

**ACCOUNTING BOOK OF THE LVIV MINT (1656–1657)
AS A SOURCE OF ACCOUNTING AND ANALYTICAL EXPERIENCE
IN MANAGING BUSINESS ENTITIES IN EMERGENCIES**

Abstract. Information for the management of economic entities is formed in accounting and does not lose its value in time for research and development of practical recommendations for the future. The Accounting Book of the Lviv Mint of 1656–1657, partially developed by historians, is a unique source of research and analytical experience in the management of public sector economic entities in emergencies, such as the war between the Polish-Lithuanian Commonwealth and Sweden (1655–1660). Unlike the books of merchants and artisans, keeping the Accounting Book at the Lviv Mint was mandatory, which testifies to the responsibility of its executors, and thus argues the authenticity of the reflected facts. The application of the rotary-historical method of studying the data of the Account Book in comparison with other historical and economic sources allows not only to reconstruct the events surrounding the opening of the Lviv Mint, but also to restore the sequence and targeting of management decisions to establish coin production in Lviv. The value source advantage of the Accounting Book is the use of in-kind, labor and cost measures, which allows to determine with sufficient accuracy all types of costs associated with the operation of the Lviv Mint and coinage. The participation of the king and the most influential elite of the Commonwealth at that time influenced the attraction of church property and private loans in the financing of the Lviv Mint in such an emergency situation as the war. The organization of cost accounting in the Accounting Book is built in chronological form, but characteristic of individual production processes, which is inherent in the minting of coins, which led to the use of cost accounting by places (centers) of their occurrence. Based on the data of the Accounting Book, the issues of payroll accounting, their types and composition of employees of the Lviv Mint were studied. Accounting and analytical

data allow to determine the nature of management and logistics decisions for the production process and methods of external settlement operations at the Lviv Mint in emergency situations. Organizational and methodological bases of management decisions and their experience of accounting and analytical support of the Lviv Mint in the conditions of war have the prospect of use in modern emergencies, and in particular pandemics. This will mobilize management capacity and resources to reduce the risk of human losses from the spread of COVID-19 virus worldwide.

Key words: Lviv Mint, accounting, accounting and analytical experience, Accounting book, management

Formulation of the problem.

One of the problems of today's civilized world in the fight against the pandemic caused by the spread of the COVID-19 virus is the unpreparedness of the management system of economic entities to act in emergency situations. This also applies to government structures at all levels of government. The lack of instructions and protocols of actions at all levels of government and business entities has led to disorganization in the activities of relevant agencies and in the economy as a whole. As a result – human losses and panic among the population, the suspension of entrepreneurship. The development of measures at all levels to counter the pandemic has faced a lack of regulatory support for emergency activities, as well as a lack of illuminated and scientifically developed historical experience. If directives and protocols tested in the EU can be used in the

creation of normative and legal support, the elaboration of domestic historical experience requires immediate efforts of Ukrainian scientists. Search and scientific elaboration of such unique sources, which is the Accounting Book of the Lviv Mint for 1656-1657, will clarify the existing but little-known accounting and analytical experience of management of economic entities in emergencies in the Ukrainian lands and consider the possibility of its application at present.

Topicality of the chosen topic.

Despite the constant development of scientific and technical process, the emergence of new technologies and information systems, the study of historical sources such as accounting documents, accounting records or accounting records are the most reliable carriers of information about specific events in certain time periods. Such unique sources of information include the Accounting Book of the Lviv Mint for 1656–1657, which, despite the ancient methods and techniques of registration of economic facts, contains detailed information about the receipt of materials, their processing and its costs in the production process. The information presented in the Accounting Book contains natural and cost measures of each economic fact on the activities of the Lviv Mint for the period 1656-1657 in a continuous way, which makes it especially valuable in terms of complexity of information. But its greatest value lies in the ability to study the experience of management decisions in the emergency situation of the war of 1655-1660, as it allows you to create an information base to address today's issues related to the pandemic. Without the creation of such a national information support, we will be doomed to keep repeating the same mistakes in emergencies.

Analysis of recent research and publication.

The Lviv Mint, as an object of scientific research and publications, covers about 100 years. The authors are dominated by Polish and Ukrainian scholars. One of the first researchers of the Accounting Book of the Lviv Mint was the work of Rudolf Menkitsky, known in historical and artistic

circles in 1932 [1]. As a specialist in numismatics, R. Menkitsky used this Account Book from the archives of Krakow to disclose information about the activities of the Lviv Mint in 1656-1657 in terms of establishing the facts of coinage, their classification and description of the circumstances due to which came into circulation Lviv horts and shostaks. After a rather long break, Teofili Opozda's research on the activities of the Lviv Mint appears, where a manuscript from the library of the Polish Academy of Sciences in Krakow is more fully used [2]. Among Ukrainian studies, the works of Volodymyr Shlapinsky and Roman Shust deserve the most attention who, using the archives of Lviv, systematized the periods of activity of the Lviv Mint and classified the minted coins [3–4]. At the same time, the issues of accounting and analytical experience and management of such an entity as the Lviv Mint in emergency situations are not given enough attention. Insufficient attention is also paid in the modern economic literature, after the spread of the pandemic, to the possibility of applying historical experience in the management of economic entities in emergencies, as the possibility of using it to solve today's problems [5].

Purpose and tasks.

