ASPECTS ON THE HISTORY OF MONETARY FLUCTUATIONS AND INFLATION

By LAZAROS HOUMANIDIS

Piraeus Graduate School of Industrial Studies

1. Introduction

When the economist investigates certain historical events subjects the supposed conceptions of Economic Theory to the control of actual facts so that, through the tools of Economic History, to check the schematic truth and the actual truth of the phenomena under examination. For this reason, Economic History becomes the means of enlightenment for every economic theory and policy.

On attempt has been made here to examine historically the monetary fluctuations and the phenomenon of inflation and to connect the logical construction with reality.

The monetary fluctuations are in general, the changes in the value of money which has serious consequences, sometimes not only on a national economy but on the economy of other countries, because of the interinfluence and interdependence of many national economies. Today inflation is an international phenomenon.

Economists have given many definitions to inflation. Thus A.C. Pigou defines inflation as «that part of the increase of prices which is a consequence of a State intervention in the currency circulation and the banking system» [1], or «the form that economy takes each time that the disposals or the reserves of the individuals increase without a similar increase in the reserves of goods» [2].

R. Hawtrey gives the following very simple definition «the issue of excess currency» [3].

M.G. Fain says «that inflation is the state where the money in a community circulates for consumption or investment, the quantity of which increases faster in relation to the stock of goods and the services offered to their purchasers during a definitive period» [4].

Joan Robinson defines inflation as «an abnormal increase in prices» [5].

M. Flamant defines inflation «as a general increase of prices» [6].

B. Hansen defines inflation as «a state of an intensively excess demand which exists in the market for goods». «We can»-he says-«take inflation to mean (amongst

other things) as a situation where extensive excess demand exists in the market for many individual goods» [7], apparently influenced by Keynes according to whom «inflation is the increase of effective demand, beyond the effective supply, to a condition of full employment» [8].

P. Einzig says that inflation is «a state of disequilibrium in which an expansion of purchasing power tends to cause or is the effect of, a decline of the price level» [9].

I believe that inflation is a state of disequilibrium because of the general abnormal increase in prices, while deflation is the opposite and tends to cause a general decline of the price level.

II. The Experience of the Past

The history of monetary fluctuations and of inflation is very old [10]. In the primitive social groups the «trok» was the fundamental element of exchange, the primitive trade «kula» not necessitating a means of transaction [11], but examining the economic life of the first social groups, which were organized into a state, we see that was dominant because they use of whole the equivalent in their exchanges and it was a very rare article which had difficult to acquire or produce.

The first serious economic disturbance that ancient Egypt encountered was during the reign of Pepi II (2738-2644 B. C.) and for centuries afterwards, when anarchy followed, but we have no specific economic information, however to draw definite conclusions.

The invasion of the Hyksos and the subsequent conquest of Egypt by them (1800-1600 b.C.) had similar results on the economy. Only barter economy has been known, until the reign of Toutme III (1479-1449 b.C.), when that Pharao introduced small gold balls or rings (15 grams) as a means of exchange and which were weighed in every transaction [12]. Gold was in use, because silver was very scarce in Egypt being imported from abroad and its price was not as stable as that of gold.

The dynasties of Miné, Hadramaout and Catamba which triumphed in the Arabian peninsula were overcome by the Sheba dynasty, who introduced the use of currency from the Greeks [13]. This currency was depreciated with the decline of the dynasty. The Phoenicians, influenced by Croesus, the king of Lydia, who was the first to use coin currency weighing 14 grams made of electron (70 % gold and 30 % silver), also minted their own currency (VIth century b. C.) [14], which however with the rise of the Athenian currency it lost its relative value.

As concers Carthage, the first colony of Tyros, its currency made of gold and silver prevailed in the area of Carthage's domination, and when Spain was conquered by Hamilcar, the former minted a silver currency [15], which was depreciated with the Carthagenian wars and disappeared completely from all transactions with the ruin of Carthage.

When the Hebrews settled in Palestine and after ceasing to live as semi-no-

mads, they used small gold and silver balls, but during Nehemia's reign (Vth century b.C.) they minted a silver piece of currency weighing 3.38 grams [16] which was depreciated in time and became scarce under the circulation of the Roman currency.

The Hittites used the shekel of barley as a means of transaction and later small balls or rings weighing 8.4 grams [17]. The purchasing value of the barley shekel depended on the harvest. Thus after a rich harvest 1 shekel was equivalent to 5 hectolitres of wheat [18], while the ratio to the mina (mna) was 1 mina = 40 shekels [19]. During the Neohittic period (1st milenium) a currency appeared [20], because transactions increased and the possibility of purchasing precious metals increased. But the decline of the Hittites deprived them of the sources of the precious metals so that the value of these metals increased.

In Mesopotamia, during the Sumerian period, dealings were carried out by means of trok or with shekels of barley and during the 3rd dynasty of Ur the dealings were carried out by means of small silver balls or rings [21] and later by means of silver and copper balls with a ratio of 1 : 2 between the two metals. When the ratio changed, the value changed accordingly [22].

We know that the Assyrians used in their dealings silver, lead and brass [23] and the Babylonians used gold and silver, balls, which were weighed at each dealing [24]. They got to know of the coin during the Persian rule, when they suffered the consequences of its fluctuations. In any case the fall in the price of silver affected the price of barley and this in turn affected the prices of the other commodities.

The Persian coin, the «Daric» coined during the reign of Darius I was made of gold, its ratio with silver being 1 : 13.5 and replaced the cattle and grains by which means had been carried out before [25].

The interception of the Persians by the Greeks and the triumph of Athens displaced the Daric to second place to return later together with other currencies at the decline of Athens.

The Minoan times and the times of Homer (XIIIth-VIIth century) concern the home-craftmanship of the small village and the very few dealings. The Cretans used in their dealings the ox and later the precious metals [26] and a coin (kit) having the shape of an octapos, so that its wear could be determined from its tentacles and therefore the shortage of its actual weight, which was between 8.812 grs-10.108 grs [27].

The Homeric Greeks used in principle as a means in their dealings the ox and the bull [28], obelisks or gold talents [29]. We have no information however on the fluctuation of these measures of dealings, which were not the same during the post-Homeric times and especially during the classical times.

The coining in Greece of the silver currency, which took place during the VIIth century b.C. by Pheidon the king of Argos, who had Aegina and Megara under his rule, was extended to other City-States.

In order to help the poor landowners settle their debts, Solon devalued the silver drachma (574 b.C.) (sissachthia-σεισάχθεια) to be the $72\frac{32}{69}$ of the old dra-

chma. For this reason the Aegina drachma remained as a «fat drachma» (δραχμὴ παχεῖα), while the Athenian drachma as a «thin drachma» (δραχμὴ λεπτὴ) [30].

When Pisistratos (561 b.C.) was in power the drachma was overvalued by 4 % in order that its value be adjusted to the rise in prices, probably to pay thee mercenaries with a heavy currency and also perhaps to successfully compete with the Persians in the Oriental market [31]. Euboea and Corinth imitated Pisistratos by overvaluing their currency [32] and Ippias, the latter's son, doubled the value of the two-drachma coin.

In 407 b.C. the Athenians because they were deprived of the Laurium mines coined a gold currency [33] from the gold offerings and spoils in the temple of Athens [34] As however this was not enough, they coined copper coins alloyed with silver. The depreciation of the Athenian currency was such that the good pieces of currency were hoarded [35]. In 393 b.C. only the silver coin existed [36], so that with the decline of Athens the gold Daric, the Macedonian gold coin (Philip's) and the currency of Kyzikos dominated the Aegean. Prices increased and the depresiation of the Athenian currency was such that even the city of Athens itself used currencies of Kyzikos, Lampsakos, Fokea and Mytilene [37]. In the time of Demosthenes the prices rose by five times as compared to their level in the times of Solon [38].

During this lapse of centuries we must consider that from the plunderings from the wars, the lootings of temples and tombs from gold and silver objects and coins, put quantities of valuable metals into circulation and prices increased.

In the Hellenistic years prices continuoued to increase. At the same time from his victorious expeditions Alexander the Great acquired treasures in Issos and Arvyla. In the town of Soussa he found 120.000 talents [39] and in order to avoid a monetary anarchy he minted his own drachma weighing 4.250 grams [40].

The value of the currency coined by Alexander the Great underwent many fluctuations with variations in the ratio between gold and silver. For example in the time of Philip and Alexander gold production in Thrace increased, as also with the capture of Susa and Persepolis by Alexander resulted in a depreciation of gold at a ratio 10 : 1 to silver, while between silver and copper the ratio declined from 120 : 1 to 60 : 1 and 80 : 1 [41].

During the successors' time of Alexander the Antigonides allowed the circulation of local currencies and currencies of small value of gold and silver [42]. The Lagides adopted the currency of Rhodes, which replaced the Phoenician one. During the years of their peak, deflation was noted to which contributed the hoarding of coins by the rich classes had [43].

Between the IVth and IIIrd centuries B.C. prices rose, the actual day wages decreased although the price of wheat rose by two times and that olive oil and wine roses by three times [44].

