

Local currencies versus the level of economic security of the region during the COVID-19 period

NINA STĘPNICKA

Department of Defence Studies
Jan Kochanowski University in Kielce
Branch in Piotrków Trybunalski
Słowackiego Street 114/118, Piotrków Trybunalski 97-300
POLAND

PAULINA WIĄCZEK

Department of Economics and Finance
Jan Kochanowski University in Kielce
Branch in Piotrków Trybunalski
Słowackiego Street 114/118, Piotrków Trybunalski 97-300
POLAND

DARIUSZ BRZOZOWIEC

Project Leader
Zielony Polska Waluta Lokalna
Bankowa 5, Starachowice 27-200
POLAND

Abstract: - Local currencies are tools typical of the social economy, affecting the real economy and serving as an instrument for reducing instability, including economic fluctuations, especially in times of crisis, difficult economic situation, etc. They are an alternative to national currencies, but they also help to support local traders. An example of a local currency is the Zielony Polish Local Currency introduced by the group of enthusiasts in 2015. Local currencies contribute to building the local community, supporting cooperative activity and the local economy, and promoting sustainable development. They also protect local communities from the negative consequences of economic fluctuations. The aim of the work is to determine the impact of local currencies on increasing the level of economic security of the region especially during periods of economic security risks, e.g. in the context of the epidemic risk caused by COVID-19. The work is theoretical. The methods used in the work are: critical literature analysis and statistical method.

Key-Words: COVID-19, local currencies, local communities, SMES, social economy, Zielony
JEL Classification: A13, B10, B55, G02, G10

Received: May 26, 2020. Revised: August 17, 2020. Re-revised: September 9, 2020. Accepted: September 14, 2020. Published: September 17, 2020.

1. Introduction

Local currencies (called the complementary currencies) can be defined as both an alternative to national currencies (i.e. generally applicable and socially acceptable

means of payment in the country) but, above all, as one of the tools that enable to create the right conditions for the development of entrepreneurship and small and medium-sized enterprises in local communities (cf. [1], [2]).

The functioning of local currencies makes it possible to make purchases at familiar sellers and local traders, which in turn offer jobs to the local community (cf. [3]). In fact, local currencies are a kind of economic and social experiment that achieves such effects as would not be possible under the traditional management and classical financial system of a city, region or country.

The aim of the work is to determine the impact of local currencies on increasing the level of economic security of the region in emergencies and periods of other economic risks (including epidemic threats, e.g. COVID-19; cf [4], [5]) during their duration as well as after they have ceased. In the second period local currencies can contribute to economic boosts, especially for small and medium-sized enterprises operating in poor communities and/or regions. This positive impact of local currencies on the development of the local economy stems from the characteristics and attributes associated with the local currencies: forced trading, closed circulation, interest-freeness, or staying out of the reach of inflation.

The work is theoretical and can be a field of exploration for further analysis. The methods used in the work are: critical analysis of literature and statistical method.

2. History of local currencies – the case of Guernsey and Wörgl

The history of local currencies, the functioning of which was based on a kind of barter, dates back to ancient times. As history shows, their emergence, but also periods of special interest and exploitation, are linked to emerging as well as increasing threats to economic security and social security. In the economic history of the world, they have generally been regarded as a tool that is the aftermath of a difficult period in the economies of different countries, but also a tool to minimise social unrest, especially in times of disasters, crises, wars, revolutions, etc. The task of local currencies was then to make up for the shortage of the generally applicable currency, which understandably (but not yet fully defined by means of an appropriate terminology apparatus) transferred on the level of economic security of entities operating in the local and regional market.

The first consistent theorist of commodity money was Nikolai Copernicus (1473-1543), who, starting with the concept of good money as a standardized commodity, formulated an outline of the theory of a two-currency parallel monetary system [6].