The purpose of the study is to analyze and summarize the accounting and analytical experience of managing business entities in emergencies based on historical sources about the activities of the Lviv Mint in 1656–1657 to form practical proposals for solving modern problems. Achieving this goal involves solving a number of tasks, namely: analysis of the Accounting Book as a source of accounting and analytical experience in managing the activities of the Lviv Mint; assessment of the peculiarities of the emergency situation in the Commonwealth related to the war; analysis of sources of financing the activities of the Lviv Mint; finding out the types of expenses of the Lviv Mint and accounting and analytical experience of their reflection; analysis of staffing of the Lviv Mint and types of its remuneration; identification of the most useful practices from the accounting and analytical experience of managing business entities in emergencies to address issues related to the current pandemic.

Outline of the main research material and the obtained results.

The Lviv Mint is a unique phenomenon not only in the historical, but also, first of all, in the economic dimension. In the historical dimension, the uniqueness of the Lviv Mint lies in the special mission of Lviv to support Polish King Jan Casimir in rescuing the Swedish army and to distribute coins minted by Lviv masters in the circulation of the Commonwealth. The uniqueness of the Lviv Mint in the economic dimension lies in the creation of a powerful financial resource for the royal treasury of the Commonwealth in an emergency situation - war. Moreover, the creation of additional financial resources for the royal treasury was possible due to the harmonization of management measures, as evidenced by accounting and analytical data from the Accounting Book of the Lviv Mint. Information about the preservation and content of the Accounting Book of the Lviv Mint for 1656–1657 became known from historical research in 1932 thanks to Rudolf Menkitsky (1887–1942) [1] – Director of the National Museum named on Jan Sh. III in Lviv [6]. Being a well-known numismatist, R. Menkitsky used the data of the Account Book to describe Lviv coins, namely: six-penny coins and orts (18 money). At that time it was the most complete study of the Lviv Mint in the period 1656–1657. Only after the Second World War did a more complete study of Teofila Opozda [2] on the activities of the Lviv Mint, which not only describes in detail the contents of the Accounting Book, but and the analysis of technology of production of coins is carried out and their systematization is carried out.

The researched manuscript is in the library of the Polish Academy of Sciences in Krakow under the title: „Mennica lwowska r. 1656. Tu jest dowodów piętnaście r. 1827 uporządkowałem” [2]. This manuscript has been preserved without a title page, beginning on page 90 and ending on page 140. According to Teofilia Opozda, this is the second copy of the Accounting Book of the Lviv Mint (the first was used by R. Menkitsky). It is in the form of notebooks and is part of a set of documentary artifacts of the “Act of Pinocchio.” The records were made in chronological order, mainly reflecting business transactions for the receipt and processing of silver, bringing its

sample to the desired quality, use of stocks and labor costs. The pages indicated: types of operations, content, natural and cost measures of operations Hryvnia, lots and quentles were used to measure the weight of silver – the main raw material for coinage. Accounts were kept weekly, usually on Fridays, the results of processing and preparation of raw materials, metal smelting The final entries related to the movement money as of the 37th week of the Lviv Mint’s activity, the last record being the payment of its debt obligations.

The Mint’s ledger is considered as an autonomous source of information about its life, about the forms and style of cooperation of individual workshops in the sequence of specific events of their implementation. The materials of the accounting book allow to find out about the settlement operations of the administration with the employees regarding the performance of various works and the results of the activity of the Mint as a whole. Thanks to the credentials, it became possible to cover the process of coin production, which increases the importance of accounting information in the time context. And this information is comprehensive. Covering all aspects of coin production that could be covered by cost measures.

The opening of the Mint in Lviv, which at that time was part of the Commonwealth, preceded by political and economic preconditions. As a result of the Polish-Swedish war of 1655–1660, the Polish-Lithuanian Commonwealth was destroyed. The Swedes captured Warsaw and Krakow, and Gdansk and Zamost were under threat. King Jan Casimir was forced to withdraw to Opole, where on November 20, 1655 he issued a manifesto calling for a fight against the Swedes. However, the treasury was empty, there were no tax revenues, which made it impossible to finance the army. Jan Casimir was forced to arrive on February 10, 1656 in Lviv, which at that time was in a safer place in the country. By order of King Jan Casimir, a mint was to be opened in Lviv as soon as possible, which was established in 1650. It should be noted that the absence of a mint at that time was nonsense for Lviv as a shopping center at the crossroads. trade, namely: east – west; North South. While coins were minted not only in Krakow and Gdansk, but also in Bydgoszcz, Vilno, Poznan, Lublin and

permanently appeared in other cities of the Commonwealth. The only real source of funding for the monetary could be only the church, which agreed to donate silver and gilded utensils to the king. As early as February 22, 1656, Jan Casimir issued an order to open a mint in Lviv and to appoint authorized persons to collect church donations. The authorized commissioners were goldsmiths, who were to determine the weight of each donated item, examine its quality (sample) and record this data in the accounting register. Thus, political and economic reasons influenced the creation of the Lviv Mint. At the same time, it should be noted that this was essentially a resumption of coin minting in Lviv. After all, since the middle of the XIV century. to the beginning of the XV century in Lviv there was a mint, which first minted Galician-rus coins (to ensure money circulation in the annexed ancient Ukrainian lands), later Rus quarters (under Vladislav Jagail (1388–1394), and later Lviv half-grossus (1394–1414).

