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RESEARCH ARTICLE

BASHKIR WÖRGL: SUCCESSFUL RESCUE OF LOCAL AGRICULTURAL BUSINESS WITH GESELL'S MONEY

Implementing Gesell's Money for Saving the Agricultural Enterprise from the Bankruptcy in Russia

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ABSTRACT: Gesell's money has been successfully used in different territories during social-economic crises to boost business growth and to improve the welfare of the territory. However, this money has remained an exotic, rarely used tool. This situation makes it particularly important to analyze every case of using this complementary currency in different contexts. The purpose of this article was to describe a new case of using Gesell money in Shaymuratovo agricultural enterprise (Karmaskalinsky district, Bashkiria, Russia) and analyze it through the comparison of its social-economic effects with the results of the most famous case of using Gesell's money - Wörgl case. We revealed common positive social-economic effects of using the complementary currency: maintaining employment and creating new jobs, increasing turnover, stimulating business activities, developing infrastructure, paying off debts and improving the social-economic atmosphere. We concluded that historical, geographical, political and other circumstances of implementing Gesell's money may determine its viability, specific form, rules of its functioning, and quantitative results. Nevertheless, implementing Gesell money has common types and qualitative characteristics of anti-crisis social-economic effects.

KEYWORDS: local currency, complementary currency, shaimuratiks, Shajmuratovo experiment, Gesell's money, free shillings, Wörgl

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1. Introduction

The search for overcoming contradictions inherent to the current crisis world financial-economic system has received much attention in recent social science research and reports (Brooks 2015; Kanninen 2013; Turner 2012; Weizsäcker and Wijkman 2017). "Ecological approach to economic development" developed by B. Lietaer, R. Ulanovich, S. Guerner, and N. Maclaren justifies structural nature of economic crises and the important role of complementary currencies (CCs) to overcome crises by making the structure of social-economic relationships more flexible and sustainable (2011). Seyfang and Longhurst note that the current structure of social-economic relationships, in particular, system of money creation encourages continuous economic expansion, and, therefore, 'parallel sustainable monetary systems' could be critical in moving toward greener economies (Seyfang and Longhurst 2013). At the same time, K. Dittmer warns against destructive cultivating the degrowth (transition) movement aversion to government policy-making and argues for 'advances towards socio-ecological transition by working for government-centered reform of the monetary system instead of feeding the hype of local currencies' (Dittmer, 2013).

Back in 1933 I. Fisher in his book 'Stamp Scrip' characterized the use of local currencies for overcoming economic difficulties as 'a minor point' which becomes 'a key point' in the situation of economic difficulties or financial crisis (1933). Since that time theoretical and practical evidences that CCs could be a perspective solution to the unstable conventional monetary systems and to the current unsustainable development sufficiently grew (Stodder 2009; Lietaer, Ulanovich, Guerner, and Maclaren 2011; Groppa 2013; Brooks 2015; Runulfo et al. 2017; G. Gomez 2018). As to the words of S. Brooks, local currency systems are 'one of the potential solutions to growing dependence of conventional monetary systems' (Brooks 2013). Nevertheless, according to K. Dittmer, different multi-aspect effects of CCs in particular conditions of their implementation stays undeveloped and unclear (2013). This situation favors the ambiguous attitude of the society to CCs and the perception of them as alternative money instead of complementary. In particular, there is extremely scarce governmental support for developing CCs in the world which caused by misunderstanding of the CCs' com-

plementing nature (Lietaer 2011). This situation makes it particularly important to analyze every case of using this type of CC in different contexts.

CCs are very diverse in design but almost ubiquitous feature is the use of interest-free money, including money with depreciation through time (Lietaer and Hallsmith 2011), at least in the case of non-digital. The theoretical concept of money with depreciation or demurrage was proposed by J.S. Gesell in 1916 in his work "The Natural Economic Order" (Gesell 1916). According to S. Gesell, Natural Economic Order implies that money serves as a means of exchange and not as a means of saving. To better serve as means of exchange, it should be depreciated through time (Gesell 1916). It should be taking into consideration that practical attempts to use Gesell's free money were aimed mainly to the acceleration of monetary circulation, and other dimensions of Gesell's socialist theory were abandoned, also they were used only at the local level (Blanc 1998). Thus, the term Gesell's money or free money in the practical field, in fact, underlies accelerated money.