During the IInd century b.C. prices continuoued to rise due to depreciated currency as a consequence of the decline in the Hellenistic World. Thus the copper drachma became a monetary unit [45].

During the time of Cleopatra and towards the end of her reign, 51-30 b.C., the drachma was depreciated by 75 % [46].

Refering to ancient Rome, its currency underwent various depreciations, which started with the Carthagenian wars (264-146 b.C.), when the Roman state in this way tried to meet its obligations [47], but the victorious wars on the other hand brought enormous riches to Rome.

In 207 b.C. the ratio between gold and silver was 1 : 17 1/7 changing later to 1 : 13 5/7 and in Ceasar's time to 1 : 8 13/14 because of the gold which came in from Gaul [48]. Prices fell in Augustus' time with the riches amassed from Egypt, but rose again after his death.

Tiberius, attempted to cope with the increased inflation and applied a deflationary policy limiting the expenses, lowering the prices and increasing the nterest, collecting 2.700 million sisterts in order to check the economic activity. But in this way cause an economic crisis in which big enterprises and banks were involved [49].

In order to face the situation and the conditions caused by the deflation and stop the economic slackness, Tiberius was compelled to lend the Banks 100 million sisterts without interest for 3 years against real security [50].

Many times emperors like Tiberius and Nero, in order to avoid an economic upheaval, offered a part of their own funds to balance the budget, while prices continuously increased [51].

From Ceasar to Nero, the «aureus» (a gold coin from 217 b.C. and equal to 100 silver sisterts) became lighter, from 8.18 grs. to 7.4 grs and the silver sistert from 3.90 grs. to 3.21 grs [52]. In the time of Commodos this was depreciated by 40 %, in Septimus Sevir's time by 50-60 % [53] and Caracallas replaced the «aureus» with the «antonian», which contained 1,5 % silver so that the coin had actually a silver overlayer [54]. The silver coins minted by Gallian and Claudius had a 10 % silver content [55].

Thus the Roman currency want from devaluation to devaluation and ended up in becoming a credit currency that even the state itself, the original issuer, refused to accept it for payments to same [56].

Diocletian minted lower quality silver and gold coins, but these were very few in number and disappeared since the inflation created such bod conditions that even taxes were paid in goods [57]. For this reason Diocletian proceeded to dictate fixed prices on transports apart from other series of measures, such as State control on commerce and industry and the prohibition of importation of certain items, including new taxes.

This tragic inflationary condition of the empire obliged Constantine the Great, to mint the «solidus» a new gold coin weighing 4,52 grs and having a 24 carat fineness [58]. This coin remained unchanged in value for 8 centuries and became an international currency. When the Byzantine empire deprived of the provinces which owned mines and with the ensuing economic decline it was compelled to adopt a depreciated currency, as in the time of Nikiforos Fokas, whicq

was called «tertatyron» and it had a value less than the 1/4 of the solidus [59]. During the reign of Nikiforos III Votaniatis (1070-1081) and Alexis Comnenos (1081-1118), the Byzantine currency, (called «hyperpyron» by the Comnenos' times), was subjected to adulteration and the prices rose. The XIIth century the Byzantine currency was depreciated as a result of the economic crisis of the empire [60]. During the reign of Michael Paleologos, when Constantinople was recaptured, the fineness of the Byzantine coin had fallen to 15 carats, then to 9 carats and later to 5 carats [61]. This is the reason why Plython Gemistos proposed that the dealings hat to be carried out in goods [62].

When Islam triumphed, the prices in the Arabian world rose because of the amassed treasures, converted into money. But from the XIIth-XIIIth century the silver diremion (43 grams equalling 8 cents) a coin of the Eastern Caliphate, as well as the gold dinar (65 grs = 4.72 gold dollars) a coin of the West Caliphate depreciated, and the ratio between the diremion and the dinar was changing according to the value of the precious metals.

During the Xth century the ratio between them was 1 : 13, during the XIth century decreased to 1 : 25 and there after to 1 : 50 and to 1 : 150 [63], This was due to a fall in the price of silver and for this reason the treasury adjusted accordingly the currency's title to avoid more serious fluctuations.

The prices rose especially during the Mecca celebrations, when the value of the dinar rose as compared to that of the diremion.

From 1036 A.D. the dinar was especially sought after by the merchants of the Eastern provinces and also the bankers. The dinar was very often adulterated with copper but the careful bankers discovered the fraud [64].

The decline of the Caliphate began in the XII Century and its currencies became subject to depreciation and thus prices continued to rise [65]. During the Mongolian period in Asia there was an exceptional case of inflation due to the devaluation by them of their paper currency, similar to China's [66].

In the West and under the Gothic rule the Roman solidus was still in force but under the Lombardian rule the currency was scarce and during the time of the Franks became more scarse, although some gold and silver coins were issued, as also some other copper coins.

Charlemagne (768 - 814), in order to avoid the centrifugal tendencies in his empire and appear powerful not only in the eyes of the Byzantines but also of the Arabs, coined his own silver dinar [67], Beside this, the economy of his time did not permit the development of the monetary circulation. Thus between the IXth and the XIth centuries the economy came to a standstill, the moving wealth was limited, very few currencies of the local feuds and monasteries circulated, the urban centres came to a standstill and the commercial activity between town and country stopped [68]. Thus we have had the closed economy of the Fortress with the natural economy of bartering. As result of this standstill of the economy, that is its contraction instead of its expansion, came the raids of the Arabs, as well as the Normans, Danes, Hungars so that by the times of the Franks the feudal

regime was fully established. Under this regime it was the harvests that influenced prices together with the amassed wealth from robberies, war victories and donations. Yet it was also noticed that the various feudal masters (the lords) adulterated the coins. H. Pirenne calls feudalism, because of its structure, anti-commercial [69].

During the Middle Ages great fluctuations could not be noted except of those caused by epidemics, poor harvests or raids.

The Medieval economy was chiefly deflationary. The Church condemned the collection of interest, while the monasteries granted concealed loans [70]. In the more liberal Byzantium the Church had also condemned the collection of interest and emperors like Isavros' dynasty and Basil I had prohibited loaning against interest. From the IXth century to Leo VIth collection of interest was being permitted [71], but without a large scale because of the Church's reaction and the mentality of the time.

In the Moslem world also, the receiving of interest was prohibited as long as the Koran was contrary to this. Yet the Hebrew wholesale merchants and later the Christians as well as the rich merchants and bankers of Horasan, Basra, Vassorah, Ispahan, Sindh, Tripoli, Castille [72] proceeded to grant loans.

It was Crusades however which awakened commerce, credit, dealings and transactions in the entire Western world as a consequence of their contact with the Moslem world, and from this time on prices began to rise, contributing to the revival of the economic from the XIth century on [73].

With the Revival of the Economy (XIth-XVth century) the appearance of the moveable wealth became more intense, currency prevailed in the transactions, the countryside was commercialised and the urban centres showed up, while credit stimulated economic and financing more and more. It is interesting to note that the first money order originated from the second half of the XIIIth century [74], the cheques from 1374 [75], the endorsed bill of exchange from 1410 [76], as well as the opening of accounts for the benefit of third parties [77], and the public banks [78]. Thus the economy began to function with money, and the prices started ro rise again with the increase of economic activity.

From the XIIth century the cities coined their own currency (Cremona, Brescia Verona, Pisa, Lucca, Genoa, Venice, Florence, Paris, Bruges, Cologne, etc.) of which the most hard were those during the rise of the Italian cities, the gold Florin (early 1252) of Florence (3.53 grams of 24 carat fineness), the Genoino of Genova 1252 a.D. with the same weight and fineness, and the gold ducat of Venice (1284) (3.559 grams and 24 carats). These currencies especially of the latter two cities almost displaced the Byzantine currency from regular transactions [79].

France devalued ten times its currency between 1346-1350, while previously Philip IV the Fair (1285-1314) falcified the currency which was adopted by Louis IX the Saint (gold coin 4.13 gr. and in ratio between gold and silver 1 : 12,5). During the Reign of Charles V (1360) a stability in prices appeared but only for a short period of time [79α].

During the XIVth century a downward trend was noticed in the economy not only because of the plague epidemic but also because of the Hundred Years War.

As the years went by, commerce strengthened and Frankish, Italian, Arabian, Spanish (Castiglia) coins began to circulate.

It is a fact that prices began to rise before the Price Revolution [80] because the fairs, the Chambers of Commerce and the end of the Hundred Years' War helped commerce and also cultivated the tendency to prefer gold.

The decline of Venice began from the XVIth century [81] with the second invasion of the Moslem world. The roads to the East were closed and the need to find new ones encouraged the geographical discoveries [82]. At the same time the founding of new national states, the technological inventions and the new ideals [83] in peoples' lives, contributed to the change of the world into a commerical beehive. Thus the mercantilistic dogma defended population-wealth-power [84] with the intervention of the State-sovereign (to its glory) in the economic life, glory from which its subjects were supposed to be favoured too.

The religious Reformation during the XVth and XVIth centuries attempted to justify speculation. The prevailing spirit was «dearness-plenty», although between the XVIth and part of the XVIIth centuries the Price Revolution experience did not favour a rise in prices [85].