Thus, on March 1, 1656, Jan Casimir issued a normative act on the opening of the Mint in Lviv: “Jan Casimir, by the grace of God, King of Poland, etc. marks this letter, watching today’s destruction of Poland, while the cities in which the mint used to be, is in enemy hands. Moreover, believing that the great disadvantage of the RP and our subjects is happening, because the Monetary in the state is not open and wanting both the RP and the people to have their own benefit, and the silver that different churches in our region to save and defend the RP, can be used in the open with the participation of the Senate Monetary, and they to the Grand Duke Stefan Koryczynski Grand Chancellor of the Crown, Warsaw, who took over this burden, and in charge of it we give Jerome Pinocchio to our Secretary to the administration and ordering it ... only orti and shostaki were minted, orti of the eleventh sample - 32 pieces from one hryvnia; shostaki of the sixth test - from one hryvnia 53 pieces. Moreover, all that remains above the costs and expenses of the monetary silver of the church, the monetary can not take any profit and should benefit the RP.” [2]. King Jan Casimir emphasizes in this ordinance that he made his decision on the advice of senators (the Seimas). Perhaps in such a difficult political and economic situation, it was a

diversification of risk. Attention is drawn in this situation to the person of Jerome Pinocchi, an Italian by birth, a merchant who lived in Krakow, had the status of royal secretary and was a famous diplomat. After taking over the management of the Lviv Mint, Jerome Pinocchi entrusted the functions of his secretary to Lorenzo Bandinelli, who was also Italian but lived in Lviv, where he owned real estate and, in particular, the famous Kaminica Bandinelli on Rynok Square, where his father opened the first office [6].

Determining the time lag of the organization of the Lviv Mint would probably also be difficult without the above-mentioned Account Book. Once again we see the importance of accounting to clarify important historical events. According to the Accounting Book, on May 15, 1656, the first batch of minted coins was received. Given the date of publication of the royal ordination (March 1, 1656), we see that the creation and launch of the Lviv Mint took a little more than eleven weeks. During this time, the premises were selected, the necessary artisans were hired, the necessary additions and re-equipment of the premises with the necessary means for processing silver and minting coins were performed. As a rule, such government agencies; their creation and activity were clearly regulated in the legislative plane. On the basis of the Accounting Book, it became known that from May 1, 1656, the expenses for the maintenance of the royal secretary, the superintendent of the Mint, Jerome Pinocchi and Lorenz Bandinelli, who supervised the workers, were accrued. That is, from the beginning of the actual activity of the Lviv Mint, and not the preparatory period of its functioning and the receipt of church silver (April 8-28, 1656).

There is no reliable information about the location of the Lviv Mint. However, most researchers believe that most of it was in a house at the corner of Market G2 and Dominican Street, owned by Lorenzo Bandinelli. Confirmation of this fact is that the most important production sites and the administration of the Lviv Mint were located in a rented building - Kamyaniitsa Bandinelli. including the rent of the house where the coin was minted) [2]. The only thing that the Accounting Book contained about the building of the Lviv Mint was the information about the payment of the plaque with the royal coat of arms,

which hung above the entrance to the house. Payment was made on May 22, 1656 in the amount of - 8 zloty 12 grosh. At the same time, T. Opozda expressed her surprise that in such a detailed and specific document, which is the Accounting Book, which reflected all the costs of raw materials and the amount of coin production, registered the movement of funds, calculations and liabilities, bypassed the development of Lviv mint. But understanding the main purpose of the Accounting Book, as the main accounting register of this time, according to common practice, rented buildings did not reflect on the balance sheet of the entity, which T. Opozda as a historian may not have known. Researchers also believe that the Lviv Mint was created temporarily due to the difficult political and economic situation in the country (war, the crisis of royal finances), so the building was rented for it. But these are rather subjective opinions of the supporters of the diminished role of the city of Lviv in the economy of the Commonwealth and ignoring the traditions of the existence of the Mint since the middle of the XIV century. Opening of the Mint in Lviv in the 16th century. became an objective necessity, which made it possible to fill the royal treasury to finance the victory over the enemy, who captured a large part of the Polish-Lithuanian Commonwealth.

The leased premises required the completion of special additional premises to ensure the operation of the Lviv Mint. The costs of construction materials and payment to employees are evidenced by records of a synthetic nature, for example, it is stated that on May 15 for nails, 11 shields, carpenters and 12 peasants who worked different days – 44 zloty 28 grosh. Or: May 29, for two rafters, for five pairs of such rafters, 6 kopas (1 kopa = 60 pieces) of shingle nails, two carpenters for work for a whole week – 11 zloty 16 grosh. These types of costs indicate the construction of additional ancillary facilities, such as sand grinding required for the manufacture of molds or for storage of materials. The presence of another auxiliary room is evidenced by the entries in the Account Book for November 20, 1656, namely: For the installation of a stove between the city walls for melting cretaceous (pieces of silver) – 2 zloty 12 grosh. Of course, the installation of the stove involved the

preliminary construction of a room under the city walls, where at that time there were many different outbuildings, mostly for the service of the city of Lviv.

Before the church silver acquired the forms of orts and six-penny coins prepared for minting at the Lviv Mint, it underwent a special cycle of processing. The main production stages were the following processes: breaking (crushing) of silver products; meltdown; separation of gold from silver (shading); standardization of the required sample (addition of silver or copper); casting in flat vats of blanks of the 11th or 6th test (according to the lot metrological system); heating the blanks to give them the softness needed to mint coins; cutting or squeezing out of the plate the appropriate number of plaques to the size of coins; bleaching plaques in a chemical solution to give them shine; weight control of individual plaques; stamping. In addition to the sequential technological process of coinage, certain types of necessary work were envisaged, which were carried out in parallel with the main production process, namely: carving of stamps; blacksmithing; metalwork; grinding sand. For these types of work there was a need for separate rooms. The Accounting Book testifies to the selected types of work, as all work was evaluated and paid for. However, in order to obtain information from the Accounting Book on all types of work at the Lviv Mint, it was necessary to conduct a historical analysis of accounting data and their grouping. It was also important to find out what technology was used and, accordingly, what funds were available at the Lviv Mint. As the analysis of the data of the Accounting Book shows, the accounting reflected the operations on the receipt of raw materials, which were products made of precious metals donated to churches and monasteries at the request of King Jan Casimir of Poland. First of all, as evidenced by the records in the Account Book, the Lviv Mint of the analyzed period was dominated by manual labor. At that time, rollers were already widely used in European coin production to stretch the tin, which could not yet be at the Lviv Mint due to the war and the lack of financial resources of the royal treasury. This work was performed by master goldsmiths who specialized in minting silver.

