

## The “Juridist” Fallacy. Methodological Aspects of the Study of Weights and Measures in Romanian Historiography

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**Abstract.** The article takes at task the Romanian historiography of metrology for positing the notion of standard measures before demonstrating their existence and before discussing the process of standardization. Contrary to such an approach, a contextual reading of the available evidence shows that the first efforts to standardize measures were late and that several variants of the same measure – I chose for exemplification the bushel – persisted long after the decreeing of the standard. In the end it is suggested that the study of weights and measures from the perspective of state- and market-formation is more profitable than the search for metric equivalents.

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Historical<sup>1</sup> evidence from Wallachia mentions scores of pre-modern (pre-metric) measures of length, volume, capacity and – more rarely – weight. But how can we make use of or interpret this evidence? How much and what do we know about the pre-modern weights and measures from the evidence at hand? Is it possible to establish metric equivalents of these measures or should we rather focus on other aspects related to them? Starting from these questions, the paper challenges the very bold and confident answers given by some Romanian historians; in main, it offers a critique of the tendency to find metric equivalents of pre-modern measures and hence to operate with a notion of standard measure before demonstrating the existence of standard measures. This fallacy comes close to the “juridist method” imputed by H. H. Stahl to some historians of the Middle Ages who started from legal codes (whose existence they failed to document) to reconstruct social realities.

Two faults were already identified in the attempts to establish metric equivalences of the pre-modern weights and measures. One is the fact that they retain as standards only the measures from administrative centres, overlooking the diversity of measures on seigniorial estates; the other is that the authors of such conversion tables have translated in the metric systems the measures in use just before the adoption of the new metrological system, ignoring the changes which affected the

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weights and measures before.<sup>2</sup> In short, they ignored or rather overlooked the history of measures.

This sort of anachronism is actually subsumed to the “juridistic” fallacy which, I argue, takes three forms. Firstly, it posits that a certain measure occurring in documents has a stable size, easily convertible in the metric system, without providing positive evidence that this was the case. Secondly, it reads any particular documentary occurrence of pre-modern measures as a proof of the standard or as a deviation from it. Thirdly, it projects backward metrological equivalences from a period in which standardization was already well underway. The main consequence of these interrelated errors is the obliteration of the standardization process and the accompanying transformation of the state, namely, the centralization and monopolization of the legitimate means of measure. So, I propose that the way out is precisely the study of these processes, starting from the situation in which measures were not standardized and the central authority did not attempt or could not make them uniform.

By standardization I understand the decreeing of a standard measure binding everyone at country level and its implementation in the daily activity of the subjects. A customary measure on an estate is not a standard in this reading but a local measure. The existence of a princely – thus official – measure is not sufficient proof of standardization, unless it is decreed as such and becomes mandatory in all measurements. Once decreed, it has to be enforced, which means that, for a period of time, standard measures coexist with customary measures. Chronologically, my paper covers the period between the mid-18<sup>th</sup> and mid-19<sup>th</sup> century. The documentary examples are drawn from the history of Wallachia (Țara Românească).

In what follows, I will define the “juridist” fallacy and show its origin in a polemic regarding the existence or non-existence of Romanian feudalism. Then I will apply it to the problem of weights and measures and will exemplify the occurrence of the fallacy in the context of Romanian metrological literature. More precisely, I will show how one particular measure – the bushel – was considered a standard with a metrical equivalent and how the sources were over-interpreted in order to force such conclusions. In the third part I will suggest how the analysis of documents about weights and measures can be profitable even though we will not be able to find the precise metrical equivalent of pre-modern units of measurement.

### **The “juridist” fallacy**

The “juridist method” is the expression used by the historical sociologist H. H. Stahl to rebut an entire research program in Romanian medieval historiography. In his view, Romanian medievalists tried – unsuccessfully – to reconstruct the Romanian feudalism on the basis of legal texts, as if they were accurate and objective descriptions of the various social groups and the relationships among them. On the contrary, Stahl surmises that legal codes are the projection of group interests, a particular point of view and they reflect relations of power. In the case of the principalities of Wallachia and Moldavia, the problem was the lack of textual evidence of such legal codes; no such codes were preserved or mentioned in other documents until the 17<sup>th</sup> century, when some Byzantine legal texts – which could not “mirror” Romanian social realities

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<sup>2</sup> Jean-Claude Hocquet, *La métrologie historique* (Paris: Presses Universitaires de France, 1995), 3.

– were translated. This is important because legal codes appear in a certain stage in the development of the state. In the absence of hard evidence, the historians turned to particular cases which they interpreted as jurisprudence, as illustrations of the enforcement of the alleged laws; but, the jurisprudence was nothing else than cases selected to confirm the existence of a Romanian feudalism akin to – what was believed to be – the French feudalism, without considering the entire group of available documents.<sup>3</sup>

For my concerns, the last two aspects of the jurist method are important: the assumption that there is a country-wide law even when evidence thereof lacks; and considering various particular documents as instances of that law, as evidence that the law exists, is a far-fetched idea. These two aspects resurface time and again in the studies of historical metrology and fatally weaken the statements made by their authors.

