The kitchin cycles of interwar Romania's economy

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Abstract: *The paper reviews the concept of Kitchin cycles and their correlation with the Juglar cycles, revealed by Schumpeter (1939) and the main approaches concerning the cyclical evolution of interwar Romania's economy adopted by Romanian economists. The author proposes a set of indicators to detect the Kitchin cycles of Romania's economy during the interwar years. Those indicators consider the change in the sectoral structure of value added, the dynamics of prices and the features of labor market disequilibria. Therefore, it is possible to identify two Juglar cycles and six Kitchin cycles. Schumpeter's assumption concerning the correlation between Kitchin cycles and Juglar cycles is confirmed. This way, it is possible to define three types of Kitchin cycles that better explain the features of Romanian economy evolution during the analyzed period. The paper finds a low correlation between Kitchin and short political cycles.*

Keywords: *economic cycles, foreign trade balance, gross domestic product per capita, labor market disequilibria, inflation, political (electoral) cycles*

JEL Classification: *E01, E 24, E31, E32, N14, O11*

Introduction

In Romania, like in other European countries, the interwar years were marked by ample fluctuations of economic activity. The special historical conditions of the above-mentioned period created the premises for both fast economic growth and deep crisis. Even during the episodes of economic growth, we deal with significant changes concerning the role played by foreign trade, the rate of inflation and the nature of labor market disequilibria. In this context, it is necessary to detect the length and features of the short economic cycles. This way, it is possible to improve the analysis of the economic growth registered during an important stage of Romania's development and make comparisons to the experiences of the other European countries and the USA.

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1. Literature review on the definition of Kitchin cycles and the correlation with Juglar cycles

The cyclical evolution of the economy during the industrial era was a central issue of economic theory. Juglar (1862) defined the first type of economic cycle and considered that its length oscillates between 7 and 11 years. The cyclical evolution of economic activity was demonstrated by the analysis of the business activities, budgetary incomes, prices and interest rates fluctuations during the first half of the XIXth century in France, England and the United States. In this context, it is possible to reveal a succession of periods of prosperity, crisis and liquidation during the above-mentioned economic cycle. Juglar assumed that the cyclical evolution is an attribute of an economy where the industry, trade and banking system reached a considerable degree of development.

Kitchin (1923) also considers economic cycles which last from 7 to 11 years. They are named "trade" or "major" cycles and usually aggregate two or three minor cycles. The average length of the minor cycles was estimated at 40 months, taking into account the statistical data concerning the clearings, commodity prices and interest rates from Great Britain and the United States during the 1890-1920 period. The causes of minor cycles were considered the fluctuations of the level of the crops and psychological factors, which influence the prices dynamics.

Schumpeter (1939) consolidated the theory of business cycles. The cycles lasting 7 to 11 years were named Juglar cycles. The short cycles defined as minors in Kitchin (1923) were named Kitchin cycles. It was also assumed that the length of the Kitchin Cycles is 3 to 5 years and that a Juglar cycle[2] includes two or three Kitchin cycles.

The research on the causes and nature of the Kitchin and Juglar cycles continued as time passed[3]. The cause of the Kitchin cycles is the fluctuations of the inventories of both raw materials and consumer goods. We note that Telycote (1993) assumed that the Kitchin cycles are influenced by the political (electoral) cycles because they last 4-5 years.

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[2] The Juglar cycles were considered by Schumpeter as components of the Kondratieff Waves (long economic cycles). The Kondratieff Waves are defined by an upturn phase and a downturn phase. As a rule, each phase includes three Juglar cycles.

[3] The scientific research concerning the economic cycles is cyclical, too. As a rule, during recessions and crises, the number of studies and papers dedicated to the cyclical evolution of the economy increase but they diminish, when we deal with economic recoveries or booms. But even if the favourable premises for economic growth maintain for a long time interval, the cyclical evolution of the economy does not disappear (Gordon and Wurtz, 1990). The study of the causes and features of the different types of economic cycles needs to be continuous. This way, the public authorities are able to avoid negative consequences such as high budgetary deficits or high rates of unemployment.

Usually, the Juglar cycles are considered investment cycles, which allow technical changes and the renewal of the fixed capital.

The historical evidence shows that the Kitchin and Juglar cycles were manifested in the context of the extension of the role of market mechanisms and the implementation of the industrialization processes. In developing countries, we deal with some particularities compared to the experiences registered by the developed countries. The respective particularities were determined by the transformation of the economic structure, the degree of exposure to the world economy fluctuation and the features of economic and social policies promoted by public authorities.

Hence, the identification of the Kitchin cycles of interwar Romania's economy could be useful from many points of view, respectively: a) establishing the causes of economic fluctuation during an important phase of the building of the industrial basis and the modernization of economy and society, b) correlation of the respective cycles registered in Romania with the experiences of the other European countries during the analyzed period, c) testing the Schumpeter's assumption concerning the length of the Kitchin cycles and their relationship with the Juglar cycles.

2. Main approaches of the cyclical evolution of the interwar Romania's economy

The 1919-1939 period has a special significance in Romania's economic history. After the achievement of national unity from the political point of view at the end of the 1918 year and the implementation of wide economic and social reforms, during the first interwar years, favorable conditions for fast economic growth and social modernization have occurred. Among the factors which stimulated the potential economic growth we mention: a) the enlargement of the domestic market, which allowed the intensification and diversification of economic activities, b) the implementation of an ample agrarian reform adopted in the 1921 year, which practically ended the first transition to a market economy. In this context, we deal with considerable decrease of the social tensions, on the one hand, and manifestation of the entrepreneurial attitudes in the rural areas, on the other hand, and c) the extension of the industrialization process, as a key factor for ensuring the premises for the acceleration of the economic and social development.

The favorable premises coexisted with important constraints. Especially during the early 1920s, the constraints to economic growth were caused by: a) considerable damages of the productive potential registered during the WW1, b) lack of the available capital for large-scale investments in industry, c) financial difficulties faced by the new small and medium farms which occurred as a consequence of the implementation of the agrarian reform. The external environment caused other constraints. The foreign trade policy promoted by the vast majority of European countries was a protectionist one. Also, the different opinions

concerning the comeback to a monetary system based on the standard gold caused unneglectable tensions in world economic relationships. Even in this context, during the 1920s, Romania registered economic growth. According to the data presented in Axenciuc (2012), between 1920 and 1929, the average yearly GDP growth rate was 5.80%.

But the external shock which mostly impeded the development of the Romanian economy during the interwar years was the world Great Depression which was manifest during the early 1930s. The crisis caused a decrease in industrial production and a considerable increase in the number of unemployed people in the urban areas, especially during the 1930-1932 period. From 1933, the first signs of an economic recovery occurred. During the 1934-1939 period, GDP grew at an average yearly rate of 3.4%, according to the data presented in Axenciuc (2012).

