In the epoch of metallic monetary existed silver standard. It was on the basis of the value of metrology 204 grams and its appearance in Europe associated with the Middle East. In the late Medieval (13-15 centuries) the territory between Ural & rivers Bug (West and South) have developed 4 monetary system - Novgorod, Moscow, Golden Horde (GH), Lithuanian. They all operate on the basis of silver bullion. Money show their value when they interact with other money. Money neighbors show the true value of sovereign national money. Economic philosopher Friedrich Hayek wrote that “Valutus” - it’s a money.

In Medieval we have a fine sample of studying process of the using the money for their foreign exchange properties. We are talking about the foreign arbitrage, when merchants in England in the early 15th sold in Flanders wool not for silver and for gold, which is then used to buy merchandise imports to England. These imports were paid in silver (J.Munro). Florentine merchant and owner of a trading house of Bardy Francesco Baldudchi Pegolotti, which had an office in London, made one day business trip to China. He wrote that on his way to China in Khorezm need to change money on the goods. In China, the foreigner gave the money in exchange for paper money at par value 1.4.

So, in China there was a metallic silver standard, which provides a nominal value of paper money. The course above and below the standard, studies show - means obtaining certain advantages compared with the standard at par in the calculations and payments.

Metal standard - is metrology, where the main parameter characteristic of a certain weight nominal cash account.

If the initial norm was a 204g before Ural, then the whole of the territory metrology money circulation was 202.4 grams. On the basis of this value occurred emission ingots and then in Novgorod and Moscow, silver delivered from Venice to GH and correlated with Prussian and Swedish «Stucke». In order to obtain additional trade preferences used forced/artificial deviation of the national currency - Novgorod and Moscow later, when nominal of metrology 202g, the market was supplied ingot weighing 175g. This led to retaliation: the Teutonic Order minted Stucke weighing 175g. Next metrological value of interoperability weight 190g, he corresponded to the average weight of the so-called ingots “Prussian’s Mark”, “Moscow rube” and “Som/Saum” on coin form of GH. This weight was used for interaction. In the Baltic countries metrology was based on the Prussian “Markstein” cash account, which accounted for 15.5 Riga’s Mark 208.63g. It is the origin of Gotland and this value delivered to the Baltic ingots, which remained from the Viking era. Part/Half of the Prussian ingot (7 Markstein) were used against the Moscow currency.

GH received silver from Venice, Chess (Gutna Gora) and China, also gold from India used his bars as a reserve, and the Russian rube is overvalued allowed in an internal circulation. Loses carried merchants, not the Treasury. But back get overpriced bars Moscow was not get billions of GH and his coins on their norm. But the bars in the Horde acted, they were few. Conclusion. Novgorod currency union, and other countries in together, but this does not rule out opportunities of interaction and Moscow weakened metrology their neighbors. Horde was deprived of this was necessary to maintain the Method of economic history has existence of an alternative flow of China in Baltic bypassing of the Volga.

Novgorodians obtained his Ingots by of two consecutive pouring in one form and get the money that is in the lower molding almost no silver, according Hermitage research in SPb (as a modern 3D-printer). It began in the last quarter of the 13th century. So, in the lower part of novgorodian bar has not contained silver almost & total weight was 202 g, but the actual silver was only 175g here. Customers in Eastern Baltics must to pay for such money as if it was worth 202 g. Therefore, I think, in order to protect the domestic money circulation from Novgorod rubles in Prussia and Lithuania began to use the new ingot weighing 175g in 30 years later. It was quite difficult and expensive. They had to find a form for Prussian currency. - They made a smaller copy of the Tatar ingot with high broadsides under the name Som / Saum. It’s well-known by B.Spuler.

The Golden Horde used in its domestic monetary circulation Russian ingots using up to 1315 exceeded their course over their weight norms. They had a very big advantage, knew Russian, who were forced to increase the rate of decline of weight (inflation), to deny the benefits of the currency counterparts.

The rate of outflow of silver was able to reduce, but to attract Tatar coins in Moscow had to increase exports. The study shows that the conduct currency wars, protecting the precious metals market in the Middle Ages, long time no one could or would not. The parties sought common ground weight. If GH took Russian (Moscow) ingots of 198 g, the Moscow Tatar coins of 196 grams - this suggests that the steppe was stronger than Moscow. Weight 198 g norm is contained in the 14 treasures with Russian bars found in GH, and treasures with Tatar bars only 10. So you can create a regression that describes the flow of silver «Russia - GH»:

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(198-196)N \rightarrow N, \quad N = \text{number units of money account.}
\]

But the beginning of the emission or handling all the money lying on the foundation of 202 grams or greater, which corresponded to the Iranian mitqal (4.4 x 46 g), according W.Hinz. It was a metrology currency reserves of Novgorod, Moscow and GH. It was heavier than the Danish \ Gotland brand in 200 grams of the Viking Age. Novgorod as though he was expelled from the system completely for the sole monetary policy. But after the crisis of 1447 Novgorod began to issue the coin on the total weight 170.1 g. This rouble is equal to half the weight of a Scandinavian Mark of 343 grams. Novgorod & Moscow refused from the bars on own money circulation.