In the literature of the subject, you can identify examples of different cities, regions, macro-regions, countries or systems that have introduced local currencies through an economic experiment (e.g. German “Wara” System in 1923; LETS system, Swiss WIR 1934). One of them was the territory of Guernsey, where between 1815-1836 and since 1914 until now together with the currency of the pound sterling also operates the local currency Pound Guernsey. The introduction of the local currency was linked to the collapse of the economic security of the territory, caused by the Napoleonic Wars. At that time, £4,000 was put into circulation. This made it possible for Guernsey's economy to grow markedly within months. New road infrastructure was built, war-damaged buildings were renovated. All actions were taken with due care and consideration, with a view to the negative impact of inflation on the improving economic and social situation. Within twenty years, Guernsey's economic situation and economic security, thanks to the introduction of the local currency, has evolved from a deep depression to true prosperity [7].

Another example of a territory that successfully realized the economic experiment of the local currency was the Austrian city of Wörgl. The experiment was a response to the great economic crisis between 1929 and 1934 and was introduced for the sake of deep recession, rising poverty and high unemployment in the city, but also high Austrian state debt at a bank in Innsbruck [8]. Because of that the mayor of the city introduced 30,000 Wörgl Schillings into business in 1932. According to Bernard Lietaer, this currency circulated 416 times over the duration of the project. A local free currency circuit was created, independent of the central bank. In this way, the consumption of goods increased, because it was possible to pay for something. Investment in the city increased by 219% compared to the previous year [9]. The introduction of the local currency has contributed to the growth of the city's economic security, in particular to minimising

the negative effects of the crisis, reducing rising level of unemployment and petty crime, and slow exit from the depression of the local economy (cf. [10], [11], [12]).

In Poland the first local currencies appeared in 1818. Although they did not resemble a typical currency like Pound Guernsey and Austrian Wörgl, but they worked in a similar way.

For example, the Hrubieszow Agricultural Society (founded in 1816 by Stanislaw Staszic) used private vouchers, acting as a means of payment (cf. Doc. 1., Foto 1., Foto 2., Foto 3.).

Another example of the Polish local currency was the PeKaO freight voucher, called the Polish dollar, which could be exchanged in a specific network of retail outlets. It could be carried out only by taking goods from internal exports at one of the outlets of Bank Polska Kasa Opieki S.A. Other examples of local currencies were porcelain (called notgeld, which originals are a hundred years old; cf. Foto 2.), stoneware and dime coins issued in the 1920s by such cities as Bolesławiec, Wałbrzych, Zabrze, Gliwice, Tarnowskie Góry and Zielona Góra.

Doc. 1.: An example of a private voucher



Source: [13].

Foto 1.: An example local currency from Zielona Góra



Source: [13].

Foto 2.: An example local currency from Tarnowskie Góry



Source: [13].

Foto 3.: An example local currency from Ziębice



Source: [13].

The economic history of the countries that have introduced local currencies proves that the analysed tools of social economy are based on the environmental and economic living conditions of the community, in particular its most vulnerable members [14], but also affect

the real sphere of the local economy, in particular the entities that operate in it and are an instrument for reducing instability, including economic fluctuations [15].

3. Silvio Gesell's theory and its importance for the development of local currencies

Silvio Gesell was a German expatriate born on 17 March 1862 in the state of Vith on the border of Belgium, Luxembourg and Prussia (cf. [16])¹. As an entrepreneur and trader who ran a medical equipment import company in Buenos Aires, but also as a political activist and forerunner of the banking and social finance movement, he advocated trading in local, non-convertible currencies. Silvio Gesell ran his business in the 1980s. 19th century, when Argentina was economically instable. It was the economic crisis that inspired Gesell, to whom money was the main source of financial and economic problems. It was unnatural to him that money is eternal and “non-rusty” [17]. According to Gesell, “rusting money” will activate trade and reduce the economic divide between rich and poor.

Silvio Gesell in his main work entitled *The Natural Economic Order* published in Switzerland in German (first volume in 1916 and second volume in 1911; cf. [18]), presented the idea of a rent-free system and interest-free money, but also drew attention to the issues related to the nature of money and its functioning in the economy. Moreover, he proposed his own proposals of reforms concerning spending money. He believed that the currency should be depreciated over time, as should the value of the goods it represents [19].