First Gesell's money (Wära Stamp Scrip) was used in 1931 in German village Schwanenkirchen for the revival of a coal mine. But the most famous case of implementing the ideas of S. Gesell in life was the experiment in Wörgl in 1932 with so called free shillings. Since 1931 Gesell's money has been used for sustainable development of local economies, growth of business activity, and increase of the local peoples' well-being (Lietaer 2001). However, despite the repeated successful anti-crisis effects of its using, it has remained a rarely used tool. J. Blanc considers that trust is the main issue of this kind of a monetary organization and therefore, such experiments can only take place successfully on a small scale (1998). R. Davletbaev notes that because of the main purpose of Gesell's money to accelerate money and commodity circulation due to demurrage, one of their sufficient limitations is inapplicability for savings (Davletbaev 2015). It complicates the concern about individual future 'safety bag' but facilitates concern about the common future: 'when using additional currencies with a negative interest rate, the future becomes more valuable, which is diametrically opposite to what is happening with traditional currencies with positive interest rates' (Davletbaev et. al. 2016). Nevertheless, despite the old fame of Gesell's money, there is still a lack of analytical information and recommendations in their better use. Thus, investigating general and particular limitations and effects on the examples of the cases of using Gesell's money would help better understanding their potential and role in communities' sustainable development.

This paper analyzes the case of using Gesell's money in the agricultural enterprise Shaimuratovo LLC (Karmaskalinsky district, the Republic of Bashkiria, Russia) in 2010-2013 and compares the results with the most famous experiment of using Gesell's

money in Wörgl (Lietaer 2001). The main prerequisites for choosing the 'Shajmuratovo case' were the following: 1) the context of the financial-economic crisis of 2007-2008, which strongly affected the agriculture of Bashkiria over the next five years; 2) using Gesell's money as a tool of overcoming the social-economic crisis in the particular territory.

The main reasons for the launching Shajmuratovo socio-economic experiment were the following: 1) *Objective*. Financial-economic crisis of 2007-2008 depressed the agriculture of Bashkiria (Russia) especially sharply in 2010, being worsen by a drought; 2) *Subjective*. The director of the Shaimuratovo LLC, Artur Nurgaliev, had a great desire to save the local agricultural enterprise from the bankruptcy, but he understood that taking a bank loan would have led to additional financial burden and it would not be a rescue solution during the crises and declining enterprise's turnover. Thus, he was open to searching for different efficient solutions. He consulted his friend, Rustam Davletbaev, who, as an economist, was aware about the effective usage of Gesell's money for overcoming the crisis in the Austrian city of Wörgl in 1932. Besides, he was interested both in reproducing Gesell's experiment in the conditions of the Russian village and in helping his friend to save the agricultural enterprise.

2. Method and Data

To analyze the case of using Gesell's money in the agricultural enterprise Shaimuratovo LLC, we used the method of the ideographic study, in particular, case study. We explored the conditions and results of the Shajmuratovo case (village Shajmuratovo, Karmaskalinsky district, the Republic of Bashkiria, Russia) where the Shaimuratovo LCC implemented local currency in form of the commodity coupons with a demurrage 2% every 4 weeks (28 days). These coupons were given to the employees as compensation of 20% of their salaries. Empirical data about the case including experimental conditions, specifics and socio-economic impact of implementing local currency were obtained from open sources: print publications and public video reports of R. Davletbaev, the author of the economic experiment in the village Shajmuratovo, the official web page of Shaimurat LLC, and official documents from these web page (agreements, economic justifications, investment offers).

3. Structure of Shajmuratovo experiment

Problem situation. The Shaimuratovo Ltd was established in 31th of July, 2006 by Arthur Nurgaliev – the owner and director of the agricultural enterprise. In 2010, it was on the verge of bankruptcy because of the economic crises of 2008 and a drought of 2010. In 2010, the Shaimuratovo Ltd was operating in several villages: Shajmuratovo, Varshavka, Tausengir, Sakhaevo, Shareevo and Aktashevo. By that time, 159 people (seasonally up to 200 people) were employed in different types of activities: animal husbandry (1200 animals, of which 240 - pedigree cattle), plant growing (8500 ha. of farmland, of which arable land - 6500 ha.), and agricultural equipment services. Delays in payments from wholesale buyers of agricultural products led to three-month salary arrears. According to the Federal Law No. 229-Ф3 of 02 October 2007 "On Enforcement Proceedings", such circumstances usually lead to the bankruptcy and the bailiffs arrest the most liquid assets (2007). Without means of the production (such as milk producing cattle), further agricultural business functioning would have been impossible (Davletbaev 2018).

By that time, 300 million rubles had been invested in Shaimuratovo Ltd, of which 150 were borrowed funds. The enterprise had two own grocery stores, but employees of Shaimuratovo LLC could not purchase products in any local store including the enterprise's stores because of lack of money. In order to prevent a decline in the quality of life, goods in the Shaimuratovo stores were given to them in debt, which had been recorded in a paper debt notebook (Davletbaev 2018).

Hypothesis. The author of the experiment, Rustam Davletbaev, suggested saving the agricultural enterprise Shaimuratovo LLC from bankruptcy by using Gesell's money in the form of commodity coupons. Gesell's money was supposed to replace the labor-intensive system of debt notebooks and to increase turnover.

The experimental conditions. Shaimuratovo LLC issued Gesell's money in the form of commodity coupons with rather high demurrage - 2% every 28 days. Those coupons called shaimuratiki contained printed nominal and demurrage schedule that allowed people to know exactly the dates of 2% nominal value decrease (Figure 1).