There were also no screw presses at the Lviv Mint for minting coins, like rollers before stamping on prepared ribbons. Instead of a press, they used an installed hammer suspended by a cord on the tower of the building (this hammer with a special lug for fastening was called in the BABA Account Book). This hammer was rhythmically raised and lowered onto a wooden log on which the lower stamp of the coin was properly fixed. When lowered, the hammer struck the upper stamp, which was fixed by a special device over the lower stamp of the coin and pressed their image on a metal disk placed between them. In order to avoid deviations from the vertical fall of the hammer, rods were driven into its sides, which were part of the streams cut vertically in the beams. In this way, the hammer struck the place where the lower stamp of the coin was fixed. However, according to the Accounting Book, the installation of this hammer took place in the process of the Lviv Mint, as the settlement with the peasants for guides to the tower was recorded on June 12, and for the transfer of logs and hammers - June 19, 1656 [2]. Whereas coinage has been going on since early May. Researchers suggest that the first coins were minted by hand, and only in June was the process of making coins modernized. Evidence of this is also the numismatic material, which is characterized by the presence of low quality coins due to non-minting of all elements of the image from the stamp. Of course, it can be assumed that the reflection of these calculations was associated with the repayment of debts to employees of the Lviv Mint, but in such cases in the Account Book recorded the payment of the debt.

The number of employees at the Lviv Mint fluctuated constantly, depending on the size of the prepared material before the time of coinage. For example, on May 22, 1656, ie at the end of the second week of operation of the Lviv Mint, 21 employees in coin production were recorded in the Account Book. And this number of employees does not take into account builders (carpenters, joiners) and security (two people). And on June 12, 36 people were registered in the Account Book during the production of coins. The maximum number of employees – 45 people, according to the Accounting Book, falls on

10.07.1656, which was a consequence of the need for urgent execution of the royal order to mint a large number of coins. The king demanded that the administrator provide the appropriate amounts: in the second week of the Lviv Mint, sending an assignment (order) in the amount of 2000 zloty. On the basis of the king's payment order, a loan was obtained from the Lviv merchant Joseph Potochko, as recorded in the Account Book of May 22, 1656. It should be noted that at this time in Europe were in circulation full-fledged money (coins at the price of silver). And this unique fact shows that the rulers in the difficult financial situation of those times began to use credit money in the form of assignates (assignatina, assignment - comes from the Latin term assignatio - payment order). These are documents (securities), which are essentially debt obligations in settlements with third parties. In this case, the signed assignor Jan Casimir guaranteed the return of zloty 2,000 to the creditor who financed the production of coins. Unlike credit (paper) money, which is used in an unlimited number of times, money orders were used once. As the analysis of the use of credit money, which originates in the VIII century. from China, paper credit money in Europe began to print regularly in the late XVII century. first in Sweden and England, and centuries later in Austria and Russia (which included the divided lands of Ukraine). Thus, the data of the Account Book on the use of appropriations in financing the activities of the Lviv Mint indicate one of the first facts of the use of credit money on the territory of Ukrainian lands as part of the Commonwealth. In general, after reporting on the work of the Lviv Mint, the money orders issued by Jan Kazimir in the amount of zloty 96,562 were mentioned [2].

The researched sources reveal information about the organization of work and staffing of the Lviv Mint. The above data showed the largest number of employees and the factors that influenced this growth. However, later, due to the depletion of raw materials (church silver), the number of employees at the Lviv Mint began to decline. It is known from the Account Book that on January 15, 1657, 10 people worked, namely: Bandinelli; three foundries; two weight controllers for making coins; carver Dombrovsky; blacksmith

and his deputy; locksmith. However, as early as January 22, 1657, only seven people remained at the Lviv Mint – there was no carver of stamps and two inspectors of coin disks. Based on the data of the Accounting Book and the final report – Sumariush, it is possible to find out the organization of work at the Lviv Mint and the results of its operation. The above-mentioned normative act (Ordinance of March 1, 1656) regulated that the organizer and administrator of the Lviv Mint was Jerome Pinocchi, over whom the crown chancellor was appointed – Korychensky. In reality, the immediate supervisor of Jerome Pinocchi was Boguslaw Leszczynski, who supervised the minting of coins in the country as a whole with the title of Treasurer of the Crown. Confirmation of this fact is the testimony of Boguslaw Leszczynski from 30.04.1658 on the report of Jerome Pinocchi to the state treasury on the use of church silver and additionally purchased silver for coinage in Lviv in accordance with the order of King Jan Casimir in 1656. After that, the Treasurer Pinocchi with data on the activities of the Lviv Mint on the basis of the presented Accounting Book. At the same time, it remains interesting that the treasury of the Commonwealth did not cover the costs of organizing the activities of the Lviv Mint due to

the lack of money in the royal treasury. After all, from the very beginning I. Pinocchi did not receive a single zloty allocated for the organization of coin production. He had to find people who could and wanted to support the king and the state during the war. At that time, volunteering was expressed in loans of money, goods and raw materials for the organization of the Lviv Mint.