The Romanian metrological historiography consists of a small number of studies dealing explicitly with the problem of pre-modern weights and measures, the most important authors being Nicolae Stoicescu and Damaschin Mioc.<sup>4</sup> They will be the authors most frequently invoked in this article as exponents of the “jurist” fallacy. The first scholarly studies of historical metrology adopted the same approach.<sup>5</sup> Older

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<sup>3</sup> The critique is developed in H.H. Stahl, *Controverse de istorie socială* (Controversies in social history) (Bucharest: Editura Științifică, 1969), 5–121. However, it is beyond the scope of this paper to assess Stahl’s views upon feudalism.

<sup>4</sup> Damaschin Mioc and Nicolae Stoicescu, “Măsurile medievale de capacitate din Țara Românească” (The medieval capacity measures in Wallachia), *Studii* 6 (1963): 1351–1378; Damaschin Mioc and Nicolae Stoicescu, “Măsurile medievale de greutate din Țara Românească. Instrumentele de măsurat capacitatea și greutatea” (The Medieval Measures of Weight in Wallachia. The Instruments for Measuring the Capacity and the Weight), *Studii*, 1 (1964): 88–105; Damaschin Mioc and Nicolae Stoicescu, “Măsurile medievale de lungime și suprafață și instrumentele de măsurat lungimea din Țara Românească” (The medieval measures for lengths and area and the instruments for measuring length in Wallachia), *Studii*, 3 (1965): 639–665. The only book on Romanian pre-modern metrology is Nicolae Stoicescu, *Cum măsurau strămoșii. Metrologia medievală pe teritoriul României* (Medieval metrology on the Romanian territory) (Bucharest: Editura Științifică, 1971); the book is based on the previous three articles but its scope is wider, covering both Moldavia and Transylvania in the fashion of national historiography. On the basis of these works Alexandru Constantinescu wrote two studies which bring no other contribution to the field, methodologically or empirically: “Măsurile în evul mediu românesc” (I) (Romanian units of measurement during the Middle Ages (I)), *SAI XXVI* (1974): 138–145 and “Măsurile în evul mediu românesc” (II) (Romanian units of measurement during the Middle Ages (II)), *SAI XXVII-XXVIII* (1974): 183–195. Corina Pătrașcu does not fall into this category; she approached the issue at a later stage, overlooking earlier attempts of standardization, “Uniformizarea măsurilor și greutateilor folosite în comerțul Țării Românești, o acțiune de unificare a pieței interne (1829–1840)” (The uniformization of the measures and weights used in the trade of Wallachia, an action of unification of the internal market), *Studii* 21 4 (1968): 667–683. H. Ciocan, *Cotul moldovenesc este cot sacru* (The Moldavian ell is a sacred ell) (Pitești: Tipografia “Liga Poporului”, s.a.).

<sup>5</sup> I. Brăescu, *Măsurătoarea pământului la români din vechime până la punerea în aplicare a sistemului metric* (Land measurement in the Romanian Principalities from the ancient times to the introduction of the metric system) (Bucharest: Atelierele grafice Socec & Co., 1913), T.

works, published in the 19<sup>th</sup> century, cannot be objects of the same critique for they were part and parcel of the process of translating the Romanian pre-modern measures in the metric system, containing conversion tables and hence “freezing” the pre-modern measure in one variant corresponding to a metric equivalent.<sup>6</sup> In addition, the “juridist” fallacy is reproduced in various studies approaching other themes than historical metrology but making reference to various measures.<sup>7</sup>

Before moving on, I must say that the position of Nicolae Stoicescu and Damaschin Mioc is more ambiguous than it might appear in my short rendering. In their studies on medieval metrology in Romania, they do acknowledge that “the first documented decisions taken by the principality for the regulation of measures in Wallachia date from the second half of the seventeenth century, when the size of the fathom was established,” as well as that of the bucket and the ell; “in the eighteenth century, the documents and the legal codes testify to a more frequent intervention of the central power in the regulation and the control of the weights and measures.”<sup>8</sup> But these statements are contradicted a few lines below, when they write: “in this period [the 18<sup>th</sup> century, M.O.], due to the differences in the size of some measures, from region to region, misunderstandings occurred between merchants and customers. As long as the merchandise was sold on local markets, the employment of the measures from the respective regions was not an encumbrance on commerce ... on the other hand, the rapaciousness of the boyars led to the falsification of measures to their advantage.”<sup>9</sup>

So, on the one hand some measures were “fixed” by the end of the 17<sup>th</sup> century and the principedom intensified its control over measures in the 18<sup>th</sup> century; on the other hand, the measures differed from region to region. Not only that the two statements contradict each other, but they also contradict the particular approach to the measures in the subsequent pages and in other studies of the two authors. Everywhere, they manage to identify the standard of a certain measure and its metrical equivalent. They even offered tables of conversion of the pre-modern measures in the modern (metric)

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Pamfilie, “Prăjina și pogonul moldovenesc din 1797” (The Moldavian rod and acre), *Miron Costin* IV 7 (July 1916): 285–286.