The unstable dynamics of GDP suggests the existence of some cycles and phases of development of interwar Romania's economy. Madgearu (1940) detected cycles and phases in the evolution of the Romanian economy during the 1919-1938 time interval. There were identified phases of the industrialization process, on the one hand, and phases of the dynamics of the foreign trade, on the other hand.

The industrialization process is considered as one of the main engines of economic growth during the 1919-1938 period. Also, Madgearu noted that the rate of growth was influenced by: a) enlarging of the domestic market after the Great Union of 1918, b) economic macroeconomic policy promoted by the public authorities c) features of the external environment. In this context, three periods in the evolution of the industrialization process, are identified, namely: A) 1919-1926, B) 1927-1932 and C) 1933-1938.

During the 1919-1926 period the development of the industrial activities has benefited from: a) extension of the internal market, b) increase in the demand for industry generated by the reconstruction of the economy, c) formation of the small farms as an outcome of the land reform. The 1927-1932 period is considered as the phase of harnessing of productive capacity in the context of the implementation of the stabilization policy (1927-1929) and the economic crisis (1930-1932), respectively. During the 1933-1938 time interval the industrialization process took place in the context of extended state control on the investments in the industrial branches, considered as crucial for the economic development and the national defense, on the one hand, and the strengthening of the protectionist foreign policy, on the other hand.

Also, four phases of the foreign trade development were identified, strongly correlated with the features of the macroeconomic situation. They also showed some differences compared to the phases of the industrialization process, namely: a) the phase of the reconstruction and the adaptation of the Romanian economy to the international new landscape (1919-1926); b) the phase of economic stabilization (1927-1929); c) the phase of economic depression (1930-1934); d) the phase of economic recovery (1935-1938).

Hence, the phases of the industrialization process were distinguished from the phases of the development of the foreign trade due to the considerable volatility of import and export prices and of the complex institutional mechanisms which modelled the relationships between Romania and the world economy in the context of increasing protectionism adopted by the most important European countries.

Most often, the papers dedicated to Romania's economic development during the interwar period (Kerekeș, 1979, Constantinescu (coord.), 1997, Saizu and Tacu, 1997) consider that the 1919-1928 time interval includes three periods, namely, a) the first interwar years (1919-1921), when large imbalances were manifest, caused by the damages of the productive potential, b) the period of reconstruction of the economy after the damages caused by WW1 (1922-1924) and c) the period of the economic boom in the new context generated by the achieving of the national unity and enlarging the internal market (1925-1928).

Axenciuc (2008) considers that the 1925 year is the upper limit of the economic reconstruction after the damages of WW1, while the 1929 year separates the late 1920s economic growth from the crisis of the early 1930s.

As a rule, the 1929-1933 time interval is considered as one when the world economic crisis (Great Depression) was manifest in Romania, too. The 1934-1939 period was marked by a consistent economic recovery.

3. The Juglar-type economic cycles of interwar Romania's economy

The fluctuations of economic activity in Romania during the 1919-1939 period brought arguments in favor of the defining two Juglar-type cycles. The main reason for this approach is the impact of the crisis of the early 1930s on the dynamics of main economic indicators. The data presented in Axenciuc (2012) show a decrease of the gross domestic product per capita, during the 1930-1932 period. A peak of the above-mentioned indicator was registered in the 1929 year, especially as an outcome of a very good production of agriculture. Also, the first signs of the crisis on the labor market occured only in December 1929, when the number of unemployed persons was higher in comparison to December 1928.

Hence, we can define a first interwar Juglar-type (decennial) cycle between 1919 and 1929 and a second one during the 1930s.

We note that two Juglar type cycles were different from many points of view. Therefore, during the 1919-1929 period, we dealt with fast economic growth. During the 1930-1939 time interval, Romania's economy experienced economic and social tensions in the context of the Great Depression, followed by a recovery. Also, we note that the fluctuations of the economic activities were manifest in the context of sensible changes of the external equilibrium, rate of inflation, disequilibria of the labor market. Hence, the identification of the

Kitchin-type cycles can contribute to a better understanding of the economic development of Romania during the two interwar decades.

4. A proposal for an improved methodology dedicated to the identification of the Kitchin cycles

The identification of the Kitchin cycles has to consider not only the changes in the dynamics of the gross domestic product which occur within Juglar cycles, but also other indicators concerning the rate of inflation, the sectoral structure of the economy, the external equilibrium, the labor market disequilibria, the political cycles. We use the available official statistical data and also the estimations of some macroeconomic indicators concerning Romania and other countries made in scientific articles or papers of Romanian and foreign economists.

Having in view the above-mentioned considerations, in this paper we will use for the identification of the Kitchin cycles the following indicators: a) the level and the average yearly rate of growth of gross domestic product per capita; b) the average yearly rate of growth of gross domestic product; c) the foreign trade balance; d) the rate of inflation; e) the features of the labor market disequilibria revealed by the average monthly number of the unemployed persons and by the yearly demand of jobs/supply of jobs ratio registered by the Placement Offices; f) the short political (electoral) cycles. Hence, the identification of the Kitchin cycles has to consider not only the changes in the dynamics of the gross domestic product within Juglar cycles but also other indicators concerning the rate of inflation, the sectoral structure of the economy, the external equilibrium, the features of the disequilibria of the labor market, the short political cycles. We take into account both the official statistical data available for the analyzed period and the estimations of some macroeconomic indicators concerning Romania and other countries made in scientific articles or papers of Romanian and foreign economists.

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The proposed set of indicators considers theoretical assumptions concerning the economic cycles, the particular historical conditions and the available statistical data for interwar Romania's economy. The main objective of the respective methodological improvement is to enlarge the analysis of the economic cycles.

Thus, we can reveal not only the relationship between economic growth and inflation, on the one hand, but the relationship between the dynamics of gross domestic product and the

changes of the labor market disequilibria, on the other hand. At the same time, the proposed methodology considers the foreign trade balance and the short political cycles as qualitative modelling factors of the economic cycles.

5. The Kitchin cycles during the 1919-1929 period

If we consider the evolution of the level of the gross domestic product per capita in real terms, estimated in Axenciuc (2012) and the balance of the foreign trade (Table 1), we identify the three Kitchin cycles, which are included in the 1919-1929 Juglar cycle of Romania's economy, namely: A) 1919-1921, B) 1922-1925 and C) 1926-1929.

