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# Red economy (Fordism and Socialism): Characteristics and peculiarities in agriculture

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## Abstract

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The article presents two main interpretations of the red economy, understood either as based on the Fordist principle of technological standardisation, mass production, and mass consumption, or as referring to the socialist economic system. It aims to analyse the main characteristics of these types of economy and provide comments on their specific implications in agriculture. The environmental limitations of Fordist principles are examined, indicating that the logic of intensified production and consumption generates systematic pressure on the environment not only in industry, but also in agriculture. Through an empirical analysis of consumption patterns in Bulgaria and the European Union, the compatibility of the Fordist economic system with the requirements of long-term sustainability is called into question. A revision of the Fordist model is considered necessary because ecological constraints increasingly restrict its contemporary applicability.

In examining the socialist economy, the traditional socialist system is first considered, followed by its contemporary modification in China. The development of the socialist economy, and agriculture in particular, is discussed, and the processes of consolidation within the sector are described. It is demonstrated that the share of agriculture in the total production of the Bulgarian economy under socialism experienced a steady decline – from nearly 50% in the late 1940s to 10% of total social product and 11.1% of GDP in 1989 – a trend which, after the 1970s, was also accompanied by a slowdown in economic growth. The contemporary challenges facing China's economy and agricultural sector are identified, and the reforms undertaken to address them are described.

*Keywords:* red economy; Fordism; socialist economy; agriculture; market socialism

## Introduction

Red is another colour of the economy, about which a somewhat pluralist view is found in the literature. The two main perceptions of the red economy lie at the opposite poles of the economic spectrum: the capitalist Fordist economy, on the one hand, and the socialist paradigm, on the other. While the Fordist economy is focused on achieving economies of scale, the goal of a socialist economy is to satisfy needs rather than make a profit.

In the light of Fordism, the red economy marks a transitional period in modern economic and industrial history. It is associated with the dawn of a model of mass production and mass consumption, where the efficient organisation of labour and the adoption of innovative technologies fostered formidable economic growth, especially in the United States of America, where the paradigm originated. These developments were not restricted to industry, as agriculture was increasingly shaped by Fordist principles of mechanisation and standardisation, extending productivity gains to

the primary sector. The success of Fordism, however, was ultimately overshadowed by environmental degradation in both industry and agriculture, driven by overconsumption and intensifying production practices.

Red economy in a socialist context refers to an economic system that is based on public ownership of the means of production, central planning, administrative pricing, and the substantial influence of non-economic incentives. These characteristics caused significant macroeconomic distortions and tensions that, together with the political changes of the 1990s, led to the end of its international existence of over 40 years. Today, some of these traits are inherent in the economy of China, where they are combined with features of other economic systems.

The aim of this study is to explore the defining characteristics, important aspects, and challenges of the two distinct dimensions of the red economy, and to outline their specifics in agriculture. In accordance with the stated aim, the article includes two main parts from a content perspective. The first one describes the essence of Fordism and pays particular attention to the role of the division of labour, the influence of Fordism on agriculture, the environmental effects of mass production and consumption in the primary and secondary sectors, and consumption patterns in Bulgaria and the EU. The second part presents the basic principles of the traditional socialist economy with an emphasis on the agricultural sector, displays the macroeconomic development of Bulgaria in the last two decades of socialism, and outlines the major features of China's modern economic system.

## Materials and Methods

The article presents a theoretical and an empirical study of the two main aspects of the red economy and its manifestations in agriculture. The research methodology includes the application of logical and historical methods, analysis and synthesis, induction and deduction, and comparative analysis. The empirical analysis is descriptive, and is based on the use of primary annual data on consumption growth rates by groups of goods and services, economic growth and inflation rates, the number of people employed, the level of physical capital and the values of aggregate social product, national income and GDP by branches, as well as derivative indicators calculated by the authors. All of them are for Bulgaria, with data on the dynamics in the structure of consumption being supplemented with values for the EU. The sources of primary statistical information are the NSI and Eurostat.

The periods of empirical analysis are consistent with the specifics of the two issues under consideration and with the availability of reliable and comparable statistical information. For Fordism, the selected period from 2005 to 2022 is the longest possible for which data have been calculated using the same methodology. The data on the relative importance of agriculture in Bulgaria's socialist economy are calculated in two ways. In the first case, they are based on the main macroeconomic aggregates for socialism – aggregate social product and national income – and refer to individual years in the period 1948–1989. In the second case, they are calculated on the basis of GDP and cover the last decade of the period. The data for all other macroeconomic indicators, including the decomposition of economic growth into its main factors – changes in employment, capital, and total factor productivity (TFP), are for the period 1971–1989. The selected empirical information and the sufficiently long periods of analysis provide an opportunity to identify the main trends in the examined aspects of the red economy in Bulgaria.