<sup>6</sup> Ion Ghica, *Măsurile și greutatea românești și moldovenești ...* (Romanian and Moldavian weights and measures ...) (Bucharest: Tipografia lui K.A. Rosetti & Binterhlader, 1848) and Dimitrie Iarcu, *Măsuri și greutăți sau aritmetică socială* (Weights and measures or social arithmetic) (Bucharest: Typographia Națională a lui St. Rassidescu, 1862).

<sup>7</sup> Emil Vârtosu, “Sigilii de târguri și orașe din Moldova și Țara Românească,” (Seals of Market-towns and Towns in Moldavia and Wallachia), *Analele Universității C. I. Parhon, Seria Științelor Sociale, Istorie*, 5 (1956): 137. Igor Ivanov și Gheorghe Ivanovici, “Istoricul învățământului metrologiei în România” (The history of metrologic teaching in Romania), *Buletinul științific al Institutului de Construcții Bucharest* XIII 2 (1970): 228–231. The editors of a Transylvanian fiscal conscription appended a conversion table on the basis of conversions provided by Nicolae Stoicescu’s book *Cum măsurau strămoșii*, to help the reader understand various measures mentioned in documents, Ladislau Gyémánt ed., *Conscripția fiscală a Transilvaniei din anul 1750* (The fiscal conscription of Transylvania from the year 1750) 1, part. 1–2 (Bucharest: Ed. Enciclopedică, 2009).

<sup>8</sup> Mioc and Stoicescu, “Măsurile medievale de capacitate din Țara Românească”, 1353–1354; similarly, Stoicescu, *Cum măsurau strămoșii*, 25–26.

<sup>9</sup> Ibid.

ones. For instance, the *oca*<sup>10</sup> used from the 16<sup>th</sup> to the 19<sup>th</sup> century for the measurement of cereals was supposed to measure 1,698 litres, while the one used for liquids 1,288 litres.<sup>11</sup> Alternatively, the *oca* could weigh 1,271 kg, if used for weighing objects.<sup>12</sup> The princely ell circulating from the 16<sup>th</sup> to the 19<sup>th</sup> century is confidently equalled with 0,661 metres.<sup>13</sup>

Against such an approach, I concur with Witold Kula's recommendation:

"Pre-metric measures ... are replete with important, concrete social meaning, the uncovering of which should become the chief task of historical metrology. .. To convert old-time measures into the units of the metric system is often, in fact, not a feasible task, and results of such attempts, however painstaking, are often of little practical use because even the most meticulous determination of the dimensions of, say, acre, could not be extensively utilized when even neighbouring villages in the same year, more often than not, would have acres of different sizes."<sup>14</sup>

Let me now turn to one example of the jurist fallacy, more precisely I will demonstrate how a certain measure – the bushel – was discussed in the metrological literature and I will underline the weaknesses of the approach.

### The bushel

The bushel (sg. *baniță*, pl. *banițe*) was a measure of capacity used for the measuring of dry items, mostly cereals, until the introduction of the metric system in the 19<sup>th</sup> century. The bushel is first mentioned in the 16<sup>th</sup> century, but until the 18<sup>th</sup> century references to it are quite rare, in contrast to another capacity measure for cereals, the *obroc*. The jurist authors confidently assert that most references about the capacity of the 'just' *banița* show it to have a capacity of 22 *ocale*.<sup>15</sup> Moreover, they specify the capacity of the bushel in the metric system: hence from the 16<sup>th</sup> century to 1832, there were two bushels: the small one of 22 *ocale* or 37,356 litres and the big one of 44 *ocale* or 74,712 litres. From 1832 to the introduction of the metric system the two kinds of bushels contained 20 *ocale* and 33,963 litres and respectively 40 *ocale* and 67,92 litres.<sup>16</sup> Nonetheless, these equivalences are rather problematic.

The first objection against this approach is that the bushel is not explicitly defined in relation to other measures or submultiples up to the middle of the 18<sup>th</sup> century. From then on, several types of documents – contracts between employers and workers, agreements between landlords and tenants (usually to conclude a dispute), accounts of private estates and legal texts – provide more precise information. For

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<sup>10</sup> *Oca* (sg.), *ocă* or *ocale* (pl.) was a capacity measure for both solid and liquid items used in small market transactions and a subdivision of larger capacity measures. For the plural form I will use *ocă* when quoting from the primary sources and *ocale*, the current accepted plural form, for other situations.

<sup>11</sup> Ibid., 1373 and 1378.

<sup>12</sup> Mioc and Stoicescu, "Măsurile medievale de greutate din Țara Românească", 93–94.

<sup>13</sup> Mioc and Stoicescu, "Măsurile medievale de lungime", 654.