During the Kitchin cycle of Romania's economy related to the first interwar years (1919-1921), the gross domestic product per capita was sensibly below the level registered in 1914. The official statistics showed a large deficit in the balance of foreign trade, caused by the serious perturbation of international economic relations and the damages of the productive capacity registered during WW1. Even in these unfavorable conditions, during the analyzed period, the gross domestic product grew not only in Romania but also in many European countries. The exception from the rule was Greece, confronted with a recession till 1923, caused by a very complicated social and political situation (Alogoskoufis, 2021). A short economic cycle can be also detected in the case of the USA[4].

Table 1. The level of gross domestic product, the gross domestic product per capita and the balance of the foreign trade during the period 1914-1929 (selected years)

Year	GDP (USDppp2000)	GDPpC (USDppp2000)	Balance of the foreign trade
1914	8192	1054	Surplus
1920	11826	761	Deficit
1921	12960	824	Deficit

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[4] Therefore, Gordon (1951) analyses the investment boom in the USA economy during the 1920s and considers two types of economic cycles, namely: minor (Kitchin) cycles and major (Juglar) cycles. We deal with a minor cycle between 1919 and 1921, representing the last phase of the 1914-1921 major cycle, sensibly influenced by the military expenditures caused by WW1. The 1919-1921 short cycle includes a boom from April 1919 to January 1920 and deflation from January 1920 to July 1921. The 1921-1933 period represents one major cycle of the evolution of the USA economy. The respective cycle includes a phase of fast economic growth (1921-1929) and a phase of economic depression (1929-1933). The phase of economic growth was a continuous one. Thus, the author of the cited paper remarked that, in the case of the analyzed period, there was no evidence to support Schumpeter's assumption that a major (Juglar-type) cycle included three minor (Kitchin-type) cycles. The unusual 1933-1938 minor cycle was strongly influenced by the New Deal and the first impulses for the increase of the expenditures allocated to war production.

Year	GDP (USDppp2000)	GDPpC (USDppp2000)	Balance of the foreign trade
1922	14638	917	Surplus
1923	16039	990	Surplus
1924	16290	991	Surplus
1925	16660	998	Deficit
1926	18472	1091	Surplus
1927	18671	1089	Surplus
1928	18372	1056	Surplus
1929	19650	1114	Surplus

Source: Axenciuc (2008, 2012)

The shortages which were manifest in the case of a series of consumer goods and particular social and political conditions caused the exacerbation of tensions on the labor market revealed by the multiplication of the number of strikes and latent labor conflicts. In this context, the public authorities have implemented a series of reforms, inspired by the recommendations of the International Labor Organisation, which sensibly modified the institutional framework of labor market (Pavelescu, 2020).

During the analyzed period, the first interwar parliamentary elections were organized and several governments of different political orientations were in power. In this context, the parliament adopted the laws of the Agrarian Reform, which marked the end of Romania's first transition to a market economy. The respective institutional change favored the considerable extension of the market mechanisms in agriculture and the acceleration of the industrialization process[5].

Therefore, during the first interwar Kitchin cycle, the weight of the primary sector[6] in the value added created at the level of the whole economy was higher in comparison to the 1914 year (Table 2).

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[5] From 1917 to 1923, laws of Agrarian Reform were adopted in the countries situated from North to South of the central and eastern part of the Old Continent. We can distinguish several groups of countries which implemented agrarian reforms designed to extend the role of market mechanisms, i.e. a) countries that gained their state independence from Tsarist Empire (Finland, Estonia, Latvia, Lithuania); b) countries that gained their state independence from Habsburg Empire (Czechoslovakia, Hungary); c) countries which re-unite their territories (Poland, Romania, Yugoslavia); d) countries from Balkans (Bulgaria, Greece). The extension of the transformation of the agrarian relationships varies from one state to another. Hence, during the interwar years, we can speak about two big groups of European countries with a market economy, i.e. a) countries with consolidated market economies from the Western part of Europe and b) countries which have implemented comprehensive agrarian reforms at the end of WW1 in Eastern and Central Europe, the Baltic region and the Balkan region.

[6] Primary sector includes agriculture, hunting and forestry and fisheries, the secondary sector includes mining and quarries, manufacturing, production of energy, gas and water and construction, while the tertiary sector includes services.

**Table 2. The sectoral structure of value added during the
1914-1929 period**

Year	Primary Sector	Secondary Sector	Tertiary Sector
1914	36.66	27.76	35.58
1920	42.94	21.78	35.28
1921	38.74	22.62	38,64
1925	37.36	27.27	35.37
1929	37.82	26.03	36.15

Source: Author's computation based on the data from Axenciuc (2012)

The economic recovery registered during the second Kitchin cycle of the interwar period (1922-1925) was mainly an export-based one. Between 1922 and 1924, we dealt with the surplus of the balance of foreign trade. In the 1924 year, the gross domestic product and also industrial production doubled in comparison to 1914 year[7]. As an exception from the rule, the bad crop of the 1925 year caused a deficit of the balance of foreign trade and a decrease of the gross domestic product per capita. The gross domestic product per capita continued to be below the level registered in 1914, despite the economic growth at an average yearly rate of 6.48% (Table 2). The trajectory of growth was a concave one both in the case of gross domestic product and gross domestic product per capita[8].

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[7] In the case of Romania, the doubling of the industrial production and the gross domestic product in comparison to the 1913 year is conventionally considered as reaching the pre-war economic potential. Some researchers estimated that the pre-war level of gross domestic product was reached or overpassed in the 1922 year, in the case of Finland (Hjerppe, 1989), in the 1922 year in the case of Estonia, in the 1924 year, in the case of Lithuania, in 1924-1925 period in the case of Latvia (Norhus, 2019), in the 1923 year in the case of Czechoslovakia, in the 1925 year in the case of Hungary, in the 1923 year, in the case of Yugoslavia and the 1928 year, in the case of Austria (Pryor et al., 1970).

[8] The representative rate Rr is defined in Pavelescu (1986) having in view the geometric average of the fixed based indices of the considered indicators.

The computation formula of Rr can be written as: $(n+1)*\ln(1+Rr)= 2*\ln Ibfgav$, where: n= the number of the years of the analyzed period; ln= natural logarithm; Ibfgav = geometric average of the fixed-based indices. If the dynamics of the considered indicator is strictly exponential, we have Rr = Rav, where Rav = average rate.

If the dynamics of the considered indicator is strictly concave, we can demonstrate that /Rr/ >/Rav/, while in the case of strictly convex dynamics the considered indicator, we have /Rr/ </Rav/.

If the analyzed period is a short one, as in the case of the Kitchin cycles, the size of the representative rate is sensibly influenced by the rate registered during the first year of the considered economic cycle.

