Copernicus on Money

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The 14th century in Poland was an age of great intensification of resources. In iron making, the use of water power increased, more and more workshops produced iron tools and in the 15th century the home market began to play an important role. In these circumstances the problem of money attracted the attention of many, including Copernicus.

The manipulation of money is not a modern invention; it was a policy opposed to the passive treatment of money and favouring flexible treatment of its purchasing power. But when adopted in practice this doctrine led to a 'debasement' of the coinage and disorganization of the market. No wonder, then, that great minds like Copernicus could not remain indifferent to these developments, which affected economic and social life as a whole.

Copernicus' versatile mind was attracted by a wide variety of problems. He turned to astronomy because Columbus' discovery of America had put it in the forefront of the sciences of the age. But in his two treatises on money, of 1519 and 1526, he revealed an equal insight, independence of thought and ability to grasp complex problems. Although he wrote no treatise on method it can be safely asserted that it was precisely his anti-scholastic, empirical and logical thinking that led him to explore successfully all the problems on which he embarked.

Copernicus was one of the first — indeed he was several centuries ahead of professional economists — to comprehend that money is neither an autonomous instrument nor an accidental phenomenon. Though he never stated this idea explicitly in his economic writings, his whole argument implies the conclusion that money came into being because life itself forced man to seek new solutions to the problems which faced him: with a steady

growth of commodity exchange it was more and more difficult to have within reach the scale and assaying tools that were always needed to determine the weight and quality of the gold or silver paid for the goods bought. Thus the seal of the royal mint was, or at least was expected to be, a guarantee of the weight and quality of the metal content of the coins.

Copernicus did not claim, like Aristotle, that money is the effect of some social contract or, like Oresmius, that it is an accidental invention of men. In his brief but thoughtful remarks in both his memoranda and the letters which he wrote on the problem, he hints that the appearance of money — and the acceptance of precious metals as its standard — was the outcome of a long-term historical process. Copernicus watched with apprehension the monetary chaos prevailing in the reign of Sigismund I. Although the various coins in circulation bore the same names, they were minted from different alloys and had a different weight in different mints. Copernicus was aware of the 'debasement' of coinage by minters and also that the Polish market was being flooded by undervalued coins, issued by the mints of the Teutonic Order to discredit the Polish coinage. He considered that the way to remedy this evil was to reduce the number of mints which were authorized by the king to strike coins. He also demanded some guarantee that the coins issued by these mints should have the correct weight and standard.

While recognizing that bimetalism was unavoidable, Copernicus was aware that the relationship between silver and gold as metals, and so monetary metals as well, was subject to fluctuation. He therefore suggested that — without any formal abolition of bimetallism — it should be revised from time to time and that silver should always be evaluated in gold. He reduced — in theory if not in practice — bimetallism to gold monometallism. Money seemed above all to Copernicus to be the most stable measure of price, and he emphasized its function as a price scale. Some economic historians have tried to present Copernicus as a forerunner of the quantitative theory of money. It is true that he was perfectly aware of the role played by the increase in the circulation rate of money, but this is a far cry from quantitative theories of money. If proof were needed of Copernicus' superiority over many later economists, it could be pointed out that he did not treat gold and silver merely as coinage metals but saw them also as instruments of hoarding.

At the time as he was writing his memoranda, the metallist theories of Oresmius had been superceded by the 'nominalist' claims that money should be manipulated. Copernicus followed neither of these extremes, pointing out instead that money had both a *valor impositus* in the form of the face value set by royal charter and also a *valor intrinsecus*, the inherent value stemming from its metal content. Consequently, he argued,

no king could in the long run succeed in maintaining the discrepancy between the *valor impositus* or *extrinsecus* and the *valor intrinsecus*, since the latter will necessarily make its presence felt and in a way which would be damaging for the economy as a whole.

Copernicus' interest in the problem of coinage was above all due to his work as administrator of the estates of the Chapter of Warnia. But even earlier, in Bologna, where his friends included the local mintner Raibolini, he had an excellent opportunity to take a closer look at minting practices. As a political economist Copernicus is known to us principally through the treatises '*modus cudendi monetam*' (1519) and '*mediata considerationes*' (1517). Some interesting light on his contribution to community and economic affairs was also shed by a few of his contemporaries. Copernicus did not share Aristotle's dislike of 'chrematistics'; neither did he support the moralistic treatment of economic problems which was characteristic of the Thomist philosophers. Instead he demanded that reason and the welfare of the whole country should be the starting point of all policy in economic matters. He realized the 'debased' coinage brought a rise in the cost of living which could benefit only those who paid a fixed rent. In the long run a steady rise in prices tended to impoverish the country as a whole.

Several years before Gresham, he found that 'bad money drives out good', arguing that economic decline is accompanied by cultural decay and that only good money can safeguard economic security and provide a good climate for earning and saving, while its stability must facilitate all exchange. Bad coinage was also ruinous to foreign trade, since no one wanted to sell his goods for bad money and so it would be impossible to buy anything abroad. Also of major importance for Copernicus' socio-economic theory is the so-called 'bread tariff' he devised for the towns of Warmia in 1531. Just as humanity is proud, then, of Copernicus, the man who 'moved the earth', so economic history can certainly claim him as one of its leading lights. His chief service was to promote the idea that money was a measure of prices, arguing that the wellbeing of economic life as a whole required a stable currency. But in assessing Copernicus' achievement in the socio-economic sphere we can hardly limit ourselves only to his surviving writings in this field. For he was not so much an economic writer as an administrator, and when speaking or writing about him today we must take into account his achievements both as a writer and as a man of action. His economic thought in fact went far beyond the relatively modest scope of his writings. This assessment derives not from the length of his writings but from the significance of the ideas which they contain. In this respect his ideas were extremely successful, and not only in the context of his own day.