<sup>14</sup> Witold Kula, *Measures and Men*, transl. by R. Szreter (Princeton: Princeton University Press, 1986), 98–99 (hereafter Kula, *Measures and Men*).

<sup>15</sup> Mioc and Stoicescu, "Măsurile medievale de capacitate," 1363–64.

<sup>16</sup> Ibid., 1373.

instance, a contract between the Metropolitanate and three swineherds registered in 1742 mentioned corn bushels of 18 *ocale*. Contention over the size of the “just” measures elicits more precision in their definition. In 1750 the peasants of three villages accused the abbot of Nucet monastery of demanding the corn tithe with a *banița* of 31 *ocă* – an unjust measure.<sup>17</sup> Unfortunately, the adjudication of the case is unknown, so we cannot see what capacity was considered legitimate by the judges.

Agreements between the monastery of Mărgineni and the tenants of Breaza (April 1752)<sup>18</sup> and between the inhabitants of Călimănești and the monastery of Cozia (May 1767) stipulated that the corn tithe was to be collected with the 22-*oca* bushel. In the last case the act is very explicit as to how the capacity of the bushel was established: “at the measurement of the corn tithe from the land of the monastery, the tithe shall be collected with the bushel of 22 *ocă*, and not more capacious, because this is how we settled”.<sup>19</sup> A few years later, in July 20, 1771, the report made by the custodian of the Metropolitanate estates also mentions that 122 *banițe* of cereals, each with the capacity of 22 *ocale*, are stored in a pit in the ground.<sup>20</sup> In 1776, account of the incomes of the Metropolitanate from the estate Flești mentions “the millet tithe of 10 bushels of 14 *ocă*” and the “corn tithe of 450 bushels, the bushel of 24 *ocă*” in corn cobs.<sup>21</sup>

These are the first instances in which the bushel is more precisely defined by relating it to its subunit, the *oca*. The variety of the sizes of the bushel is evident. The 22 *ocă* bushel later became the standard capacity. But for the moment it was a local measure, the result of local and private agreement, having nothing to do with the state and, logically, only having a local circulation. Yet sometimes in the second half of the 1770s the principedom began to extend its control over the weights and measures.

This change occurred due to two facts: the growing importance of corn among cultivated cereals in Wallachia<sup>22</sup> and the regulation decreed by the principality, stating the obligation of the tenants towards landlords. Although the regulation of agrarian relations started in the 1740s, under Prince Constantin Mavrocordat, the first attempts

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<sup>17</sup> *Documente privind relațiile agrare în veacul al XVIII-lea*, (Documents regarding the agrarian relations during the 18<sup>th</sup> century) vol. I, Țara Românească [Wallachia] eds. V. Mihoarea, Ș. Papacostea, Fl. Constantiniu (Bucharest: Editura Academiei Republicii Populare România, 1961), 502/doc. 342 (hereafter, *DRA*).

<sup>18</sup> Nicolae Iorga, *Studii și documente cu privire la istoria românilor* (Studies and documents regarding the history of Romanians), vol. 5 (Bucharest: Stabilimentul Grafic Socecu), 197 (hereafter Iorga, *St. și doc.*). The adjudication is allegedly based on a settlement (*testament*), but there is no settlement that regulates the method of paying the corn-tithe and the capacity of the bushel; so the claim that the corn tithe is paid according to the custom – i.e. local method – should be taken literally.

<sup>19</sup> *DRA*, 571/doc. 420.

<sup>20</sup> *DRA*, 581/doc. 430.

<sup>21</sup> *DRA*, 603/doc. 456.

<sup>22</sup> Florin Constantiniu, *Relațiile agrare din Țara Românească în secolul al XVIII-lea* (Agrarian relations in Wallachia during the eighteenth century) (Bucharest: Editura Academiei Republicii Socialiste România, 1972), 48–49. As a tributary principality, Wallachia had to provision the Ottoman military and the city of Istanbul with various food staples (wheat, barley, butter, honey etc.).

to regulate the bushel are documented only in 1770s, during the reign of another reform-minded prince, Alexandru Ipsilanti (1774–1782).<sup>23</sup>

The control took two successive forms. At first, the princely county officials used to intervene in metrological disputes and arbitrate a compromise between the two parties, validating the material objects used to measure by branding them with a metallic sign, “the princely brand”. The first such instance is recorded in November 1779: the villagers of Ocnîța (Dâmbovița County) complained, among others, that the administrator of Dealu monastery exacts the corn tithe of four bushels per acre (*pogon*), a bushel measuring 52 *ocale*. The princely adjudication reduces the obligations of the peasants and asks the two parties to make a compromise. Yet it is surprisingly silent when it comes to the corn tithe and the bushel, for a reason revealed by the report given by two *ispravnici*<sup>24</sup> of Dâmbovița (February 20, 1780) who judged the matter on the spot.<sup>25</sup> The latter measured “that bushel with wheat, barley, millet and corn” and find it to be of 36 *oca*. To ascertain themselves that this is the just bushel, they summoned the administrators of five surrounding estates to present their bushels; these were all of 36 *oca*. So the villagers from Ocnîța had to accept the obvious and the *ispravnici* made another pair of identical bushels which they also authenticated with a piece of metal, “the princely brand”.<sup>26</sup> Another case, involving the Metropolitanate of Târgoviște and the villagers from Săcuieni, was solved identically in 1780 demonstrating the existence of a regional bushel in Dâmbovița County.<sup>27</sup>