From the Account Book we learn that from the beginning of the organization of coinage, in the calculations of production at the first stage (15.05.1656) recorded a loan from a Lviv merchant in the amount of 120 zloty. (Table 1), which was repaid in minted orts only on August 1, 1656. Successfully managed to attract commodity loans from Lviv merchants. For example, from the account of November 20, 1656, it is known that Stanislav Krekhmalovich was connected with the organization of the Lviv Mint for long-term expenses – 216 zloty and 17 grosh. Similarly, Lviv artisans provided their services and performed work on credit, for example, from the data of 11.12.1656 it is known that Jan Robicki for blacksmithing from the beginning of the mint received a balance of 92 zloty and 3 grosh. Thus, the financing of the first weeks of work of the Lviv Mint was carried out, and, first of all, payment to employees, which was carried out by weeks.

Table 1

Attracting credit resources for the functioning of the Lviv Mint in 1656–1657

	Lenders	Sum		Date of entry in the Account Book (in chronological order)
		Zloty	Grosh	
1.	An unknown Lviv merchant	120	–	15. V. 1656
2.	S. Krekhmalovich	216	27	20. XI. 1656
3.	Merchant Joseph Potochek	2000	–	22. V. 1656
4.	Various burghers of Lviv and merchants	18250	–	24. VII. 1656
5.	Unknown close merchant	2650	–	4. IX. 1656
6.	Cash register of Lviv merchants	4000	–	8. I. 1657
7.	L. Bandinelli	2263	22	22. I. 1657
	Total	29 500	19	*

Historical sources show that the royal secretary and diplomat Jerome Pinocchi was reluctant to accept his appointment as manager and superintendent of the Lviv Mint, although he carefully complied with the royal order. Because as soon as Jan Casimir assigned him a mission to Gdansk, without releasing him from the management

of the Lviv Mint, I. Pinocchi transferred his powers to Lorenzo Bandinelli and left Lviv, as evidenced by the entry in the Account Book of 20.11.1656. Bandinelli accepted this position with the consent of the king. After all, from the beginning of the organization of Lviv Mint Lorenzo Bandinelli acted as a deputy administrator, and

according to the Account Book, he officially acted as a clerk, for which on May 15, 1656 he was charged 30 zlotys. From that time on, he also served as a senior master. His competence included supervision and quality control of manufactured coins, accrual of salaries to employees, kept the cash desk of the Lviv Mint and the Accounting Book. It is also known from the records that L. Bandinelli was assisted by scribes, but neither their names nor their number are mentioned in the Account Book. With the departure of Jerome Pinocchi, from November 20, 1656 to January 1657, Lorenzo Bandinelli performed all managerial functions at the Lviv Mint. As a senior clerk, he received 30 zloty a week, which was several times more than masters, goldsmiths, blacksmiths or carvers of coins. After November 20, his reward rose to 45 zloty.

The composition of the masters was constantly changing, for example, June 12, 1656. The accounting book contained 8 names of employees in the immediate vicinity of L. Bandinelli (Table 1), and on July 3, 1656 only three were identified: S. Krekhalovich, P. Lasch and T. Hendrich. The July 17 record mentions P. Lasch (older than tin), T. Hendrich (older than blacksmiths) and Libatsky (older than making horts), who was no longer mentioned on July 24. From 14.08.1656 to 6.11.1656 only P. Lashch spoke next to the clerk, and from that time only L. Bandinelli himself remained to work.

As can be seen from the Table. 2 most of the management staff were masters, but about the last three there is no more detailed information in the Accounting Book. It is

possible that they replaced the functions of the above-mentioned masters depending on the degree of workload on individual production cycles of the Lviv Mint. If workers were paid on working days, the masters received a weekly payment. For example, in the Account Book dated July 3, 1656, it was recorded that T. Hendrikh was paid zloty 12, S. Krekhalovich – zloty 12, P. Lashch – zloty 10.

An important part of the work at the Lviv Mint was the process of making stamps for coinage. The quality of coins, their presentability, perception of trust on the part of the population depended on it. This required the involvement of experienced metal carvers, which was difficult due to the lack of coin production in Lviv. It was necessary to find and attract metal carving masters as soon as possible in the conditions of war and difficult financial situation, and thus to stimulate them financially. The data of the Accounting Book give us the opportunity to know not only their names, but also the form of payment that was made in accordance with the rates of payment for a pair of stamps and the number of their production (Table 3). According to the Accounting Book, we see that at that time used two forms of remuneration in today's interpretation, namely: piecework and hourly. Only hourly wages were called daily, or in parts: half a day, a third and a quarter of a day. That is, it depends on the amount of time worked and was used for management staff, as well as part of the workers. Whereas piecework, which depended on the quantity and quality of work performed and products produced was used in wages.

Table 2

Management staff of the Lviv Mint (1656–1657).

	Surname	Title / status	Management functions
1.	Jerome Pinocchi	Royal Secretary and Diplomat	Administrator, superintendent
2.	Lorenzo Bandinelli	Lviv burgher	Secretary of the Administrator; administrator (since 20.11.1656)
3.	Stanislav Krekhalovich	Master	Senior over coinage workers
4.	Libitsky	Master	Chief over coinage workers
5.	Pavlo Lashch	Master	Chief over goldsmiths
6.	Tomasz Hendrich	Master	Chief over blacksmiths and locksmiths
7.	Martin Zelenka	Master	–
8.	Matthew Snoikovich	Master	–
9.	Wojciech Slosar	Master	–

Table 3

Remuneration of carvers of coin stamps for work performed at the Lviv Mint (1656–1657)

Carvers (working hours)	The rate of payment for a pair of stamps		The amount of earnings		Made stamps
	Zloty*	Grosh	Zloty	Grosh	Pairs
Matthias Nimets (15.05–14.08)	1	20	140	–	84
Shchepko Zhyd (22.05–27.05)	1	15	9	–	6
Joseph Zhyd (29.05–25.09)	1	15	160	15	107
Yurkovich (28.09–9.10)	1	15	15	–	10
Dombrowsky (14.08–25.11)	1	15	135	–	90
Dombrowsky (27.11–15.01.1657)	1	24	46	24	26
Total	*	*	505	9	323

*1 zloty = 30 grosh.