The first shaimuratiki were put into circulation in the spring of 2010. Their sum value was 180,000 rubles, which was equivalent of the value of all available commodity balances in the stores of Shaimuratovo LLC. In addition, the value of commodity coupons had triple provision by the value of products produced by Shaimuratovo LLC. In other words, the ratio of issued shaimuratiks and value of goods assets was 1 to 3. Shaimuratiki were issued with a duration of one calendar year, by the end of which the issuing company Shaimuratovo LLC bought them back at their residual value for rubles (Davletbaev et. al. 2016).

Figure 1 – The commodity coupon with the nominal value of 100 shaimuratiks

Номинал, ед.	Период времени, включительно с	по	Номинал, ед.	Период времени, включительно с	по
100	22.05.2011	18.06.2011	86	04.12.2011	31.12.2011
98	19.06.2011	16.07.2011	84	01.01.2012	28.02.2012
96	17.07.2011	13.08.2011	82	29.01.2012	25.02.2012
94	14.08.2011	10.09.2011	80	26.02.2012	25.03.2012
92	11.09.2011	08.10.2011	78	26.03.2012	22.04.2012
90	09.10.2011	05.11.2011	76	23.04.2012	20.05.2012
88	06.11.2011	03.12.2011	74	21.05.2012	дата по

Source: “The synthesis of a positive calendar by Auguste Comte and the idea of free money by Silvio Gesell in shaimuratiks” (Davletbaev 2016b)

The coupons compensated only 20% of employees' salaries. During the experiment, about 250 local people were involved in the exchange processes using shaimuratiks. At the beginning of the experiment in 2010, 776 people lived in the village Shajmuratovo according to the census (Davletbaev 2013).

During the period of the experiment, two different schemes of using shaimuratiks were applied.

1) In May 2010, shaimuratiks were issued as the commodity coupons which could be exchanged on any commodity in the Shaimuratovo LLC stores. Despite the fact, that shaimuratiks did not replace or even influence the circulation of conventional money and only 20% of salaries were paid in shaimuratiks following Russian labor legislation, their use was banned by the court. In January of 2012, the Karmaskalinsky district prosecutor's office conducted an audit of Shaimuratovo LLC, which revealed violations of labor rights of workers according to the articles 130, 131 of the Labor Code of the Russian Federation, viz. absence of the written applications of the employee for non-monetary wages in an amount not exceeding 20% and collection of the commission in the amount of 2% per month from the employees. The revealed violations of the law were the basis for attracting the general director of Shaimuratovo LLC A. Nurgaliev to administrative responsibility under Part 1 of Article 5.27 of the Code of Administrative

Offenses (violation of labor law) in the form of a fine of 2,000 rubles (Prosecutor's Office of the Republic of Bashkortostan, 2012). Despite this court decision A. Nurgaliev continued to use shaimuratiks and an administrative case has been instituted under Part 2 of Article 5.27 of the Code of Administrative Offenses (violation of labor law by a person previously subjected to administrative punishment for a similar offense), based on the results of which he was disqualified as a director for one year. Disagreeing with the court decision, A. Nurgaliyev appealed against it. However, the appeal was dismissed by the decision of the Karmaskalinsky district court of September 27, 2012, (Karmaskalinsky District Court of the Republic of Bashkortostan, 2012).

2) After entry into force of a court decision and dismissal of appeal in September, 2012, the second scheme was developed. Shaimuratiki were not given as a part of salaries, but they began to be sold like “gift cards” in the Shaimuratovo LLC stores. Essentially, nothing changed in the practical usage of the commodity coupons and the role of shaimuratiks as a complementary currency. However, from the legal point of view, the system of applying shaimuratiks changed radically. Shaimuratiks were displaced from the legal field of Russian labor legislation. In the sphere of labor relationships, the employer legally fulfilled his obligation to pay salary to employees in rubles. By fact, employees continued to get shaimuratiks for their work through translation their salary credit into commodity coupons without involving real rubles. This new accountant scheme from the legal point of view implied that workers buy Shaimuratiki and this trade operation was regulated by civil law while the previous scheme of paying salaries in Shaimuratiki directly was regulated by labor law.

The second scheme of applying the commodity coupons confirmed its viability from the point of view of Russian legislation comparing to the first scheme. The director of the Shaimurat Ltd successively won four lawsuits aiming to ban the usage of the commodity coupons. The last ban on the coupons was lifted in 2015 by the Supreme Court of Bashkiria. The court decision was “it is not forbidden to issue and use commodity coupons in circulation, however it is forbidden to replace salaries with commodity coupons” (Supreme court of the Republic of Bashkortostan 2013). Anyway, the second scheme of using Shaimuratiki satisfied these legal requirements.