Spain suffered most from the Price Revolution and this because Spain was the biggest importer of precious metals which depreciated by one half the value of its currency (second half of the XVIth century). In addition Spain did not have cooperatives as powerful as those of the workers of Florence and Belgium for an organised resistance against the rise of prices [86].

The inflow of precious metals from the New World and the new methods of mining increased still more the quantities of precious metals supplied by Tyrol, Saxony, and the town of Annaberg and the various colonies of Africa [87].

Prices rose especially in France between 1585 and 1635 and in England till 1650 [88]. We cannot however support the contention that after 1630 the rise in prices was due only to the monetary factor, as we cannot say that inflation today is due to the energy crisis alone. In the various fluctuations of prices we must take into consideration the wheat famines of 1556, 1586, 1617, 1630, 1666 and especially that of 1709 [89].

On the other hand, inflation had especially caused great pressures in England when, during the reigns of Henry VII (1485-1509), Henry VIII (1509-1537), Edward VI (1537-1533) devaluation of the currency because of the low fineness of the metal took place [90].

The situation in England after the defeat of the Spanish Armada in 1588 improved, and prices tended to get steady, although the same did not occur in Spain after the defeat of Philip II. Thus in the times of Philip III (1598-1621) the Spanish currency was depreciated to half its value and in Philip's IV reign (1622-1665) the

wholesale prices in Seville rose by 93 %, to fall later to 87 % with the anti-inflationary measures taken [91].

France also got acquainted with inflation after the wars of Louis IV who left a public debt of 3,5 billion livres i.e., fifty times more than the yearly revenue of the State, despite the fact that Colbert, with his economic policy, contributed so much to the State Treasury [92].

In general from 1375 and for about 135 years thereafter, we have a decline of economic activity i.e. until 1510 [93] at least in France, England, Germany and Italy.

This period was characterized by a high purchasing value of the currency and low prices due to the decrease of the population and the demand for commodities. The great plague epidemic (1348), and mainly the Hundred Years' War (1338-1453) contributed to leave the soil uncultivated and in general ruining thus the countryside and the communications [94].

Historians agree that this slackness in the economy was due to the lack of precious metals during that period till 1510, and it was chiefly due to their hoarding [95]. Although this view is not without revelance it does not represent the basic one, because the slackness in the economy was due rather to the inflation produced with clipped coins according Gresham's law, as a resault of the prevailing unstable political and social conditions in this period.

With the passing of time the parity, between the pound, the soldi, the dinar and the mark became as follows: One livre was equal to 20 soldi, one soldi was equal to twelve dinars, while one mark of pure silver weighing 245 grams was divided into eleven livres and thirteen soldi [96]. By 1540 the livre was depresiated and increased the value of the mark to 13 livres and 12 soldi. Till the year 1601, the livre had lost one half of its value, and till 1726 the mark continued to increase its value at the expense of the livre [97]. The «Law scandal» in France (1720) contributed to this because, as if the wars of Louis XIV, which were so destructive to the economy of France were not enough, the storm which the «Law scandal» had caused, added to uncertainty and prices rose by 88 % [98].

In the Ottoman Empire a continuous depreciation of the piaster also took place during the XVIIIth century and caused prices to rise [99].

Between the XVIIth and XVIIIth century prices rose due to poor harvests, the wars and internal agitations [100]. Especially during the Thirty Years War prices rose at first to fall heavily after, but they rose again between 1648-1660 [101]. Towards the end of the XVIIth and the beginning of the XVIIIth century prices fell in England for an economic crisis occoured in 1709. Prices continued to fall till 1763 towards the end of the Seven Years' War (1756-1763), and began again to rise suddenly in 1767 [102].

During the War of Independence in America (1775-1783), inflation was especially intense. During the French Revolution (1789) an excessive issue of paper currency (assignats) in 1791 created an ominous threat of inflation, when the Directorate adopted a new paper currency, which was issued based on the promise to the bearer that he would receive an amount of commodities of an equal nominal

value. Actually the new paper currency too (mandats) at the beginning of its issue, lost so much of its actual value that it was equivalent to 18% of its nominal value. Finally it completely lost its value [103].

The Napoleonic Wars (1793-1815) created relatively small monetary fluctuation but not one of an intense inflation. On the contrary in England, paper currency lost the 71 % of its value (1813).

The poor harvests nevertheless contributed to a general rise in prices in France as those of 1811, 1812, 1816, 1817-1818 [104], which continued beyond 1820 [105].

Moreover the Napoleonic Wars contributed to a decline of land produce, and naturally the recovery of the French farmer was effected only with State protection. Apart from that the fluctuation of prices was not avoided, as evidenced in the crises of 1818, 1826, 1830, 1837 and 1847, and which occurred mainly because of speculative and commercial reasons [106]. As concerns both England and France after the crisis of 1847 the prices rose by 42.19 % for agricultural products and by 7.94 % for industrial products [107].

France was to experience across another inflation in the reign of Louis XVIII and Charles X, and later in Louis Philip's reign (1848), while in the reign of Napoleon III the Franco-German war of 1870 cost France 17 billion francs increasing the public debt from 13 billion to 30 billion francs [108]. In any case the period 1830-1873, meant for France a depreciation of the franc, because of the revolutions of 1830 and 1848 while the Paris Commune in 1871 brought the franc down, but it was restored in 1878 [109].

Between 1850-1873, after the California gold mines were discovered (1848), general economic activity and the rise of prices moved together [110]. Indirectly, the whole world was influenced now by America, but of course not to the same extent as when prices rose in the period between the XVIth and the XVIIth century. On the other hand, the Revolutions of 1848, the Crimean War (1854-1856) and the American Civil War (1861-1865), when the Federal Government issued 450 million dollars (Greenbacks), all contributed to speculation and to a general rise in prices [111]. Besides these events the rapid development of the railway communications brought an increase in prices [112].

The exploitation of the Californian and Australian mines between 1850-1873 was accompanied with a big increase in prices and the same has been noted between 1890-1914 with the discovery of the Transvaal gold mines [113].

Between 1873-1896 we have had deflation, especially in England, when prices reached the lowest point (1895), while in America exactly the opposite occured in 1893 [114].

In general until 1896 we have had deflationary, period, but later and especially after 1900 prices rose continuously, because of the discovery of precious metals in Australia, South Africa and Alaska. In South America from 1878 on inflation dominated, which could not be controlled; as the pesos underwent a heavy depreciation [115]. In 1892 Austro-Hugaria devalued its currency by 85 % [116] and in 1896 Russia devalued her too currency by $^1/_3$ [116a]. The Spanish-American War (1898)

caused in Spain a serious inflation and only in 1913 was the monetary equilibrium restored [117]. As far as Italy is concerned, inflation pressured the country from 1866 until 1905 because of State expenses [118].

Between 1905 until World War I prices continued their upward trend because of military preparations.

World War I was the beginning of a large increase in military expenses, the abandoning of the gold standard and the subsequent inflation. The value of the German mark had already fallen, so after the end of the war it did not rise again. The same happened with the Austro-Hungarian crown, which followed the mark. The value of the French franc on the contrary remained steady for a long time. The Russian rouble lost 27 % of its value and much more with the Bolshevik revolution, so that at the end of 1918 one sterling pound was equal to 150 roubles [119], while after, the value of the rouble in the international markets became zero. Great Britain was the first country which applied anti-inflationary measures by increasing the bank interest by 10 %. In addition England proceeded to increase taxation in order to cope with the rise of the wholesale prices which has risen by 140 % and the cost of living by 120 % - 125 %, since the outbreak of the war [120]. In the other belligerent countries, inflation was much more threatening while they proceeded to acquire internal loans. But among all these countries Germany was especially affected.

The non-belligerent countries did not suffer less from inflation in spite of the fact that international public opinion believed that with the end of the war the purchasing value of the currency would be restored and thus psychologically a favourable climate for anti-inflation existed.

In 1925 Great Britain returned to the gold standard in order to create confidence in her currency and be able to support it, in a way which allowed her to stop the rise of prices and to develop production. In 1928 France adopted the gold bullion standard and issued the devalued new franc [120α]. The U.S.A. government with the «New Deal» adopted an expansionary policy in helping the economic activity, after the great 1929 crisis, while Germany by adopting the Schacht plan, succeeded in liquidating her loans and in this way helped her economic recovery.

We must mention here inflationary pressures, which were present between 1921 - 1925 in Germany, Poland, Czechoslovakia and Finland which did not cause an increase in currency circulation. On the other hand in some cases, the currency circulation increased, (Austria between 1922-1923 according to a remark by Aftalion) but in no way affected prices [121].

In Latin America the Chilean peso was depreciat (during the war) while its vaiue increased again during 1918. The same thing happened with the peso of Argentine, while the pesos of El Salvador, Venezuela and Colombia remained stable [122]. We can say the same for the Japanese yen [123], while the Italian lire underwent a heavy depreciation. From 1927 (with the help of the anti - inflationary policy)

the italian lira as compared the english pound was restored, to the ratio of 1 : 92 while prior to 1927 it was 1 : 150 [124].