¹ Silvio Gesell (born on 17th March 1862 in Vith on the border of Belgium, Luxembourg and Prussia B; died on 11th March 1930 in Oranienburg in Germany).

Apart from the “rusting banknotes” and the reform of the monetary system, Silvio Gesell has gained popularity thanks to the theory of local alternative money. The German economist's theory was that money should be used in commercial transactions, not for austerity or speculative purposes. Local money, which Silvio Gesell called “free currency” or the Freigeld monetary system and which were described in *The Natural Economic Order* [cf. 20] the author defined as “an exchange instrument and nothing more, which only test was the degree of safety, speed and cheapness with which the goods are changed” [21]. Cash should not generate any interest and, if not used, should gradually lose value [22]. The initial value of money is restored after the payment of so-called demurrage (once interpreted as downtime; currently: evaluation fee or negative interest rate). Silvio Gesell's concept was intended to increase local money in circulation [23].

Silvio Gesell's concept had a bearing on some views of well-known economists like John Maynard Keynes (1883-1946) and Irving Fisher (1867-1947) who, in their reflections on some of their own proposals lowering interest rates during periods of inadequate effective demand, referred to the concept of a German economist [24].

4. The Zielony Polish Local Currency and its role in shaping economic security in the COVID-19 period

Until 2015 there were three local currencies in Poland: Dobry, Piast (PLP) and Zielony (PZL). The first two were created in 2014, were electronic and were organised in the form of a loyalty program. Joining the Dobry and Piast local currency system allowed entrepreneurs to gain access to a new customer base, while customers could exchange products offered by local entrepreneurs [cf. 25].

Nowadays the only project of local currencies in Poland is Zielony - Polish Local Currency introduced by the group of enthusiasts in 2015. The project brings together about 600 companies with more than four thousand products (food and industrial products, RTV equipment, cars and automotive accessories) and services (e.g.

restaurant and tourism services) and more than 5,500 consumers.

Zielony functions as a barter exchange system between companies and a loyalty system that rewards customers with discounts for purchasing products and services from local entities that participate in the program. Therefore Zielony is addressed to enterprises as well as individual customers, and the currency can mediate in various types of business relationships: between enterprises (B2B), as well as between consumers (C2C), but also in business-to-customer (B2C) and between the customer and enterprise (C2B).

Zielony is so-called Local Currency System, i.e. a legal contractual unit of account, offering cooperation programs and interest-free financing for Polish small and medium-sized companies, as well as a barter exchange system, on the basis of which the contractors via Zielony can purchase another company's work on the market. It is a non-convertible unit, what makes its circulation five times faster than the circulation of the national currency. Green's goal is to increase sales and attract loyal customers, but above all it is a support tool for the sector of small and medium-sized enterprises in the local market, also during a difficult period, during a crisis, etc. One Zielony is equivalent to one Polish zloty (PLN).

Table 1: Selected Features of Zielony

Feature	Zielony
Recipients	Enterprise in Poland customers
Business relations	business-to-business (B2B) business-to-consumer (B2C) consumer-to-consumer (C2C) consumer-to-business (C2B)
Aim	supporting the local production system and services, building good business relationships between local companies; increase in the turnover of participants by using specific tools
Form	system of barter exchange between companies, a loyalty system that rewards customers with appropriate discounts for purchasing goods from local entities participating in the program
Value	1 Zielony = 1 zloty
Motto:	We will buy from you as long as you buy from us - because it is fair

Source: (cf. [26]).