The documents discussed above reveal the variations in the actual size of the bushel used for the collection of the tithes. To find so many variant bushels is not only to commit the fallacy of pseudo proof in the form of reversible reference,<sup>28</sup> in the sense that the evidence provided by the Stoicescu and Mioc contradict their statement about a standard bushel, but also to make the notion of standard bushel preposterous. The “juridist” position, namely the constant attempt to find, anachronistically, a regular capacity of the bushel becomes untenable. First of all, by the beginning of 1780, there is no state endorsed standard bushel, the central power intervening only by arbitrating metrological disputes and by validating measures agreed upon by the parties involved. This is the reason for which the final adjudication of a metrological dispute is entrusted to local officials. Secondly, the bushels of 22 *oca* are not instances of a standard, but the result of local agreements. Thirdly, there are other variants of the bushel recognized as legitimate, which had also been the result of local agreements.

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<sup>23</sup> Ibid., 106–170.

<sup>24</sup> The *ispravnici* were the representatives of the prince at county level. They cumulated administrative, judicial and police functions and were instituted by Constantin Mavrocordat during the 1740s. At first there was one *ispravnic* in each county but Prince Alexandru Ipsilanti (1774–1782) instituted two *ispravnici* in each county.

<sup>25</sup> DRA, 657/doc. 511.

<sup>26</sup> DRA, 662–664/doc. 516. A day later, a princely decision mentions the 52-bucket used by the monastery of Tismana to exact the corn-tithe; as the decision does not indicate any measure, most probably the metrological side of the dispute was to be arbitrated on the spot by princely agents, DRA, 661–662/doc. 515.

<sup>27</sup> DRA, 661–662/doc. 515. Villages of Ocnîța and Săcuieni are indeed geographically very close.

<sup>28</sup> David Hackett Fischer, *Historians' Fallacies. Toward a Logic of Historical Thought* (New York: Harper & Row, 1970), 44–45.

Thus far, the bushel was still local. The intervention of the state in the definition of the “just” measures enters a new phase in September 1780 with the publication of the Legal register (*Pravilniceasca condică*). For the first time, a legal text established the standard measure for the corn tithe:

“As with the other harvests, in this register it was decided for the corn tithe to be taken similarly one out of ten, according to justice; but ... since the harvesting of the corn does not occur all at one time, both the tenants, who do not have the possibility to gather it all at once, and the landlords, cannot afford to assign men to guard until all the corn is harvested, suffer losses; hence, after a more reasonable evaluation, following the old custom, we decide that the tithe has to consist of four bushels of seeds per acre, the bushel being of 22 *ocă*.”<sup>29</sup>

This is the first direct enunciation of a standard bushel for the entire country. From this point on in history, it is justified to assert that the bushel for the corn tithe contained 22 *ocale* and that other variants were derogations from the standard. Now that a legal point of view existed, the standard had to be put in practice, in the daily life of the subjects. Prince Mihail Suțu probably had these stipulations in mind when, on August 22, 1785 he exhorted the landlords to assess the tenants’ dues justly: “at the time of tithes collection there shall be no injustice or damage, [avoiding] the use of a bigger unit of measurement”.<sup>30</sup>

Mioc and Stoicescu failed to notice the importance of this moment in the history of weights and measures. For them the historical process I described above did not exist. In analyzing the individual documents, they pay no attention to the context, ignore the details which contradict their assumptions and bring together facts divided by several decades in the same paragraph, as if no change had occurred in between. The main trait of their method is the amalgamation of the data in a long series of illustrations of the standard bushel or deviations from this standard. For example, in the same paragraph they mention a stipulation of the Organic Regulation from 1831 and a local agreement from 1767, both mentioning the 22-*oca* bushel.<sup>31</sup> But while the latter dates from a period in which no standard was enunciated, the former is precisely such an enunciation and occurred half a century after the first legal enactment of the standard bushel; hence, the two facts are not on a par. In this reading of the sources, variant bushels – both before and after 1780 – become unofficial ones, deviations from the standard. The methodological error gives way to such paragraphs:

“Besides this 22-*oca* bushel, considered “just” and official, there were other bushels, with varying capacities of 14, 15, 18, 20, 24, 25 etc. *ocale*, so both smaller and larger than the official one of 22 *ocale*.”<sup>32</sup>

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<sup>29</sup> *Pravilniceasca condică* (The legal register), ed. Colectivul pentru vechiul drept românesc al Academiei R.P.R. (Bucharest: Editura Academiei Republicii Populare Romîne, 1957), 156.