Table 3. The indicators of trajectory of growth of Gross Domestic Product and of Gross Domestic Product per capita during the 1922-1929 period

Period	RGDP	RGDPr	RGDPpCav	RGDPpCr
1922-1925	6.48	8.49	4,91	6.89
1926-1929	4.21	4.92	2,79	3.49

Source: Author's computation based on the data from Axenciuc (2012)

The growth of the gross domestic product was obtained in the context of the sensible increase of the weight of the secondary sector from 22.62% in 1921 to 27.27% in 1925. It was a consequence of the recovery of industrial activity and the reaching of the productive potential of the respective economic branch that existed before WW1. In this context, the relative importance of both primary and secondary sectors in creation of value added decreased. We note also that the sectoral structure of the value added in 1925 was close to that registered in 1914.

The fast economic growth was obtained in the context of high inflationary pressure. Axenciuc (2012) estimated that during the 1922-1925 period the average rate of inflation was 27.05% (Table 4)[9].

Table 4. The rate of inflation and indicators of labor market disequilibria during the 1922-1929 period

Period	RInflav	(Djob/Sjob)av
1922-1925	27.05	85.05
1926-1929	0.66	105.59

Own calculations based on Axenciuc (2012) and Romania's Statistical Yearbook

In the 1922 and 1923 years the rate of inflation was high (near 40%), but decreased to 15% in the 1924 year (Graph 1).

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[9] The high inflationary pressures, during the early 1920s were manifest not only in Romania but also in other Central European countries, such as Germany, Austria, Poland, Hungary as a consequence of damages generated by WW1 and the monetary disturbances which occurred in the context of the formation of new national states and the reconfiguration of the international economic and financial flows.

Graph 1. Estimated rate of Inflation during the 1921-1929 period (%)
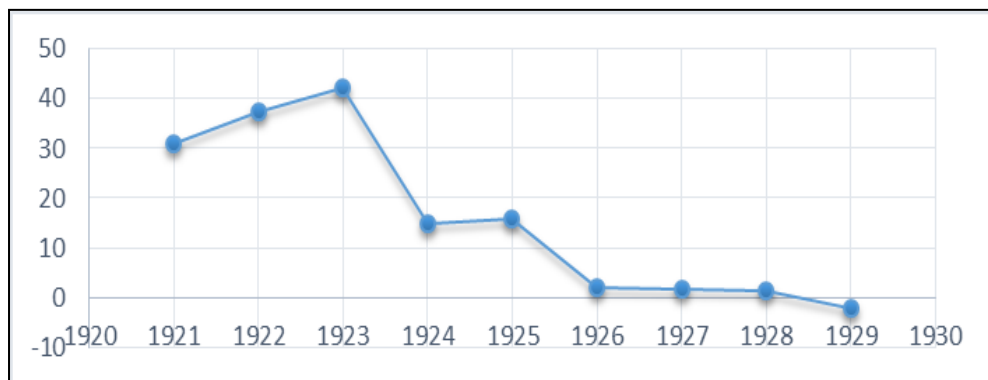
Source: Own calculation based on data from Axenciuc (2012)

The fast economic growth and especially the expansion of industrial production created favorable premises for labor demand increase. The average yearly job demand /job supply ratio registered by the Placement Offices was near 85%. The size of the respective indicator was below 100% each year (Graph 2) and suggested that unemployment was not a serious social problem during the analyzed period. On the contrary, labor shortages were manifest in some industrial activities.

Graph 2. The job demand /job supply ratio registered by the Placement Offices during the 1922-1929 period (%)
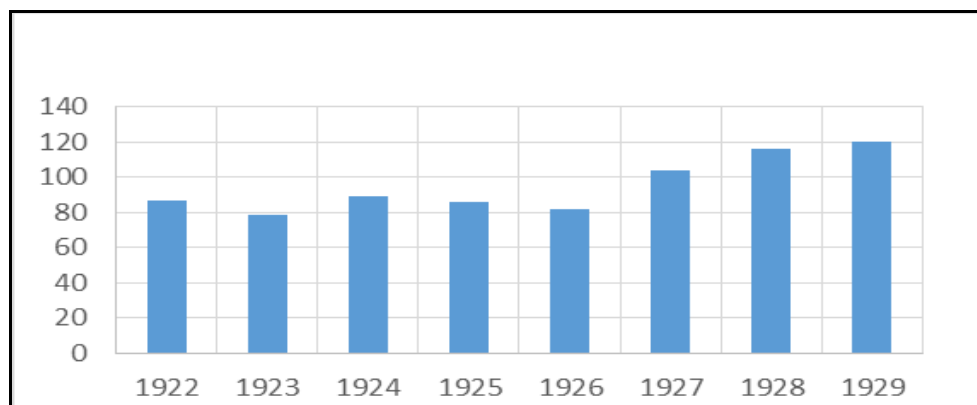
Source: Own calculations based on the data from Romania's Statistical Yearbook

This Kitchin cycle was marked by the governance of the National Liberal party, which promoted a protectionist foreign trade policy and adopted measures to strengthen the positions of the local entrepreneurs.

The 1926-1929 Kitchin cycle was sensibly different from the previous one. The very good crop obtained in the 1926 year generated a new impulse for economic growth. The gross domestic product grew by 10.8%, while the gross domestic product per capita grew by 9.3%. During the 1927-1929 time interval the gross domestic product grew at an average yearly rate of 2.07%, while the gross domestic product per capita grew at an average yearly rate of 0.17%. The representative rates of the above-mentioned indicators are higher than the average rates and suggest a concave trajectory of economic growth.

The slow pace of economic growth was caused by the bad crops obtained in 1927 and 1928 years and also by the beginning of the world agrarian crisis, which led to sensible decrease in the prices of the agricultural products[10]. The very good crop registered in the 1929 year favored the relaunch of economic growth and contributed to an increase of the weight of the primary sector in the total value added. During the second half of the 1920s the secondary sector development was slower in comparison to the dynamics of agricultural production and the extension of activity of the tertiary sector. Thus, the contribution of the industry and constructions to the creation of the value added at the level of the whole economy decreased from 27.27% in 1925, to 26.03% in 1929.

The inflation rate sensibly decreased at an average yearly rate of 0.66% as a result of the action of multiple factors, such as: a) policy measures designated to implement monetary stabilization, b) the favorable impact of the surplus of the foreign trade balance, c) the decrease in the prices of the agricultural products in the context of the agrarian crisis, which began in 1928 and lasted to the middle of 1930s.

The nature of the disequilibria on the labor market sensibly changed. Between 1927 and 1929, the ratio job demand/ job supply ratio was higher than 100%. The size of the respective indicator revealed that unemployment became a social problem that could not be ignored. Since the 1928 year, the public authorities have published official statistical data concerning the number of unemployed persons. The average monthly number of registered unemployed persons was 10,535 in the 1928 year and 7,449 in the 1929 year.