## Results and Discussion

### *Fordist economy*

To understand the essence of the Fordist-red economy, one should consider the perceptions of Fordism itself, which are divided into two main areas. The first perception of Fordism regards it as a term coined to direct towards a specific period – between the end of the Second World War and the 1970s. There is a lag of about 40 years between the establishment of Henry Ford's pioneering practices at the famous Highland Park factory and the period in economic history that bears his name – a time during which the examined paradigm became a widespread and widely accepted ethos. Another definition of Fordism, arguably a more popular one, relates the term to mass production practices. It also refers to the employment of the latest technology of its time, the centrepiece of which is the assembly line. The aim is to achieve efficiency, which in turn includes lowering production costs and increasing production volumes (Watson, 2018). The two definitions capture the essence and practical aspects of Fordism, which, although concerning diverse aspects, are interrelated.

### *Fordism and the division of labour*

The concept of decreasing production costs and increasing productivity is far from an entirely new concept at the beginning of the 20th century. Some of the ideas on which the Fordist-red economy is based date centuries before Henry Ford created his company and legacy. The concept of division of labour was by far not a newly introduced concept, seen as a means of generating prosperity by Adam Smith and Adam Ferguson in the 18th century (Hamowy, 1968) until much later readopted by Marx.

The concept of division of labour is considered to be a factor that allowed Henry Ford to achieve economies of scale and a drastic reduction of unit labour costs and hours. Together with the other factors cited below, it is one of the reasons for the success of the Fordist production model at the beginning of the 20th century. An orthodox economist's reasoning would assume that a high level of productivity was achieved by substituting capital for labour and increasing the capital stock per worker. Skilled workers would thus be able to increase their production by using the additional capital provided.

However, the increase in capital and labour productivity is not isolated as the sole reason for the formidable success of the Fordist model. An additional improvement highlighted as having a key role is the reorganisation of workflow and layout changes, which would additionally decrease unit labour requirements in production (Williams et al., 1992). The introduction of the assembly line allowed production time and unit labour requirement to diminish drastically, yielding efficiency (Lazdowski, 2020), which would result in lowering production costs.

The efficient organisation of labour introduced by Ford was combined with a substantial financial stimulus, which is considered to have had common traits and a similar effect to the Keynesian policy for inducing demand. This refers to the $5 day, introduced in the early 1910s. This daily payment represented a drastic increase for Ford employees, as it was double the average payment in the industry at the time. This increase in the disposable income of workers allowed them to increase their consumption and buy the cars they had produced. This transformed them from pure employees into customers of the enterprise they worked for. Already in the possession of a vehicle, workers did not have to live within walking distance of the factory where they worked. This created the necessity for road construction.

Further, these workers could travel and take vacations, which stimulated the distribution of petrol, the construction of petrol stations, the development of recreational infrastructure, etc. (Lazdowski, 2020). It is assumed that Henry Ford could have been aware of the effect that the increase in salaries would have on the demand for Ford cars, and that this measure was taken deliberately to trigger what would later be referred to as a multiplier effect. Consequentially, the term Fordist-red economy was also used to describe a macro-scale model of the organisation and linking of mass production and consumption. The Fordist model is often seen as the canonical model of capitalist development in the second half of the 20th century (Hudson, 2009; Lauria et al., 2020).

While this transformation began within the walls of the industrial plant, its implications rapidly spilled across the wider economy. Between the 1910s and 1930s, agriculture was increasingly integrated into the Fordist economy as major technical innovations transformed farming and encouraged rural producers to render production more capital-intensive and thus adopt more manufactured inputs.

In this broader context, agriculture was expected to play a central role in Fordist development by generating strong demand for consumer goods and new agricultural inputs, supplying outputs to the expanding food-processing industries. Moreover, it would provide surplus labour for the growing industrial sector. The Fordist model therefore represented not only a transformation of industrial production but also a restructuring of entire sectors around new patterns of mass production and mass consumption (Kenney et al., 1991).

***Limitations of the Fordist economy***

The beginning of the 1970s was marked by the publication of several articles that highlighted the link between mass consumption, which was one of the achievements of Fordism, and pollution (Commoner et al., 1971; Fleming and Pantell, 1974; Desai, 1977). This shed light on the detrimental effects of excessive production and consumption on the environment, formulating the consumption-pollution relationship as a trade-off (Clarke and Reed, 1994).

Thus, research showed that although the red economy had proven to allow the achievement of efficiency in production and an increase in consumption and although the Fordist model had been a governing paradigm in the USA, Europe, and Japan for the better part of the three decades following World War II, it was not a sustainable strategy for further economic development (Roobeek, 1987). The red economy is considered to have limited applicability in contemporary economic conjuncture, specifically due to the undesirable long-run environmental effects of mass production and consumption. The principles of the red economy contradict the principles of other colours of the economy aimed at sustainability.

While the critiques of Fordism in the 1970s focused primarily on the relationship between mass consumption and pollution, agriculture provides an equally strong illustration of the environmental constraints inherent in the Fordist model. The integration of agriculture into the Fordist system during the early and mid-20th century brought significant increases in productivity through mechanisation, synthetic fertilisers, pesticides, and the standardisation of both crops and livestock. These developments followed the core principles of Fordism – expanded production, greater use of technology, and a constant pursuit to increase output (Kenney et al., 1991).