As can be seen from the table. 3 we have a number of carvers (engravers), but in the first place Matthias Nimets, whose name is mentioned in the Account Book of 15.05.1656, that is, he worked from the beginning of coinage at the Lviv Mint. He was paid zloty 20 for a pair of stamps made. - more than the following carvers. Most likely Matthias Nimets came from German lands, but according to researchers he was a Pole and was mainly engaged in carving engravings. Being the first (who cuts stamps) at the newly opened Lviv Mint, he obviously had the experience and courage to start performing such a responsible job, which is why he received a high salary. During the whole period of his work he made 84 stamps, which he managed to calculate according to the Account Book on the rate and amount of payments. The following week, a second carver, Shchepko Zhyd, arrived at the Lviv Mint, apparently as an assistant to M. Nimets, but worked only one week making literally six stamps. He was replaced by Joseph Zhyd (possibly the brother of Joseph the Zhyd). As can be seen from the table. 3 carver J. Zhyd made the largest number of pairs of stamps during his work – 107 [2]. Mathias the Nimets worked until August 14, 1656, after which he was replaced by the carver Dombrowsky, who performed these functions until the penultimate week of the Lviv Mint. During the 21st and 22nd weeks of the Lviv Mint's operation, ie from September 26 to October 9, Yurkovich, who had previously been involved in the process of forging silver plates, worked in stamp cutting. His temporary move to

stamp-making was most likely due to the September 26 dismissal of carver Joseph Zhyd.

Payments to carvers were made weekly in the amount depending on the number of stamps made. As mentioned above, M. Nimets received the most – 10 zloty, the rest of the engravers received 9 zlotys each, and Dombrowski, starting from November 27, 1656, received only 7 zloty and 6 grosh for a pair of stamps. The lower level of payment is due to the production of fewer stamps at a slightly higher price than the previous ones..

Coin minting at the Lviv Mint in 165–1657 required various technical workers, including blacksmiths and locksmiths. Their functions were in demand from the beginning of the organization until the last days of the Lviv Mint. Locksmiths and blacksmiths took part in the installation of equipment, in the repair of tools and instruments, as well as participated directly in the process of minting coins. For example, when processing silver castings into plates and when stamping discs. The Accounting Book of the Lviv Mint has preserved the names of many such craftsmen, among whom the most frequently mentioned are: Martin Koval, Jan Piotrowski, Wojciech Semkowicz, Jan Lubaczewski, Andriy Olesytsky, Martin Zielonka, Kasper Skibitsky, Ferenc Kovalczyk, Matviy Snojnkovich [2]. However, after July 10, in the Account Book of the Lviv Mint, the separation of surnames was stopped, but only the profession was indicated, for example: a blacksmith – 10zloty, a blacksmith – 7 zloty, two locksmiths – 14 zloty. Obviously, rationalism in the work of the scribe prevailed or saving

resources (paper and ink). From 16.10.1656 to 23.01.1657 the craftsmen included two blacksmiths and one locksmith. The average weekly earnings of these workers were quite high and ranged from: blacksmith – zloty 8–10; assistant blacksmith – zloty 2.5-7; locksmith – 6–7 zł. In addition, craftsmen were provided with breakfast in the period from October 16, 1656 to January 2, 1657. It is possible that the reduction of work towards the end of the Lviv Mint reduced the discipline of artisans, and breakfasts encouraged workers to be faster at work, or the additional interests of L. Bandinelli in the sale of agricultural products, and thus write off these costs of minting coins.

According to the Accounting Book of the Lviv Mint, it is known that in addition to the above-mentioned groups of workers, four sand miners were involved on a periodic basis, as well as two young men, to help everyone. There were two security guards (gaiduks) at the entrance of the Lviv Mint, who were paid 4 zloty a week. Subsequently, a night watchman was hired, paying from 2 to 3 zloty.

In addition to the Accounting Book, an important source on the activities of the Lviv Mint are the data of the final report called Sumarius General compiled by Jerome Pinocchi, as well as a more detailed register compiled by him on the

supply of precious raw materials transferred by churches and monasteries. [2]. According to these sources, the Lviv Mint received a total of 6,348 hryvnias, 15 lots and 4 quintals of silver and gold weighing 191 red gold. It should be noted that the hryvnia was used as a weight-counting system when minting coins and at that time was approximately 198 grams of pure silver, so only the church silver (pure) was donated 1270 kilograms. The term red gold was used to denote gold coins - ducats of Hungarian minting, which weighed about 3.4 grams of pure gold) [7]. Jerome Pinocchi proved to be a talented organizer and responsible superintendent of the Lviv Mint, especially he was aware of personal social responsibility for the work entrusted to the king and the church values passed to him. I. Pinocchi realized that regardless of the emergency situation – the war, he will have to report on the performance of its functions. To do this, he conducted a detailed analytical description of all accepted values using not only natural and cost indicators, but also such qualitative parameters as the sample. On the basis of the analytical data compiled by him and the documents signed by the representatives of each diocese, it became possible to generalize the receipt of silver at the Lviv Mint (Table 4).