During the analyzed short economic cycle, both timely and early parliamentary elections were held and governments of three political orientations were in power.

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[10] Solimano (1991) remarks that during the second part of the 1920s, the Central and Eastern Europe countries benefited from relative prosperity, in the context of the favourable agricultural prices from the consumers' point of view. Also, Polanski (2017) reveals that the 1927-1929 period is considered in Poland as the best time in the interwar years.

6. The Kitchin cycles during the 1930s

The fluctuations of the gross product per capita allow us to detect three Kitchin cycles during the 1930-1939 period, namely: a) 1930-1932; b) 1933-1935; c) 1936-1939. During the 1930s we dealt with a surplus of the balance of the foreign balance (Table 5). The respective cycles reveal the economic crisis during the early 1930s, on the one hand, and the phases of the economic recovery, registered during the 1933-1939 time interval, on the other hand.

Table 5. The level of gross domestic product, the gross domestic product per capita and the balance of the foreign trade during the 1930-1939 period

Year	GDP (USDppp2000)	GDPpC (USDppp2000)	Balance of the foreign trade
1929	19650	1114	Surplus
1930	19811	1097	Surplus
1931	20272	1116	Surplus
1932	18623	1011	Surplus
1933	18981	1018	Surplus
1934	19433	1027	Surplus
1935	21039	1102	Surplus
1936	21892	1133	Surplus
1937	22910	1173	Surplus
1938	22654	1147	Surplus
1939	23197	1164	Surplus

N.B. USDppp2000 = U.S. dollars at purchase power parity in 2000

Source: Axenciuc (2008, 2012)

The 1930-1932 Kitchin cycle was marked by the economic crisis. The gross domestic product decreased with an average yearly rate of -1.77%, while the gross domestic product per capita decreased at an average rate of -3.18% (Table 6)[11] The representative rates are

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[11] The decrease in the gross domestic product during the 1930-1932 period was not observed only in Romania, but also in the United Kingdom, USA (Middleton, 2010), Poland (Polanski, 2017), France (Beaudry and Portier, 2002), the Netherlands (den Bakker, 1990), Bulgaria, (Kolev, 2009), Austria, Czechoslovakia, Hungary and Yugoslavia (Pryor et al., 1970). In Romania the gross domestic product decreased by 5.22%, while the gross domestic product of the world economy diminished by 10.1% (Jacks and Novy, 2020). In the case of the USA, the respective indicator decreased by more than 32%, while in Finland the estimated diminish was only 4%, one of the lowest in the World (Hjerppe, 1989).

negative for both indicators, i.e.: -0.24% and -0.18%, respectively. At a first sight, we deal with a convex trajectory. But we have to consider the unstable dynamics of the gross domestic product. The good crops obtained in 1930 and 1931 generated an increase in the respective indicator and masked, in a certain measure, the economic crisis that was strongly manifest in industry and some of the services activities. The negative values of the average and representative rate of the two considered indicators of economic growth, respectively, during the analyzed period, is caused by the deep decrease of the gross domestic product registered in 1932.

Table 6. The indicators of trajectory of growth of Gross Domestic Product and of Gross Domestic Product per capita during the 1930-1939 period

Period	RGDPav	RGDPr	RGDPpCav	RGDPpCr
1930-1932	-1.77	-0.24	-3.18	-0.18
1933-1935	4.15	3.11	2.91	1.83
1936-1939	2.47	3.01	1.38	1.87

Source: Author's computation based on the data from Axenciuc (2012)

During the analyzed period the agricultural production was an unstable one. High crops were obtained in the 1930 and 1931 years, while the crop registered in 1932 was considerably poorer. In this context, in 1932, the weight of the primary sector in the total value added (35.47%) was lower in comparison to 1914. Between 1929 and 1932, both the secondary and tertiary sectors increased their weight in the value added created at the level of the whole economy (Table 7).

This way, in 1932, the weight of the secondary sector was 27.30%, very close to that registered in 1925, while the weight of the tertiary sector exceeded 37%. Hence, it is possible to speak about a forced tertiarization of the sectoral structure of gross domestic product in the context of an economic crisis.

Table 7. The sectoral structure of value –added during the 1929-1939 period %

Year	Primary Sector	Secondary Sector	Tertiary Sector
1929	37.82	26.03	36.15
1932	35.47	27.30	37.23
1935	33.77	30.38	35.85
1939	35.28	30.03	34.69

Source: Computed based on Axenciuc (2012)

During the economic crisis, the prices registered a considerable drop, especially in 1931 and 1932 years (Graph 3).

Graph 3. Estimated rate of inflation during the 1929-1939 period (%)
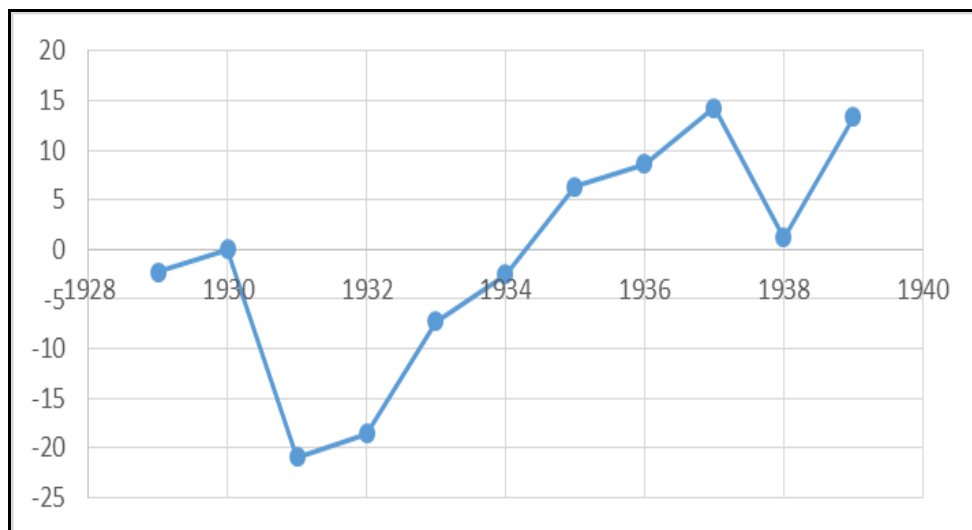
Source: Own calculation based on data from V. Axenciuc (2012)

Under these conditions, the average yearly rate of inflation was -13.62% (Table 8).