<sup>30</sup> D.C. Sturdza-Șcheanu, *Acte și legiuiri privitoare la chestia țărănească* (Acts and regulations relative to the peasant question) seria I, vol. 1 (Bucharest: Atelierele Grafice Socec & Co., Societate Anonimă, 1907), 76 (hereafter Sturdza-Șcheanu, *Acte și legiuiri*). A similar order is reiterated the next year by Prince Nicolae Mavrogheni on May 28, V.A. Urechia, *Istoria Românilor* (History of Romanians) tome III (Bucharest: Tipografia “Gutenberg” Joseph Göbl, 1892), 75.

<sup>31</sup> Stoicescu, *Cum măsurau strămoșii*, 228.

<sup>32</sup> Stoicescu, *Cum măsurau strămoșii*, 226. The same variants of bushel appear in Mioc and Stoicescu, “Măsurile medievale de capacitate,” 1363.



The origin of this error lies with the “juridistic” fallacy, the assumption that there is a standard waiting to be discovered by historians in particular cases. A consequence of this fallacy is to ignore or overlook historical developments and retrospectively apply 19<sup>th</sup> century realities. The idea that the regular *banița* comprised 22 *ocale* is actually a retrospective projection of the stipulation of this capacity in the Legal Register from 1780, the Caragea Law (*Legiurea lui Caragea*)<sup>33</sup> from 1818 and Organic Regulation (*Regulamentul organic*)<sup>34</sup> from 1831. But as I already demonstrated, the bushels of 22-*oca* were originally the result of local agreements, not the application of a gauge established by the state. Other similar agreements, concluded on other estates, defined the just bushel as containing 36 *ocale*. In order to adjudicate metrological disputes, the princely court had to resort to the local customs and local knowledge, because it had no standard whereby to override local customs.

To summarize, only starting with the year 1780 can we speak of a standard bushel, all other variants being derogations from it, non-legitimate and non-official measures. The tendency to impose the standard measures set by the Legal Register is amply documented and irreversible. One way was through ordinances addressed to the territorial princely officials (*ispravnici*) who were exhorted to make sure that the standard bushel was used in the relations between landlords and tenants, as they were in 1784.<sup>35</sup> The other was by applying the agrarian regulations, which stipulated the standard bushel, in the adjudication of disputes between tenants and landlords. In 1783, Prince Nicolae Caragea ruled that the tenants from Bobul and Urlați had to render the tithe and the labour dues to the monastery of Colțea according to the Legal Register; among these “for the corn, they have to give four bushels per acre, corn seeds with a bushel of 22 *ocă*”.<sup>36</sup> Such dispositions became frequent in the early 18<sup>th</sup> and late 19<sup>th</sup> century.<sup>37</sup> Since such ordinances, judicial reports and judicial decisions simply reiterate the provisions of the Legal register, it is possible that sometimes there was no metrological dispute. But even so, it is clear that the bushel is not an indifferent matter to the central power.

However, while it existed legally, the standard bushel varied considerably in practice. For instance, the computation of tithes on two estates of the Metropolitanate in Buzău county in the years 1779–1781 shows different capacities for the same measure. On the Metetelu estate, the barley was measured with a *banița* of 21 *ocale* while the millet with a *banița* of 22 *ocale*; on the Acsentile estate the wheat and barley was measured with a *banița* of 20 *ocale* and the corn with a *banița* of 25 *ocale* (cobs,

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<sup>33</sup> *Legiurea Caragea* (The Caragea Law), ed. Aurel C. Sava (Bucharest: Editura Academiei Republicii Populare Române, 1955), 46.

<sup>34</sup> *Regulamentele organice ale Valahiei și Moldovei* (The organic regulations of Wallachia and Moldavia), eds. Paul Negulescu și George Alexianu, colaborator Aurel Sava (Bucharest: Întreprinderile “Eminescu” S.A., 1944), 39.

<sup>35</sup> Sturdza-Șcheeanu, *Acte și legiuiiri*, 74.

<sup>36</sup> N. Iorga, “Documente urlățene” (Documents relative to Urlați), *Buletinul Comisiei istorice a României*, V (1927): 277–78.

<sup>37</sup> *DRA*, 793/doc. 636, 803-804/doc. 646, 845/doc. 680, 879/doc. 705, 881/doc. 707, 883/doc. 708; Iorga, *St. și doc*, vol 5, 200–02

not seeds).<sup>38</sup> One possible explanation is that the assessment started before the introduction of the standard bushel in 1780 by the Legal Register.