The first deal in Zielony took place on 15 March 2015. In the years 2015-2019 the value of turnover in Zielony constantly grew. In 2015, the turnover was around PLZ 551,000, in 2016 more than four times as much as the previous year (PLZ2,219,166) and in 2018 twelve times as much as in the base year (i.e.PLZ 6,719,612). Between 1st January 2020 and 31st July 2020, the turnover expressed in Zielony was PLZ 2,296,000 and PLZ792,000 from January 2020 to 12th March 2020 (until the outbreak of COVID-19 caused lockdown in Poland). With the outbreak of epidemic in Poland, the turnover decreased compared to the same period in 2019 and to the first two months of 2020. According to statistics, in the months between March and July 2020, the turnover in PLZ was 1,362,000. The monthly value of turnover in Zielony from March 2015 to August 2020 is presented in Table 2:

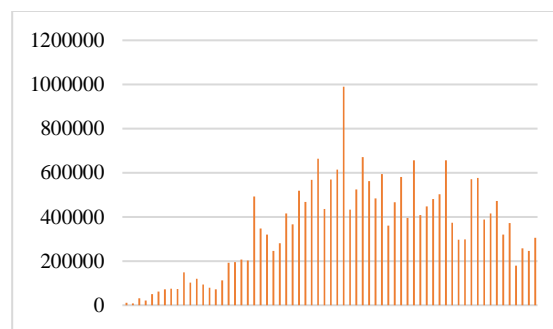
Table 2: The monthly value of turnover in Zielony from March 2015 and August 2020

Year	Month	Turnover (in PLZ)
2015	March	11 168
2015	April	7 939
2015	May	31 567
2015	June	21 142
2015	July	49 748
2015	August	61 345
2015	September	71 879
2015	October	74 408
2015	November	73 080
2015	December	149 200
2016	January	103 066
2016	February	119 700
2016	March	93 864
2016	April	78 972
2016	May	72 769
2016	June	113 322
2016	July	193 164
2016	August	194 867
2016	September	206 593
2016	October	202 389
2016	November	492 988
2016	December	347 472

2017	January	319 666
2017	February	245 840
2017	March	281 499
2017	April	415 320
2017	May	365 998
2017	June	518 838
2017	July	468 158
2017	August	568 570
2017	September	664 148
2017	October	436 072
2017	November	569 878
2017	December	615 088
2018	January	990 546
2018	February	433 741
2018	March	524 231
2018	April	670 419
2018	May	561 540
2018	June	483 961
2018	July	594 690
2018	August	360 586
2018	September	467 141
2018	October	581 187
2018	November	395 278
2018	December	656 292
2019	January	408 992
2019	February	447 866
2019	March	481 717
2019	April	503 201
2019	May	657 089
2019	June	374 035
2019	July	296 732
2019	August	298 530
2019	September	570 600
2019	October	577 293
2019	November	388 284
2019	December	415 317
2020	January	472 000
2020	February	320 000
2020	March	372 000
2020	April	180 000
2020	May	258 000
2020	June	246 000
2020	July	306 000

Source: [27].

Figure 1: The monthly value of turnover in Zielony from March 2015 and August 2020 (in PLZ)



Source: [27].

Taking into account the number of transactions made using the local currency Zielony, their distribution in each year was as follows: 2015 – 3,186 transactions, 2016 – 13,622 transactions, 2017 – 23,098 transactions, 2018 – 30,277 transactions. Table 3 shows the number of transactions made using Zielony currency on a monthly basis between March 2015 and August 2020.

Table 3.: The number of transactions in Zielony made between March 2015 and August 2020

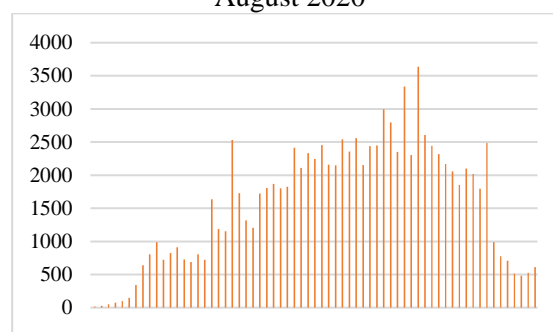
Year	Month	Number of transactions
2015	March	18
2015	April	28
2015	May	48
2015	June	74
2015	July	98
2015	August	146
2015	September	338
2015	October	642
2015	November	804
2015	December	990
2016	January	720
2016	February	824
2016	March	912
2016	April	726
2016	May	686
2016	June	806
2016	July	720
2016	August	1634