**Table 8. The rate of inflation and the indicators of labor market disequilibria during the 1930-1939 period**

Period	RInflav	(Djob/Sjob)av	NUav
1930-1932	-13.62	136.55	32867
1933-1935	-1.32	113.07	20030
1936-1939	9.22	93.18b	10556b

b) average for the 1936-1938 time interval

Source: Author's computation based on the data from Axenciuc (2012)

The decrease in the demand for industrial goods and the worsening of the economic and financial situation of many firms or banks caused significant job losses. Also, the austerity measures adopted for the implementation of a stabilization policy created new pressures on the labor market. In this context, the jobs demand/job supply registered by the Placement Offices grew from 120.47% in 1929 and reached a peak (146.24%) in 1932 (Graph 4).

Graph 4. The job demand /job supply ratio registered by the Placement Offices
during the 1929-1938 period (%)
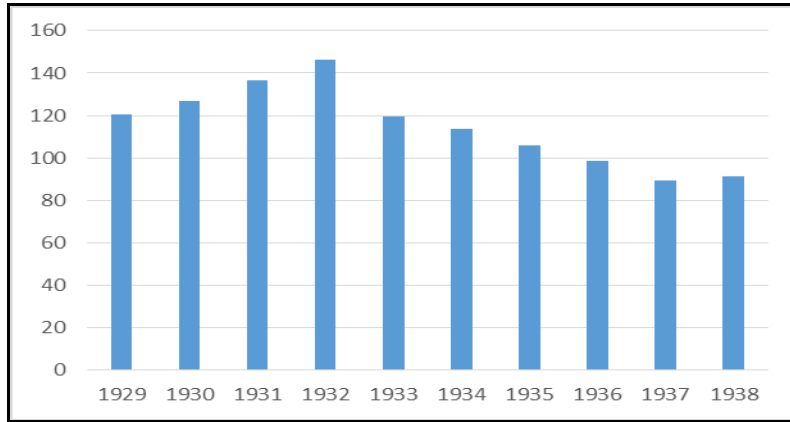
Source: Own calculations based on data from Romania's Statistical Yearbook

The average value of the above-mentioned indicator was 136.55%, sensibly higher in comparison to the 1926-1929 time interval and highlighted the extension of unemployment. The official statistical data confirmed this assumption. Between 1929 and 1932, the average number of the registered unemployed persons increased more than 5 times, namely from 7449 to 38958 (Graph 5).

Graph 5. The average number of registered unemployed persons
during the 1928-1938 period
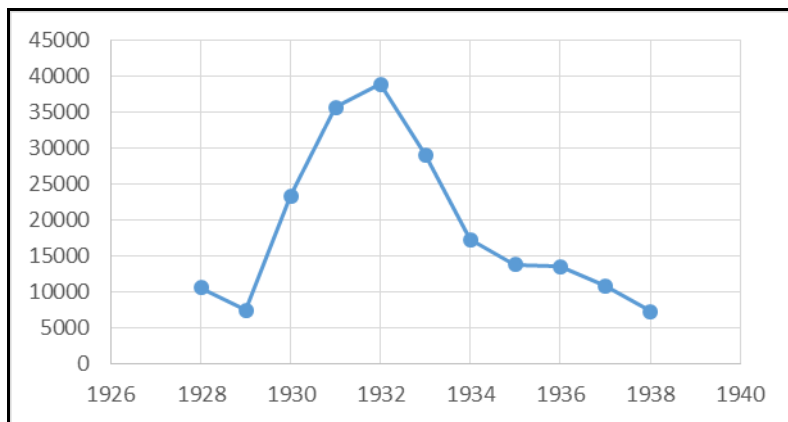
Source: Romania's Statistical Yearbook

From the political point of view, this Kitchin cycle was marked by a succession of several political crises and two early parliamentary elections.

During the 1933-1935 Kitchin cycle, Romania registered an economic recovery. The average yearly rates of growth registered by the gross domestic product and the gross domestic product per capita were comparable to those obtained during the 1926-1929 period and lower than the representative growth rates. Hence, we can speak about accelerated economic growth during the analyzed period[12]. Despite the significant increase in the gross domestic product, in the 1935 year, the gross domestic product per capita was still below the level estimated for the 1929 year. The main contribution to the economic recovery was made by the secondary sector. This way, the weight of the respective sector exceeded 30%.

The relaunch of the economic activity was obtained in the context of a trend of decrease of the prices, especially of the agricultural products.

The average yearly number of registered unemployed persons decreased significantly in comparison to the 1930-1932 period, but was more than double in comparison to the 1928-1929 period. The average job demand /job supply ratio registered by the Placement Offices decreased in comparison to the 1930-1932 period but continued to be higher than 100%.

The analyzed period was marked by a government rotation in 1933 from the National Peasant Party to the National Liberal Party.

During the 1936-1939 Kitchin cycle, the average yearly rate of growth was 2.47%, in the case of gross domestic product and 1.38%, in the case of the gross domestic product per capita[13]. In other words, the economic growth was slower in comparison to the previous

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[12] During the period 1933-1935 a Kitchin cycle can be also detected not only in the case of Romania but also in the case of Poland. Zweig (1944), cited by Polanski (2017) mentioned that the above-mentioned time interval was marked by a stagnation with symptoms of a slight recovery. Middleton (2010) remarks on a recovery of the economy of the United Kingdom during the 1933-1936 period. The depression continued to be manifest during the 1933-1935 period in Bulgaria and Czechoslovakia and during the 1933- 1936 period in France. The recovery was strong in the case of Finland, where gross domestic product grew at an average yearly rate of 7.4% (Hjeppe, 1989).

[13] During the late 1930s, the economic recovery was manifest in the majority of European countries and the USA. The relaunch of the economic activity was obtained in special conditions, the increasing state-interventionism and the pre-war situation, respectively. Polanski (2017) reveals that, in Poland, between 1936 and 1939, the public authorities have implemented a plan for the promotion of industrial development through public investments and the extension of state ownership. In the case of France, the economy registered a weak recovery in the context of entering a pre-war regime (Beaudry, 2010). The dynamics of the gross domestic product was unstable in the USA, the United Kingdom and the Netherlands. In the case of the United Kingdom, Middleton (2010) speaks about a recession and rearmament phase during the 1937-1939 time interval and about a pre-war recession and recovery during the 1937-1941 time interval. In the case

Kitchin cycle. Also, the trajectory of economic growth was a concave one, because the average yearly rate was lower than the representative rate. From the 1936 year, the gross domestic per capita was higher in comparison to the level registered in the 1929 year.

Like in the case of other European countries, moderate economic growth was obtained in the context of extending the interventions of public authorities in favor of the expansion of industrial and agricultural production. Thus, the agricultural production significantly grew, so that the weight of the primary sector in the total value added was 35.28% in 1939. The weight of the secondary sector slightly decreased but remained above 30%. The weight of the tertiary sector registered a decrease from 35.85% in 1935 to 34.69% in 1939. Consequently, we may consider that at the end of the interwar period the primary sector maintained the first position in the creation of the value added, despite the considerable development of the industrial activity.