It is noteworthy that payments in Shajmuratiki were only 20% of the Shaimuratovo LCC stores turnover, but this share turned out to be enough to support the consumption of people during the crisis (Davletbaev 2016a). According to R. Davletbaev’s conclusion, two most important problems were solved: saving the agricultural enterprise and maintaining quality of peoples’ life during the crises (Davletbaev 2016a).

When the crisis was over and prices on agricultural products began to grow, the experiment was stopped. The last Shaimuratiki were put out of circulation in the spring of 2013 (Davletbaev et. al. 2016).

Results. At the beginning of the experiment, the monthly turnover in the Shaimurat stores was 100,000 rubles. In May 2010, when Shaimuratiki were issued, and 20% of three-month salary arrears were paid off, R. Davletbaev started to monitor the results of the experiment. He noted that for the first two years of the experiment (May 2010 – May 2012) the commodity turnover in Shaimuratovo stores increased by 12 times (Davletbaev 2013). Since May 2010, Shaimuratovo stores accepted both rubles and shaimuratiki, one unit of the commodity coupon was equivalent to 1 ruble. For the first two months, people were mistrustful of the CC until they realized that they could pay off their personal debts by bringing their lenders to the stores and paying debts off with goods paid in Shaimuratiki. In the first year of Shaimuratiki circulation, monthly commodity turnover in the Shaimuratovo stores grew by 6 times - from 100,000 rubles in May 2010 up to 600,000 rubles in May 2011 (Davletbaev 2015). One year after the issue of first Shaimuratiki, 480,000 commodity coupons were additionally issued. For the second year of Shaimuratiki circulation, the commodity turnover increased by 6 times. By the end of the second experimental year, the turnover per month was already 1 million 200 thousand in rubles equivalent (Davletbaev 2015) what was 6 times higher than at the beginning of the second year and 12 times higher than monthly commodity turnover at the beginning of the experiment with the CC.

Additionally, in two years after issuing Shaimuratiki, labor productivity increased by 20%, and the average salary grew by 26%. There is no clear evidence of the direct connection between labor productivity, growth of salaries and the CC circulation, but initiators of the experiment believe that labor productivity grew mostly because of the improvement of the corporate climate at the enterprise due to paying off debts and overcoming the crisis situation with Shaimuratiks. At the beginning of the experiment, three-month salary arrears were completely repaid and did not arise in the future while neighboring enterprises were in the deep crisis. According to R. Davletbaev “We had the average wage increased by 26%. We saw that it was possible to increase wages faster than labor productivity grows. The company allowed itself to do this’ (Davletbaev 2015).

Gradually the circulation of Shajmuratiki went over the enterprise’s stores to the entire district (Shajmuratovo, Varshavka, Tausengir, Sakhaevo, Shareevo and Aktashevo), making a significant contribution to its GDP (Davletbaev 2016a; Davletbaev 2018). Local community including local stores began to use Shaimuratiki as a local currency basing on their ruble equivalent within the established period of time printed on the cou-

pons (Figure 1). Local entrepreneurs began to join this model: taxi drivers began to provide services for the commodity coupons, a range of goods including sawn timber could be bought for Shaimuratiki. Davletbaev said “I realized that everything turned out when I found out that alcohol was being sold for Shaimuratiki. For me, it was an indicator that the commodity coupons worked out” (Davletbaev 2018).

The usage of Shaimuratiki has pushed people to realize that money does not have its own intrinsic value that it is a conventional instrument, and its prior function is to be a mean of exchange. The financial literacy of the population sharply increased, people tried to use maximum commodity coupons before the demurrage date (the day in which value of coupons decreased by 2%). R. Davletbaev noted that in the first year of the experiment on the demurrage day, on average, 73% of the money turned out to be in the Shaimuratovo LCC stores, 8% was in exchange transactions of goods and services, and only 19% was in people's hands (Davletbaev 2013). It implies that people tried to spend the most of the CC before the day of their monthly depreciation. As the most of money turned out to accumulate in the Shaimuratovo LCC stores on the day of their depreciation, the main burden of coupons depreciation laid on Shaimurat LLC. For example, next day Shaimuratovo LCC stores could use the accumulated commodity coupons for the further exchange operations but for the less value as they were depreciated for 2%. At the same time, people did not feel any losses in the CC value if they spent the CC before the day of their depreciation.

In addition, Shaimurat Ltd maintained the village's water supply infrastructure, cleaned roads in winter, and provided social support to pensioners, war veterans, and young specialists. Besides, a kindergarten was built with the support of the Shaimurat Ltd by 2012. Despite the absence of the direct connection between shaimuratiki and investing in infrastructure, the main premise of investing in the community infrastructure was financial wellbeing of Shaimuratovo LLC Stabilization of business activities, and the increasing of the enterprise financial wellbeing became possible after overcoming financial crises in 2010 which would be impossible without the help of Goessel's money. R. Davletbaev reflected that negative interest rate made environmentally friendly and long-term projects, resource-saving technologies, and rational nature management more profitable as “the future became more valuable” (Davletbaev et. al. 2016).