Table 4

Receipt of silver at the Lviv Mint according to the report of I. Pinocchi

Sources of income	Number			Sample (average)	Value	
	Hryvnias	Lots	Quintles		Zloty	Grosh
Przemyśl diocese	2455	13	12	10	43 000	–
Diocese of Krakow	3124	6	8	9	52 000	–
Diocese of Poznan	335	4	–	10	6 000	–
Janów Church	433	7	–	8	6 500	–
Purchased	1000	1	4	different	16 461	19
Total	7349	–	8	*	125 961	19

As can be seen from the table. 4, the largest share of silver was donated by the dioceses of Kraków (41.28 %) and Przemyśl (34.14 %), and in third place - silver purchased by the Lviv Mint from the population (13.07 %). The documents compiled by Jerome Pinocchi were used to report to Crown Chancellor Stefan Korczyński, Treasurer Bogusław Leszczyński, the State Treasury and the Senate. It was already mentioned above that on

April 30, 1658, the Treasury Crown Leszczyński testified before the State Treasury about the compilation of a report by I. Pinocchi on the use of church silver and additionally purchased silver for coinage. It should be noted regarding the transactions of purchasing silver from the population by the Lviv Mint. This is where purely market problems arise, when information about actual public procurement has benefited resellers

and speculators in a limited market. To solve this problem, the king adopted special regulations, but they were powerless in the interests of market participants in obtaining additional benefits. This was also reported by Jerome Pinocchi, as a loss of possible but not received benefits in the activities of the Lviv Mint.

The events of 350 years ago can be compared to today's events related to the global pandemic through the prism of the management system and its accounting and analytical support. Common features are the extraordinary nature of events, their suddenness and unpreparedness on the part of the authorities. First of all, this is due to the lack of an effective legal mechanism for organizing the activities of economic entities in emergency situations. Thus, in Ukraine, at the beginning of the pandemic, there were isolated regulations governing activities in emergency situations [8-9]. While the possibility of changes in the regulatory mechanism in accordance with the adopted European integration vector of development under the adopted Association Agreement with the EU has not been fully used. At the same time, the government's actions in connection with the spread of the COVID-19 virus in the first stage (from March to May 2020) can be assessed mainly as positive, as they were carried out in a similar manner by EU governments. Application of preventive measures aimed at reducing the spread of the virus through the adoption of restrictions on the movement and mass concentration of people. Restrictions applied to passenger traffic, recreation, entertainment and trade. Gathering and gathering of people at entertainment events and social and political events was completely banned. The author conducted an expert survey on this issue among 128 students of the Faculty of Economics of Lviv National University during May 2020 by using an electronic questionnaire. The respondents were students of flax form of education, aged from 18 to 22 years. The survey showed the following: to the question "Do you think our government has taken sufficient measures to social distance in a pandemic?" 80 people answered in the affirmative "Yes" and 48 respondents answered "No", and among the critical comments it was emphasized that some restrictive measures were not

considered. To the question "Have you seen patients with COVID-19" with your own eyes?" affirmatively, five respondents answered yes, 16 respondents chose "Maybe" and 107 answered "No". Thus, the results of the survey generally positively assess the role of government in the first stage of the pandemic (March-May 2020).

The fact that the fund for the fight against the coronavirus pandemic in the amount of UAH 66 billion was managed to be set up quite quickly also deserves a positive assessment. At the same time, part of the fund's funds was used for roads (UAH 10 billion). As of June 1, 2020, UAH 27 billion was spent from the Fund to Combat COVID-19. [11]. A total of UAH 16 billion and UAH 35 billion were planned from this fund for the Ministry of Health. is directed on reconstruction, repair and the maintenance of highways. Of course, this situation of misallocation of funds indicates an increase in corruption risks.

The pandemic and restrictive measures have negatively affected business and the economy as a whole. The main factor in the decline in GDP in Ukraine by 11.4 % was the reduction of domestic demand (II quarter of 2020). This is primarily due to the impact of quarantine restrictions on economic activity, as well as due to the uncertainty of the further scenario of the situation with the second wave of the pandemic[10]. This led to a change in consumer behavior of the population in the direction of reducing the purchase of durable goods, which negatively affected the investment behavior of entrepreneurs, and thus there was a postponement and curtailment of business projects. As a result, household consumption expenditures decreased compared to 2015 by 10.4 %. However, according to the National Bank of Ukraine, economic activity will be constrained by the preservation of certain restrictions in the conditions of adaptive quarantine, as well as increasing the risks of further increase in the incidence of coronavirus.

In contrast to the situation studied on the example of the Lviv Mint, an important accounting and analytical regulator in business and banks today is the order of the accounting policy which should provide for activities in emergency situations. However, as the practice of

enterprises and banks shows, the statute can still find a section on risk management, but there is no specification of the actions of officials in an emergency, as in the accounting policy, unfortunately, the problem of emergencies is not adequately covered. In fact, such a meaningful content of the order on accounting policy should be paid attention to and analyze the needs for such changes under the influence of the pandemic, and in particular the results of the impact of restrictive measures.

Ending a coronavirus emergency can have quite sad consequences that need to be prepared for at the state level. This applies to the highly anticipated aggressive investment policy in industries that have suffered losses from restrictive measures in connection with the pandemic. This is most likely to be the case for the land market. After all, this market is just beginning to be created and can provoke significant risks for both government agencies and the general population. Thus, systematically developed changes to regulations and organizational and methodological support using generalized historical experience in emergencies has the potential to be involved not only in combating the spread of the virus COVID-19, but also to create a regulatory mechanism to protect business and banking sector in case of emergencies.