The new international economic and financial environment and the end of the agrarian crisis caused an increase in prices at an average yearly rate of 9.2%. Also, the features of the labor market disequilibria had changed. The job demands/job supply ratio registered by the Placement Offices was lower than 100%. The number of unemployed persons decreased. The average of the respective indicator was 10556 during the 1936-1938 time interval. In 1938, the average monthly number of unemployed persons was 7248, lower in comparison to 1929. The size of the above-mentioned indicators of the labor market disequilibrium suggests that during the late 1930s, we dealt with structural unemployment. This statement is in line with the comments expressed in the Encyclopedia of Romania (Enciclopedia României) (1938), concerning the operation of the institutions of the labor market and social protection.

The last interwar Kitchin cycle of Romania's economy was marked by the erosion of parliamentary democracy and by the establishment of an authoritarian monarchical regime in February 1938.

Conclusions

Kitchin cycles were manifested in interwar Romania's economy. We deal with six Kitchin cycles, which lasted three or four years. The respective cycles can be grouped in two Juglar type cycles. This way, Schumpeter's theory concerning the relationship between Kitchin cycles and Juglar cycles is confirmed.

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of the Netherlands, the data presented in den Bakker et al. (1990) reveal an acceleration of the rate of growth of the gross domestic product from 5,4% in 1936 to 7.7% in 1939, but with a recession of -3.2% in 1938. In the case of Finland, the rate of economic growth decelerated from 6.8% in 1936 to 5.2% in 1938. The gross domestic product decreased by -4.3% in 1939, under war conditions.

We can identify three types of Kitchin cycles, namely: a) **cycles of unfavorable economic and social situations** in case of 1919-1921 and 1930-1932 periods; b) **cycles of recovery after unfavorable situations** in case of 1922-1925 and 1933-1935 period, c) **cycles of consolidated economic growth**, obtained after the overpassing the peak of the gross domestic product per capita registered before the crisis, in case of the 1926-1929 and 1936-1939 periods.

The identification of the Kitchin cycles allows detection of some features of the dynamics and structural changes of Romania's gross domestic product during the interwar period. Therefore, the gross domestic product increase was a fast one during the cycles of recovery after an unfavorable situation and a moderate one in the case of the cycles of consolidated economic growth. It is to mention that the trajectory of economic growth was a concave one in the case of the three Kitchin cycles. Hence, the analysis of the dynamics of gross domestic product in the context of respective cycles confirms the results obtained in Pavelescu (2018), which reveals the concave trajectory of the considered indicator during the whole interwar period.

The gross domestic product and the gross domestic per capita grew in the context of sectoral changes in the gross value added. The weight of the primary sector in the total value added decreased during both the cycles of unfavorable economic and social situations and the cycles of recovery. The respective weight increased in the context of the consolidated economic growth. This evolution reveals that agriculture remained the main branch of Romania's economy, despite an important extension of the industrial and services activities. As a rule, good crops were obtained during the cycles of consolidated economic growth.

The weight of the secondary sector in the total gross value added increased during the cycles of unfavorable economic and social situations due to an important decrease in agricultural production. An increase of respective weight has occurred during the economic recovery cycles as an outcome of vigorous dynamics of the industrial activities. During the consolidated economic growth cycles the relative contribution of the secondary sector to gross value added decreased, revealing that the dynamics of industrial production was slower in comparison to the agricultural production.

The weight of the tertiary sector increased during the cycles of unfavorable economic and social situations and diminished during the economic recovery cycles. This evolution shows that the fluctuations of the activities included in the services sector were lower in comparison to those registered in the case of agriculture, industry and constructions. During the consolidated economic growth cycles, the sense of change of the weight of the tertiary sector in the gross value added was influenced by the role of the market mechanisms. Therefore, during the 1926-1929 time interval, the weight of the considered sector in the total value added was favored by the extension of the role of market mechanisms and of the banking system in financing industrial activities. The diminishing of the relative importance of

the services in the total gross value added during the 1936-1939 period occurred under the conditions of the extension of state interventionism in favor of industry development and protectionist practices in the foreign economic relationships.

We detect a correlation between the labor market disequilibria and the dynamics of prices. When inflationary pressures were manifested, we dealt with the relatively low number of unemployed persons or even labor shortages. In the context of deflation, caused by the agrarian crisis or by the Great Depression, the number of unemployed persons increased.

The Kitchin cycles were relatively low correlated with short political cycles. Only between 1922 and 1925 did a Kitchin cycle overlap with a political cycle. During the other Kitchin cycles, we dealt with political instability revealed by early parliamentary elections, government rotations or a major constitutional change.

During the 1920-1939 period, the rate of economic growth was 3.6% in the case of Romania and 4.4% in the case of Finland, the most successful interwar agrarian-reformed economy. Hence, we deal with widening the development gap between the two countries.

The dynamics of interwar Romania's economy was unstable. Thus, the economic growth rate was 7.1%, during the 1920-1925 period and 2.4%, during 1925-1938. In other words, after reaching the pre-war economic potential, the pace of gross domestic product growth sensibly decreased. Between 1925 and 1938, the rate of economic growth was 3.0% at the European level and 4.2%, in the case of Finland. Therefore, we can conclude that the economic development of Romania in the context of a new production base was significant from the national point of view but may be appreciated as slower to moderate in comparison to the evolutions registered at the European level or by the most successful European economies during the analyzed period.

Hence, we can conclude that during the interwar years, the evolution of the Romanian economy was in line with the trends manifested in Europe concerning the gross domestic product fluctuation and the inflationary and deflationary episodes. The labor market disequilibria had a local specificity, mainly caused by: a) the constant increase in the potential labor supply, b) maintaining the important role played by the agriculture within the economic activity, c) the relative slow increase of labor demand in urban area generated by the expansion of manufacturing industry and the services in comparison to labor supply dynamics. In this context, the rate of unemployment was low, compared to the developed European countries. But the size of this indicator needs to be correlated with the low labor productivity of an important part of the active persons employed in agricultural activities.

We note that this paper has some limitations because the analysis is focused on the identifications of the correlations between the cyclical evolutions of the gross domestic product, the prices dynamics and the changes of the features of labor market disequilibria. Therefore, other important modelling factors of the Kitchin and Juglar cycles, such as the balance of foreign trade or the short political cycles are considered only as qualitative ones.

Also, the causes of the inflationary pressures and of the deflationary evolutions are not examined in detail.

Under these conditions, we can identify directions for further developments of the research. We have in view the study of the size of the foreign trade balance, the dynamics and the structural changes of the exports and imports and their correlations with the Kitchin cycles. Also, it is interesting to analyze the impact of the monetary policy on the prices dynamics in the context of cyclical evolutions of the gross domestic product. Another research issue is the study of the role of industrial policy in the modelling of short economic cycles.