2016	September	1184
2016	October	1150
2016	November	2532
2016	December	1728
2017	January	1318
2017	February	1204
2017	March	1722
2017	April	1804
2017	May	1868
2017	June	1802
2017	July	1826
2017	August	2416
2017	September	2110
2017	October	2332
2017	November	2244
2017	December	2452
2018	January	2158
2018	February	2148
2018	March	2538
2018	April	2356
2018	May	2558
2018	June	2152
2018	July	2440
2018	August	2448
2018	September	2996
2018	October	2798
2018	November	2350
2018	December	3335
2019	January	2302
2019	February	3636
2019	March	2606
2019	April	2444
2019	May	2316
2019	June	2168
2019	July	2054
2019	August	1854
2019	September	2100
2019	October	2016
2019	November	1794
2019	December	2486
2020	January	988
2020	February	776
2020	March	710

2020	April	512
2020	May	479
2020	June	524
2020	July	610

Source: [27].

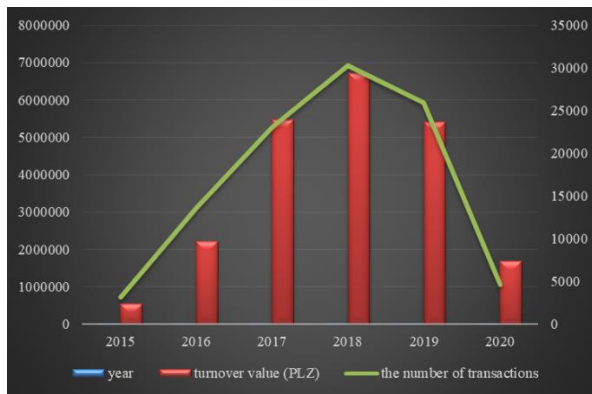
Figure 2: The number of transactions in Zielony made between March 2015 and August 2020



Source: [27].

From the point of view of the epidemic situation of COVID-19 it is important that the number of transactions carried out using Zielony has decreased. According to the data presented in Table 3, in the period from 1st January 2020 to 12th March 2020, the number of transactions was 988 in January 2020, 776 in February 2020 and 710 in March 2020. From the 1st March 2020 and 12th March 2020 the number of transactions was 396. After 12th March 2020, the number of transactions decreased and most transactions was connected with food, confectionery and bakery, cosmetic and industrial items, automotive parts, computer services, advertising and printing. The value of turnover in Zielony and the number of transactions in the period 2015-2020 is presented in Figure 3.:

Figure 3.: The value of turnover in Zielony and the number of transactions in the period 2015-2020 (from 01.01. to 31.07)



Źródło: [27].

70% of transactions carried out using Zielony considered services (e.g. hotel, financial, accountants), 10% - trade, and 20% - sales of products. The disproportion between services, trade and sales has been noticeable since the functioning of currency and during the COVID-19 period, when a significant part of services (e.g. beauty, hairdressing, hotel) have been reduced.

This was related to the appearance of the Ordinance of the Council of Ministers of March 31, 2020 on the establishment of certain restrictions, orders and bans in connection with the occurrence of an epidemic, introducing temporary restrictions for certain institutions or workplaces. From April 1, 2020, this obligation concerned, among others, activities related to hairdressing and other beauty treatments, as well as restaurants and cafes, hotel and boarding services and other accommodation. The opening of hotels and other accommodation places took place as part of the so-called the second stage of defrosting the Polish economy, i.e. from May 4, 2020, and restaurants, cafes, hairdressers and beauty salons as part of the third stage of defrosting the Polish economy, i.e. from May 18, 2020. This means that the above-mentioned entities in the period from On April 1, 2020 until mid-May 2020, they did not conduct any economic activity, and therefore the turnover of the Zielony currency in the aforementioned period was close to zero.

5. Conclusions from research

The benefits of functioning of the local currency, including the functioning of Zielony in Poland in the conditions of 'normal' economy, include:

- intermediation in the exchange of goods and/or services in a specific area; interest-free, making it indebted and non-inflationary; adjusting the quantity to the needs of local/regional market in which it operates; no possibility of transfer outside the region in which it operates;
- supporting local enterprises and thus increasing the number of jobs, reducing unemployment; maintaining of capital in the region.

