Recensione del volume:

The Monetary Systems of the Greeks and Romans◊

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a cura di

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1. - Introduction

The book edited by Harris collects thirteen essays on the monetary systems of ancient Greece and the Roman empire; eleven come from the proceedings of an international conference held in April 2005 at the Center for the Ancient Mediterranean at Columbia University; two, one by Manning on «Coinage as "Code" in Ptomelaic Egypt» and the other by Harris on «The Nature of Roman Money» complete the collection.

The essays are arranged in chronological and geographic order: from Archaic Greece to late imperial Rome, from the Mediterranean to the furthest Roman frontier provinces and ancient China. An introductory chapter identifies the unifying themes of the book: the use of bullion as money, reasons for the spread of coinage, coin *versus* credit money, money supply, prices and growth, the cultural implications of monetization, the extent of monetization, unified monetary integration across the Roman Mediterranean, the choice of metals and money historicized in a Roman province.

◊ OUP, Oxford, 2008.

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The book discusses ancient money from multiple perspectives bringing together numismatics, history, anthropology and economics, in the spirit of what Hicks, writing about the theory of economic history, called the «… Forum where economists and political scientists, lawyers, sociologists and historian- historians of events and of ideas and of technologies-can meet and talk to one another» (Hicks, 1969, page 2).

According to Harris, the multidisciplinary approach to the study of ancient money dates back to the early 1990s when scholars with wider interest in economic and cultural history became involved in the study of relatively sophisticated premodern economies.

In his 1985 essay on monetary theory and Roman history, De Cecco, a leader in the field according to Harris (see also De Cecco, 2001), identified three different approaches to the economics of ancient money: *a)* a pragmatic approach, based on the identification of politics in monetary history and of its connections with the strength of the state; *b)* a prevailing theoretical approach based on Fisher's identity and the quantity theory of money and *c)* a competing theoretical approach based on the Karl Polanyi's ideas and on his «critique of the classical concept of "economic man", the moral and intellectual fallacy of treating as commodities land, labour and money; the impossibility and fatal effects of "disembedding" economic life from social life, and the related phenomenon of the "double movement"; and the importance of understanding the historical processes of social and economic change» (Larragy, 2009). Going through the book, one realises that this classification is still valid today with the second and third approach possibly prevailing on the first one.

This review is structured as follows. Section 1 contains a primer on ancient money compiled drawing information from the book and from a document taken coming from the website of the Central Bank of Austria (ONB). Section 2 focuses on the main economic themes discussed in the book and on their underlying theoretical framework. Section 3 contains some critical considerations on the status of monetary theory today *vis à vis* that discussed in the book. Section 4 concludes.

2. - Ancient Money: A Primer

The rise of Greek trade in the fifth century b.C. was accompanied by the development of monetary instruments, initially bullion later on silver coins. In the opening essay, Krall, discussing the monetary uses of weighted bullion in archaic Greece, argues that bullion was used as store of value but also as transactional medium, both before and after the introduction of coinage.

Silver coins were introduced in Athens and Attica around the 7th century b.C. and their circulation was greatly enhanced at the beginning of the 6th century b.C. in the context of Solonian legal reforms. The monetary system also expanded as a consequence of the promotion of trade and crafts as well as the growth of silver mining. From the times of the tyrant Peysistratos onwards, Attic coins became the symbol of the monetary power of Athens and came to be used throughout the Mediterranean, as recalled by Seaford in Chapter 3 of the book which is about money, Athenian tragedy and tyrants.

As recalled in the ONB document, in the 5th century b.C. numerous Greek cities began to produce coins, chiefly low-value silver coins or on occasion copper coins, which quickly became established as a common form of money to be used for everyday transactions as well. New monetary instruments were developed alongside coins including pawn broking, giro-credit and bank deposits. Schaps provides reference on this in Chapter 2 of the book.

Even city-states which did not manufacture coins themselves either because of lack of silver or for other reasons, such as Sparta, which forbade its male citizens to own coins and silver and prescribed the use of iron rods as means of payment, needed coins. Nevertheless, Sparta was compelled to ask the king of Persia for financial support in the form of large amounts of coins to finance its war against Athens.

With the onset of Alexander the Great in the 4th century b.C. and his monetary reforms, briefly mentioned in Chapter 5 of the book on Coinage in Ptolemaic Egypt by Manning, the prerequisites for the economic integration of the Orient and the Mediterranean were established. The financial system was consolidated and the Attic monetary standard was introduced throughout the entire realm, using the huge precious metal hoards seized in Persia.

