

Open and repressed inflation in Czechoslovakia in 1945–1953

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Abstract:

The contribution deals with open and repressed inflation in Czechoslovakia during transitory process to economy of Soviet-type. It analyzes two relatively distinct periods, post-war reconstruction and transition to state socialism. The contribution highlights uncertainty as the important factor that strengthened systemic defects of economies of Soviet-type. It stresses structural transformation as a key factor increasing uncertainty in transforming economy with significant implications for economic equilibrium. By analyzing labor, money and consumer markets it reveals existence both types of inflation while repressed inflation coexists together with different trends in monetary overhang. Analysis of consumer market together with assessment of existing price indices on inflation in respective period cast doubt on the need of a monetary reform in such a severity as it was *introduced in June 1953*.

Keywords: inflation, labor market, planned economy, monetary policy, Czechoslovakia

JEL: N24, N34, P22, P23, P24

Introduction

A postwar reconstruction and a transition to centrally administered economy of Soviet-type were accompanied by a considerable disequilibrium. Its nature has common features for all countries, which then constituted the Soviet bloc, as well as country specifics. This contribution will focus on the example of Czechoslovakia, which includes almost all the characteristics typical for changes in central Europe after the World War II. She was affected by a population transfer, she was subject of sovietisation and there were considerable war damages whose extent however was smaller than in other countries in the region, for example Poland. However contrary to the most of other central European countries, she belonged to the most developed countries in the region; she was one of the most opened economies with the extensive ties to western countries. She also stood on the victorious side in the war and there was a big internal support for socialism and Soviet Union all over the country.

The aim of this contribution is to discuss the main sources of inflation in Czechoslovakia in the two relatively separate periods, the reconstruction period from 1945 to 1948 and the period of transition to Soviet-type socialism from 1949 to 1953. It will attempt to assess the

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main causes of disequilibrium such as pressures on labor market, consequences of monetary reform of 1945, causes that stemmed from the system of managed economy and implementing economic planning of Soviet-type and so on. There are two main goals of the article. The first one is to prove the hypothesis, that structural rebuilding of the economy in 1949–1953 was a key cause of economic disequilibrium in Czechoslovak economy leading to monetary reform in 1953. The second one will assess existing estimates of inflation and it will attempt to estimate the extent of hidden inflation by analyzing of state budget data on subsidies, development of monetary aggregates and situation on consumer market. The article will also mention limited role of central bank in preventing macroeconomic disequilibrium.

The text is organized as follows. At first, it introduces theoretical approaches to inflation in centrally administered economies of Soviet-type and their critique. Next, it focuses on sources of inflation and disequilibrium generally in the Czechoslovak economy in 1945–1953. Within this section, it analyzes the role of money market and particularly the role of the central bank. Finally, it discusses existing estimates (official and unofficial) of inflation on consumer market. Transitory period is marked by a great change in statistics reporting that together with state of contemporary statistical service in Czechoslovakia and transition of economic institutions and economy's management resulted in a lack of full and consistent time series hence the contribution is not based on modern quantitative methods and I adheres more to the traditional historical approach.

1 Inflation in centrally administered economy - theoretical approaches

The most important contributions on how to deal with repressed and hidden inflation or with disequilibrium in centrally administered economies generally come from the 1970s and the 1980s when problems with inflation in economies of Soviet-type arose, or to be more precise, became visible. Many models and indicators how to find out the extent of repressed inflation were developed during that time. The most sophisticated, for example Barro and Grossman (1974) or Porters and Winter (1980) based on disequilibrium macroeconomics, enable to use modern econometrics in order to estimate repressed and hidden inflation in economies of Soviet-type. These models were subject of criticism especially for not including two or more-tier consumer market, for necessity to rely on true values of the input variables and for ignoring the time dimension in case of making proposals for policy makers Nuti (1986, p. 70). Another type of handling with the problem represent the models focusing on a relationship of excess liquidity to income or other relevant indicators to identify repressed

inflation in centrally administered economies and to find a relationship between the growth of monetary stock and prices. They are mostly based on or inspired by quantity theory of money. This approach is applied for example by Pindak (1985), Cassel (1990) or Peebles (1991).

For the purpose of my analysis, I use definitions set by Nuti (1986). His treatise on repressed inflation on consumer market in centrally administered economy is quite comprehensive and it is suitable for a transitory period to state socialism of Soviet type because it considers large market with relatively free prices. Nuti makes differences between hidden and repressed inflation on one hand and between repressed inflation and excess demand on the other hand. Repressed inflation is thus defined as *“rising excess liquid balances in the hands of the population with respect to what they would wish to hold if markets cleared at official prices.”* Nuti (1986, p. 38). Hidden inflation is an inflation not recorded in official price indices. Therefore, it could be repressed inflation as well as open inflation that does not enter in official price indices. The well-known examples are prices of black market or wrong construction of consumer basket where weights do not correspond to actual composition of consumption. Excess demand is then defined in terms of forced savings when households cannot carry out the whole value of desired current consumption at official prices.

Although repressed inflation expresses itself in a form of change in involuntary monetary holdings in the hands of population it is wrong to consider it as a pure monetary phenomenon as Cassel (1990, s. 3) put it. In a pure model of central planned economy of Soviet-type central planners took responsibility for setting and maintaining macroeconomic equilibrium by natural balancing of the plan and set the corresponding income flows through central wage and price regulation. The role of banking system was to control plan performance and to redistribute temporary unused monetary balances. The disequilibrium could be a result of ambitious plan targets exceeding real limits of the economy or inadequate fulfillment of the plan that would result in violation of planned equilibrium between production and monetary income of the population. There could be also unplanned exogenous shocks as bad harvest and other natural disasters or imported inflation etc. Existence of systemic defects also moved repeatedly the economy to the state of disequilibrium. The main reason was that plan targets were bargained politically, while bargaining power of state enterprises management was strengthened by information asymmetry in favor of the management. This led to a permanent investment strain on one hand,¹ and it resulted in a relatively soft plan targets that enabled

¹ Investment strain was also backed by communist ideology preferring maximum economic growth. In the eyes of central planners and communist leaders, this was possibly only through high investment.

divergence in production and income on the other hand. Presence of bottlenecks on producer and consumer markets forced agents to stock hoarding.² Banking system represented by a monopoly state bank had almost no chance to regulate such developments. It passively accommodated existing disequilibria by monetary expansion, as it will be showed also in the case analyzed in this study.³ So Cassel's recommendations to begin with the analysis of repressed inflation in centrally administered economy at money market and to take growth of money supply under control to stop repressed inflation Cassel (1990, pp. 3 and 33) were not quite adequate.⁴ In short, growth of money supply was not primary cause of growing macroeconomic disequilibrium including repressed inflation in economies of Soviet-type but a consequence. Money in centrally administered economies was partly endogenous and followed flows of physical inputs and outputs.