Moreover, local currencies, including the Zielony one, are not subject to speculation that distorts the essence of money, they are transparent and cheap to use.

Restrictions on the use of local currency arise in specific situations faced by the economy, e.g. in times of economic crisis, unstable economic, social and political situation. The use of local currencies during the COVID-19 epidemic is also not conducive to economic recovery.

The use of local currencies during the economic crisis, but also the epidemiological situation COVID-19 does not contribute to economic boosting. Nor can they be a source of increased economic security in the region during the analysed period. Due to their characteristics and attributes: inability to have debt resulting from keeping cash at the same stable level (which is an important condition for local economic development), handling transactions on the local market without transfer and speculation, negative phenomena and economic processes (inflation and deflation), support for the local goods production sector, stimulating economic development in the region and labour market activation (cf. [28], [29]), the use of local currencies is important especially at the time of recovering from the crisis, or the transition of the epidemic situation to the next phase, which from the point of view of the economy is characterized by its defrosting.

In the first period of the epidemic phase, the economy reacts similarly to the period of the economic crisis: there is a decrease in investment and a decrease in incomes, a decline in consumption or a decline in employment. It is also a period in which selected sectors of the economy are "frozen", which, due to their specificity, cannot

participate in its functioning during the COVID-19 period for some time. The freeze referred to above causes that the demand for given products and / or services is completely inhibited, which prevents transactions for which the local currency, including Zielony, was not carried out. The lack of commercial transactions in frozen industries means that there is less local currency in circulation or the use of it is abandoned.

In the period of “defrosting” of the economy, economic activity is stimulated, and industries that were shut down in the first phase of the epidemic begin to reactivate when the “epidemic economy” passes to the next phase. Then the demand for goods and/or services that were excluded in the first phase increases, the demand for money, including the Zielony local currency increases, and thus the standard of economic life improves. During this period, the use of local currencies contributes to:

During this period, the use of local currencies contributes to:

- the protection of local interests in the small and medium-sized enterprises sector (local manufacturing) which, during the COVID-19 period, did not represent local development or local economic security
- supporting local businesses and meeting the needs of a local customer (acts as a catalyst for local entrepreneurship);
- the boost of the local labour market, which, as a rule, is distorted in situations of conflict, crisis, epidemic risk;
- lowering the local unemployment rate, which, from the point of view of the economic security of the local community during the epidemic period and afterwards, is meaningful;
- a bigger activity of the local business environment, through the involvement and cooperation of which the effects of the epidemic threat are less severe;
- the support for the local production and services sector, which, during a period of economic and social turbulence, is exposed to difficulties and dysfunctions;
- the support for local markets, important to ensure the economic security of the local community of the region;
- creating a link between the local community and its business;

- the demonstration of regional identity and the strengthening of social ties (cf. [30], [31], [32]).

The idea of local money, which functioning and the mechanism are independent of the situation on the domestic and international financial market, and above all in the banking sector or on commodity exchanges.

This dependence results from the local range of the local currency and its application in a specific area: city, district, region or voivodship. As a rule, local currencies operate in closed circulation, are not convertible and are not listed on any stock exchange.

6. Conclusion

Modern local currencies in Poland are a kind of social contract, covering the business environment. Local currencies are also economic policy tools that can be used to ensure economic security in the local community, region and country.

The effects of using local currency are:

- reduction of external debt;
- no need to take out an interest-bearing bank loan;
- intensification of local economic turnover.

Local currencies support building of communities, cooperative, local economies and promote sustainable development. Local currencies in some way also protect local societies from economic fluctuations.

Although local currencies in the world have been in operation for a long time (starting with the traditional economy model, feudal system, etc.) nowadays they are still regarded as a form of bottom-up initiatives based on the assumptions of social economy, experimental economy, alternative economy and even on the assumptions of modern trends and directions of the market economy: a circular economy, an access economy, or a gig economy. Undoubtedly, their use and increasing popularity, especially during the period of defrosting various sectors of the economy and exiting the COVID-19 pandemic (rather than the pandemic itself) may increase the economic security of the region where the analysed means of payment operate. They are also seen as a specific way of influencing the level of economic security of entities operating and participating in the local market, such as

small and medium-sized enterprises or other entities which operate on it (cf. [33]).