As to the Rome, during the first four centuries following its foundation lumps of copper, *aes rude*, and then cast bronze bars, *aes signatum*, were used as money together with cattle and sheep (*pecus*). The first true coins were minted around 300 b.C. Apart from the *aes grave*, the Romans also began to mint silver coins modelled on the money of the Greek cities in southern Italy. The Hellenistic influence on Roman money grew when Rome strengthened its position as a Mediterranean power.

The reform of the coinage system in 212 b.C. instituted the monetary basis of Rome's hegemony in the Mediterranean. It set up a system of silver and bronze coinage based on uniform, fixed relations. The main coins modelled on Greek precedents were the bronze as and the silver *denarius*, whose mark, X (ten), signified that it was worth 10 *asses*. The Roman Senate exercised control of the monetary system on behalf of the Roman citizens.

Chapter 6 in the book explores the demand form money in the late Roman Republic. Roman society was monetized quite rapidly during the 2nd century b.C.; monetary circulation rose markedly. As Roman domination expanded, regional money systems were permitted to operate in coexistence with Roman money. Provincial coins vanished as a result of growing impoverishment and were replaced by Roman money, mirroring the fate of Athens' silver coins in the mid-1st century b.C.

In the context of Augustus' reorganization of the Roman state, the monetary system was reformed as well. As the ONB document reports, the new coinage code specified gold and silver as coinage metals and tariffed gold to silver at a *ratio* of 1 to 12,5. The copper coins – the *sesterce*, the *dupondius*, the as and the *quadrans* – were rebased at a fixed ratio to gold and silver coins (1 *aureus* = 25 *denarii* = 100 *sesterces* = 400 *asses*). The *pontifex maximus* was accorded the sole right to issue gold and silver coins; only the striking of copper coins at the mint in Rome remained within the province of the Senate. The imperial aspect of mint policy had already surfaced during Caesar's reign, when the image on the mint showed the ruler or his family rather than the *signum* of the elected official.

Roman money spread to the most remote corners of the empire by way of soldiers and army's activities. Beyond the borders of the Roman Empire, the *aureus* and the *denarius* became the main trade coins, *e.g.* in Germany and Scandinavia, and even in India, where considerable amounts of Roman coins were in circulation. Katsari, addressing the monetization of Rome's frontier provinces in Chapter 12 of the book, analyses this specific issue taking the reader into the military camps and the frontier cities of the Roman empire and finding that the extent of monetization depended mainly on the levels of urbanization and on the extent of trading activities, rather than on the economic role of the troops.

Starting in the first century A.D., more resources had towards be channelled to defending the empire against invasions from the east and the north. With the manufacture of coins expanding and precious metal resources contracting at the same time, Romans resorted to reducing the silver content of the coins. Using again the ONB document as a source of information, we are reminded that the Emperor Nero (54 to 68) was the first to reduce the weight of the *aureus* (from the 7.96 grams defined in Augustus' coinage code to 7.29 grams) and of the *denarius*, to which up to 10% base metal was now added. The silver content of the *denarius* declined further, slowly but surely, over the next two centuries. In the second half of the 3rd century, the deterioration of Roman money accelerated dramatically. By the time of Aurelian's reign (270 to 275), the silver content of the *denarius* had dropped to just 2%.

One of the causes of the Roman Empire's monetary crisis in the 3rd century was the *ratio* between the two precious metals fixed in Augustus' coinage code. This *ratio* did not reflect actual coin values, and, in prompting outflows of undervalued coins, successively undermined the Roman currency. Emperor Caracalla's attempt in 212 to correct the value shift in the *ratio* of gold to silver by lowering the value of the gold pound and by introducing a new silver coin, the *antoninianus* (a double *denarius* with a weight of about 5.1 grams), had failed.

As a result, the value of money fell and prices rose, entailing all the social and economic consequences of inflation. Financial assets depreciated, the price of everyday purchases burgeoned and purchasing power diminished. Soldiers and civil servants were especially hard hit. Instead of receiving fairly generous amounts of money as pay like they used to, they were frequently given payment in kind. Farmers, too, suffered from price inflation, as they could no longer sell their *surplus* goods on the market.

All these episodes and many others are recalled in the chapters of the book devoted to Roman money, especially Chapter 6 by Hollander and Chapter 9 by Harris, together with estimates of Roman nominal GDP and money circulation and many curious anecdotes on Cicero's real estate purchases and international money transfer problems, Emperor Galba's travelling arrangements, and payment habits in Rome as represented by Stanley Kubrick and Kirk Douglas in the famous film *Spartacus*.