In 1923 there was a currency change in Austria, Hungary and Poland and a special reform was conducted with the rouble of the new Bolshevic state.

England during of the World crisis between 1929-1932 abandoned the gold-standard (1932) and Greece at the same year devalued the drachma.

The U.S. dollar reached the peak of its crisis, in 1933 having a speculative pressure for the first time since 1914 and in 1934 it was devalued and stabilized with an equivalence of 59 % as related to its old parity. The Italian lira was devalued by the same percentage, while the French franc by 30 %, the Belgian by 28 % and the Swiss franc by 20 % [125].

In 1936 the rouble was devalued by 77% to follow in 1950 a revaluation by 32 %.

With the outbreak of World War II the English pound was depreciated and the French franc followed, while the Spanish peseta was devalued by 17 % in relation to the U.S. dollar and the Portuguese escudo by 6% [126]. The end of the World War brought a continuous increase of price all over the world.

In 1949 the British pound was devalued in relation to the dollar from 4.02 to 2.80 dollars to undergo in 1967 a further devaluation from 2.80 to 2.40 dollars. In 1948 the old Germany mark was replaced by the new D.M. In 1961 west Germany devalued it from 4.2 to the dollar to 4 dollars and in 1966 from 4 dollars to 3.66. With the new revaluation the ratio between mark and dollar from 1973 to 1976 rose by 22,65 %.

The wave of inflation included all the countries of Latin America especially Brazil and in 1954 Mexico devalued its currency (peso).

India did not remain immune from inflation, while in the Far East, Japan suffered inflation too and in 1973 and 1976 competed with the dollar in devaluations.

The experiment (1923) of Protopapadakis to cope with the needs of the Greek State, through the cutting of the drachma in half, i.e. 50 %, (the rest representing credit bonds), did not encounter any monetary derrangement, except for the consequences of the World crisis (1929 - 1932). An irregular rise in prices has been noted since and during the period of the German occupation, when the levels of inflation rose to incredible heights. Thus, when the drachma was restored in 1944, the ratio was fixed for one old drachma to be equal to 50 billion occupation drachmas.

In 1953 the drachma was devalued and its parity to the dollar fell from 1: 15 to 1 : 30. In connection with the dollar, it followed its devaluations (8 % in 1971 and 10 % in 1973) so that today the relationship between the two currencies is 1 : 36 and more.

World War II and the immediate post war period can be considered as one of accute inflation, which caused disturbances in the economy, and in the balance of payments. These disturbances in turn induced conditions for a period of stagflation which followed.

The spreading of inflation was such that even in countries which supposedly can control their monetary circulation such as the communist ones, their economies underwent inflationary pressures, especially in Hungary and Yugoslavia, where inflation has reached the level of the non-communist countries [127]. Thus the prophecy of Lenin who was expecting the fall of capitalism because of the inflation, today concerns also communism.

Inflation is the most basic problem, the «headache» of the economists in the non-communist and communist countries. And this is so because, even during the time of the Price Revolution, inflation has not struck against the universal economic structure as it has today. We are living in a world where the different economic aggreggates have increased in a parallel way with the qualitative developm-ent in the various sectors of human development. Consequently the universal chain of interdependence among all countries is more complicated, narrower and more sensitive. In addition, during the French Revolution and during the first half of the XIXth century in England and also in Germany (1918-1923) we did not have inflation as pervasive as today.

During World War II and especially from 1948 till 1959 an international increase in prices was noticed to have spread over the industrially developed countries by a percentage of 2 1/2 % per year [128]. The Korean war in 1950 increased the prices of raw materials by 15 % in Germany, 20 % in Holland, 57 % in U.K. The delay in the rate of economic development during the same period limited the inflationary pressures. After a brief deflationary break, which followed the War, a further increase of prices started in 1954 and continued [129], while the rouble was devalued in 1961 in a ratio 1 new rouble = 10 old roubles = 0,987412 gr. of gold.

The percentage of the annual inflation rose fast beyond the 4% and as from 1969 it rose still more to 6 % and above. From 1972 until 1976 inflation accelerated first on account of the industrial development and the military expenses and second as a consequence of the quadruple rise in the price of oil [130].

With all this upheaval caused by upward shooting of prices inflation after important increases in prices for 1976-77 will continue, and unemployment will be accompanied by a decline in the level of the national product. In this way Philipp's curve has been proved by the facts of stagnflation as being now untrue [131].

III. Before the present

From the whole historical review we have seen an evolution of rising prices and althrough there were some intervals of declining or stationary prices generally speaking, the world trend was in an upward direction of always high records.

Concerning monetary fluctuation and inflation examined previously, we have noted that the change in the value of money is not only due to the quantity of money. Other contributory factors such as governments, epidemics, wars, famines, speculation, psychology etc. have influenced the value of money.

There are also some other factors which are responsible for causing monetary

fluctuations and inflationary pressures, especially in our times. These factors are : The excessive demand, the deficit budget, the increase in credit, the monopolies, the multinational or transnational corporations, the bureaucracy, the lack of effective wages policy, the irrational public expenses, the lack of conscientious participation of the people in the anti-inflationary task of economic policy, the different structures, unnecessary state interventions, the irrational tax policy, the abnormal inequality distribution of national income, the decrease of working hours, the excessive spending of uncontrolled advertising, the irrational productivity performance, etc.

The two World Wars specifically their military preparations and procurement of armaments during the hostilities are connected with inflation. In fact today the excessive increases in the national budgets because of armament expenses create, among other things, considerable inflationary pressures.

We shall demonstrate below with a matrix of armament-disarmament of the West and the East (as appeared in the American Economic History ed. Berkeley 1970, p. 25) the importance of the reduction of the burden of military expenses having as prerequisite that b>a, where b is disarmament and a is armamant.

Countries A

Countries B	Armament	Disarmament
armament	-a, a	-a, b
Disarmament	-b, a	b, b

If we accept that the countries of the Western alliance (NATO) A and the Eastern alliance (Warsaw convention) B, are arming, then both will have a loss (-a,-a) as long as they proceed to increase armament costs at the expence of the production of other commodities for consumption. If the West keeps disarming and the East is arming, then we are faced with a military position of the latter rise against the former (-a,b).

In the opposite case, the West is arming and the East disarming then the former will be in advantageous position (b,-a). This is a rather urealistic case. However both alliances formally disarm then both will have a gain (b,b). There is also possile that both agree on disarming but the one side may violate the agreement e.g. the East, and getting armed, (-a,b) then the West will want to do the same in order to be again in the initial position i.e. we shall have the loss of both (-a, -a).

The argument that an international control could avert the one alliance of nations from arming at the expense of the other is unsupported in view of the fact that such a control is unrealisable in practive.

Thus we arrive at the conclusion that, as we had once claimed [132] inflation is first an international phenomenon mainly due to the armaments and it will continue until a real peace is established. Second inflation is due also to mistaken theories and to the lack of a coordinated plan for coping with it in the countries which have been struck by inflation. In addition the system of fixed exchange rates, as established after 1944 until its downfall, has played its part in creating inflationary pressures.

III. Annex

We have today in economics two basic views which compete with each other as far as monetary theory and policy are concerned. The first one is that of the Monetarists (Friedman) [133] and the second one that of the Fiscalists (Samuelson), which are working the same foundation of the paper money and monetized credit system to maintain full employment and price stability, while a third one tries to go through the first two (Aschheim). Friedman's view that money can come from heavens in a percentage which produces a steady rise in its quantity [134], gives us the idea, on the one hand, about the easy monetary supply, yet it explains that the increase of the prices and incomes, as Kaldor says, comes from the sky by means of a helicopter [135].

But the importance of the dynamic process from the increase of the quantity of money depends, as Don Patinkin claims, upon the manner in which this came into the economy [136]. Thus Don Patinkin, and other economists as well, would not disagree to the policy of handling a deflationary gap with a budgetary policy [137].

There is no doubt that the quantitive theorists follow the easy way of the monetary supply and through it the stimulation of the economy, but the fiscal policy is fundamental for the economic development and the policy on money. Anyway the policy of economic development bringing the economy to expansion has consequences on the rise of prices. Also the wrong distribution of public resources may cause inflation [138].

According to our opinion the Walras model, assumes the existence of a system of economic and monetary equilibrium and by the method of successive approaches we may have the State replace the entrepreneur coordinator, who is between the two markets of services and products. We can say that the natural parameter — to use the expression of professor Rugina [139] — replying also to his aspect for a steady equilibrium, is not destroyed if we replace the private monopoly by the State monopoly for certain enterprises, so that the natural parameter is strengthened in case the State replaces the private initiative, which avoids to undertake a certain business or because a firm monopolizes the market with a higher price than the free

competition's price. Thus the monopoly will be conducted by the State at prices of perfect competition so that the marginal cost is adjusted to the price [140].

Consequently in the model of a Rational Economy [141], which'is not dogmatic towards either the private enterprise or the nationalised one, we have domination of perfect competitive prices with a monetary stability, with dynamic profits but with nationalisations and other changes of a social nature which minimize the cost of dependence i.e. the psychological cost which exists between the production factors [142].