In Shajmuratovo salary arrears were fully repaid, people paid off their debts. As a result, the social-psychological climate was improved and productivity increased by 20%. At the same time the situations at neighboring agricultural enterprises was completely different: there were complaints from the employees and even the dismissal of directors by the prosecutor's office (Davletbaev 2016a).

The dynamics of commodity circulation in rubles and in Shaimuratiki showed that the CC sufficiently accelerated commodity circulation by compensating the shortage of the available financial resources and by stimulating the exchange function of the finances. The commodity coupons filled the emerging money "vacuum". In addition, Davletbaev noted that using the commodity coupons did not affect the structure of the cash flow - commodity coupons did not displace the ruble, therefore, they did not compete with the national currency (Davletbaev 2016a).

At present, the experiment, which lasted three years from 2010 to 2013, has been completed. The main goal was reached: the agricultural enterprise Shaimuratovo Ltd successfully survived the crisis. Nevertheless, this practice stimulated further implementing of different innovative technologies of investment in agricultural business and further developing of the spread financial technologies. Today, four attractive and participative investment projects have been launched in Shaimuratovo Ltd: 1) "Season" - investment into seasonal activities; annual investor income - up to 23%. 2) "Harvesting" - short-term three-months investment into diesel fuel, tractor, spare parts, services of tractor drivers, machine operators, agronomist services at the choice of the investor; weekly investor income - 0.7%. The project allows any person to encourage employees to invest in seasonal needs of the agricultural enterprise and to get a high short-term profit (in comparison the average bank deposit rate in 2019 varied from 3% to 6%). Shaimuratovo Ltd can cover the seasonal lack of financial resources very fast and without spending time on arranging bank credits. 3) "Co-owner of the dairy herd" - investment in a cow, which remains on the territory of the Shaimurat agricultural enterprise by a lease agreement. The project allows any person to invest in milk production any amount that is a multiple of the cost of a dairy cow (70,000 rubles) and receive dividends from the milk produced by it minus the cost of cow maintenance (about 3,900 rubles per month). 4) "Diva" - long-term investment in the acquisition of agricultural machinery or equipment, and real estate; annual income - up to 20% (Shaimurat farm 2019).

4. Comparison of the experiments of Gesell's money implementation in Shaimuratovo and in Wörgl.

Conditions of the experiments. Both experiments were launched because of the economic crises. Free shillings in Wörgl were issued in the times of Great Depression (1929-1939) in July, 1932 and were used until September, 1933 (Unterguggenberger 1932). Shaimuratiki issued in 2010 were used to overcome consequences of global fi-

nancial-economic crises 2007-2008. Both cases had all signs of crises: heavy salary arrears, debts, unemployment, depressed business activities and decreased turnover.

Free shillings and Shaimuratiki based on the same principle of Gesell's money – money with built-in depreciation (Gesell 1958). Anyway, the design of experiments was slightly different. Free shillings had a monthly demurrage 1% of their nominal value on the last day of every month (yearly - 12%). In Shajmuratovo, a stricter negative rate was applied - 2% every 28 days from the nominal value of the coupon. These small 'fees' for using money led to the fact that owners of both free shillings and shaimuratiki tried to spend them as quickly as possible before paying with their regular money what led to the fast circulation of Gesell's money and fastening commodity circulation in the communities using them.

Besides, there was a difference in the 'mechanics' of using Gesell's money. In the case of free shillings, the monthly 'fee' for using money was paid in the form of a stamp with a nominal value of 1% of the value of the banknote, this stamp was glued on the back of the banknote. Without stamp glued for past months, the banknote was invalid.

After analyzing the experiment in Wörgl, the developers of shaimuratiks came to the conclusion that the stamp scrips are inconvenient to use for two reasons: 1) there is a need to buy and glue stamps and 2) in Gregorian calendar months have a different number of days, what led to uneven depreciation by days.

R. Davletbaev highlighted the main disadvantages of the Gregorian calendar for agricultural production:

- unequal duration of months (28, 29, 30, 31 days);
- inconsistency of the serial numbers of days in the month with the days of the week;
- each new year begins on a different day of the week.

Since planning and work in the agricultural sphere are carried out commensurate 28-day cycles, the use of the 12-month calendar does not fit into the rhythm of the agricultural activity. Besides, the consumer behavior of agricultural workers is associated with a five-day working week, and irregularity of the monthly schedule complicates both individual and enterprise financial planning (Davletbaev 2016b).