However, the long-run environmental consequences of Fordist agricultural practices have proven substantial. The

widespread use of nitrogen- and phosphorus-based fertilisers has contributed to soil acidification, water pollution, eutrophication, and increased greenhouse gas emissions (Vitousek et al., 1997; Galloway et al., 2003). Intensive pesticide use has also been associated with ecological toxicity and long-term ecosystem disruption (Pimentel, 2005). The emphasis on mechanisation and large-scale production has accelerated soil degradation, loss of organic matter, and the over-exploitation of land and water resources (Lal, 2004; Montgomery, 2007). These outcomes reflect the same structural tension identified in industrial production: the Fordist logic of expansion inevitably clashes with ecological limits.

Thus, agriculture demonstrates that the challenges of the Fordist-red economy are not confined to industrial sectors or household consumption alone. Instead, they affect the entire socio-economic system and show that the mass-production and mass-consumption paradigm creates growing ecological pressures across all sectors. This pattern goes beyond agriculture, as similar sustainability pressures can be observed in household consumption. In a study, which aims to assess the environmental impact of household goods in Europe, Castellani et al. (2021) found that paper products, detergents, furniture, and clothing are the product groups contributing the most due to a combination of consumption intensity and environmental profile of products. In the paper, the authors also conclude that environmental impacts due to household goods consumption were higher in 2015 than in 2010.

This raises the question of whether the consumption of goods in these categories, considered harmful to the environment, exhibited substantial growth during the first two decades of the 21st century. Data on household consumption are analysed. The geographical units observed are Bulgaria, a small European country and EU member since 2007, compared to the rest of the EU (all other European Union Member States as of 2022, excluding Bulgaria, which is observed separately). The growth of real consumption in total and the consumption of different groups of goods and services is observed.

Real consumption is measured in chain-linked volumes in millions of euros, with the base year being 2005, which coincides with the first year of the observed periods. The period is 2005–2022. The choice of period is justified for several reasons. First, the extent of 19 years is significant enough to capture lasting changes in consumption patterns. Second, the period reflects the distortions caused by the COVID-19 pandemic, but also includes the post-crisis recovery period, during which consumption reaches and exceeds pre-pandemic levels.

The growth rates over the period are compared throughout categories of consumed goods according to the Classification of Individual Consumption by Purpose (COICOP). The level of aggregation is 12 subcategories of consumed goods, and the source is Eurostat. The calculated growth is presented in Table 1.

Over the period from 2005 to 2022, Bulgaria observed a 59.16% growth of total real consumption. The "Communications" subgroup showed the highest growth – 375.21%, followed by the "Recreation and Culture" subgroup, which includes recreational services: holidays and cultural activities, as well as goods and equipment for recreation.

Both in Bulgaria and in the other EU Member States, the consumption of the subgroup "Furniture, household equipment and current household maintenance" shows significant growth, which exceeds the growth of total consumption. "Clothing and footwear", also outlined as one of the most environmentally harmful subgroups of goods, also marks high growth in Bulgaria.

The increase in consumption in these subgroups could partially be explained by an increase in real income throughout the period. The growth in real GDP in chain-linked volumes (2005 million of euro) is calculated as a reference. It is as follows: real GDP growth in Bulgaria is 53.97%, and in the EU, excluding Bulgaria – 24.19%.

The growth in real income in Bulgaria, as well as in the rest of the EU, could serve as a justification for the growth of consumption. However, the growth observed in some of the subgroups, including "Furnishings, household equipment and routine household maintenance", "Recreation and culture" and "Clothing and footwear", is significantly higher than the growth in real income. Thus, the changes in patterns of consumption could not be explained entirely by the increase in real income. A plausible explanation would be that there has been a change in preferences for certain types of goods and a tendency to consume more of those preferred goods.

However, in order to achieve sustainable economic development, it would be advisable to achieve a shift in consumption patterns towards goods which have a less negative impact on the environment. Subsequently, the Fordist aspect of the red economy, which had its peak in the 1940s, 1950s, and 1960s, would not be an optimal means of achieving sustainable growth. This points towards other colours of the economy that could provide solutions to some of the issues that Fordism could not resolve.

***Socialist economy***

The world socialist economic system emerged after World War II, and continued to exist until the 1990s. Focus-

ing on some of its most important peculiarities, it can also be defined as a command, command-administrative, planned, centrally planned, or administrative-command economy. The emergence of this type of economy follows the basic principles of Marxist theory, which are applied to very different economic conditions, including underdeveloped productive forces, agricultural sector dominance, to name a few. Thus, the establishment of the socialist system in the respective countries took place before their capitalist economies reached maturity, rather than manifesting itself as a means of removing constraints imposed by developed capitalism on their economic progress, as postulated by Marx.

***Characteristics of the traditional socialist system***

The socialist economy in its traditional version has its own basic characteristics, which are inherent in all countries that have established it. They are related to the nature of the dominant ideology, the structure of political power, the purpose of economic activity, the ownership of the means of production, the features of the coordination mechanism, the method of pricing, the organisation of decision-making, the importance of economic sectors and the type of economic incentives. Some of the specific characteristics do not appear to the same extent in different socialist countries, which does not call into question their universal validity.