Talking about repressed inflation raises a question, how to distinct temporary market imbalances caused by the disturbances in distributing goods or by the bad structure of supply that does not reflect properly preferences of consumers from overall inflation. Inflation should reflect general process of growing disequilibrium by faster growth of incomes than aggregate supply of final goods valued at official prices. Several indicators help to recognize it. The first hand indicator is some kind of liquidity ratio, i. e. growing share of liquid assets on GDP or retail sales that synthesizes faster growth of money income than supply of consumers goods at official prices. Other types of indicators can be constructed by analyzing situation on colored markets. Growing size of the black market in terms of volume and prices usually indicates well the divergence between the intended consumption and the supply of consumption goods. Concomitant phenomenon of excess demand is recurring panic buying when an effort to get rid of money prevails. Worsening situation on official rationed market can be expressed by lowering rationed amount of goods.

Growing share of liquid assets on GDP or retail sales is too synthetic to indicate repressed inflation. It depends on whether the increment consists mostly of involuntary savings or not. There were limited investment opportunities in economies of Soviet-type. In a situation where

² More on the systemic characteristics of economy of soviet type and its defects see Kornai (1980), Šulc (2004) or Mlčoch (1990).

³ In later periods, the possibilities of the State bank were enhanced by its participation in creating the state plan.

⁴ For example, effort to tightening monetary policy in Czechoslovakia during the 1980s by implementing monetary criteria had little impact in preventing growing macroeconomic disequilibria. On the other hand, it does not mean to omit money market at all. It can provide useful information, mostly on how imbalances in economy expressed and how they were solved. State bank could accommodate real imbalances by a growing monetary aggregates but if not they expressed in growing insolvency of state enterprises. The result was then forced transfer of resources from through state budget resulting in a decrease of living standard. Imbalance on consumer market could be covered by issuing state bonds, i. e by growth of the state debt. So credit market is not omitted either in this study.

did not exist capital market, financial assets had a form of deposits or currency or long-term state bonds but this option was not available in all countries in Soviet bloc.⁵ Restriction of private enterprising prevented using unspent part of income for business. Growing money balances of population served partly as an expression of their wealth. Hence, it is necessary to distinct between transaction demand for money and demand for money as a store of value.⁶ Another reason that limits validity of this indicator for detecting repressed inflation is the existence of free market (legal or illegal in whatever degree) Nuti (1986, p. 64). Growing monetary holdings then reflect decreasing real value of money balances of population and in case of illegal markets also growing transaction costs. Limited supply of consumers goods, especially goods of long-term consumption was reflected in official price structure so it takes time to save sufficient amount to buy it namely in the situation with limited access to credit on consumption purposes or when there is common greater credit aversion.

The relation between excess demand and repressed inflation in Nuti's reasoning is that excess demand defined as cumulative repressed inflation in previous periods pushes current repressed inflation further.⁷ Two key factors stand behind this process: previous experience of households with the existence of shortage and the expectations of its persistence in the future Nuti (1986, p. 47). Excess demand is then pushed up by trading goods and services – including re trading goods from state market – on shadow or black market. It is questionable, if it can rise aggregate income of households as Nuti (1986, p. 68) claims, or it can only change structure of aggregate disposable income with the impact on structure of the demand and with possible impact on aggregate marginal propensity to consume but it can be compensated by rise in transaction costs. Nuti does not describe the process that would lead to a higher aggregate disposable income through trading on colored markets. Considering re trading state goods only, there is no room for direct increase in aggregate disposable money income, but it has redistributive effects. When new value added is created, for example by providing a service after working hours or by selling vegetables form a croft outside official market, its aggregate income in real terms rises.

⁵ Besides this the foreign currencies also served as a store of value but their holdings were limited in most of the countries in the Bloc, and to obtain them was possible only through the black market. It depended then how strong controls to obey the rules restricting obtaining and holding foreign currencies were.

⁶It is not right to use the term speculative demand for money in its Keynesian meaning in context of economies of Soviet-type. Speculative demand form in this type of economy is used in different meaning. It expresses demand for money for future goods on official market. But it works similarly as the Keynesian one, while expectations of shortages in economy rise, speculative demand for money rises too and it makes the whole demand for money in centrally administered economy absolutely elastic Nuti (1986, p. 67).

⁷ Lijn and Verbek (1997) verified the impact of cumulated monetary overhang from previous periods on desired consumption in a case of Soviet Union since 1965 to 1991 and their tests were quite persuasive.

1.1 Effects of inflation in centrally administered economies

The existence of dominated market with rigid prices leads to quantitative adjustment processes. Inflation thus influences the extent of factor of production supply, namely labor supply in terms of quality and quantity of time worked and the extent of supply of goods and services and the system of their distribution, whether through official state market or unofficial market with free prices. This is connected with a transfer of resources or using production facilities of the official state sector in private activities (shadow economy), where the rate of return is higher. This pushes official sector further from balance and complicates macroeconomic planning, since the information based on inputs is distorted. This deepens misallocation of resources in time Cassel (1990, p. 26). Forced substitution operated in the same way because it gave wrong signals on consumers' preferences.