3. - Economic Theory and Ancient Money

The first economic theme generally addressed in the book concerns the nature of money. As Ingham (2004) points out, discussions about this topic revolve around two fundamental competing theories: the commodity theory and the claim theory.

The commodity theory sees money as a good yielding positive utility, because of its exchange-enhancing capability, which must be understood in terms of supply and demand. The commodity theory underlies orthodox monetary economics from the quantity theory to dynamic stochastic general equilibrium models with money in the utility function or cash in advance constraints (Walsh, 2003). The competing view maintains that money «in the full sense of the term can only exist in relation to Money of Account» (Keynes, 1930), *i.e.* as an abstract measure of value. Based on this view, the money stock is seen as consisting essentially of claims and credits, not merely tradable objects or their symbols, whose value is determined by the state. Today, the claim theory of money underlies heterodox post-Keynesian monetary economics (Rousseas, 1992).

Traces of this debate may be found in the second, fourth and ninth chapter of the book. After discussing special *versus* all-purpose money and market exchange in the ancient world, Schaps (Ch. 2) agrees with Finley (1985) in concluding that for all ancient states «Money was coin and nothing else» and that credit money and token values while used were only marginally relevant. Cohen, discussing the elasticity of money supply at Athens (Ch. 4), and Harris, writing about the nature of Roman money (Ch. 9), hold the opposite claim. Both authors identify a significant credit component and a relevant amount of endogeneity in the money supply process.

Competing views about the nature of money reverberate on the prevailing understanding of the linkage between money and the price level. The commodity approach and its linkages with the quantity theory and the view that the price level balances money demand and supply underlies the essay by Hollander (Ch. 6) on the demand for money in the late Roman Republic. Adopting the Cambridge version of the quantitative theory of money $M = kPY$, with M indicating the money stock, P the price level, Y real GDP and k «the proportion of resources kept in money form» (Pigou, 1917), Hollander explains the absence of inflation during the late Roman republic, in spite of the huge increase in coined money stocks and monetization levels, as a consequence of rising demand at all levels of society.

In the opposite camp, the claim approach with its emphasis on the unit of account function provides a framework to the essay by Kessler and Temin (Ch. 7) on money and prices in the early Roman empire. The essay, the only one to include an empirical analysis, argues that monetization in the sense of using monetary measures was virtually universal in the early Roman Empire and that there was unified monetary integration across the whole Mediterranean.

This conclusion is based on the discovery of a statistically significant inverse relationship between wheat price differentials, as registered in Rome *vis à vis* six different trading locations, and distance. With the highest prices recorded in Rome, Kessler and Temin observe that discounts increase with distance and interpret this finding as depending on increasing transportation costs in a unified market adopting a single monetary standard based on *sestertii* in the western Empire and on *drachmae* in the eastern empire with a fixed exchange rate between them.

The other essays collected in the book address specific problems related to the use of money by individuals. Lo Cascio, addressing the function of gold coinage in the monetary economy of the Roman empire (Ch. 8), compares the different uses of silver and gold coins to conclude that the latter were often used as slowly circulating store of value but also to make large payments. Andreau, analysing the use and survival of coins and of gold and silver in the Vesuvian cities (Ch. 11), discusses the spending and saving habits of those inhabitants of Pompei and Herculanum who died in the Vesuvius eruption with their coin and precious possessions on them. Manning and van Minnen (Ch. 5 and Ch. 11) focus on the use of money in Ptolemaic and Roman Egypt in relationship to the development of the state, its financing needs and the country's production and trade structure. The opening and concluding essay in the book, respectively by Kroll on the monetary use of weighed bullion in archaic Greece (Ch. 1) and the divergent evolution of coinage in eastern and western Eurasia by Scheidel (Ch. 13), discuss how the decisions of ancient states to use one metal or the other depended on the availability of metal resources, the different kinds of military service, political considerations and finally path dependence.

4. - Critical Considerations

With the sole exclusion of Temin, this is a book written by historians about economic matters. This explains the almost complete lack of mathematical modelling and for economists used to intertemporal optimization, calibration, simulation and impulse response functions it can be quite offsetting. Equally offsetting is the absence of any econometric testing, the inevitable consequence of the lack of empirical data. The only formal statistical test in the book, contained in Chapter 7, is an OLS linear regression estimated on a sample consisting of six observations only.

