given place" (p. 188), two of the corresponding things are non-existent, namely the value of a hectolitre of wheat and the value of a half-decagram of silver 0.900 fine (assumed to be the value of one franc), and only the third thing (the ratio of the two values) exists. The reason for this surprising contention is given as follows: "Our analysis has demonstrated perfectly that value is essentially relative. To be sure, behind relative value, there is something absolute, namely the intensities of the last wants satisfied or the *raretés.* These *raretés,* which are indeed absolute and not relative, are nevertheless subjective or personal and not physical or objective. They are in us and not in things. It is therefore impossible to substitute them for values in exchange. Hence there is no such thing as the rareté or *the value of a half-decagram of silver 0.900 fine;* and the word *franc* [denoting a standard of value] is the name of a thing which does not exist" (p. 188). - This is very confused. We have seen that although

utilities are relative to the satisfaction of needs and wants, and in this sense subjective, they represent the correlation of properties of things with needs and wants of human nature, and, thus, tend to stabilise on certain definite values, objectively determined. This, in fact, is what makes *unitary* prices in markets of goods and services to obtain. The (marginal) utility of things is *for* us, and not *in* us. Furthermore, although the value of the monetary unit (as unit of value) is *trivially* one, and there is no substantive sense in asking about the value of the measure of value, just as it is nonsensical to inquire about the length of the unit of length (in the sense that it is tautologically one), since the standard of measure measures and is not measured; yet the question about the value of the monetary unit (as means of exchange) is very pertinent and pregnant. The real reason for this disparity being that the monetary unit - but no other unit of measurement normally - serves a definite purpose over and above its function as standard of value, namely to be exchanged against every concrete utility (and ultimately to be the *fundamental instrument of debt,* v. Chapter 1).

The confusion in the Walrasian argument reaches its critical absurdity in Say's thesis to which Walras appeals *(ibid.).* Say declares: "Avec un peu plus d' apparence de raison, mais non pas avec plus de fondement, on a nomme le numeraire, ou la monnaie, un mesure des valeurs. On peut apprécier la valeur des choses; on ne peut pas la mesurer, c' est à dire la comparer avec un type invariable et connu, parce qu' il n' y en a point... C' est qui rend impossible la comparaison qu' on a quelquefois tente de

faire des richesses de deux epoques ou de deux nations différents. Ce parallele est la quadrature du cercle d' economie politique, parce qu' il n' y a point de mesure commune pour l' établir". Jean Baptiste Say, *Traité d' économie politique,* 1861[7], pp. 273-275 (quoted by Jaffé in n. 7, pp. 521-2 of his edition of the Walrasian opus). - But the necessity for a common standard of the value of things which would make them effectively commensurable has been shown by Aristotle to be an absolute presupposition for the existence of market (a nexus of systematic exchange) and indeed for the very existence and cohesion of political society.

There is *indeed,* in fact, an absolute measure of value for things, since they have definite values standing in definite value-relationships to each other. The standard of value simply reflects these self-subsisting relationships and does not influence them in the least (save trivially, in the sense of the choice of an appropriate unit of measurement). The monetary (currency) standard, on the contrary (money as means of exchange) *does indeed* influence the network of value-relationships in the system by the Introduction of a new utility within it, namely an acceptable means of universal exchange (the original bond). The value of this utility (of money as currency) is now part of the whole system, and it varies just as any other value does. The unit of value-measurement is, *indifferently,* a certain *quantity* of a given commodity (in the case of a commodity-money), or the *value of this quantity* of the given commodity, just as, for example, the unit of length is *either one physical metre or the length of such physical metre.* Walras introduces an

inadmissible wedge between the two, asserting (erroneously) that this enables us to measure value and wealth (*ibid.,* p. 188). Nothing, naturally, of the sort. Values can only be measured by a unit of value and in no other way - this is presicely why we had to find a common dimension of measurement for all disparate things of use, as the Aristotelian theory makes abundantly clear. And currency measures values because it is value. There is complete correspondence between relationships of value and relationships of quantity of utilities (cf. characteristically Aristotle, *NE,* E, 5, 1133b26-27, quoted in Chapter 4, n. [48]): *equality in value among things as utilities (goods and services) means weighted equality of their physical quantity - weighted according to the standard of value, according, specifically, to the relationship in value between the units of measurement of the utilities equilibrated.*