As in market economies, the inflation in economies of Soviet-type is connected with redistributive effects. As it was noted before, one of the redistribution channels is through the shadow or black economy. It privileges people with easier access to the goods that can serve as a store of value — mostly various real assets as realties or work of art and antiquities. Repressed inflation favors members of nomenclature and party hierarchy because they can intermediate the access to commodities that were of short supply, mostly those, that were subject to waiting lists (state flats, cars). Repressed inflation thus strengthened corruption behavior on one hand and resulted in income and wealth stratification of the society, different from intended.

Transitory period is however little bit distinct from periods with settled institutions of centrally administered economy and developed behavior patterns of economic agents used to operate in such an institutional environment. For a long period there was a coexistence of large private sector namely in agriculture and retail trade.⁸ Together with weakened control mechanisms, it left significant space for transfer of scarce resources outside of planning system. The black market with free prices could then absorb large part of repressed inflation. On the other hand, fresh and strong ideological drive of communist parties in the period of establishing their regimes sharply eliminated possibilities of private sector by using administrative methods to liquidate it or at least to discourage it from economic activities that would not had been under state control. It also prevented part of the communist administrative from corruptive action while interests of the Party were superior to personal interests of the

⁸ There were of course country specifics, for example GDR or Poland where private sector kept relatively strong share until the end of centrally planned system.

communist officials.⁹ Uncertainty about future prospects was an important factor that contributed to growing disequilibrium in economies in Central Europe, namely in brief period after the war and before communist takeover. This resulted for example in instability of demand and in transferring hard currencies out of the country. Transitory period was marked by a sharp social change when it aimed to greater income and wealth equality than before. Professional structure of the economy changed as well. It caused growing share of industry, mostly the heavy industry at the expense of agriculture and traditional light industries. Replacement of the old economic elite by new people, often with a lack of experience and knowledge together with liquidation of the private sector contributed to growing inefficiency of supply side of the economy.

2 Sources, effects, and forms of inflation in 1945-1953

The years of 1945–1953 in Czechoslovak economy are marked by the large imbalances that were partly inherited from the war and partly given by the economic policy applied since the liberalization, when creeping process of transition to planned economy began.¹⁰ At first, it is necessary to mention, that the main goals of economic and social policy in the years of 1945–1948 followed a general European trend. Apart from the post-war reconstruction, it was the policy of full employment and of building the welfare state, which Czechoslovak government pursued. While intellectually, the inspiration came from Western Europe as well as from the Soviet Union, in the first three years Czechoslovakia applied its own solutions and methods in fulfilling them. After communists monopolized their power in February 1948, the process of transition to Soviet system speeded up. However, according to low knowledge, how the Soviet system worked, there was a lot of space for experimenting in the years of 1948–1952 resulting in huge imbalances in the economy. Related to the process of Sovietisation an interesting question offers. Did the main source of the economic imbalance stem from a pure systemic transition lacking sufficient control mechanisms and suffering traditional systemic defects of an economy of Soviet type, or was it caused by structural transformation, that preferred heavy industry, that was not suitable for the Czechoslovak conditions, to other branches? The answer is ambiguous. As the following text is going to

⁹ This has to be taken as a hypothesis or presumption. Author of the contribution does not know about any historical study that would deal with change of corruption patterns in centrally planned economies in different periods of their existence.

¹⁰ Although the years of 1945–1948 admitted more options on a form of economic system, decisive role of communist party in political system and commonly shared ideas on superiority of planned economy to free market economy opened the doors for implementing Soviet system that was realized since 1949.

show, it seems that the priority was on the side of harsh structural transformation that would have not been possible, if the economy had not been managed the way it was and if it had relied on market forces.

The analysis of sources and nature of Czechoslovak inflation during the period under study can be divided to the analysis of three markets — labor market, money market and consumer market.

1.2 Labor market

Situation on labor market was very chaotic in the two years after the war because of the huge transfers of population, when the forced transfer of German population from Czechoslovakia took place, while it was insufficiently compensated by re-emigration. Since number of transferred Germans approached 3 millions, re-emigration counted only 150 thousands if we neglect people returned from forced stay abroad during the war Průcha (2009, p. 130).¹¹ To sum up the number of population in Czechoslovakia decreased from 14.1 millions in August 1945 to 12.1 millions at the end of 1946 NBČS (1947–1949, table annex). Since then it grew slowly at a rate of 0.88 % per a year up to 1953 ČSÚ (2013) and ŠÚSR (2013). Průcha's assessment of composition of transferred German population related to labor force, where there was a big share of women; people crippled by the war and non-active population, neglects accumulated knowledge and experience they had namely in case of industry management, engineering and farming. There are no adequate data but it will not be far from reality to suppose a decrease in total factor productivity, productivity growth respectively, when newcomers without this specific knowledge replaced those expelled. Weakened relationship to acquired land and capital by newcomers must be taken into account. It caused big fluctuation of labor force in border regions and regional bottlenecks in supply of specific professions.

Spontaneous reallocation of workforce took place also in the rest of the country when war control of labor force allocation broke up at the end of the war. New government was forced to continue managing labor force allocation by renaming war control institutions and softening coercive methods. Shortage in labor supply was strengthened by the opening of universities that were closed during the war.

¹¹ Chaotic situation mainly during the last phase of the war and first months after caused that exact number of transferred German people is hard to find out. According to the official statistic data it counted 2,996 million Průcha (2009, p. 134)

On demand side, the most important was nationalization of the industry and banks in 1945. Nationalized enterprises then created decisive share on aggregate output and employment. The state ownership restricted possibility of bankruptcy and this opened doors to ineffective treatment of inputs. The most visible indicator was the over employment when the enterprises and their supervisory bodies - General directories, employed large share of administrative workers. According to Beinhauerová (1993, p. 82–83) ratio of administrative employees to workers sharply decreased comparing to pre-war situation unless the need of workers decreased too because of rationalization as in the western industry. State ownership increased political impact on industry, since new institutions as work councils served not only to bigger workers' influence on enterprise management but also as a mean of political struggle. Existence of the work councils and stronger position of the trade unions in enterprises together with political impact also supported bad working morale and preferred political aspect in installment to managerial positions Beinhauerová (1993, p. 82–83). Relaxed monetary policy, as will be analyzed further, also contributed to keep employment in nationalized enterprises above economic optimum. Resulting shortage of labor supply reversely pushed on higher wages and it worsened the profitability of national enterprises. However wage rates were centrally set, enterprises found ways, how to evade wage control, so that the real earnings were much higher than regulation admitted.¹² Growing labor costs necessarily contributed to negative results in nationalized enterprises in 1946–1948 (see table 1). When productivity in industry rose of 18.75 % from January 1947 to December 1948, wages and salaries rose about 55 % from January 1947 to September 1948.¹³ Growing costs of labor were not the only loss factor of national enterprising. Enterprises had to deal with renewal of equipment and the price setting of products in the heavy industry by the Highest price office was also subject to the contemporary critique see Nebesář (1947, p. 24).