The economy under socialism is in direct correlation with the dominant ideology and the mechanisms for exerting political power (Kornai, 1992; Lamb, 2016). Central to the ideology are the goals of developing the productive forces, improving the welfare of the population, ensuring social equality and justice, and seeking to catch up with the economic performance of the most advanced capitalist countries. Because of the understanding that the value of a commodity is measured by the amount of abstract social labour needed for its production, it is assumed that the working class plays the leading role in society.

Achieving full employment and satisfying its most important domestic and social needs are therefore set as primary objectives. The realisation of the set goals relies on the typical socialist domination of public interests over personal ones, the influence of moral principles and the possibilities of mobilising the potential of the whole population through discipline and individual sacrifices. Political power belongs to the Communist Party, which is seen as the vanguard of the working class. Its policies determine the decisions of state institutions, although these institutions are formally independent.

The aim of socialist production is to ensure consumption and satisfy needs, not to make a profit. The means of production are public property, and the way they are used depends on the state, which acts as the nominal owner (Kornai, 1992; Tchipev, 2000). A highly dominant form of public ownership is state-owned enterprises (SOEs), which are controlled by the central or local administration. In some socialist countries, along with public ownership, there is also private ownership in some industries and activities whose relative share in total economic activity is very small.

The primary form of public ownership in agriculture are cooperatives, which are also controlled by the state, even though their means of production are collectively owned. The process of collectivisation in the sector goes through a few stages, which have a specific impact on the overall state of the sector. Initially, the consolidation of land and means of production took place on a voluntary basis, but it was carried out on a very limited scale. Therefore, in the next stage, inclusion in cooperatives took place using various forms of pressure and acquired a mass character.

The aim is to consolidate the socialist system and, in purely economic terms, to increase labour productivity, also through the adoption of mechanisation in production. Although the governing bodies of cooperatives are formally appointed by the cooperative members, in practice they act as representatives of the administration, which takes all important decisions related to their activities. In this way, cooperative ownership under socialism actually takes the form of „quasi-state ownership“, with the material interest of cooperative members in most countries limited to the possibility of personal use of certain land plots (Kornai, 1992).

The next stage in the development of cooperatives under socialism involves their further consolidation through the merging of smaller farms. This process is usually followed by further concentration in the sector through the incorporation of cooperative farms into even more aggregated structures, together with the coexisting state-owned farms and individual industrial and commercial enterprises. This leads to vertical integration, which significantly improves economic performance over a certain period of time but cannot guarantee that these results will be maintained in the medium and long run (Ivanov, 2007).

Prevailing public ownership in the socialist economy is combined with administrative coordination of economic activity, which is an alternative to the market mechanism in a capitalist economy (Ellman, 2014; Brus, 1973). It involves the direct influence of the state on production, consumption, output volume, and prices of final goods and services, as well as of raw materials. This is done in a variety of ways, with the priority being given to the mechanism of directive planning, consisting of the adoption of short- and medium-term plans at national and disaggregated levels. They are developed by specialised planning bodies and contain certain

quantitative targets for the production and use of goods, for the distribution of labour and investment, for technological development, for foreign trade and for the financial system.

In the hierarchical structure of the socialist economy the main information flow takes place from top to bottom after the adoption of the plan and in the opposite direction before its elaboration and in the processes of its reporting and eventual modification. The adopted plans are of a mandatory nature for the lower levels, which carry out their activities based on instructions received from the higher levels. Most of the incentives of workers and managers to implement the plan are of non-economic nature and concern moral and ethical principles, political beliefs, strivings for career advancement, fears of sanctions, etc.

Administrative price setting and the drive to raise living standards account for the relatively moderate price increases as measured by the retail price index (Nuti, 1986; Kornai 1980; Pindak, 1983). This open inflation can occur at the initiative of the government or of enterprises and is usually a response to more sensitive increases in the costs of production. If there is an upward movement in prices, but it is not reflected in the official price index, then inflation is hidden. This may be a consequence of objective difficulties in calculating it, as well as of deliberate actions to underestimate open inflation. They include the non-accounting for the emergence of new goods and the substitution of cheaper for more expensive ones, changes in weights to undervalue faster appreciating goods, limiting the index to public sector prices only, and the intended distortion of primary price information in its transmission to higher levels of administration.

One of the most typical characteristics of a socialist economy is the presence of repressed inflation, which is expressed not in price increases but in the build-up of significant inflationary potential. It is the result of administrative price determination and the authorities' desire to contain price increases, which in turn lead to a sustained excess of demand over supply. The resulting deficit is chronic in nature and affects the entire public sector, with the exception of state-funded services, which gives to Kornai (1980) reason to define the socialist system as an 'economy of shortage'. Turning a rising deficit into repressed inflation is possible when consumers give up missing goods and accumulate substantial forced savings.