We have already spoken about monetary fluctuations and inflation, we must now add a per functionary reference to the factors which determine the value of money.

The various equations and functions, which have been pretended in the literature up to now, on the determination of the value of money and its changes, are not satisfactory.

The classic quantitative equations of the Fischerian type (Newcomb, Pantaleoni, Fisher, Kemmerer, Lubbock, Banos, Schumpeter, Penderson etc.) have not taken into consideration, in principle, the factors of production, as well as other elements, while P is an index to them whose level is not given by the explanation of the value of money, except only the change of prices between two periods of time. They also display the weak point of not giving a complete interpretation of the velocity of money.

The quantitative equations of the Cambridge School (Marshall, Pigou, Robertson, Hawtrey, Keynes of «A Tract of Monetary Reform»), determine from their side the value of money at a point in time, when relative prices are conceived as steady. In addition they examine the demand of money and they overlooked the investment goods.

With Walras' view on equilibrium, the cash, which people desire to keep (encaisses desirés) [143] are not excluded, a view which Karl Marx could also accept [144].

Keynes' equation in «A Tract of Monetary Reform» (1923) as well as his fundamental equation PO = MV in «A Treatise on Money» (1930) relate the quantitative theories of the classical type conceiving money as a medium of exchange. The «General Theory» on the other hand examines money also in the sense of a store of value by the combination of these within the general theory of value of interest and employment, a path that Wicksell first opened with his book «Geldzins und Güterpreise» (1898).

Say's law of Markets always accepts the equality between the value of distributed rewards to the factors of production and the value of the produced product excluding the possibility of disequilibrium in view of the assumption that production creates its own demand.

Keynes opposed Say's law invoking defficient demand, and combining this with liquidity preference and the propensity to invest or otherwise with the interest and the marginal efficiency of capital. But Keynesian theory has been proved erroneous because :

a. The defficient demand is relative and cyclical and not permanent and is not verified by today's realities and especially with the policy, which is in accordance with his views of expense-abundance. This policy of expense-abundance does not bring the monetary flow towards an equilibrium with the flow of commodities and services. Today we are faced with an overefficiency or excess demand which has become one of the reasons of inflation.

b. The increase of the liquidity preference appears with decline of the marginal efficiency of capital, which occurs during the downward phase of the cycle, proving in this way a transient and not a permanent decrease in investment.

c. The increase in the liquidity preference happens also, when the stock exchange market booms in the upward phase of the cycle. Thus while interest determines the investment, at the same time the interest is determined by the investment.

Don Patinkin through his own theory has, placed himself also outside actual realities having accepted that the needs are unchanged and also that production and prices are steady. He therefore disregarded the time element and the changes therein. In continuation he did not consider the advance payments and the increase in the quantity of money. The importance of the fluctuations in income for various factors is missing from his theory.

Friedman's theory too,in spite of his attempt to renew the quantitative theory, has some weak points. Because, on the one hand his is a pure theory of choice and on the other it is a short time analysis from which the element of foresight is missing. In addition changes in prices and the nominal income can precede the changes of the actual cash that the owners wish to keep. Of course Friedman in his well known article : «The Quantity Theory of Money-A Restatement, Studies in the Quantity Theory of money» (1956) uses a broadly defined variable, which he is supposed to represent «any...variables that can be expected to affect tastes and preference...» such as indexes of migration miles of railway travels and «the like». He also interpretes *u* as «including variables affecting... the relevant technological condition of production» [145].

We have just mentioned above many variables which affect the value of money and we shall proceed here below to formulate a function which historical analysis has taught us.

In general, the above theories, with Patinkin as partial exception, are antimerchandising in the problem of the value of money and in this way they result in inflation.

Ascheim's and others' reaction, without referring to some views on neutral money as that of Hayek, was justified. Yet these view do not formulate a function which can show the determination and change of the value of money and which could contain not only the production factors but also the technological factor as well as the non monetary factor and expectations.

To this effect we offer the following function according to our own views.

$$V_m = \frac{1}{P} = f\,(M,\ V,\ r,\ \frac{E}{0})$$

The V_m in the above function is the value of money, M is the total quantity of money, V is its velocity, r the general level of interest, 0 the possibilities of production (capital and technological equipment, rationalisation of production and its general conditions [146], the reaction of trade unions, of the entrepreneurs, the fundamental banking system, and other basic factors affecting production directly or indirectly), E the forecasted future result of production.

According to our function the quantity of money influences the level of prices and the rate of interest through the holding of cash; the prices in turn affect the quantity of money exactly, as the rate of interest through the quantity of money affects the level of prices. The velocity of money affects its quantity and, through this, the rate of interest and the level of prices. But the quantity of money also affects the velocity, as also the rate of interest and the prices. All parts of the function affect the value of money, which is the dependent variable.

In the relation $\frac{E}{0}$ we must take into consideration certain factors concerning the special conditions of a country in as much as this relation concerns the social, economic, political, institutional structures etc.

In the case that $0 > E$ then the prices will fall, but if $0 < E$, it is obvious that the opposite will happen. As the productive forces evolve and develop, the ratio $\frac{E}{0}$ will increase and we shall have a rise in prices, in the long run. In the case again where we have full employment, the increase of E in relation to 0, as well as the increase of the $\frac{E}{0}$ will cause inflation. If $0 = E$ we have equilibrium and in this case money may be counted as a numéraire and the rate of interest should be such as to equalize the holding of cash and the total quantity of money.

NOTES

1. A.C. Pigou : Economics of Welfare, 3rd issue, 1939.

2. A.C. Pigou : The Veil of Money, London 1949, chap. I.

3. R.G. Hawtrey : Trade and Credit, 1928, Chap. I. Cassel gives a similar definition saying «...inflation is a too plentiful supply of currency» (G. Cassel : Money and Foreign Exchange after 1914, London, p. 61-62).

4. M.G. Fain: La lutte contre l'inflation et la stabilisation Monétaire, Paris, 1943, p. 26.

5. Joan Robinson : An Introduction to the Theory of Employment, London, 1949, p. 43.

6. M. Flamant : L'inflation et la Politique Anti-inflationiste, Paris, 1952, p. 33.

7. B. Hansen : A study in the Theory of Inflation, London, 1951, p. 3.

8. J.M. Keynes : The General Theory of Employment, Interest and Money, London, 1951, pp. 19, 21, 301, 303. Keynes also use the term «full inflation», which is reached after the attainment of full employment because he recognize that the raising of the level of employment generally involves some inflation pressure before to be attained. A Lerner (Economics of Employment, New York 1951 Ch. 13) distincts between «low full employment» without significant inflation and «high full employment» with significaut inflation.

9. P. Einzig : Inflation, London, 1952, p. 22. Einzig also defines two terms : «reflation» which indicates deliberate expansionary effort to prevent a fall in prices or to stimulate a recovery of prices following upon their fall» and «disinflation», which indicates efforts to check a rise in prices or to reverse an inflationary rise already taken place» (P. Einzig : p. 22-23). In his thesis : «Le mouvement des prix in France depuis 1914», appeared in 1923, Einzig, for correct definition discriminated inflation : in «monetary inflation» and in «inflation of prices». In case there is a superiority of the means of payment over economic requirements that causes the first, while if it happens the opposite and the existing quantity of means of payment requires an increase of it that causes the second.

10. J. Lescure : Les mouvements des prix de longue durée, Paris, 1910.- A. Despaux : L'inflation dans l'Histoire, Paris, 1923.- Les Devaluations Monétaires dans l'Histoire, Rivière 1936. R. Lewinsohn : Histoire de l'inflation, Paris, 1926. -G. Pirou : La Monnaie, Paris. B. Nogaro : La monnaie et les systèmes monétaires, Paris, 1945.

11. E. Babelon : Les Origines de la monnaie, Paris, 1897, and R. Thurnwald : L' Économie Primitive, French transl., Paris, 1937, p. 111.

12. W. Durant : Histoire de la Civilisation, French transl. Payot, Paris, 1947, p. 209 and F. Melis : Storia della Ragioneria, Bologna, 1950, p. 89.

13. S. Moscati : Histoire et Civilisation des Peuples Semitiques, Paris, 1955, pp. 186-189.

14. G. Contenau : La Phenicie, Paris, 1949, p. 176.

15. P.Bonfante : Storia del Commercio, Parte Prima, Roma 1938, p. 79 and B. Washington: Histoire de la Civilisation du Carthage, Paris, 1961, p. 73. The copper mines were in Sardenia and the silver mines in Spain (J. Toutain : L' Économie Antique, Paris, 1924, p. 256).

16. A. Chouraqui : La Vie Quotidienne des Hebreux aux Temps de la Bible, Paris, 1971, p. 136. -Ch. Guillebert; (Le Monde Juif, Paris 1950, p. 8) speaks about Jezekiah, who coined a currency in the 5th century b.C.

17. O.R. Gurney : The Hittites, London 1954, p. 84

18. E. Cavaignac : Le Problème Hittite, Paris, 1936, p. 135.

19. On these also in G. Contenau : La Civilisation des Hittites et les Hurittes du Mitanui,Paris 1948 948, pp. 111 and 129.