¹² According to the contemporary statistics NBČS (1947–1949, table annex) the official tariffs of manual workers' daily wage rate rose about 4.5 % from January 1946 to September 1948 but the real daily earnings of workers rose about 44 % within the same period.

¹³ Data are quite incomplete to make time series of the same length for the whole period 1946 to 1948. Sum of wages and salaries for September 1948 is an average from quarterly data SÚS (1949a, p. 115) and NBČS (1947–1949, table annex).

Table 1 Profits and losses of National Enterprising in 1946–1948 (mil. Kčs)¹

	1946	1947	1948
Industry but food	-4049	-763	-1559*
Food industry	-128	-382	-1257*
Banks	248	242	–
Total	-3929	-903	-1816

¹Beinhauerova (1993, p. 85) presents different data for industry (1946: -3739; 1947: 307; 1948: 3775) . The difference is probably given by the fact the data the table presents are not definite.

*Contemporary estimate

Sources: ÚV KSČ (1949), SÚS (1948).

The situation worsened after the communists seized the power and began with implementing the first five-year plan. System of centrally rationed labor force according to the planned targets of production in terms of quantities together with high investment quotas led to permanent excess demand for labor, mostly in preferred industries. It was strengthened by frequent shifts in production programmers and reorganizations that increased uncertainty leading to further stock and labor force hoarding. So the excess demand was not caused only by the systemic defects when enterprises maximized their gross income Šulc (2004, p. 124) during the transitory period. Increased uncertainty about the future supply of inputs played role too. There were permanent bottlenecks mostly in industries with high intensity of manual labor as mining and building. Harsh tempo of structural change and replacement of the old industrial elite required new high-qualified employees that would match new structure of labor demand but it took time and thus contributed to excess of demand for labor.

The response of the communist administrative was central mobilization and allocation of labor force that restricted its freedom in choosing the job. It was expressed by classifying people as class enemies, mostly high qualified non-manual workers (intellectuals, teachers, state clerks etc.) and send them to industry as manual workers, similar effect had actions transferring administrative employees.¹⁴ However, the success of latter mentioned was limited and short lived. From 1952 to 1959 territorial allocation of graduates was solved by forced emplacement. Central allocation of labor force had negative impact on work exertion since it weakened interests of enterprises in effective using and its control. Political considerations often prevented management in forcing manual workers to abide the rules.¹⁵ Despite that the productivity of labor rose but in a lower rate in preferred industries. The most frequent

¹⁴ Since 1945, the process of growing share of administrative employees began. It was related to increased role of state in the economy. This process consisted not only of growing share of administrative employees in nationalized enterprises but also by increased numbers of state employees.

¹⁵ For example the effort to strengthen work norms in 1952 in connection of unpleasant development of productivity related to wages was opposed by trade unions and several strikes took place Průcha, (2009, p. 601).

justification of not fulfilling the plan targets was – apart from the shortage of raw materials and other intermediate goods – bad working morale that partly stemmed from shortage of labor; see for example SBČS (1952a, 1952b). Excess demand created high pressure on wage growth. Since there was no effective system of wage control up to 1952, wage inflation was a result.

1.2.1 Wage policy and control

Monetary reform from the end of October 1945 was accompanied by price and wage increase. Both rose three times relating the pre-war situation.¹⁶ Concurrently, changes in relative structure of prices and wages were made, while wage relations were leveled. Hence, inflation pressure was preserved due to bigger propensity to consume of low-earning employees¹⁷ and because real wages remained in average the same. Wage rates were set by central authority. However, there was lack of effective control, since the priority was focused on quantitative fulfilling of the plans on one hand and because the state had no capacities to exert the control on the other hand. Evading the state set tariffs was supported by black consumer market and by character of labor market where excessive demand prevailed. Moreover, the strong position of manual workers on labor market was also backed politically. Political support of manual workers' interests expressed itself in widening of piece rates where there was room for circumventing wage rules by over-fulfilling of soft work norms Průcha, (2009, p. 218) and also in slight increase of the official wage tariffs. So relation of wages of manual workers to other employees was changing continually in favor of the first ones since the monetary reform in October 1945.¹⁸ Moreover, it was strengthened by rationing system on consumer market, especially after 1948 when differential rationed quantities were established according to the policy of class struggle.

Since 1948 when general macroeconomic disequilibrium increased in connection of fulfilling two year-plan, newly established State wage commission had to elaborate new rules for central wage setting with aim to unify the principles Průcha (2009, p. 600). It initiated

¹⁶ While, index of living cost of workers family living in Prague was 306.7 at the end of January 1946 relating to March 1939, index of living cost of clerks family living in Prague rose up to 276.5 in the same time NBČS (1947–1949, table annex)

¹⁷ However, it was partly compensated by the change in relative prices when increase in prices of food and many consumer goods exceeded the rise of rents and energies. The increase of prices was strengthened because of lower quality of goods relating to pre-war ones and this is of course omitted in the official price indices Michal, (1960, p. 157).

¹⁸ But the trend of growing share of administrative workers where wages remained in average about 1.5 times higher Průcha (2009, p. 210) must be taken in consideration for assessing the development of incomes relating to growth of supply of consumption goods.

application of piece-rate wages that were more suited to shock workers movement.¹⁹ Permanent bottlenecks in labor force systematically undermined intention of state wage policy when enterprises competed for employees by classifying them to position with higher wage tariffs, by paying over-time work or provided them with non-wage incentives as for example flats. Central planning was thus disturbed by specific form of market relations between labor demand and supply.