Under the socialist system SOEs and partly cooperatives operated under conditions of soft budget constraints (Kornai, 1986; Goldfeld and Quandt, 1988). This means that when the relationship between revenues and costs is disrupted and losses are incurred, they receive support from the state to ensure their continued existence. This support takes the form of additional subsidies or various tax and credit reliefs. It appears as an inherent characteristic of the system, which is closely linked to the dominant state ownership, the directive planning and the administrative price setting. It is under the latter three conditions that an unforeseen and exogenously determined increase in the costs of enterprises may be difficult, if not impossible, to compensate for through an increase in their revenues, as well as a possible decrease in revenues to be reflected in the previously determined amount of costs.

To the extent that these discrepancies between revenues and costs arise as a consequence of factors external to the enterprise, the application of relief may be perceived as justified. The problem is that enterprises' confidence in receiving state support when losses occur does not encourage them to take measures to increase their efficiency and therefore the efficiency of the economy as a whole. The situation of SOEs and to some extent of cooperatives is completely different from that of households and private sector enterprises, which face hard budget constraints typical of a market economy.

Monetary and fiscal policies under socialism are not discretionary in the traditional sense, but subordinated to political objectives and processes in the real economy. The amount of budget revenue and expenditure in the preparation of the budget is predetermined by the indicators set out in the national plan for socio-economic development. Subsequent changes in budget parameters are usually related to the way the plan is implemented, changes in the external economic environment, administrative decisions to raise prices and wages, increase in subsidies in the presence of repressed inflation, provision of softer budget constraints to SOEs, etc.

Monetary policy also accommodates the needs of the real sector, with money supply adjusting to money demand. The interest rate is set administratively, and the monetary authorities have a commitment to provide sufficient credit to the public sector and sufficient liquidity to households. At the same time, if the forced saving generated by chronic deficits is in the form of liquid assets, then monetary overhang accumulates in the economy, which is one of the conditions for the emergence of repressed inflation (Cottarelli and Blajer, 1991; Garvi, 1977).

Inherent to socialist economies is the drive for accelerated economic progress, which is justified ideologically by the desire for superiority over market economies. Achieving higher rates of economic growth relies on rapid industrialisation, which is associated with an outflow of labour from agriculture and forestry and an intensive process of urbanisation. The allocation of more resources to industry becomes disproportionate, with priority given to heavy industry. This fact is in line with the Marxist-Leninist principle of prefer-

ential development of the production of means of production compared to the production of goods for consumption.

The structure of the economy is consistent with the role of capital accumulation as a major supply-side determinant of growth and the principle that needed capital goods should be produced primarily domestically rather than being provided through imports. The main driver of growth on the demand side is the increase in investment, which has a leading position in the plan and is almost entirely financed by the state. Therefore, the system exhibits a continuous and increasing hunger for investment, as well as an excess in the demand for capital goods relative to their supply (Stankiewicz, 1989; Kornai, 1992).

Simultaneously, the economy experienced technological progress and, in the first two decades, an increase in employment. With the development of the Council for Mutual Economic Assistance (CMEA), its member countries were benefiting from opportunities for international specialisation, and many of them from access to cheap energy resources. As a result, by the 1970s most socialist economies achieved relatively high rates of economic growth, which then started to decline. This was primarily due to the extensive nature of economic growth in the presence of decreasing productivity of investment and, in some countries, the shrinking size of the labour force (Krugman, 1994; Vonyo and Klein, 2019). These factors were compounded by increasing dependence on imports, as well as unfavourable international economic conditions, including the global economic crisis of 1971–1974.

The efforts made to reform socialism internally by expanding the private sector, introducing some market principles, and allowing greater independence for state enterprises varied in depth and scope from country to country, but generally failed. The reason is that they were fragmented and did not change the cornerstones of the system concerning the dominant state ownership and the administrative-bureaucratic coordination. Thus, despite some initial achievements of the socialist economy and its capacity to avoid market imperfections, it accumulated significant problems relating to lack of incentives, technological backwardness, inefficient production structure, accumulated deficits of goods and factors of production, suppressed inflation, distorted price ratios, rising external indebtedness, etc. In agriculture, these issues were compounded by urbanisation and a sharp decline in the number of people employed. The objective impossibility of solving these problems led to the collapse of the world socialist system and necessitated the transition of most socialist countries to a market economy.

The characteristics of the socialist system as a whole are confirmed by the empirical data on the Bulgarian economy. The open inflation in the country was very low, except for the intervals 1950–1955 and 1976–1980, when it amounted to 7% and 4%, respectively (Dodge, 1975; Table 2). A moderate price increase, averaging 2.5%, recorded in the period 1986 to 1989, together with the figures from the previous decade, indicated the accumulated inflationary potential that could no longer be suppressed. According to expert estimates, which take into account the existence of hidden and repressed inflation and cover only discrete periods, the rise in the official price index from 1971 to 1975 represents a very small fraction of actual inflation, which reached 3% (Nuti, 1986). According to the World Bank, a discrepancy, albeit to a lesser extent, also existed in 1986–1989, when it estimated inflation at 3.5%.