Local bushels continued to be perceived as legitimate even by the peasants and even when such bushels were to their disadvantage, a fact indicative of the low infrastructural reach of the state. On November 20, 1793, one of the *ispravnici* of Vlașca reported to the prince on the adjudication of an agrarian litigation. The peasants from Novaci petitioned that from old times they rendered their corn tithe with a 25-*oca* bushel but, from the income of that estate, the new farmer exacted the corn tithe with a 45-*oca* bushel. The judge argued that the lease-holder has done no injustice, since he exacted as tithe “four bushels per acre, with the iron-branded bushel, which was given to him by the landlord of the estate”. Did the landlord possess an official bushel with the princely iron brand, or was it just a local bushel authenticated by a princely official? The latter case is very probable, since none of the two bushels is according to the Legal register; hence, it was an abuse of the landlord who did not attend the Legal Register. What is striking is that both the peasants and the princely officials regarded as legitimate a bushel (of 25 *ocale*) which was in fact not standard.<sup>39</sup> On other estates, local bushels were perceived as illegitimate. In 1814, a petition of the peasants from Soslănești against the boyar Niculae Rucăreanu imputes the latter the use of a 44-*oca* bushel, “never heard of before”; still, we don’t know what bushel was legitimate in their opinion.<sup>40</sup>

It is interesting to notice that local bushels became illegitimate only at the encounter with the homogenizing state; only documents issued by state authorities or addressed to them refer to illegitimate bushels. In private acts, as evidence of the income of estates, the variant bushels are only registered for the sake of accountancy, no hint of illegality emerging from the texts. A good example is furnished by the accounts of the estates of boyar Nicolae Glogoveanu which mention both official and local (unofficial) bushels. Hence, in 1814 on the estate of Glogova the dues from corn, wheat and barley were collected with “iron-branded bushels” (*banițe înherate*).<sup>41</sup> Yet, in another village belonging to this estate – Brativoești – the corn tithe was exacted with “the bushel of priest Dinu of twenty *ocă*” (*banița popii Dinu dă oca dooăzăci*).<sup>42</sup> In 1816, at Câlciu, the corn was collected “with the bushel of 11 *ocă* and one pint” (*cu banița de ocă 11 și o litră*) and also with “iron-branded bushels”.<sup>43</sup> A year later, on the

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<sup>38</sup> DRA, 679-680/ doc. 531. The explanation of the variation of the bushels in this case by the varying weight of the cereals might be correct, but it doesn’t help the jurist authors since the corn bushel is of 25 *ocale*, Mioc and Stoicescu, “Măsurile medievale de capacitate,” 1363.

<sup>39</sup> V.A. Urechia, *Istoria Românilor*, tome V (Bucharest: Tipografia și Fonderia de Litere Thoma Basilescu, 1893), 120–23.

<sup>40</sup> Dan I. Simionescu, “O jalbă de la începutul veacului al XIX-lea. Document muscelan” (A supplication from the beginning of the nineteenth century. A source from Muscel County), *Revista arhivelor* 12 (1925): 274.

<sup>41</sup> Nicolae Iorga, *Situația agrară, economică și socială a Olteniei în epoca lui Tudor Vladimirescu. Documente contemporane* (The agrarian, economic, and social situation of Oltenia in the age of Tudor Vladimirescu. Contemporary sources) (Bucharest: Editura Ministerului de Agricultură, 1915), 46-47/doc. LII.

<sup>42</sup> Ibid., 49–50.

<sup>43</sup> Ibid., 79/doc. XCV. For lack of a better term I translated *litră* – which was ¼ of the *oca* – with pint.

same estate, only the iron-branded bushels were used.<sup>44</sup> In 1817, at Glogova, the wheat is collected with “the bushel of 32 *ocă*” (*banița de ocă 32*).<sup>45</sup> Finally, in 1826 on the estates of Prunișori, Degerați, Ercila and Șărpești the dues of wheat were rendered with the “iron-branded bushel” (*banița cea înherată*).<sup>46</sup>

This considerable metrological variety existed on the lands belonging to a single landlord. Different measures were used on different estates and villages; on the same estate, different measures were used in different years; and on the same estate, in the same year, the same cereal was measured with different measures. What is more surprising is that what appears to have been an official measure, the iron-branded bushel (the standard bushel of 22 *ocale*, or a local measure authenticated by a local official?), coexisted with several local measures and no notion of unlawfulness of the latter appears in the documents. It is not difficult to imagine that the situation was more or less similar on other estates.

The state regulation of the agrarian relations was insufficient to standardize the bushel as long as local measures were still accepted. As Witold Kula showed, an additional trigger was necessary, namely, the extension of the range of commercial ties across territories; according to the Polish historian “the will of the state would win through, but not until much change in economic life, and in the nature of the state itself, had taken place”.<sup>47</sup> In 1824, mirroring the intensification of trade, Prince Grigore Dimitrie Ghica orders the *ispravnici* to make bushels of stone according to the gauge delivered from the centre in order to facilitate commercial transactions. Such bushels were supposed to be made of hard stone – to avoid alteration of size – and had to be placed where they were needed most in a county; if necessary, the *ispravnici* could make more than one.<sup>48</sup> If such stone-bushels had to be located in one important place of the county, after the Organic Regulation (1831) the central authorities delivered standard bushels in each village.