In 1951, wage totals as a precursor for wage funds were implemented. Wage funds became basic tool of wage control and together with balance of income and expenditures of population had to be the main instrument regulating the equilibrium on consumer market.²⁰ Despite the intention of the communist administrative to establish wage fund dated from 1948 NBČS (1948b, p. 21), it was introduced in 1952. The experience with wage totals was differed from promised development. As wage totals were set by bargaining between enterprises and centre, enterprises assured reserves for intended need of new employees or to hold down the existing ones. The wage totals were tied to gross production as an indicator. If the planned gross performance was set low, it was easy to pay bonuses for its over-fulfillment. If over drafting of planned wage totals occurred it related mainly in branches with planned loss where reserves were the least SBČS (1951a, p. 27). Since the performance was set globally and quantitatively, the result was change in composition of production, while enterprises preferred more capital and material intensive products to maximize wages per head Pesek (1956, p. 31). Hence, wage totals did not prevent the higher growth of wages then productivity in 1951. Partly because they did not include the whole planned sector, namely agriculture where divergence between productivity and earnings was quite high SBČS (1951a, p. 24). The same defects were true also for wage funds and favorable development of the relation between the productivity and wages in 1952 was due to shortage of labor force so the real number of employees was lower than planned. SBČS (1952c, table supplement) Table 2 shows relation between changes productivity and wages in several branches of industries in 1948–1953. It is derived from official data on employment, on national income produced and average numbers of employees in respective branches.²¹

¹⁹ For example the share of piece rate wages including premiums of total wage bill of manual workers in industry in 1949 was 68.1 %. SÚS (1949b).

²⁰ Balance of incomes and expenditures of population was not used in the period under study.

²¹ Recent data on employment presented by ČSÚ (2006) are rather lower then used here, but they show the same trend despite the classification of branches does not match properly to Marxist definition of production.

Table 2 Changes in productivity and earnings in 1948-1953 (%)¹

		1949	1950	1951	1952	1953
economy	productivity	10.12	10.28	9.29	10.35	6.16
	Gross earnings	15.18	3.55	9.70	2.07	-16.65
industry	productivity	4.26	4.17	12.89	6.03	1.67
	Gross earnings	27.56	4.93	7.27	2.66	0.6

¹Earnings per employees are computed from original individual distribution of national income, as defined by Marxist methodology and deflated by implicit deflators of national income.

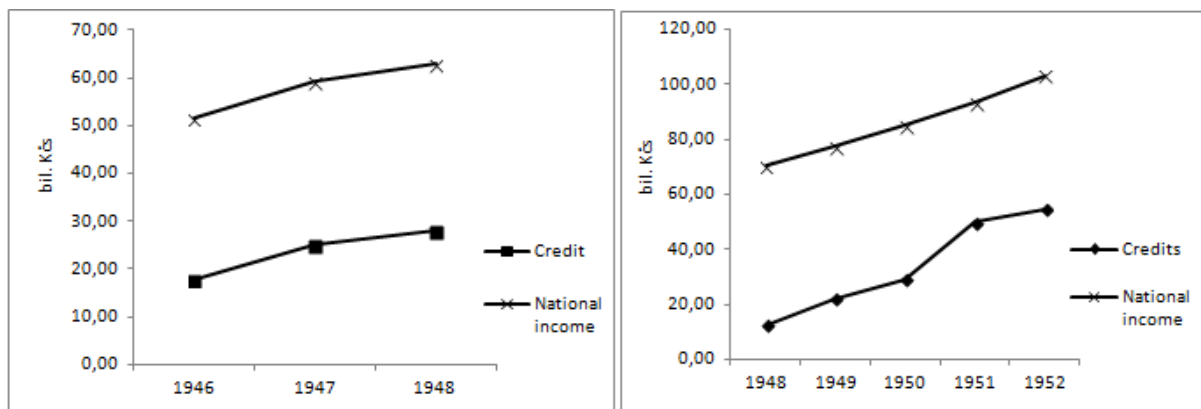
Source: FSÚ (1985 pp. 88–90 and 146-147), own computations.

Data shows stable trend in productivity on aggregate level for the whole period but the year 1953 when monetary reform occurred. Data on industry indicates, however, there was irregular development within particular branches. When talking about industry it is necessary to notion that there were big differences between industry branches, while non-preferred industries recorded much bigger growth of productivity due to forced rationalization caused by the shortage of resources. The divergence between earnings and productivity on aggregate levels is at the beginning of the first five-year plan, when control mechanisms were not developed yet, and in the 1951, when targets of plan were increased and disturbances in production were more common.

2.2 The money market and monetary policy

The money market is characterized by great institutional changes and by huge credit expansion during the whole period as demonstrated in graph 1. While in the period of 1945–1946 the expansive monetary and fiscal policy was inevitable because of removing war damages, if the live standard should not have been further decreased. Especially first two years were marked by supply shock as analysis of labor market illustrated. Since 1948, the demand side played decisive role in growing imbalance of Czechoslovak economy because of structural transformation and application of soviet model of macroeconomic management.

Graph 1 Credits and national income in constant prices in 1946–1952¹



¹There is no consistent time series for both, credit and national income. The left hand graph excludes credit cooperatives but includes all credit regardless if it is short term or long-term. The right hand graph includes short-term credit only, the figure for the end of 1952 is estimate, since data from Investment bank, and cooperatives are taken from credit plan because real data has not yet been available to author of the study. Sources: SÚS (1948a); SÚS (1948–1950) ; SBČS (1951–1953) ; SBČS (1953a) , Nachtigal (1969, p. 56); FSÚ (1985, pp. 51), own computations.