In pointing this out I am not decrying the content of the book, quite the contrary. I found it very interesting to see standard economic problems such as the relationship between money, prices and growth and the effects of fiscal and monetary policy on individual decisions addressed using theoretical and analytical tools different from the ones economists are used to. All the essays in the book show that sound economic reasoning is possible outside the realm of mathematics and econometrics. What is lost by not using formal modelling procedure and statistic tests, is replaced by careful collection and critical analysis of textual and archaeological sources and sound reasoning.

Theoretical formulations presented in the book, about the quantity theory of money in the Fisher and Marshall version, the money multiplier process and the Keynesian theory of liquidity preference, are presented at an undergraduate level (*e.g.* Mankiw, 2002) and share a certain vintage flavour. That "old theories" should be evoked in a book about the money stock is not surprising in view of the fact that today's macroeconomics has largely done away with it.

Applied general equilibrium models, the standard for micro-founded macroeconomics today (Farmer, 1999) find little room if any for money supply and the money stock. According to Hahn (1982), the most serious challenge that the existence of money poses to the theorist is that the best model of the economy, the Arrow - Debreu version of the Walrasian general equilibrium, cannot find room for it. A world in which all conceivable contingent future contracts are known neither needs nor wants intrinsically worthless money. Lacking fundamental uncertainty in the Keynesian sense and historic time, what role is left for money is that of a largely irrelevant *numeraire*. Moreover, as Romer (2000) and Galì (2008) among many others point out, monetary economics today is about independent central banks setting interest rate according to some optimal rule with the aim of determining inflation expectations and the output gap. The money stock is endogenously determined to match money demand which in turn depends on real output and nominal interest rate and plays no independent role in determining the macroeconomic equilibrium.

5. - Concluding Remarks

The overall impression one receives from reading *The Monetary Systems of the Greeks and the Romans* is that ancient Greece and Rome provide perfect examples of the non-neutral role of money as a driving force of social integration and economic activity. Ancient monetary systems were highly developed and contributed to form the basis of the economic supremacy of Greek city states and Rome. As monetization progressed, these systems also influenced cultural and social relations.

That the study of ancient monetary and financial arrangements is important not just *per se* but also as a source of inspiration on current matters has been recently remarked by the President of the European Central (Trichet, 2010), whom in giving a speech on risk and monetary policy, began by quoting a description by Tacitus of the financial crisis that hit the Roman Empire in the year 33 A.D.

In the Annales, Tacitus writes «The destruction of private wealth precipitated the fall of rank and reputation. At last, the emperor interposed his aid by distributing throughout the banks a hundred million *sesterces*, and allowing freedom to borrow without interest for three years, provided the borrower gave security to the State in land to double the amount. Credit was thus restored, and gradually private lenders were found». As Trichet suggests «Replace "emperor" with "governments and central banks", "sesterces" with "dollars" or "euro", "security" with "collateral" and this two thousand year old quotation could sound surprisingly familiar».

At the end of the same speech, Trichet recalls that «There was a famous controversy between Julius Caesar and Cicero eighty years before the crisis described by Tacitus». Rome, at that time, was struggling with a debt overhang. Caesar proposed partly to remit the debt. Cicero strongly opposed such action. He argued that debt forgiveness would shake the foundations of the Roman Republic and destroy one of its most important values: *fides*. *Fides* is trust, confidence, good faith.

Following this indication we may conclude this review by asking ourselves what can be learnt about the present by studying the monetary systems of the Greeks and the Romans. The first obvious indication in this respect is that international monetary integration if properly managed and adequately governed from a central sovereign authority increases material prosperity through its trade enhancing potential. As the European Monetary Union faces its first major crisis, set off by the sudden appearance of major fiscal imbalances in Greece and other European countries hardly hit by the international financial and economic crisis, this is a lesson which EU and national authorities should not forget as they strive to regain equilibrium. The second lesson is that empire and nation building and international military supremacy are very expensive to maintain. At some point increasing military costs wreaks havoc with ordinary circulation. This is again a lesson both the U.S. and European governments should be careful not to forget.

As a final word of comment, I would like to stress that the wide range of contributing scholars, the rich list of bibliographical references, the plurality of opinions and of methodologies, make the reading of *The monetary systems of the Greeks and Romans* absolutely worthwhile for any one interested in economic history, ancient money and applied monetary theory and as such I recommend its reading, possibly in connection with Cottrell, Notaras and Tortella (2007) which contains a *longue durée* view of European monetary integration from the Athenian Tetradrachm to the Euro.

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