After the Treaty of Adrianopole (1829) and the opening of the Wallachian trade to the outer world both standardizing factors became stronger. The merchants started to purchase grains from all over Wallachia and transport the cargo to the Danube ports for export. In turn, the state needed to gather accurate data about the production, consumption and surplus of grains to know how much export it could afford. Both operations required standard measures.<sup>49</sup>

It is in this context that gauge measures were delivered not only to the administrative centres of the counties, but also to the villages, marking a big step forward in the standardization process. An echo of this measure dates from 1840 when the magistrate of the town of Giurgiu showed that the standard bushels from villages, being made of wood, had dried up and shrank.<sup>50</sup> The problem resurfaced in 1846 when

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<sup>44</sup> Ibid., 80/doc. XCVII.

<sup>45</sup> Ibid., 88-89/doc. CX.

<sup>46</sup> Ibid., 287/doc. CCCLXXVI.

<sup>47</sup> Kula, *Measures and Men*, 114-115; the quotation at page 115.

<sup>48</sup> I. Cojocaru, *Documente privitoare la economia Țării Românești 1800-1850* (Documents concerning the economy of Wallachia 1800-1850) vol. I (Bucharest: Editura Științifică, 1958), 337-338/doc. 227 (hereafter Cojocaru, *Documente*).

<sup>49</sup> Corina Pătrașcu, “Uniformizarea măsurilor,” 673.

<sup>50</sup> Ibid., 681.

the governor<sup>51</sup> of Romanați county reports that the iron-branded bushels distributed through villages have dried up, “some more, some less,” and suggests that iron bushels were needed.<sup>52</sup> So, the desired uniformity of measures was faulted by technical problems. However, we can remark that towards the middle of the 19<sup>th</sup> century, not only was there a theoretical standard bushel, but the state had also gone a long way in imposing it in practice at the very local level, the village.

## Conclusion

When Ion Ghica published in 1848 his booklet with tables of conversion of the pre-modern Romanian measures in the metric system,<sup>53</sup> he was participating in the standardization process – long underway. The aim of his work was to provide a set of guidelines to merchants, statesmen and engineers; hence the obliteration of the wide variety of the pre-metric measures in favour of one variant considered standard was absolutely necessary. But to adopt the same approach in scholarly works, to retrospectively project the standards fixed in the 19<sup>th</sup> century, and to assume that such a standard existed before its enunciation by the central power is misleading.

This is the mistake I impute to Romanian metrological historians. They formally acknowledged the diversity of weights and measures and the late intervention of the central authority in their control and definition; and yet, due to what I call the “juridistic” fallacy, they assumed the existence of a standard and looked for its illustration in the historical evidence at hand, instead of trying to demonstrate it.

Focusing on the bushel as a unit of measurement, I showed in this paper that such an approach is erroneous. Thus, it is also mistaken to believe that some scattered references to princely measures are expressions of standard measures, in the absence of any source referring to standardization before the end of the 18<sup>th</sup> century. In addition, even when a standard was decreed, local measures could still be used and accepted as legitimate. Finally, it is equally misleading to rely on the 19<sup>th</sup> century tables of conversion of the old measures in the metric correspondents, because such tables obscure the history of weights and measures and – in their attempt to simplify – overlook local variations in the size of weights and measures. In the light of these considerations, the explicit aim of the metrological historians – to provide an instrument of calculation for economic historians – becomes questionable.

If metrological history based on the assumption – not the demonstration – that there are standard measures is a rather unproductive endeavour, then what is the use of the study of weights and measures? Similarly to legal codes, standard measures emerge at a certain stage in the history of a state and indicate a certain situation of the economic market. Hence, we can use the study of weights and measures as a vista on the larger social process like state formation and market formation.

In the first case the study of weights and measures and of their standardization reveals the nature of the state. The imposition of the standard measures is an indicator of the infrastructural power of the state, its capacity to act at a distance through its own

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<sup>51</sup> After 1831 the top county official was no longer called *ispravnic* but called *cârmuitor* (which I translate as governor).

<sup>52</sup> Cojocaru, *Documente*, vol. II (Bucharest: Editura Științifică, 1958), 887-888/doc. 684.

<sup>53</sup> See footnote 6.

infrastructures. Imposition of standard measures reflects centralization of power and monopolization of the legitimate means; conversely, failure to impose standard measures indicates a weak state facing other competitors in the same territory. Moreover, the regulation and imposition of standard measures in the daily life of the subjects represented everyday encounters of the latter with the state. Through measures bearing the princely stamp, the state is brought in the daily life of the subjects and represented as a just and legitimate entity.

Equally, the study of weights and measures can illuminate the constitution of national economic markets. Intensification of commercial exchanges and commodification of landed property also required a stable and homogenous metrological system. In opposition, local measures existed where the range of commercial ties was short, where local markets prevailed and long-range trade was rare and limited to several expensive items.

Tracing the process of standardization and linking it to the development of the state and of the economic market could be less ambitious than trying to figure out the metric equivalent of a certain pre-modern measure; yet at the same time, it can be more realistic and more profitable.