Conclusions

Today's challenges to people around the world require similar approaches as 350 years ago to dealing with wars, epidemics and natural disasters. Such complex problems are today described by the common name of emergencies, in which the pandemic due to the spread of coronavirus infection has shown the unpreparedness of humanity to adequately protect millions of people on the planet and in Ukraine. Analysis of accounting information from the Accounting Book of the Lviv Mint (1656–1657). showed a number of theoretical and methodological foundations of management of socially responsible business entities used in emergency conditions related to the war. Based on the results of the analysis, the following conclusions can be drawn:

First, the Accounting Book of the Lviv Mint is an important source of accounting and

analytical experience in managing the activities of socially significant entities that use public funds for their activities, as accounting at the Mint at that time was an example of few types of management where accounting and reporting were mandatory. At the same time, the obligation of accounting, in contrast to today's accounting practice, did not provide for such a degree was regulated, but served to make management decisions and document the transactions.

Secondly, when assessing the peculiarities of the emergency situation in the Polish-Lithuanian Commonwealth related to the war, the initiators of solving the problems related to emergency situations are traditionally the authorities. In the case of the Swedish-Polish war, King Jan Casimir, the church and the nobility, initiated the solution of financial problems to save the Commonwealth. Drawing parallels with today's pandemic in the world, we see positive management initiatives in most countries around the world, which have reduced the risk of disease and mortality from the COVID-19 virus. At the same time, the premature easing of quarantine restrictions and the imbalance of government action at all levels and, above all, the financing of public protection have led to a prolongation of the pandemic and an increase in death threats.

Third, the analysis of sources of funding for the activities of the Lviv Mint showed a significant degree of cohesion between the ruling elite, the clergy and the nobility in emergency conditions of hostilities to save the state. The sacrifice of the church hierarchs, the creditor mission of the nobility provided financial resources for the successful activities of the Lviv Mint in helping to fight the enemy. Today's pandemic in Ukraine has shown the possibility of rapid formation of financial resources of the state to protect the population in the amount of 66 billion UAH. At the same time, their development is accompanied by corruption risks based on individual party interests, which can nullify the noble mission of the ruling elite.

Fourth, the elucidation of the types of expenses of the Lviv Mint and the accounting and analytical experience of their reflection showed a flexible adaptation of the then management in such extraordinary types of production, which is

characteristic of coinage, which led to the application of costs by places (centers) of their origin and responsibility. This practice is relevant today, especially in the newly created in Ukraine family medicine and the formation of the cost of paid services, which is a necessary condition for the successful development of insurance medicine.

Fifth, conducting an analysis of the staffing of the Lviv Mint and its types of remuneration; Determining the most useful practices from the accounting and analytical experience of managing business entities in emergencies can serve to address the problems of stimulating the payment of health workers associated with services in a modern pandemic.

Successful application of historical accounting and analytical experience in the current emergency situation will help solve management problems at all levels.

References

1. Menkicky, R. (1932). *Mennica Lwowska in the years 1656-1657*. T. XXXI, Lviv Library, Lviv, 271–289.
2. Opozda, T. (1980). *The Crown Mint in Lviv in the years 1656–1665*. *Numismatic News*. R. XXIV. Warsaw, 129–195.
3. Shlapinsky, V. & Shust, R. (2000). *Italians in Lviv: managers and staff of the Lviv Mint in 1656-1663*. *Visnyk of Lviv National University. Historical series*, 35–36, 521–531. [in Ukrainian]
4. Shlapinsky, V. (2004). *Four stages of the mint's activity in Lviv (1656–1663)*. *Lviv Numismatic Notes: Popular Science Magazine (1)*, 2004, 18–31. [in Ukrainian]
5. Shvets V. (2020). *Ukrainian paradigm of accounting, analysis and control in emergency situations / Current state and prospects of development of accounting, analysis, audit, reporting and taxation in terms of European integration: abstracts of the II International scientific-practical Internet conference (Uzhgorod, April 16 2020)*. Uzhhorod: Uzhhorod National University Publishing House "Hoverla", 116–119. [in Ukrainian]
6. Menkicky, R. (1936) *National Museum for them. Of King Jan III in Lviv. Collection guide with 12 boards*. – Lviv.
7. Zvarych, V. & Shust, R. *Numismatics. Directory*. - Ternopil-Lviv: State Book and Magazine Publishing House "Ternopil", Lviv. State. Univ. I. Franko. [in Ukrainian]
8. *The order of classification of emergencies of man-caused and natural nature according to their levels*. Approved by the Resolution of the Cabinet of Ministers of Ukraine of March 24, 2004. No. 368 Retrieved from: <https://www.kmu.gov.ua/npas/5390215>. [in Ukrainian]
9. *State-level emergency response plan*. Approved by the resolution of the Cabinet of Ministers of Ukraine of March 14, 2018 No. 223 (as amended by the resolution No. 161 of 03.03.2020). Retrieved from: <https://zakon.rada.gov.ua/laws/show/223-2018-%D0%BF>. [in Ukrainian]
10. *The Cabinet of Ministers has expanded the list of trade and activities that can work during quarantine*. Retrieved from: <https://tsn.ua/groshi/kabmin-rozshiriv-spisok-vidiv-torgivli-ta-diyalnosti-yaki-mozhut-pracyuvati-pid-chas-karantynu-1514748.html> . [in Ukrainian]
11. *The head of the Ministry of Finance provided data on expenditures from the "coronavirus fund"* Retrieved from: <https://www.radiosvoboda.org/a/news-minfin-koronavirus-fond/30847612.html>.