20. L. Delaporte : Les Hittites, Paris, 1936, p. 237.

21, 22. G. Childe : What happened in History, edition Penguin books 1969, p. 106.-P. Carleton : The Buried Empires, London 1939, p. 198 and F. Melis : Storia della Ragioneria, p. 67,68.

23. F. Melis : 45.

24. L. Delaporte : La Mesopotamie (Les Civilisations Babyloniens et Assyriens), Paris, 1923, p. 332.

25. W. Durant : Vol. I, p. 287.

26, 27. G. Glotz : La Civilisation Egéenne, Paris, 1937, pp. 224, 226 and F. Melis : pp. 91, 276 and La Ragioneria nella Civiltà Minoica, Roma 1948. J. Capart-G. Contenau : Histoire de l' 'Orient Ancient, Paris, 1936, p. 93 and F. Matz : Cretar, Micene, Troia, Italian transl. Rome, 1958, pp. 93-96.

28. Iliad I, XX, 179 and I, XXIII 702-705, Odyssey A. 430.

29. Iliad : I, IX, 122, I, XIX, 247.-P. Courbin : Valeur comparée du Fer et de l'argent lors de l'Introduction du Monnayage in «Annales» 1959, No. 2, p. 209, and A. Fanfani : Poemi Omerici ed Economia Antica, Milano, 1961, p. 40.

30. Aristoteles : Ath. Politeia VI 3 - 4. I.F.R. Glovel : The Ancient World, London 1953, p. 65 and A. Boeckh : The Public Economy of Athens, New York, 1976, p. 16. -The weigh of the Athenian drachma after Solon's reform was 4,36 gr. and its fineness 0,985.

31. P. Gardner : History of the Ancient Coinage, Oxford 1918 pp. 157-158.- and L. Th. Houmanidis : History of Economic Life, Athens, 1968, p. 89.

32. H. Michell : The Economics of Ancient Greece, Cambridge, 1957 p. 318.

33. The ratio between gold and silver fluctuated at the level of 1 : 13.5 (On these in E. Stamiris : The value of gold and silver in ancient Greece, in «Archives of Economic and Social Sciences», Athens, 1939 p. 171.) During the IV century b.C. this ratio became 1 : 10 (O. Nöel : Histoire du Commerce du Monde depuis les temps les plus reculés (Tempe Anciens-Moyen Age), Paris, 1891, p. 100.

34. Thucidides : VI, 91 and H. Michel, p. 326.

35. Aristophanes : Frogs, 720-725.

36. Aristophanes : Eccles. 815-822.

37. E. Babelon : Traité des Monnaies Grecques et Romains, Paris, 1907, p. 475. N. Anghell : The Story of Money, 2nd ed., London, 1934.

38. A. Boeckh : The Public Economy. p. 16.

39. A. Andreades : Les Finances de Guerre d'Alexandre le Grand in «Works», vol. I under the care of K. Varvaressos, G. Petropoulos, J. Pintos, Athens 1938, p. 173.

40. J. Toutain : p. 213. Alexander the Great proceeded to coin this currency in order to avoid the economic anarchy from the circulation of the Persian currency and the other local coins, Egyptian drachma, Corinthian drachma equivalent to the Attica drachma, and the Rhodes currency) (W. Tarn : La Civilisation Hellénistique, French transl. Paris, 1936, p. 223) as

well as because in many provinces the barter economy existed (A. Andreades : Les Finances de Guerre d'Alexandre le Grand in «Works» vol. I., p. 277).

41. E. Cavaignac : L'Economie Grecque, Paris, ed. 1951, p. 126.

42. M. Rostovtzeff : Social and Economic History of Hellenistic World, vol. I-III, Oxford 1953, p. 253. (P. Einzig : The History of Foreign Exchange, London, 1962, p. 30.

43. M. Rostovtzeff : p. 404.

44. C. Barbagallo : Le Declin d'une civilisation ou la fin de la Grèce Antique, French transl. Paris, 1927. p. 250 and R. Cohen : La Grèce et l'Hellénisation du Monde Antique, Paris, 1951,p. 546.

45. R. Rachelvitz : La Vita nel Antico Egitto Italian transl. Firenze, 1961, p.222.

46. P. Einzig : p. 36.

47. A. Piganiol : La Conquête Romaine, Paris 1940 in «Peuples et Civilisations (L. Halphen et Ph. Sagnac) p. 69. In addition the copper assassarius underwent continuous depreciations becoming lighter in weight. Thus in 187 b.C. fell 2 ounces, in 89 b.C. 1/4 ounce (G. Luzatto: Storia Economica d'Italia. L'Antichità et il Medio Evo, Roma 1949, p. 113 and Paul Louis : Ancient Rome at Work, 1967, p. 208).

48. A. Boeckh : p. 28.

49. W. Durant : Vol. II, pp. 167-168.

50. W. Durant : Vol. II p. 168.

51, 52, 53, 54, 55. G. Luzzatto : Storia Economica d'Italia, L'Antichità e il Medio Evo, Roma,1949, p. 113. E. Gabba : Progetti di Riforme Economiche e Sociali et Fiscali in uno Storico dell'età dei Severi in «Studi in Onore di Amintore Fanfani» Milano, 1962, vol. I, pp. 60-62. Mainly the wars of Marcus Aurelius and the plague contributed in the abandoning of the countryside, the reducing of the production and the fall of the prices during the Sevirs. V. Machioro : L'Impero Romano nell'età dei Severi. Il Sistema Economico in «Rivista di Storia Antica» No. 10, 1967 pp. 201-235 and 1906 pp. 285-291. See also in A. Calderini : I Severi e la Crisi dell'Impero Romano nell III Secolo, Bologna, 1949, p. 362.

56, 57. L. Cioli : Histoire Économique, fr. transl. Paris, 1938, p. 72.- M. Rostovtzeff: Storia Economica e Sociale dell'Impero Romano, it tr. Firenze 1953, pp. 483, 603, 604. Based on the price lists of Diocletian, which were found, we know the prices of labour, wine, meat, fish, vegetables and other kinds (O. Nöel : Histoire de Commerne du Monde, Paris 1894 vol. I, p. 11, annex. p. 315 ed. and H. Mattingly : Monetary Systems of the Roman Empire from Diocletian to Theodosius, 1945).

58. A. Andreades : History of the Greek Public Finances, Athens 1918, p. 405.

59. A. Andreades : History of the Greek Public Finance, Athens, 1918, p. 405. A. Frolow : Les noms des monnaies dans le typikon de Pantokoator in «Byzantinoslavics» volt. 10 1949, p. 251.

60. D. Zakythinos : Crise Monétaire et Crise Économique à Byzance de XIII au XV siècle in «Hellénisme Contemporaine» 1940 and L. Houmanidis: Aspetti della Produzione e del Commercio della Lana e dei Tessuti di Lana in Bisanzio tra XII e XIII secolo, Firenze, «Istituto Internazionale di Storia Economica» F. Datini,», Prato, 1976, p. 705 and: Staatwirchaft und Handel in Byzanz in «Scripta Mercaturae» No 2 München 1971, p. 45.

61. G. Ostrogorsky : Histoire de l'Etat Byzantin, fr. tr. Paris. 1956, pp. 390, 506.

62. L. Th. Houmanidis : History of Economic Life, Athens, 1969, pp. 215-226.

63. A. Mazaheri : La Vie Quotidienne des Musulmans au Moyen Age (X_e -$XIII_e$ siècle), Paris 1951, p. 302 and Houmanidis: The Arab's Economy during the Middle Ages, Athens, 1960.

64, 65 A. Mazaheri : p. 390, 506. Provençal mentions that the dinar which was coined in Spain weighed 3.43-4.80 grams. It is understood that copper coins circulated, as the «fals» in Cordua. (Lévi Provençal : Histoire de l'Espagne Musulmane Vol. III, p. 254. A. Mazaheri : ib. A. Seyons : Un manuel Arabe du Parfait Commerçant in «Annales d'Histoire Économique et Sociale», 1931. Also see the excellent work of E. Ashtor : Histoire des prix et des Salaires dans l' 'Orient Medieval, Paris, 1969).

66. The Han Kai Hatou who proceeded to issue excessive currency lost his life, as a result of the rising of prices by his subjects (De Guines : Histoire des Huns, book XVII,p. 267). The contact with the Europeans compelled the Mongols to mint a metallic currency and thus to stop the paper currency, which existed in China (A. Fanfani : Storia Economica, p. 169), also, by the same author : Note e Discussioni. Perche fu Transcurata la Divulgavione di Marco Polo sulla cartamoneta di Cinesi in «Economia e Storia» No. 11, 1956. Bonmarchand supports that the, Chinese issued paper currency because of lack of metals (J. Lacour Gayet : Histoire du Commerce Paris, 1950, Vol. III, pp. 3, 27).