The research results confirm that during a crisis, as well as in other emergency situations (e.g. during the COVID-19 pandemic), the demand for local currencies decreases. It is closely correlated with the purchasing power of consumers, investment demand, consumer demand for goods and services, the prevailing economic and social situation, etc. During the COVID-19 pandemic, investment and consumption demand, as well as the economic situation, are shaken (slowing down). It means, therefore, that in the COVID-19 period, local currencies stimulate the economic situation to a limited extent. Their effectiveness is much higher in the period of recovery from a crisis or pandemic than in their very center.

References

- [1] Zimon G., The influence of the central warehouse on the functioning of Polish small and medium sized enterprises operating in group purchasing organizations, *Problems and Perspectives in Management*, vol. 18, iss. 1, 2020, p. 26-28.
- [2] Zimon D., Zimon G., The Impact of Implementation of Standardized Quality Management Systems on Management of Liabilities in Group Purchasing Organizations, *Quality Innovation Prosperity. Kvalita Inovacia Prosperita*, no. 23/1, 2019, p. 163-170.
- [3] Stępnicka N., Waluty lokalne – szansa czy zagrożenie dla rozwoju przedsiębiorczości?, *Przedsiębiorczość i Zarządzanie*, t. XIX, z. 10, cz. 1, 2018, p. 461–474.
- [4] Triani, I.G.A.L, Soemarno, B.T. Rahardjo, Zubaidah, E., The Influence Of Treatment Variation Of Plant Promoting Bacteria In Cultivation On The Quality Of Chinese Cabbage, *International Journal of Biology and Biomedical Engineering*, vol. 14, 2020, p. 114-127.
- [5] Ogundile, O.P., Edeki, S.O. Adewale, S.O., A Modelling Technique for Controlling the Spread of Tuberculosis, *International Journal of Biology and Biomedical Engineering*, vol. 12, 2018, pp. 131-136.
- [6] Zajda J., Kopernikowska teoria pieniądza, *Ruch Prawniczy, Ekonomiczny i Socjologiczny*, no. 35, z. 4, 1973, p. 18-19.
- [7] Ekins P., *The Living Economy. A New Economics in the Making*, Routledge, London, New York 2005, p. 199.
- [8] Gomez G.M., *Argentina's Parallel Currency: The Economy of the Poor*, Routledge, London, New York 2016, p. 24.
- [9] Lietaer B., *The Future Of Money*, Cornerstone Digital, London 2013.
- [10] Łukasiewicz-Kamińska A., Waluta alternatywna, jako dobro wspólne, *Mysł Ekonomiczna i Polityczna*, no. 4(47), 2014, pp. 206-218.
- [11] Ekins P., *The Living Economy. A New Economics in the Making*, Routledge, London, New York 2005, p. 200-202.
- [12] Focardi P., *Money: What It Is, How It's Created, Who Gets It, and Why It Matters*, Routledge, New York 2018.
- [13] Administrator Waluty Zielony (data as of July 21, 2020).
- [14] Rushkoff D., *Throwing Rocks at the Google Bus: How Growth Became the Enemy of Prosperity*, Penguin Publishing Group 2017, p. 157-159.
- [15] Abucewicz M., *Miejsce ekonomii alternatywnej w ekonomii społecznej* [in] J. Kwaśniewski (red.), *Nauki o polityce publicznej: monografia dyscypliny*, Instytut Profilaktyki Społecznej i Resocjalizacji, Warszawa 2018, p. 329-330.
- [16] Sobiecki G., *Waluty alternatywne jako czynnik ograniczający niestabilność w gospodarce globalnej na przykładzie bitcoina i Argentyny*, [in] R. Sobiecki (red.), *Przeciwdziałanie turbulencjom w gospodarce*, Oficyna Wydawnicza Szkoła Główna Handlowa w Warszawie, Warszawa 2015, p. 67.
- [17] Stępnicka N., Waluty lokalne – szansa czy zagrożenie dla rozwoju przedsiębiorczości?, *Przedsiębiorczość i Zarządzanie*, t. XIX, z. 10, cz. 1, 2018, p. 463-464.
- [18] Woś R., *Trzy pomysły, które odmienią współczesną Europę*, „Polityka”, no. 1(3142), 2018.
- [19] Gesell P., *The Natural Economic Order*, Isha Books, Delhi 2013, p. 211.
- [20] Greco T.H., *Money: Understanding and Creating Alternatives to Legal Tender*,