Aristotle contends that, although the monetary standard varies in value with time, its variation is less pronounced than that of concrete utilities: the value of currency is more stable than the value of other things (for, certainly, currency, whether it is commodity-money or completely fiduciary, is also an *existing thing,* just as any other, *pace* Walras). Aristotle is, of course, describing ancient financial reality of an economic activity operating in a practically and fundamentally non-inflationary environment. To explain this reality one should *first* notice that the utility of a means consists precisely in realising the end, for which it is a means. Therefore, money (as currency) being means of exchange, its value (= utility) as such must be proportional to the amount of exchange realised through its means: only

this amount is not the quantity of things exchanged, but the measure of their utility (in satisfying, directly or indirectly, human needs, wants and desires), i.e. their *weighted quantity* according to the standard of value. Since the standard of value is assumed to be (the accepted) means of exchange as well, the value of currency is proportional to the value of exchange realised by its means, both measured by the standard of value which also serves as means of exchange (as currency). The factor of proportionality (which renders that proportion an equality) expresses the proportion of currency with regard to the total amount of economic value created (in a perfect market-system), or, in other words, the part of total value existing as currency. Thus, we have deduced in effect the *Cambridge Equation of Exchange* (v. Pigou, *The Exchange Value of Legal Tender Money,* published in the *Quarterly Journal of Economics,* 1917):

$$M = hYP$$

where Y is the real income, P the level of prices, M the quantity of money and h the ratio in which individuals tend to keep liquid assets. As it is not so much a question of what individuals wish to do, but of what the institutional and cultural setting of the economic activity objectively allows them to do, the formulations above are preferable to those of standard Cambridge theory, also, in that they equally lead to *Fisher's Equation of Exchange* (v. Chapter 1 *supra pp.24 sqq.*), a more accurate expression of the underlying realities according to the Quantity Theory of Money. (I abstract from the fact that these equations sharply distinguish between the value of utilities in general and the

value of currency and in this way introduce a theoretically unwarranted asymmetry in monetary theory). h is the inverse of the transactions-velocity or of the rate according to which currency changes hands in the process of economic activity.

The need (and hence demand) for money is proportional to the level of economic activity. Assume a commodity-money system. Suppose a higher economic intensity in real terms. Price-stability can be maintained on one or both of two conditions: either the rapidity of transactions or the quantity of money must be increased. Now there is no way to decide in a given isolated system whether what is happening is depreciation of currency or inflation. (There is an interesting exception to this, if the monetary system is monometallic. Then one may gauge the stability in the value of money by measuring the relationship between the value of the money-commodity to the non-monetary noble metal which might have served in a similar way as money-commodity. This method will be employed (in Volume III of this work) in determining the amazing stability of the value of money in classical Athenian economy). Thus, in effect, price stability includes the value of currency. Therefore, to increase in the circumstances the quantity of money, one must supply more money-commodity.

Now notice, *secondly,* that the classical financial sector was *totally and perfectly unregulated.* There was no *Central Bank,* nor any other financial and monetary authority apart from the Mint. There was not even any policy in financial matters, no Treasury or Ministry of Finance with monetary

jurisdiction. *The Market was determining the monetary aspects of the ancient economic system* just as any other (normally) financial or real-economic parameter of it. Consequently, a condition of heightened economic intensity, or even, before that, the drive towards it, would carry spontaneously and automatically with it the required adaptation of matters monetary, financial and real-economic. Between increased rapidity in the pattern of economic activity and augmented supply of the money-commodity (and usually through an appropriate combination of the two, whereby what was temporarily missing from the necessary supply was supplemented by the quickening of the intensified economic activity itself), the variations to the level of economic activity were absorbed and (monetarily speaking) *neutralised,* maintaining, as a result, remarkable currency stability without turmoil in the obtaining rate of interest, and, thus, without impediment to the rate of return on capital employed; consequently, without compromising the increased degree of real economic activity.

This state of affairs explains, furthermore, why currency was more stable than the value of any other utility: there is nothing in the case of a concrete utility (goods or services) to answer adequately to monetary circulation as a means of supplementing difficulty and deficiency, or easiness and superabundance, in its supply. Thus, for instance, increased or decreased spending capacity as a result of higher or lower real income causes more wide variation in the value of non-monetary utilities, and takes more time to be normalised by adjustments on the supply side. Besides, variation in the

value for non-monetary utilities is regularly sharper because of seasonal, epochal and other cyclical factors, as well as of temporal vicissitudes of one sort or another (e.g. the incidence of military or trade war, cutting off of supply roots, closure of markets, tariff or non-tariff barriers etc.), given esp. the customary degree of State-intervention (be it occasional and extraordinary for the period of classical antiquity) in matters commercial or industrial-manufacturing. By contrast, the effect of such one-time interferences or cyclical influences on the value of currency is limited by virtue of the third function of money, its capacity to serve as store of value: movements of money to and fro between saving on the one hand and investment and consumption on the other can mitigate, even practically annul, the results of those factors to an extent of a different order than what analogous movements of any other utility may do, which does not enjoy the function of a standard store of value.