For designing shaimuratiki R. Davletbaev took the ideas proposed by the founder of positivism, Auguste Comte. In 1849, he proposed a worldwide positivist (solar) calendar based on natural laws. According to this calendar, a year consists of 13 months, a month – of 4 weeks, a week – of 7 days. Periods of the currency depreciation were defined based on the positivist calendar and were indicated on the commodity coupon, 13, and one day was the day to redeem the coupon. Instead of stamps that were purchased by residents of the city of Wörgl as a 'fee' for using free shillings, shaimuratiks had a table with the 13 periods of depreciation and nominal values of the commodity

coupon valid in these periods (Figure 1). Besides the convenience of this system for the agricultural business, it was easy to explain to employees that 'Every fourth Saturday, the value of the coupon is reduced by 2% of the original cost.' (Davletbaev 2016b)

Both CCs were secured, but in a different way: shaimuratiks were secured by good inventories and free shillings – by conventional shillings on the bank deposit.

Whereas free shillings were accepted in all local stores and in all exchange operations, shaimuratiks initially were accepted only in the Shaimuratovo LLC stores but with time, they started being used in many other local community exchange operations. In Shajmuratovo, only 20% of salaries were paid in shaimuratiks while in Wörgl all city employees, including the mayor received 50% of their salaries in free shillings and new emergency workers – 100%. Besides, the residents of Wörgl could pay municipal taxes in free shillings (Schwarz 1951). In Russia CCs are not considered in tax legislation, and taxes are accumulated only in rubles.

Effects of the experiments.

In both cases, the CCs allowed paying off existing debts. Shaimuratovo LLC paid off the three-month salary arrears, that allowed employees, in their turn, to pay off their personal debts. In Wörgl during 1932, 77,327 shillings were paid from the large debt accumulated by 1931 and amounting to 83,000 shillings (Unterguggenberger 1932).

Sufficient positive socio-psychological changes occurred in both cases: people stopped concentrating on the problem of money absence, they began to better understand what resources they really needed, the socio-psychological climate in the extended circle of the participants noticeably improved. Due to the solving the problems of the crises, increasing well-being and improving cooperation, there was noticeable development of common infrastructure both in Wörgl and in Shajmuratovo.

Gesell's money as any other type of complementary currency compensated for the lack of national currency when crisis and inflation process occurred. The experiences of Wörgl and Shaimuratovo showed that the CCs coexisted with national money peacefully, without conflict and competition, but rather helped to fulfill urgent social tasks. For example, circulation of shaimuratiks increased in the times of rubles' deflation and decreased in the times of financial-economic stability (Davletbaev 2016a). In Wörgl experiment, it was noticed that there was no inflation of prices in free shillings (Fisher 1933), which, without doubt, stabilized the economy in the times of heavy inflation and depreciation of national currency. However, shaimuratiks did not have their 'own value', they were estimated in ruble equivalent which was printed in the table on the commodity coupon. They could partially mitigate the inflation process for employees only by providing an opportunity to pay their salaries in advance in the form of the com-

modity coupons. And in the periods of rubles' deflation and prices' inflation people tried to buy goods in advance.

In Wörgl, the all amount of free shillings paid for salaries returned to the city 20 times a month (Fisher 1933), which was equal to 240 times a year. Considering this extremely fast circulation of the CC and the fact, that all stores in Wörgl accepted free shillings and saved national currency for paying taxes (Muralt 1933), there was a sufficient rise in local trade turnover stimulated by free shillings. Additionally, the rise of turnover was proved by the stores' owners through interviews (Schwarz 1951) but, unfortunately, there is no exact quantitative data on the local trade turnover increase. In Shaimuratovo, each coupon passed through the accounting department three times by the end of the year, turnover increased in 12 times or by 1200% (Davletbaev 2018).

In Wörgl, permanent jobs were given to from 30 to 50 of the 1500 unemployed, unemployment decreased to 25% (Schwarz 1951). Wörgl was the first town in Austria which effectively managed to redress the extreme levels of unemployment. Every one free schilling created between 12 and 14 times more employment than the normal schillings circulating in parallel (Lietaer 2010). In Shaimuratovo LLC, jobs were saved due to the CC shaimuratiks, additionally new workmen were hired for the seasonal works. Thus, in both cases, a powerful influence has been exerted to prevent any increase of unemployment by keeping business active. Besides, by the end of the experiment in Shaimuratovo, the average nominal salary in Shaimuratovo LCC increased by 26%. Considering inflation in 2011 6,1% and in 2012 6,6% (Statbureau 2020), real salary increased by more than 13%.

It should be especially noted that during crisis times implementing of Gesell's money in both cases allowed maintaining and developing infrastructure and providing social support. In particular, in Wörgl, town's welfare work was enlarged, which gave new jobs and increased local peoples' life quality: seven streets aggregating 4 miles were rebuilt and asphalted; twelve roads were improved; the sewer system was extended over two more streets; trees were planted and forests improved (Fisher 1933). In Shaimuratovo, along with maintaining the village's water supply infrastructure, cleaning roads in winter, a new kindergarten was built with the support of the Shaimuratovo LLC (Davletbaev et. al. 2016). In addition, Shaimuratovo LLC provided social support to pensioners, war veterans, and young specialists (Davletbaev et. al. 2016). These activities were not straightly connected with issuing CC but, on the one hand, they were possible because using the CC assured the farm business's continuity throughout the crisis and its financial stability, and, on the other hand, they supported the trustful and loyal attitude of local community to shaimuratiks and favored spreading their circulation to almost all local exchange operations.