- Chelsea Green Publishing Company, White River Junction, Vt. 2001, p. 62.
- [21] Tarasiewicz M., Newman A., *Cryptocurrencies as Distributed Community Experiments*, [in] D. Lee Kuo Chuen (red.), *Handbook of Digital Currency: Bitcoin, Innovation, Financial Instruments, and Big Data*, Academic Press-Elsevier, Amsterdam 2015, p. 215.
- [22] Dodd N., *The Social Life of Money*, Princeton University Press, Princeton-New Jersey 2016, p. 348.
- [23] Surette L., *Pound in Purgatory: From Economic Radicalism to Anti-semitism*, University of Illinois Press, Urbana-Chicago 1999, p. 177.
- [24] Cato M.P., *Green Economics: An Introduction to Theory, Policy and Practice*, Sterling, VA, London 2009, p. 82-83.
- [25] Surette L., *Pound in Purgatory: From Economic Radicalism to Anti-semitism*, University of Illinois Press, Urbana-Chicago 1999, p. 177.
- [26] Stępnicka N., Waluty lokalne – szansa czy zagrożenie dla rozwoju przedsiębiorczości?, *Przedsiębiorczość i Zarządzanie*, t. XIX, z. 10, cz. 1, 2018, p.467, 469.
- [27] Administrator Waluty Zielony (data as of July 21, 2020).
- [28] Łukasiewicz-Kamińska A., Waluta alternatywna, jako dobro wspólne, *Myśl Ekonomiczna i Polityczna*, no. 4(47), 2014, p. 210.
- [29] Stępnicka N., Waluty lokalne – szansa czy zagrożenie dla rozwoju przedsiębiorczości?, *Przedsiębiorczość i Zarządzanie*, t. XIX, z. 10, cz. 1, 2018, p. 465-466.
- [30] Ślęzyk B., *Zielony Waluta Lokalna jako konkretne wsparcie dla biznesu*, „Network Magazyn”, 2018, [online] <http://networkmagazyn.pl/zielony-waluta-lokalna-jakokonkretne-wsparcie-dla-biznesu>, access: 13.07.2020.
- [31] Walasek R., Supply Chain Optimisation and Competitiveness of an Enterprise – Result of the Study, *Research in Logistic & Production*, vol. 6, no. 2, 2016, pp. 188.
- [32] Walasek R., Zimon G., The Analysis of Financial Liquidity Management in Small Transport Enterprises During the COVID 19 Pandemic - Case Study of

Poland, *WSEAS Transactions on Business and Economics*, Volume 17, 2020, pp. 786-795.

- [33] Zimon G., Working Capital Management Strategies in Polish SMES, *Academy of Accounting and Financial Studies Journal*, vol. 24, iss. 3, 2020, p. 1-9.

Contribution of individual authors to the creation of a scientific article (ghostwriting policy)

Author Contributions:

Nina Stępnicka, Paulina Wiączek, Dariusz Brzozowiec – responsible for organizing and conducting the study, systematizing data, reviewing the literature, developing content. Nina Stępnicka, Paulina Wiączek – was responsible for the analysis, statistics, systematizing data, content development.

Creative Commons Attribution License 4.0 (Attribution 4.0 International, CC BY 4.0)

This article is published under the terms of the Creative Commons Attribution License 4.0 https://creativecommons.org/licenses/by/4.0/deed.en_US