Graph 1 demonstrates the difference between both of the periods when period of first five-year plan should indicate very high inflation at first sight. It has to bear in mind distinct role of money in market economy and in an economy of Soviet-type with separated monetary circuits. In the sphere of production money followed decisions of planners that was based on natural flows. Money served as a unit of accounts and money supply was endogenous namely in the initiate period when control mechanisms were not established and the role of central bank was only to control, if real process of production and distribution was matching the planned one. State bank of Czechoslovakia established in 1950 was subordinated to ministry of finance and its powers to regulate monetary and macroeconomic development were limited. The final word in granting credit if bank did not want to had minister of finance or when situation of individual enterprise was serious, the whole cabinet. Superior authorities of problematic enterprises supported them when they were in conflict with the state bank on granting new credit or prolonging the existing ones often supported the enterprise SBČS (1952a, May, p. 4). In controlling consistency of the real production process with planned, State bank could only alert to existing problems. Interest rates as instrument of monetary policy was useless while enterprises preferred fulfilling obligations to their partners if they were backed by contracts with higher penalties than interest paid from additional credits (Pohl, 1951, p. 243). Moreover, no risk of bankruptcy enabled to transfer losses to state budget.

Since September of 1951, the State bank began to implement instruments of managing credits and currency emission that were known in Soviet Union — the credit plan and the cash plan. Since beginning of 1951, central bank introduced purpose credits instead of unspecified global operating credit according to the enterprise budget. This reform can be taken as an effort for restrictive monetary policy, but it only revealed existing imbalances and amount of nonpaid credit rapidly grew.²² It will not be far from reality to claim that, until soviet system of managing credit and currency was fully implemented in 1953 the elasticity of monetary supply in production sector related to demand was close to infinity.

Separating of monetary circuits was not full because part of monetary expansion spilled over on consumer market through wages and salaries as it was showed in previous section. Although firms were obliged to use cashless system of payments since 1948 — with the exception of wages and salaries payments, there was certain limit up to that they could use currency. Thanks to this possibility, they entered to consumer market and bought goods (for example clothing, office supplies, drugstore goods etc.) they needed but they were not able to obtain in time or at all through official channels.

High credit expansion was partly exhausted by excessive stocks of material and goods, that was hard to sell, and partly was lost in higher investment costs, whose efficiency was low. This is documented by small increments of productive capital on one side and big difference in investment quota measured in current prices to constant prices, that was almost two times higher²³ Nachtigal (1969, p. 292).

Active role of central bank was however limited also in the period prior central planning implementation. Since its share on initial economic policy was bigger than in period describe above. The first task had to be done after war, was monetary reform. It occurred at the turn of October and November 1945. Apart from the rise in prices and wages just analyzed, the main measures were blocking of prewar and war deposits and restriction of the amount of currency in circulation. Blocked deposits had to be exhausted partly by special taxes and the rest should have to be released according to growing supply of consummation goods. Blocked deposits were one of the central issues of discussion on monetary policy during this period but the lack of agreement did not allow resolving it until the June 1953, when they were nullified.²⁴ Initial

²² Since the end of 1952 to march of 1953 the sum of nonpaid credits and unpaid payment-orders rose almost 2.5 times, but it still made less than 9 % of total credits granted SBCS (1953b).

²³ This difference is partly due to method used in pricing when time series of national income in constant prices were retroactively computed Nachtigal (1969, p. 32)

²⁴ From almost 263 billions of K of blocked deposits (excluding interbank and insurance funds) 99 billions of K were nullified. The rest was released or taxed or for settling payments for acquiring property. confiscated to German population

norms of their releasing favored – besides low-income population – administrative bodies, municipalities and political parties and until June 1947 there was no incentive for banks in to prevent liberal releasing, despite the rules on releasing were gradually tightening. It was released more than 78 % of total sum of released blocked deposits in this period.²⁵

Table 3 Releasing of blocked deposits (mil. Kčs)

Year	1945	1946	1947	1948	1949	1950	1951	1952	Total
	2 557	21 477.7	7 327.7	5 133.7	5 489.2	2 978	2 214	1 208.6	69 366.7

Source: LFM (1952, p. 11).

There were several motives for quick and huge releasing of blocked deposits in respective period. The first and the most important was to secure these deposit form uncertain fate by transferring them to free deposits and the second was to us money to keep real value of money balances for transaction purposes NBČS (1947, p. 12) – see section concerning consumer market.

Monetary policy was set to ease after-war recovery, so it had expansive character from the very beginning. Original idea was to set monetary stock at low level, about 16 or 20 billion of crowns GHSR (1945, p. 9) and then to manage the policy according to real bills doctrine. In reality the main instrument of managing credits were credit purpose-built facilities. Excess liquidity caused by releasing of blocked deposits weakened control of National bank over money market. Quantitatively set targets of two-year plan prevented central bank from more active role in regulating money supply by real bills. The problem of using real bills in regulating money supply deepened when trade credit was limited since 1948. Shortage of real bills forced National bank to relax requirements on their nature and quality NBČS (1948a, pp. 91–97). New law on National bank from March 1948 introduced new instruments of monetary policy as open market operations and reserve requirements, however they were not used, but on the other hand it tied National bank more to central planning.

Introducing of general tax since January of 1949 meant decisive change in monetary and fiscal policy. This indirect tax collected in retail trade²⁶ enabled massive redistribution of resources, since it became the main source of state budget incomes. Introducing of two-tier consumer market with higher prices led to huge surpluses of state budget from increased sales. This tax followed several goals; first, it should have regulated consumption by

²⁵ No wild releasing after the February 1948 happened as Půlpán and Půlpánová (1995, p. 650) claimed.

²⁶ This was true since 1950. Originally, it was collected in wholesale trade and partly in production.

differentiated rates of final goods.²⁷ Second, it should have to assure the resources for investment.