67. A. Fanfani : p. 91. By the same author also: Origini dello Spirito Capitalistico in Italla, Milano 1933.

68, 69. H. Pirenne : Mahomet et Charlemagne, p. 214 During the Merovingit tes commerce and sea commerce existed (H. Pirenne : Medieval Cities, Engl. transl. New York, 1956, p. 22) and J. N. Thompson : The Commerce in France in the Ninth Century» in «The Journal of Political Economy» London, 1915, vol. XXIII, p. 857).

70. R. Latouche : Les Origines de l'Économie Orientale, Paris, 1956, p. 147. R.Génestal : Rôle des Monastères comme Etablissements de Crédit Édutié en Normandie du X à la Fin du XIII siècle, Paris, 1901, pp. 1-20.

71. L. Houmanidis : History of Economic Life, pp. 216-217.

72. L. Houmanidis : The Arab Economy in the Middle Ages, Athens, 1960 and History of Economic Life, p. 276.

73. L. Houmanidis : pp. 351 -356.

74. A. Fanfani : Storia Economica, Milano, 1956, p. 262 and new edition 1965.

75. F. Melis : Note di Storia della Banca Pisana nel Trecento, Pisa, 1955, pp. 63 ed. seq. and A.P. Usher «The Early History of Deposit Banking in Mediterranean Europe, Cambridge, Mass. 1943, p. 90.

76. F. Melis : Una Girata Cambiaria del 1410 nell'Archivio Datini di Prato in «Economia e Storia», No 41, 1958 and C. Seignobos : Essai d'une Histoire Comparée des Peuples de l'Europe, Paris, p. 133.

77. F. Melis : Note di Storia della Banca Pisana, pp. 121, 142, 161 and C.M. Cipola : Movimenti dei Cambi in Italia dal Secolo XIII al XV, Pavia 1948.

78. F. Knight : Introduction to Modern Economic History, 1940 p. 44 G. Luzzntto : Storla Economica (L' Età Moderna Padeva 1955, p. 76. A. Fanfani : Storia Economica ed 1965 vol, I. p. 610 and L. Th. Houmanidis, History Economicof Lifc p. 301.

79. L. Th. Houmanidis: pp. 351 ed seq.

79a. R. Gonnard: Histoire des Doctrines Monétaires, Paris, 1935, p. 70 - 86. Also in G. Ardant : Histoire Financière de l' Antiquité à nos jours, Gallimart, 1976, p. 102.

80. E. Hamilton : American Treasure and the Price Revolution in Spain, Cambridge,

Mars 1934, p. 273. M. Ulloa (La Hacienda real de Castilla en al Reinado de Felipe II, 1963) attributes the increase in prices more to the element of credit than to the numéraire. See also F. Mauro : Le XV Siècle Européen, Aspects Économiques, Puris, 1970, p. 217.

81. F. Braudel : La Vita Economica di Venezia nel Secolo XVI in «La Civiltà Veneziana del Rinascimento» Firenze 1961.-B. Pullar : Crisis and Change in the Venetian Economy in the Sixteenth and Seventeenth Centuries, London, 1969.-L. Th. Houmanidis : in Book III.

82, 83, 84. A. Fanfani : Storia delle Dottrine Economiche, Milano-Messina 1954. p. 143 L. Th. Houmanidis : History of Economic Life, p. 351 ff. Professor Kula writing about the changes which tooke place in Polish economy between XVI and XVII centuries says that it had the following fundanental causes :

1. The influx of precious metals into Europe as a result of the geographic discoveries, which brought about widespread inflatiorary phenomena and with a greater increase in the price of prime necessaries than in the price of luxury goods.

2. New acccss, as a result of the gographic recoveries, to the sources a large number of luxury goods (rpices), which brought about a relative drop in their prices.

3. The technical progress in certain sectors of industrial production (iron, paper etc.) which brought about a relative drop in the price of these goods in relation to agricutural produce.

4. Progress in Socioeconomic organization of production in certain industrial sectors i.e. the textile industry leading to effects similar to those indicated above.

5. The process of organization and advanced industrialization in certain regions of Europe because of 3 and 4 above mentioned points.

6. The technological progress in transport and in particular in maritime navigation to become profitable the transportation of certain goods for distances that before had made it prohibitive. (W. Kula : Teoria ekomoniczna ustroju feudalnego, 1962 Eng. trans. An Economic Theory of the Feodal System Towards a Model of the Polish Economy 1500-1800, (Presentation by Fermand Braudel) London 1976, p. 129).

85. L. Th. Houmanidis : History of Economic Theories, Athens, 1973, p. 68.

86. Between the end of XV cent. and XVI cent. real salaries were submited in a decrease at least of 30% to 35% (P. Harsin : Les Doctrines Monétaires et Financières en France du XVI au XVIII siècle, Paris 1928 p. 27). G. Parenti : Prime Ricerche sulla Revoluzione dei Prezzi, Firenze 1939, p. 226 and C. Verlinden : Mouvements des prix et des Salaires en Belgique au XVI siècle in «Annales» 1959, p. 192.

87. L. Th. Houmanidis: pp. 363.

88, 89. W. H. Beveridge : Weather and Harvest Cycles in «Economic Journal» 1921 pp. 429 - Jenny Griziotti - Kreschtmann speaks about poor harvests in 1596, 1608, 1648, 1674, 1678 and 1709 (J. Griziotti-Kreschtmann : p. 391). Unluckily the information on the Price Revolution is not exact because there were no possibilities of measuring at that time of inflation and very few books refered with the phenomenon of the increase as for example those of which were written in France by Ch. Desmoulins (Tractatus Ccmmerciorum et Usurarium 1545), J. Cherrugt de Malestroit (Paradoxes sur le fait des Monnoyes, 1566 and J. Bodin (Response aux iparadoxes de Monsieur de Malestroit, 1568), (In Denis Richet : Causes of Inflation in France in the XVIII century «Journal of European Economic History» Vol. 4, No. 3, Rome, 1975 pp. 709 ed seq.) Very interesting about Prices' Revolution is the book of P. Vilar : A Hisrory of Gold and Money 1450—1920 Englsh transl,, London 1956.

90. Y.S. Brenner : The Inflation of Prices in Early 16th Century in England in «Economic History Review» No. 2, 1961, p. 225.

91. L. Th. Houmanidis : History of Economic Life, p. 367. Philipp IV during the five first years of his reign minted 37,937,373 copper marks corresponding into 264,144,440 maravedis so that copper coins come into Spain for speculation (R. Trevor Davies: Spain in Decline (1621-1700) London, 1970, p. 96).

92. L. Th. Houmanidis : p. 374.

93. J. Griziotti-Kretschmann : Il problema del trend secolare, p. 67.

94. Th. Rogers: A History of Agriculture and Prices in England 1259-1793, Oxford, 1877.

95. G.D. Avenel : Histoire Économique de la Propriété, des salaires, des denrées et de tous les Prix en général depuis l'an 1200, jusqu'au 1800, Paris 1892-1926.

96, 97. J. Griziotti-Kretschmann : pp. 68, 69.

98. P. Harsin : Les Doctrines Monétaires et Financières en France du XVI au XVIII siècle, Paris 1928. Ch. Rist : Crédit Public et Banque d'Etat en France du XVI au XVIII siècle, Paris 1933 and La Banque et le Système de Law in the «History of the Principal Public Banks» (J.G. Van Dillen) Hague, 1934, vol. I-VI, pp. 273 ed. seq.

99. A. Andreades : L'Administration Financière de Grèce sous la Domination Turque. «Works». Vol. I, p. 637.

100, 101, 102. J. Griziotti-Kretschmann : p. 87.

103. G. Luzzatto : Storia Economica, età Moderna, Padova,1955, p. 212. In Spain also in the reign of Charles IV (1788-1808) the velóln was depreciated, while, before him the poor harvests had as result the abnormal increase of the price of wheat (1760-1768) in New Castille (E. Hamilton : War and Prices in Spain, 1651-1800 Cambridge Mass. 1947 p. 83-84 and in J. Savraith : L'Espagne éclairée de la seconde moitié du XVIII siècle, Paris, 1954).

104, 105. J. Griziotti-Kretschmann : p. 121.—E. Levasseur : Histoire du Commerce de la France, Paris, 1912.

106, 107. E. Levasseur : p. 146.

108. P. Bonfante : Storia del Commercio, Parte Seconda, Torino, p. 236.

109. P. Einzig : The History of Foreign Exchange, London 1962, p. 195. As concerns the mark its value increased. The same thing happened with the Austrian courrency, the Italian and the Hungarian after the wars of 1848-1849 (P. Einzig : ib).

110. Prices increased between 1851-1873 by 38 % on account of the gold bearing sand of Califonia (L. Walras : Économie Politique Pure, Lausanne 1874, ed. 1926, p. 354).

111. S.B. Clough-Ch. W. Cole : Economic History of Europe, Boston, 1967, p. 624.

112. In England (1847) and USA (1893) (J. Lescure, p. 323). Fogel especially pointed out that towards the end of the IXth cent. railways were more expensive than canals and wagons. (R. Fogel : Railroads and American Economic Growth, 1964).

113. Walras had already noted the increase in prices, which would follow with the exploitation of the Transvaal gold-mines (L. Walras : Études d'Économie Politique Appliquée, Lausanne, 1898).