The economic growth of the Bulgarian economy during the socialist period was relatively high and even exceeding that of most other countries. Its maximum value of 12.2% was reached in the interval 1951–1955, after which the trend was of gradual decrease (Feiwel, 1981; Table 1). A more pronounced slowdown occurred in the 1980s, when growth rates became relatively moderate. A major contributing factor was the capital growth, which was observed at a declining rate over time, albeit outpacing real GDP growth. In the 1970s and 1980s, this contribution ranged from 55.6% in 1986–1989 to 81.8% in 1981–1985. Over the same period, employment changed only slightly and its impact on growth was small and even negative in 1986–1989. The increase in total factor productivity accounts on average for 1/3 of GDP, growth, which indicates that the growth is of an extensive nature.

At the beginning of the socialist period in Bulgaria agriculture was the largest economic branch, accounting for almost half of the aggregate social product and slightly less than 60% of the national income of the country (Table 3). The reforms undertaken in it and the efforts for accelerate industrialisation led to a rapid decrease of the relative share of the branch in the two main macroeconomic indicators for the socialist economy – by 55.1% and 46.6% in 1960 compared to 1948 and by 59.1% and 37% in 1970 compared to 1960, respectively. After a certain increase in the contribution of the sector over the next ten years, which was more pronounced in terms of the social product, a further decline was observed, with its values in the last year of the command economy converging.

In 1980, the relative share of agriculture, forestry and fishing in the gross value added of Bulgaria remained below 15%. In the period 2015–2023, it initially increased and subsequently decreased (except only 1984), amounting to an average annual value of 14.8% (Figure 1). The trend was downward, similar to that for services, which was combined

with a steady increase in the share of industry. Between 1986 and 1989, there was a one-off initial increase in the contribution of the agricultural sector to the value added. It then declined, reaching its lowest value of 11.1% in 1989, which was also lower than in most years of the subsequent transition period.

**Table 1. Growth rate of real consumption in total and the consumption by different groups of goods and services (COICOP) in Bulgaria and the other EU countries (average, %)**

| Sub-groups of goods and services, according to COICOP | Bulgaria | EU countries (except Bulgaria) |
|---|---|---|
| | 2005–2022 | 2005–2022 |
| Total | 59.2 | 15.7 |
| Food and non-alcoholic beverages | 15.6 | 5.1 |
| Alcoholic beverages, tobacco and narcotics | 19.3 | -7.9 |
| Clothing and footwear | 77.9 | 16.3 |
| Housing, water, electricity, gas and other fuels | 49.6 | 12.4 |
| Furnishings, household equipment and routine household maintenance | 156.3 | 18.3 |
| Health | 36.9 | 33.6 |
| Transport | 68.3 | 8.9 |
| Communications | 375.2 | 60.7 |
| Recreation and culture | 121.2 | 34.7 |
| Education | 80.5 | 19.9 |
| Restaurants and hotels | -6.3 | 14.8 |
| Miscellaneous goods and services | 61.1 | 22.0 |

*Source*: Eurostat and own calculations

***Contemporary and peculiar socialist economy of China***

In more recent times, China's economy can be taken as an example of a modern but peculiar kind of socialist economic system. This understanding corresponds to a definition of the system by the country's official political doctrine as 'market socialism' or 'socialism with Chinese characteristics' (Cui, 2012; Golley, 2016; Vogel, 2012). This hybrid model combines significant state ownership of the means of production and the leading role of the Communist Party in economic decision-making with the presence of a private sector that is not seen as a substitute but as complementary to the state sector. In principle, the public sector implies centralised top-down management and development, while in the private sector, the state should have a limited role, and development should be based on individual initiative.

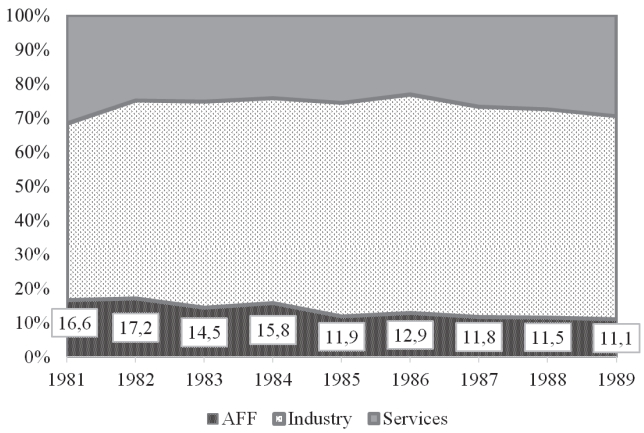



**Fig. 1. Structure of GVA by main economic sectors**
*Source*: Own calculations based on NSI

**Table 2. Inflation and economic growth under socialism in Bulgaria (average rates, %)**

| | 1971–1975 | 1976–1980 | 1981–1985 | 1986–1989 |
|---|---|---|---|---|
| Inflation (officially measured) | 0.2 | 4.0 | 0.9 | 2.5 |
| Economic growth | 7.8 | 6.1 | 3.3 | 4.5 |
| Employment growth rate | 0.4 | 0.0 | 0.2 | -0.5 |
| Employment contribution to growth (p.p) | 0.2 | 0.0 | 0.1 | -0.3 |
| Capital growth rate | 12.2 | 9.0 | 6.5 | 6.0 |
| Capital contribution to growth (p.p) | 4.9 | 3.6 | 2.7 | 2.5 |
| TFP contribution to growth (p.p) | 2.7 | 2.5 | 0.4 | 2.3 |