It is remarkable that, in both cases, issuing and circulating of CC faced with the negative attitude from the side of government, more precisely, the national Central Banks. Prosecutor office sued Shaimuratovo LLC 5 times. All 5 lawsuits were won with the limitation not to use CC for paying salaries. The attitude of the Austrian Government also was not hostile to free shillings (Fisher 1933). At the point when 200 townships in Austria wanted to copy Wörgl experiment, the Austrian Central Bank panicked and decided to assert its monopoly rights (Lietaer 2010). The people sued the Central Bank, but they lost the case in November 1933. The case went to the Austrian Supreme Court, but was lost again. After that it became a criminal offence in Austria to issue 'emergency currency.' (Lietaer 2010). At the same time, there was a sincere positive interest of neighbor municipalities, local government and even some representatives of national government to the results of CC implementation for overcoming crises. In particular, six villages in the neighborhood implemented Wörgl system (Lietaer 2010). Shaimuratiks also became popular in the neighbor villages, and their circulation extended to the whole district.

R. Davletbaev, reporting on the results of the experiment in Shaimuratovo, noted that both significant quantitative and qualitative changes confirmed the Wörgl effect. He also mentioned that there were some very significant social effects that were invisible, such as the transformation of thinking among the population and improvement of the socio-psychological atmosphere (Davletbaev 2018). Anyway, by his words, these hardly measurable effects turned into some measurable ones. For example, productivity increased by 20% by the end of experiment (Davletbaev 2016a).

Table 1 - Comparison of the experiments of Gesell's money implementation in Shaimuratovo and in Wörgl

<i>Categories of comparison</i>	<i>Shaimuratiks (Shajmuratovo, Russia)</i>	<i>Free shillings (Wörgl, Austria)</i>
Conditions		
Duration	May 2010 – Spring 2013	July 1932 - September 1933
Place	Shajmuratovo, Russia	Wörgl, Austria
Social-economic situation	Global economic crisis, drought	Great depression
Salary share in CC	20%	50-100%
Form	Commodity coupon	Stamp Scrip
Demurrage (annual)	24%	12%
Period of demurrage	28 days (positivist calendar)	Month (Gregorian calendar)
Security	Provided by good inventories on the bases of trust	Officially secured by shillings on the bank deposit
Initial usage	2 Shaimuratovo LLC stores	All local stores and local exchanges,

		utility bills
Direct results		
CC turnover annual rate	3	240
Commodity turnover	Increased by 1200% for 2 years	Increased, no exact quantitative data
Debts	100% paid off	93% paid off
Unemployment	Existing workplaces saved	Decrease to 25%
Indirect effects		
Average salary	Increased by 26% in 2 years	no data
Productivity increase	Increased by 20% in 2 years	no data
Infrastructure	Maintaining existing infrastructure and building new objects	Maintaining existing infrastructure and building new objects
Overall wellbeing	Increased	Increased
Overall sustainability of community development	Sufficiently increased	Sufficiently increased
Relationships with national currency	Compensated the lack of money during a crisis, mitigated inflation	Compensated the lack of money during a crisis, mitigated inflation
Legal status	5 lawsuits with the result: forbidden to be used for paying salaries as full-fledged money and accepted as commodity coupons	2 lawsuits with the result: forbidden in circulation
Attitude of local and neighbor communities	Very positive	Very positive
Attitude of the government	Neutral – from the side of municipal authorities Negative – from the side of the regional prosecutor’s office	Positive – from the side of other local majors Negative – from the side of Austrian Central Bank

Source: Authors’ classification.

5. Discussion

A new case of implementing Gesell's money was described and compared with Wörgl case. In spite of different conditions of the experiments, including different historical time periods and design of Gesell's money, comparative analysis allowed clarifying the role of CCs in sustainable development of local communities by identifying common effects.

Demurrage of shaimuratiks (24%) which was twice higher than demurrage of free shillings (12%) was supposed to stimulate higher level of CC turnover annual rate (Davletbaev et. al. 2016) but it turned out to be much lower than in Wörgl case (3 vs 240). We suppose that this situation might have been stipulated by differences in experimental conditions which often have much higher influence on currency turnover rate than a level of demurrage. For example, free shillings had sufficiently more extended opportunities for the local exchange because they were accepted in all Wörgl stores and accepted to pay utility bills. Besides, in Wörgl case most of salaries were paid in free shillings, which stipulated higher probability of their usage in local exchange, comparing to Shajmuratovo case, where only 20% of salaries were paid in shaimuratiks. Nevertheless, in both cases, demurrage had the common effect of stimulating local exchange and increasing turnover. We assume that other factors, such as population, number of local enterprises, the cultural specifics of territory, also may have substantial influence on the quantitative results of experiments.