114, 115. P. Einzig : ib.

116. P. Einzig : inflation p. 42.

116a, 117, 118. B. Clough-Ch. C. Cole : see above.

119. P. Einzig : The History of Foreign Exchange p. 249.

120. S. Pollard : The Development of the British Economy, 1914-1967 2nd ed. 1973, p. 214.

120a. The new franc (65.5 mg of gold and finaness 900m) was devalued in relation to old franc «germinal» by 80%. (M. Sallon : Histoire Économique Gontemporaine. Paris, 1972, p. 106).

121. G. Pirou : La Monnaie, p. 415.

122. P. Einzing : The History of Foreign Exchange, p. 252.

123. A. Andreades : Les Finances de l'Empire Japonais et leur evolution, Paris, 1932, p. 119.

124. P. Einzig : p. 258.

125, 126. P. Einzig : p. 255 ed. seq.

127. Concerning inflation in the communist countries in my book : Comparative Economic Systems, Athens, 1975, pp. 167-169.

128. D. Marus Fleming : International aspects on inflation (announcement in IEA Inflation Theory and anti-inflation policy, Aug. 28-Sept. 3, 1955) Saltsjobaden, Sweden, p. 2. Between 1956-1968 the rate of inflation in Great Britain was 3.7%, in West Germany 2.3% in French 3.3% and is Japan 4.8%, in 1970 the rate become in Great Britain 7.9%, in West Germany 4%, in French 5.3% and in Japan 8.4% (M. Sallon : p. 179)-

129. A. Marc : L'Evolution des prix depuis cent ans, PUF 1966, p. 33. The author underlines also, very rightly, apart from the factor of population, habits, communication etc., the importance of inovations and the advertisment for the increase of prices. The war in Vietnam (1950-1952), which ensued did not influence the inflation less, while the U.S. reached the level of 80 billion dollars approximately for their war expenses and their export inflation affected the other coutries (American Economic History Fybate Lectures, Berkeley, 1970, p. 89).

130. D.M. Fleming : Notes that the State Oil cartel increases the prices (cost inflation ef- fect) despite the private one and reports that if in 1974 the OPEC caused inflation pressures from the cost side, yet as concerns the redistribution of the universal income it created deflation, which helped the stagnflation (M. Fleming : p. 26).

131. Professor Rugina maintains that under conditions of general stable equilibrium the A.W. Philipp's curve's effect does not and cannot exist. He thinks that this curve does exist, but only in a system with a shaky monetary standard with wild fluctuations in value and cost of living. Profesor A.W. Philipps did not include «the cost of living adjustments in wages rates» (A. Rugina : American Capitalism at Crossroads, New York, 1976, p. 85 and 106). Also referring to Philipp's curve in A. Nassbaumer : The Growth of Public Sector and Inflation Pressure. Announcement in above International Congress «IEA», Satjobaden, 1975, p. 21.

132. Whichita Beacon (Kansas), November 1971.

133. G. Haberler distinguishes these into two groups, which do not always agree : those which do not accept that inflation is dealt with monetary measures (monetarists) and that the pressures for salary increases do not create inflation and those (new inflationists) who claim that a steadily foreseen inflation of 5 % even of 10 % is allowable (G. Haberler : Income Policy and Inflation. An analysis of Basic Principles in American Enterprise Institute, 1971 (Greek translation

in «Studies», vol. XXIII, p. 430). Schichter who is not so acute supported a 3 % rate of increase while Tubin follows the extreme way that is to deceive the public through inflation (G. Haberler, p. 429 and by the same author Inflation, its causes and cures AEI, Washington,1966, p. 95). Gordon unites these two views in favour of the directed inflation (R.J. Gordon : Steady Anticipated In - flation : Mirage of Oasis : «Booking Papers on Economic Analysis» No. 2, 1971). The monetarists ascribe inflation as an excess in the necessary quantity of money and the only way to avoid or to reverse an inflation is to restrict or reverse the quantity of money. The fiscalists ascribe inflation as unproductive public expenditure or the excess of it over tax receipts.

134. M. Friedman : The Optimum Quantity of Money and Other Essays, Chicago 1969 p.9. The latest article of Friedman in the «Times» (13 Sept. 1976) is interesting, in which under the title «Inflation : The tax that never has to be passed by Parliament», clarifies his theory in relation to that of Keynes.

135. N. Kaldor : The New Monetarism in «Lloyd's Bank Review», July 1970, p. 4.

136. Don Patinkin : Money, Interest and Prices, New York, 1965, p. 23.

137. This is specially underlined by J. Aschheim : Monetarism versus Fiscalism : Towards reconciliation in «Banca Nazionale di Lavoro, Sept. 1975, pp. 227-228.

138. R.A. Musgrave : The theory of Public Finance, New York, p. 22ff.

139. For Professor Rugina the Walras model assumes the existence of a system of economic and monetary equilibrium based on a set of free, open markets and all prices be expressed only in the natural parameter of the numeraire. It is possible further to conceive that the natural parameter of the numeraire has been integrated with a Marxian system of decentralized socialist markets, where the prices are not dictated by the Government Central Planning Authority bue are determined by the real economic conditious as expressed in the local free-choice agreggatr demand and available supply. In a Marxian decentralized market, socialism state enterprises undea the given conditions would calculate equilibrium prices equal to marginal costs exactly as in system of perfect competition of the Walrasian type. (A. Rugina : American Capitalism at a Crossroads, p. 18, 43, 210).

140. Walras on the other hand did not refuse the application of nationalisation through the Economie Rationelle Sociale in order to achieve a fair ration of value towards rarity (L. Walras : Études d'Économie Politique Appliquée, Lausanne 1898, p. 273). Contemporary authors have pointed out the monopoly and the necessary state intervention against it (M.C. Kalecki : Theory of Economic Dynamics 1954) J. Galbraith : American Capitalism, the Concept of Countervailing Power, 1955) and also to create an office against speculation in order to restrict the monopoly domination on the prices (A. Lerner : Economics of Control, 1944). -Machlup at the contrary supported that for the U.S.A. (after 1941) the behavior of the monopolies was to check the rise of prices and this for reasons of national policy as also to keep their clients. Duesenberry also maintained that the total of the American monopolies increased the prices but not more of the level of their cost.

141. L. Houmanidis : Ein Dritter Weg in «Regensburger Universitäts-Zeitung». No2, 1971 as also in : Comparative Economic Systems, p. 286.

142. L. Th. Houmanidis : The theory of wages from the classics until today, (Preface by A. Fanfani) Athens, 1957, 2nd edition 1965

143. 144. According to Léon Walras the value of money is formed either by the increase of its supply or by its decrease in relation to the desired cash (encaisses desirées). If the level of the prices, which are expressed by the chosen goods-money (numéraire) is P_a and Q_a is the amount of the circulating money and H the desired cash then $Q_a P_a = H$. If we take into consideration also the credit money (F) then $(Q_a + F) P = H$ and in this case the econo-

mic equilibrium will be disturbed because the money circuit may not correspond to the circuit of goods and services, while with the numéraire we succeed in having a stable equilibrium excepting the output of gold out of the country (L. Walras: Elements d'Économie Politique Pure, Lausanne, 1874, ed. 1926, pp. 311, 352). Marx coincides with those views of Walras, according to Rugina, when we have simple production i.e. the circuit starts with the sale of the commodity and ends with purchase of same (C-M-C) (we have commodity-money numéraire). In the case however of the developed production, capital money interferes i.e. M-C-M', (we have credit money-antinumératre and so we shall have disequilibrium (A. Rugina : A monetary dialogue with Karl Marx : Its significance for both capitalist and socialist economies «East European Quarterly» vol. III No. 3, 1975) Any way Marx in his «Theories on Supervalue» says : «I was therefore wrong in saying in the first part» (Marx speaks about the two first paragraphs of the part «Money» of the «Criticism of Political Economy» that the form M-C-M must always be M-C-M' (value of merchandises plus surplus value). (K. Marx: Theories of surplus value, Part I, Moscow ed. S. Ryzanskaya 1969, p. 322). Marx also gives an explanation for the non-coincidence of value and price and at the same time refuses, for certain cases of sales below cost, the existence of a surplus value. (K. Marx; p. 327). When reading another paragraph of Marx we see that a surplus value does not always exist. «The simple circulation of commodities-selling in order to buy-is ameans of carrying out a purpose unconnected with circulation, namely. the appropriation of use-values the satisfaction of wants. The circulation of money as capital is on the contrary an end in itself for the expaniou, of value takes place only within this conetanthy renewed movement. The circulation of capital has therefore no limits». (K. Marx : Capital Moscow, no year, vol. I, p. 150). In this way Marx as Aristoteles, proceeds we might say to a distinction between Οἰκονομίας and Χρηματιστικῆς (Aristoteles : Politics 1257a, 9) the first regarding the best satisfaction of wants the second the continuous enrichment.

145. M. Friedman : p. 10.

146. If the rate of increase of the production factors is faster than the rate of increase of the volume of production, then in this case the prices will decrease and vice-versa.