References

Alogoskoufis, G. (2021). Historical cycles of the modern economy of Greece. From 1821 to the present. CGK Working Paper 1/ February 2021

Axenciuc, V. (2012). Produsul intern brut al României 1862-2000 Serii statistice seculare şi argumente metodologice.Volumul I Produsul intern brut 1862-2000. Sinteza seriilor de timp a indicatorilor globali pe secţiuni temporale, Volumul II Produsul intern brut 1862-1947. Calcule detaliate şi metode de constituire a seriilor de indicatori pe activităţi-resurse. Editura Economică, Bucureşti

Axenciuc, V. (2008). La formation et le développement du marché intérieur moderne en Roumanie, Etude et séries statistiques a longue terme (1860-1947). Institute National de Recherches Economique

Bascani, A. (2020). Growth without development: The post-WWI period in the Lower Danube: perspectives and problems of Romania and Bulgaria. The Journal of European Economic History, Associazione Bancaria Italiana, Roma, Vol. 49, Iss. 3 /2020

Beaudry, P., Portier, F. (2002).The French Depression in the 1930's. Review of Economic Dynamics, no.5/2002

den Bakker, G. P., Hutker, T. A., van Bochove, C. A. (1990). The Dutch Economy 1921-1939. Revised Macroeconomic Data for Interwar Period. Review of Income and Wealth, Series 36, No.2/June 1990

Cloyne, J., Dimsdale, N., Postel-Vinay, N. (2018). Positive effects of fiscal policy on economic growth: New evidence from Great Depression in Britain. Vox, 2 November 2018

Constantinescu, N.N. (coord.) (1997). Istoria economică a României, Vol.I. Editura Economică, Bucureşti

Garner, C. A, Wurtz, R. E. (1990). Is the business cycle disappearing? Economic Review, May/June 1990

Giurescu, C. C. (coord.) (1972). Istoria României în date. Editura Enciclopedică Română, Bucureşti

Gordon, R.A. (1951). Cyclical Experience in the Interwar Period: The Investment Boom of the Twenties. Conference on Bussiness Cycles, NBER

Hjerppe, R. (1989). The Finnish economy 1860-1985. Growth and structural change. Bank of Finland, Gouverment Printing Centre, Helsinki

Jacks, D., Novy, D. (2020). Trade Blocs and Trade Wars during the Interwar Period. Asian Economic Policy Review, no. 15/2020

Juglar, C. (1862). Des crises économiques et leurs retours en France, en Angleterre et aux Etats Unies. Guillaumin, Paris

Kitchin, J. (1923). Cycles and Trends in Economic Factors. Review of Economics and Statistics, Vol 5, no. 1/1923

Karotayev, A., Tsirel, S. (2010). A spectral analysis of world GDP dynamics: Kondratieff waves, Kuznets swings, Juglar and Kitchin cycles in global economy development and the 2008-2009 economic crisis, Structure and Dynamics no. 4(1)/2010

Kerekes, E. (1979). Aspecte teritoriale ale dezvoltării industriei României în perioada interbelică, Studii de istorie economică și a gândirii economice românești. Editura Dacia, Cluj-Napoca

Kolev, S. (2009). The Great Depression in the eyes of Bulgaria's economists, Bulgarian National Bank Disscution Papers no. 79/2009

Kondratieff, N.D. (1935). The Long Waves in Economic Life. The Review of Economic Statistics vol.17/1935

Kuznets, S. (1930). Secular Movements in Production and Prices. Their Nature and their Bearing upon Cyclical Fluctuations. Boston: Houghton Mifflin

Ledenyov, V., Ledenyov, D. (2018). Bussiness Cycles in Economics. MPRA Paper no. 84959/2018

Madgearu, V. N. (1940). Evoluția economiei românești după războiul mondial, Editura Științifică, București, 1995

Middleton, R. (2010).– British monetary and fiscal policy in the 1930s. Oxford Review of Economic Policy, Vol. 26, No. 3/2010

Norkus, Z. (2019). The economic output growth of Baltic countries in 1913–1938: a quantitative cross-country comparison. Journal of Baltic Studies, Vol.50, Issue 2, 2019

Pavelescu, F. M. (1986). Some considerations regarding the estimated parameters of the Cobb-Douglas production function. A new approach. Revue Roumaine des Sciences Sociales, Série des Sciences Economique, no. 1-2 /1986

Pavelescu, F. M. (2018). Disembodied technical progress and structural change in Romania's interwar economy. In L. Chivu, C. Ciutacu, V. Ioan-Franc, J-V. Andrei (eds.) (2016), Issues and Innovative Trends in Sustainable Growth- Strategy Challenges for Economic and Social Policies. Proceedings of ESPERA 2016, Part I. Peter Lang

Pavelescu, F. M. (2020). Institutional changes and labor market operation in interwar Romania. Romanian Journal of Economics, Vol. 50/2020

Polanski, Z. (2016). Stabilisation Policies and Structural Developments: Poland and the crises of 1929 and 2008. CASE Working Papers no 9(133) /2016

Postolache, T. (coord.) (1991). Economia României în secolul XX. Editura Academiei, București

Pryor, F., Pryor, Z., Standik, M., Steller, G. (1971). Czechoslovak aggregate production in the interwar period. Review of Income and Wealth, Vol.17, Issue 1, March 1971

Saizu, I., Tacu, A. (1997). Economia europeană interbelică. Institutul European, Iași

Schumpeter, J. (1939). Business Cycles. A Theoretical, Historical, and Statistical Analysis of the Capitalist Process. NY: McGraw-Hill, New York

Sartorello Spinola, D. (2018). Instability constraints and development traps: An empirical analysis of growth cycles and economic volatility in Latin America. UNU-MERIT Working Paper no.2/2018

Solimano, A. (1991). The Economies of Central and Eastern Europe: An Historical and International Perspective. In V. Corbo, F. Corricelli, J. Bossak (eds.), Reforming Central and Eastern European Economies: Initial Results and Challenges, A World Bank Symposion. The World Bank, Washington

Sych, A. (2019). Post war (WWI) Central and Eastern Europe: Time of civilizational choice. Codrul Cosminului, vol. XXV, no. 1/2019

Teichova, A. (1985). Economic policies in interwar East Central Europe. Freedom and constraints of action. Uppsala Papers in Economic History, Research Report no.8/1985

Telycote, A. (1993). The long waves in the world economy. Routledge

Zweig, F. (1944). Poland between Two Wars. A critical Study of Social and Economic Changes. Secker & Warburg, London