The tax further weakened the control of National bank, since it caused excess liquidity when big surpluses of state budget were placed in Poštovní spořitelna that granted them as loans to other banks. As pointed Kadlec (1949) endogenous increasing of monetary stock happened unless National bank's active operations increased. Comparison of the average growth of monetary stock and average growth of active operations of central bank (rediscount of bills and lombard of securities) in the year of introduction of general tax confirms his claim. The volume of active operations was slowly decreasing, while monetary stock recorded reverse trend due to the increase in current deposits mainly owed by business sector and the state.²⁸

3.2 Consumer market, rate of inflation and demand for money

As it was noticed rationed system in consume dominated the whole period under study. Up to the 1949 there were different systems in Czech lands and in Slovakia where the much smaller extent of goods was rationed and the system was not so complicated Štěpek, (2009, p. 3). Quick recovery of the economy in 1946 and 1947 was seen rather on income side of population than on supply side of consumer market because of releasing of block deposits and quick growth of wages and salaries as was analyzed before. Despite that, the situation was probably improving up to the summer of 1947. This can be documented by decreasing ratio of prices of black market to official ones SÚS (1949a, p. 269) It is difficult to estimate the extent of black market and its changes, but due to relaxed control compared the war it can be supposed it was widened.²⁹ Of course, a decrease in risk margin could contribute to lowering the ratio too. Political pressures resulted in significant lowering of prices of some goods from April 1947 but it was compensated by rise in state interventions. If we consider interventions to prices, subsidies on imported commodities and compensations for adjustments of state purchase prices in agriculture, the amount for the years 1946–1948 mounted from 0.65 billions of Kčs to 7.29 billions of Kčs (NÚKÚ, 1946-1948).

²⁷ Compared to sales tax introduced in December 1952 it had no negative rates. It was not set as difference between wholesale and retail sale price but as percentage charge to price or by fixed rate per unit of sold goods.

²⁸ The figures are as follows: rediscount of bills of exchange: -0.88 %; lombard of securities: -4.27 % and monetary stock: 2.97 % per month. Own computations from data collected in NBČS (1945–1949), NBČS (1947–1949, table annex); SÚS (1948–1950).

²⁹ Michal (1960, p. 161) presents contemporary estimates that claimed 30% share of black market on the whole retail turnover.

Table 4 National Income and Personal disposable Income in prices of 1937 in 1946–1948

	1946	1947		1948	
	Level (bill. of Kčs)	Level (bill. of Kčs)	Year-to-year change (%)	Level (bill. of Kčs)	Year-to-year change (%)
Net personal disposable Income ¹	53.2	58,3	10.7 %	59.7	1.3 %
Personal consumption ¹	48.69	53.66	10.2 %	53.16	-0.9 %

¹For obtaining values of personal disposable income in constant prices were used implicit deflators of national income. Using living-cost indices would give much favorable development relating to consumption.

Source: Nachtigal (1969, s. 57–59), own computations.

Table 4 indicates worsening of situation in consumption that corresponds with troublesome situation on consumers' market. It could stem from increased investment quota and from increased prices on black market when ratio between black and official prices almost doubled within a year from September 1947 to September 1948.³⁰

The two-tier market, rationed with low prices and free with higher prices was established since the January 1949 with the aim to make room for definitive abolition of rationing system. Besides it, black market still existed, while not all the good was available on both markets, especially when situation worsened in 1951 due bad results of agriculture and shifts in plan targets preferring the production of investment goods that required further increasing of investment quota. Step by step releasing more and more commodities from rationing disturbed leveling effect of rationing system in consumption on one hand and growing share of free market in commodities traded in both of the trades limited the supply of it for rationed one. (Petrák 2013, p. 74) Table 5 showed decreasing share of rationed market but in terms of quantities the share of rationed market was decisive (Jančík, 2007, p. 252)

Since March 1951 some of the foodstuffs were gradually rationed again. Together with it, lowering the rationed quantities (Petrák, 2013, p. 80) and rising in prices occurred. Since the beginning of 1952 some professional and social groups and members of their families (tradesmen with employees, rural riches and self-suppliers) were excluded from rationed market according to Announcement of Ministry of internal trade no. 364/1951 G.I. Another, more comprehensive restriction came in the beginning of the 1953 when according to Announcement of Ministry of internal trade No. 11/1953 G.I. retired people, tradesmen without employees and members of their families, non-working people and others).

³⁰ The change is related to September 1948 to September 1947 SÚS, (1949a, p. 269)

Table 5 Share of the value of rationed market on the value of retail turnover in 1949–1952 (%)

	1949	1950	1951	1952*
Foodstuffs	43	26	28	28
Other	37	32	30	27
Rationed market	40	29	29	27

*Estimate

Source: ÚV KSC (1953 p. 8 and table annex, tab. 8)

3.2.1 Inflation

Analyzed development indicates great imbalance in the economy that had to express in some form of inflation. Available indices made by Statistical office indicate different rates according to size of basket of consumer's goods and indices base year. Official indices does not include the black market prices, despite there is an combined index for black market and direct sales of small farmers to consumers. Table 6 summarizes available indices on inflation at consumer's market.

Table 6 Indices of price developments in Czechoslovakia in 1945–1953

	Cost-living index	Index of retail prices	rural and black food price index	Index based on implicit deflator of NI	Michal's estimate	Pešek Estimate
	1937 =100	1937=100	III/1939=100	1948=100	1948=100	IV/1947=100
1945	187.5	N/A	N/A		N/A	–
1946	340.6	N/A	N/A		N/A	115.83
1947	325.7	N/A	875		N/A	120.40
1948	322.1	N/A	1360	100	100	153.86
1949	360	N/A	1031	121.4	N/A	186.87
1950	363.3	577	905	129.9	N/A	194.54
1951	380.8	657	1392	154.9	N/A	215.79
1952	N/A	712	N/A	154.9	150	252.69
1953	127	–	N/A	166.5	164	265.11

Sources: FSÚ, (1985, p. 90–91 and 210,); SÚS (1953); SBČS (1951a, table annex, tab. 6d) ; Michal (1960, p. 158) ; Pešek (1956, 201).