Both in Wörgl and in Shaimuratovo, the technology of Gesell's money accelerated the exchange of existing resources. In general, maximum utilization of existing resources, including assets, favors minimization of additional pressure on the environment in the case of introduction of special new industries, and degradation of existing businesses. In spite of the cases of Wörgl and Shaimuratovo cannot directly support the ideas of S. Brooks (2013), G. Seyfang and N. Longhurst (2013) about critical importance of interest-free monetary systems in moving toward greener economies, they both demonstrate increasing investment in improving local community infrastructure. Thus, the issue of relationship of CC with infrastructure investing requires further theoretical investigation and practical evidence. Anyway, without a doubt, depreciation of money through time favors long-term investment, which can be infrastructure development, resource-saving and clean production technologies.

The use of the commodity coupons in Shaimuratovo confirms the general conclusion of previous researchers (Blanc 1998; Lietaer 2001; Groppa 2013; Ranulfo 2017) about the positive impact of complementary currencies on the economy through lowering costs, increasing employment, developing social capital, and providing satisfaction with the needs of almost all agents of local economy.

The analyzed cases showed that both CCs in Wörgl and Shajmuratovo faced the situation of legal obstacles in spite of the different historic times, cultures, countries and legal systems. In both cases, these legal obstacles can be explained by misunderstanding the nature of complementary currencies and their differences from the national currency. Negative attitude from the side of national central banks and prosecutor offices was stipulated mainly by the concerns of undermining the monopoly of national central banks on issuing money.

At the same time, the experience of Shajmuratovo along with other cases of implementing CC with depreciation over time (Fisher 1933; Lietaer, 2001) confirmed that so-called Gesell's money is a universal tool that increases the viability of local communities by providing sustainable exchange of goods and services. Its usage leads to increasing level of trust, quality of communications and cooperation among the participants involved in the exchange relationships. Gesell's money is able to stimulate employment, to increase turnover, to developing infrastructure during economic crises thanks to the demurrage or "Gesell's tax".

Repeated successful results of Gesell's money in overcoming crises empirically prove "ecological approach to economic development", substantiated in the work of B. Lietaer, R. Ulanovich, S. Guerner, N. McLaren (2011). A positive experience of using free shillings in Wörgl (Austria) and the commodity coupons in Shaimuratovo (Russia) together with other cases of using complementary currencies (Runulfo 2017) of different types strengthen B. Lietaer's thesis that CCs, in general, increase sustainability and long-term viability of the community, since they favor increasing the flexibility and adaptivity of the community ecosystem (Lietaer, Ulanovich, Guerner, and McLaren 2011).

Existing successful cases of using Gesell's money for overcoming crises have supported the ideas of S. Gesell about stimulating business activities using money depreciation (1933) and ideas of I. Fisher about the necessity of currencies diversification for providing the sustainable world financial system to some extent (1933). Nevertheless, both Wörgl and Shaimuratovo cases have sufficient limitations for confirming the validity of the holistic concept of Gesell's money because Gezellian project envisioned a structural and permanent re-foundation of the monetary system, and CCs in Wörgl and Shaimuratovo were used only at the local level and only for the contemporary purposes for overcoming crises.

6. Conclusion

A new case of using Gesell's money (the Shaimuratovo case) was described and analyzed through the comparison of its social-economic effects with the results of the most famous case of using Gesell's money - Wörgl case. Shaimuratovo case was based on the well-known theoretical model of using Gesell money. The hypothesis of the experiment in Shajmuratovo was proved by the fact that Gesell's money in the form of the commodity coupons rescued the agricultural enterprise Shaimuratovo LLC from the bankruptcy. In its turn, the enterprise being the village-forming enterprise, saved Shajmuratovo and several villages around from social-economic depression due to paying off debts, stimulating business activities and rising turnover.

The results of comparing cases have strengthened the arguments for the universality and effectiveness of using Gesell's money for overcoming economic crises and increasing community sustainability. We concluded, that historical, geographical, political and other specific circumstances of implementing Gesell's money might determine its specific form, period and rules of their functioning, as well as quantitative differences in results. Nevertheless, the types and qualitative characteristics of Gesell's money social-economic effects stay common. This research proved that Gesell's money is an effective tool that allow to compensate inflexibility of world economy structure leading to economic crises and, in general, favour the long-term viability and well-being of local communities (Lietaer 2010).

The comparative analysis contributed to better understanding common positive social-economic effects of using Gesell's money to overcome crisis situations: decreasing unemployment, increasing turnover, stimulating business activities, developing infrastructure, paying off debts and improving social-economic atmosphere.

We assume that CCs provide sustainable development of local economies and more sustainable local economies increase the sustainability of the world social-economic development. Further research of Gesell's money requires investigation of more cases of their use in different conditions and comparison of their multi-aspect results and effects. Some new aspects of Gesell's money usage might be opening up with the development of the electronic form of CCs based on the blockchain technology.

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