*Source*: Own calculations based on NSI and PWT (Feenstra et al., 2015)

**Table 3. Relative share of agriculture in the aggregate social product and national income of Bulgaria (%)**

| | 1948 | 1960 | 1970 | 1980 | 1989 |
|---|---|---|---|---|---|
| Aggregate social product | 49 | 22 | 9 | 13 | 10 |
| National income | 58 | 27 | 17 | 19 | 11 |

*Source*: NSI; Marcheva (2016)

According to some analysts, the definition of the economy as socialist corresponds to the dominance of the first sector, which must also be combined with the use of the results of state ownership by society. Otherwise, with sufficient viability of market principles and prevailing contribution of market forces, the economy can be defined as capitalist and, considering the economic role of the state, as state capitalism (Coase and Wang, 2012; Nee and Opper, 2012; Szamosszegi and Kyle, 2011). Additional arguments in favour of the second understanding may be the production of goods for profit instead of use and the existence of financial markets that are not typical of a socialist market system (Du and Hu, 2005; Li and Kotz, 2021). At the same time, the state retains its functions of coordination of economic activity through planning, which is carried out in a transformed form through a combination of mandatory plans for state-owned enterprises in priority and strategic sectors and indicative plans at sectoral levels (Rambures, 2015).

Despite the impossibility of unambiguously characterising the type of Chinese economy, since the beginning of the transition period it has made a significant expansion of the global market and has achieved the highest rates of economic growth worldwide. According to World Bank data, in the last decade of the 20th century and the first decade of the 21st century, the average annual growth rate of real GDP was 10.5% and 10.6%, respectively, while in the second decade of the current century it amounted to 6.8%. As a result, since 2017, China's GDP by PPP has begun to exceed the corresponding value for the United States, and the country has become the world leader in this indicator. The significant growth in economic activity and the increase in GDP per capita under PPP are, on the one hand, in line with the UN goals for poverty and hunger reduction and decent work and economic growth. On the other hand, they have some adverse economic, social and environmental consequences that may manifest themselves over different time horizons and require urgent and well-justified measures.

Some of the most important economic problems are related to the slowdown in growth and its highly unbalanced nature (Golley, 2016; Ginting and Naqvi, 2020). On the demand side, it is heavily dependent on exports and investment, and little influenced by personal consumption. On the supply side, it is primarily a function of capital accumulation, as well as induced by foreign investment, and is much less driven by the growth in technology. These features of growth are also combined with low interest rates and high indebtedness of both local authorities and state-owned enterprises, growing income inequality, and highly uneven development of different regions. The accumulated economic problems motivate the implementation in the second decade of the current century of several important reforms. Some of them are related to rebalancing growth by stimulating the contribution of domestic consumption. The idea is thus to limit the strong dependence of the economy on volatile external demand, while responding the political drive to increase the standard of living of the population.

The orientation towards this approach is justified in the short run, as well as ideologically, but it puts at risk the possibilities of achieving high economic growth in the long run. Other ways to rebalance growth are aimed at its linking in the long run mainly to technological progress at the expense of a declining contribution from capital accumulation. Specific measures to resolve the economic problems include liberalising the interest rate, increasing exchange rate flexibility, improving the governance structure of SOEs, promoting innovation in the private sector, deducting dividends for the state from SOEs, etc. Three features of the Chinese economic model are most important in terms of preserving its essence: the use of allocated dividends for the benefit of society at large by increasing transfers and reducing taxes, the provision of state support for private firms, including through improved business climate and subsidies, and the leading role of the Communist Party in the reform process.

In the agricultural sector, the challenges are mostly related to the limited size of the arable land which, given the large numbers of the population, predetermines the fact that the country is the largest importer of the agricultural goods in the world. Although at the same time the country is a world's leading importer of some kinds of crops, according to World Bank data, its foreign trade balance with agricultural products is strongly negative. Another problem is related to the rising level of urbanisation of the population and the significant outflow of labour towards industry. Under these conditions, the increase in domestic production aimed at raising the standard of living and providing the necessary resources for the development of related branches of industry is possible only through productivity growth.

To achieve such growth, the country has relied on deep reforms in the rural sector, the first of which began in the late 1970s (Lin, 1992; Sun and Chen, 2020). This reform includes transition from collectivisation to the household-responsibility system, raising procurement prices, and increasing the role of market principles. This is also linked to providing greater incentives for rural households that enter into contracts with the government for the use of publicly owned land in exchange for producing a certain quota. They also gain the ability to make management decisions regarding production, as well as to use surpluses for themselves or to sell them at prices higher than those set for the quota.

In the current century, the self-sufficient policy, aimed at guaranteeing food provision and overcoming fluctuations in production, has become of paramount importance (Hyde and Syed, 2014; Clapp, 2017). Its main tools are the setting of minimum purchase prices for certain food products and their gradual increase, the consolidation of production units, the granting of subsidies for the modernisation of production, and the implementation of a selective trade policy. In 2017, China adopted a rural revitalisation strategy focused on the implementation of technology-intensive agriculture through the application of modern scientific methods and innovations, integration with industrial and service enterprises, and the creation of new-quality products (Research Centre for Rural Economy, UNDP and CICETE, 2025). In 2025, the first roadmap for the execution of this strategy was launched, which focuses on the implementation of further land reform, the intensive application of digital technologies and artificial intelligence, and the use of new methods of investment financing.