In a natural economic system (i.e. one that operates on the basis of a self-adjustable equilibrium) there is no reason why currency should not be as nearly stable as can possibly be. (Maximal stability of currency is taken for granted by ancient jurisprudence; v. *Appendix F,* Part A: *Digesta,* XVIII, 1, first part). The facts of the case, so far as they regard classical developed economy such as the Athenian, will be presented and analysed in Volume III of this work. One striking confirmation, however, may be mentioned in advance of its full analysis here, and is provided by Xenophon's testimony in his *On Ways and Means* or on *Revenues (Περὶ Πόρων).* Xenophon there (IV, 5-10)

comments on the fact, that whereas for all commodities a markedly increased supply results in depreciation of their value, the case is different with silver, the money-commodity of Classical Athens: more and more of the metal is absorbed as currency by the Athenian-led economic system without any significant effect on its value. Evidently, the demand for the Athenian coinage both within and without the State (it being an international currency in the period envisaged) was such, that its supply could barely keep pace with the need for it: which by istelf attests to the vibrant dynamism of the Athenian economy, where stability and a quick rhythm of development went hand-in-hand. Xenophon adduces as reasons for the stability of silver currency, the removal from active economic operation of its superfluous amount through saving (§7) and the considerable consumptive need for it whether in cases of general affluence (§8) or of destitution (§9), i.e. in periods both of expansion and recession. Xenophon also notices (§10) the facts that increased supply of gold (1) reduces its price (contrary to what happens in the analogous case with silver) and (2) enhances the price of silver. (1) is an effect of gold not being money-commodity in the classical economic system; it thus behaved as any non-monetary commodity. Point (2) appears difficult to explain; but flooding the market with gold will exercise a downward pressure on the general level of prices, since many will exchange utilities for, and carry on their economic activity with, gold (even if it is not a monetary metal and is offered in abundance), at least for some time; this, on its turn, means an appreciation of the silver currency. More importantly, abundance of the

monetised commodity can be absorbed by an excess demand for its monetary function (if the economy is accelerating, or the economic system is expanding in space). But excessive supply of a non-monetised commodity will necessarily bring its value down, provided nothing has changed in the pattern of its demand.

[What has been argued before with regard to cases of dynamic equilibrium, i.e. with changes in the rhythm of economic activity, can be repeated, *mutatis mutandis* and in a simplified version, in the case of static equilibrium, with a steady rhythm of economic performance. This applied to many a State in ancient Greece, esp. to land-locked ones, or those primarily agricultural in character. Here, there is no need for additional supply of money-commodity; the minor variations in economic performance due to cyclical or special reasons, are absorbed through adjustments in the rapidity of economic activity or in balances between saving and spending].

In what preceded, I explained the Aristotelian theory about the greater stability of currency compared to non-monetary utilities in connexion to a system of commodity-money with free-market physical supply of the money-commodity stipulated as means of exchange. In the case of strictly convertible fiduciary money, it may still be left to the market to determine its quantity, in which case the same reasoning applies, and the same results concerning stability are reached, as in the former instance. In this situation, everyone bringing to the appropriate authority the equivalent amount of the specified utility into which money is obligatorily convertible, will get back the specified

quantity of money; the Monetary Authority can in no other way issue money. (Cf. the arrangement called *Currency Board*). The Monetary Authority may on the other hand retain the right to issue money, in principle convertible to a given utility, though without any *strict* reference to the available amount of that utility. Or, finally, convertibility may be completely abolished, and issuance right become absolute. In the last two cases, the automatic operation of the market in the ways above delineated in stabilising currency is curtailed in the former and negated in the latter. Now institutional practices and interventionist policies of one sort or another have to be devised in order to control the movements in the value of money whose oscillations now, as a result, will become more marked, more ample and more irregular. From this radical point of view (the classical one) all modern monetary and financial systems are dirigiste. The difference lies now in how much the Monetary Authority allows itself to deviate *from the single-minded fixation on the purpose of regulating money supply according to the real intensity of the actual and rationally foreseable economic activity. Succumbing to political considerations with the attempted aim of improving economic performance (esp. in the near future) does constitute a serious deviation from its rigid monetary business.* All interference with the natural processes of currency stabilization is disruptive. This is no less true, if it proceeds from best intentions and employs state-of-art techniques: they all turn out to be just wishful thinking, if nothing worse, like entrechment of vested, often corrupt, interests. *Nature will not allow her prerogatives of self-*

adjustment to lapse because of human misplaced and meddlesome aggresiveness. Contemporary proof is provided on the positive side by almost two decades now of United States Economy's march forward; on the negative side by a decade of travelling financial crises induced by similar policies and treated by similar recipies which obstruct (by protecting failure) the natural work of destructive creation to take place. The malady thus remains with us.

In Greek antiquity, money was commodity-based (with a few marginal and extraordinary exceptions). Issuer's interference with monetary reality was, therefore, always a question in the last analysis of State *fraud,* never of avowed policy and systematic practice: one, e.g., debased the standard in order to issue more currency. Such practices were normally last resort measures of necessity and despair - although isolated, usually insignificant, cases of short-sighted purposefulness or purposeful short-sightedness do occur, too. In any case, the fiduciary constituent of money always suffered irretrievably as a result of such tampering. Notably, Athens never in classical times indulged in such self-destructive games with her coinage, even in her hour of extreme agony. The Athenian economy was highly developed and the Athenian currency an international means of exchange (cf. Xenophon, *On Revenues (Πόροι),* III, 2). To a detailed study of classical Athenian economy as a model of a truly free market system will be devoted volume III of this work.