China's high economic growth is associated with the use of significant amounts of non-renewable resources, the production of huge volumes of waste, the country's world-leading position as a greenhouse gas emitter, and significant air, soil and water pollution (Lin and Zhou, 2022; Buckley, 2021). Given the scale of the Chinese economy, these processes contribute greatly to the world's environmental challenges and climate change. Therefore, addressing these issues by the Chinese authorities, enshrining them in strategic documents, and implementing the targets set therein to peak greenhouse gas emissions by 2030 and achieve carbon neutrality by 2060 is of key importance to achieving the sustainable development goals of the global economy (World Bank, 2022; UNCTAD, 2023). It relates to the simultaneous solution of social and environmental problems through the use of state capabilities and in line with Chinese philosophy and is aimed at achieving certain political and geostrategic goals (Hanson, 2019; Buckley, 2021). With regard to agriculture, the achievement of sustainability involves using environment-friendly machinery and technologies, preventing adverse effects on soil, reducing water consumption, increasing biodiversity, and producing bio-based agricultural products.

## Conclusions

The red economy, as represented through Fordism and socialism, captures the multifaceted dynamics of industrial and economic development in the 20$^{th}$ century and early 21$^{st}$.

Fordism represents a significant turn in economic history. The combination of mass production and mass consumption promoted elevated economic growth, based on the division of labour, technological innovations, remuneration stimuli and efficient organisation of the production process. Despite that, the Fordist paradigm has apparent limitations, particularly regarding the environmental impact of mass production and overconsumption. The presence of the latter impact is supported by empirical observations of the consumption patterns in Bulgaria, as well as the overall consumption patterns in the EU member countries. These limitations extend beyond industrial production and consumption, as the diffusion of Fordist principles into agriculture produced comparable environmental pressures alongside gains in productivity.

The combination of overconsumption, reduction of resources, and pollution is a challenge to sustainability. Thus, a revision is required in order to adjust the Fordist models to current economic and environmental priorities. Although Fordism represents a symbolic triumph of industrial efficiency, its feasibility as a viable economic strategy in the present-day economic conjuncture is minimal. The agricultural case further highlights the limited applicability of Fordist principles, demonstrating that development based on production intensification is constrained by structural ecological limits. If the Fordist paradigm were to serve as a basis for models of economic development, its limitations must be overcome.

The functioning of the socialist economy is inherently linked to the dominant ideology and politics and to the perceived leading role of the working class, of which the Communist Party is considered to be the vanguard. Most of the enterprises are owned by the state and operate under soft budget constraints. In agriculture, cooperative ownership dominates, which has the character of quasi-state ownership and is characterised by increasing concentration. The coordination of economic activity is conducted in a hierarchical and administrative manner, with the main mechanism being that of the directive planning. Administrative price setting, along with limiting their increase, leads to the occurrence of chronic deficits and the accumulation of substantial repressed inflation. Macroeconomic policies have a subordinate role and non-discretionary manner, with the supply of money adjusted to its demand. In structural terms, the heavy industry has a priority development, which corresponds to the observed hunger for more investments.

The initial results of the socialist economic system were positive and were expressed in the achievement of relatively high rates of economic growth. After the 1970s, economic growth began to slow down, and this trend was also valid for Bulgaria. In the country, it had a clearly pronounced extensive character, with the slowdown being mainly a consequence of more moderate investment activity. The relative share of agriculture in the main macroeconomic aggregates also shows a downward tendency, which is at the expense of

the growing contribution of industry. Efforts to reform the socialist economy from within were not successful, as the problems were embedded in the fundamental principles that shaped its essence.

The modern Chinese economy is characterised by significant expansion into the world market, achieving high rates of economic growth, and taking the leading position in the world in terms of GDP per capita in PPP. Its designation as a capitalist economy is predicated on the dominant political doctrine, the prevailing state ownership and the leadership role of the Communist Party. They are combined with traditional elements of state capitalism, such as the presence of a private sector, the retention of the coordinating functions of the state, production for profit, and the existence of a financial sector. Irrespective of its hybrid nature, this economy is also experiencing a growth slowdown, as well as its imbalances, the use of non-renewable resources, and an increase in adverse environmental impacts, which require serious measures to mitigate them. The outlined problems have a particularly high impact on the agricultural sector, which has led to various reforms aimed at increasing the role of the market, modernising production, and achieving sustainability goals.

Finally, the study of the Fordist and socialist paradigms is evidence that neither of these traditional approaches is sustainable in terms of future economic development, but rather invites a synthesis of lessons in efficiency, equity, and environmental responsibility from the red economy. As the global economy continues to evolve, analysing the 'colours' of economies offers a valuable framework for understanding the diverse strategies and their implications.

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