Comparing the results of particular indices, official cost-of-living index gives the least exact information on inflation namely in the period of first five-year plan, when it was based on cost of living of worker's family in Prague, but foodstuffs, and it was not very

comprehensive because covered only about 70 items (ČSÚ, 2012, p. 2). However, workers were a group with preferred access to ration market so this had to affect the index. This reveals that despite the share of free market in terms of value distinctly dominated the share of rationed one, the rationed market was still too important for significant part of the population. Others indices reflects the development more properly, while indicating higher inflation rates in 1949 due to introducing of two-tier market. This is reflected also in considerable decrease in black market index, by more than 55 % within that year. It proves tendency to market balance, if space for free movement of prices widens. It is disputable to say the extent of black market lowered. Contemporary analysis MF–T (1953b, pp. 1–2) estimated relatively constant share of black market on combined rural and black foodstuffs market.³¹ Numerous letters of the population to high state representatives, namely to president, also confirm worsening situation on the consumers market since 1951 and in some cases they compared it to the war situation ÚPV–B (1953).

Pešek's estimates worth to notice, while they are based on scattered and incomplete data they close to inflation based on official implicit deflators, especially in the years 1949–1951.

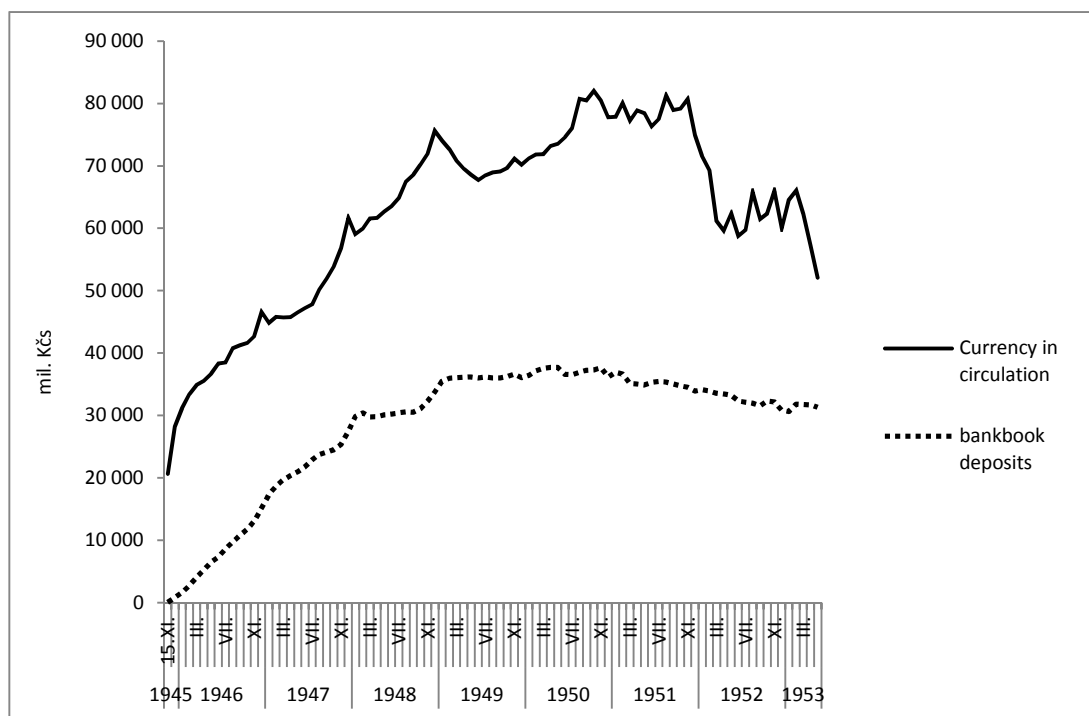
To assess the extent of imbalance it is necessary to take deteriorated quality of goods and its limited assortment into account. These are not reflected in analyzed indices and contributed thus to unrecorded or hidden inflation respectively.

Quantitatively the extent of imbalance can be expressed by the development of personal consumption. Official data document its low growth rates compared to the rate of the whole national income. The annual average growth rate of personal consumption was 2.97 % while, the rate of growth of national income was 8.63 % according to official statistics. Neither Official and unofficial estimates of inflation however cast doubt on the necessity of such a severe monetary reform that occurred in June 1953, since some of them indicate quite high inflation but not hyperinflation.

What data on inflation cannot reveal is the existence and extent of repressed inflation. If the repressed inflation means growing monetary overhang in the hands of population as the expression of excess demand, the development of deposits and currency holdings during this period reveals quite different story.

³¹ The share was 28 % in 1950 and 29.4 % in 1951, since it was dominated by money payments over payments in kind in ratio 70:30 MF–T (1953b, p. 2). The share of the whole rural and black market on total net of agricultural income produced production (in terms of Marxist national income) reached around 23 % MF–T, (1953b, p. 3)

Graph 2 Currency in circulation and deposits at bankbooks 1945–1953¹



¹Missing values of bankbook deposits were replaced by trend values.

Sources: SÚS (1949a, p. 193 and 199); NBČS (1947–1949, table annex); SÚS (1948–1950); SBČS (1951b, table annex, tab. 7a and 9); MF–T (1953a; 1953c, 1953d and 1953e), SBČS (1953c, p. 20 and 45), ÚV KSČ (1952–1953); ÚV KSČ (1953a, table annex, tab. 11); SBČS (1950, f. 776); SBČS (1952d); own computations.

Graph 2 indicates two distinct trends in development of the narrow monetary stock components³² — increasing one at high growth rates from 1945 to the end 1947 in case of deposits and up to the end of 1950 in the case of currency in circulation. The second one shows slow decline in deposits and sharper and much volatile fall in case of currency in circulation.

The period of high rate of narrow money is caused by released blocked deposits. While it proves priority of the motive stemmed from the fear of blocked savings is hard to say. The available records should indicate it, since more than half of the currency in circulation was estimated to be of savings nature. However, if it was held purely as an asset or for a precautionary reason is a matter of question, because this share was rising significantly up to 1949 and then sharply dropped and between 1950 and 1951 fluctuated between 50 and 55 %

³² Demand deposits were excluded because of several reasons. The first one is, that time series is too incomplete to estimate the missing data. The development after 1949, where the most of data is missing shows great volatility along the growing path at high rate. The second reason is that money on demand deposits after 1949 belonged mostly to the enterprise sector and the state and had thus different nature as it was noted in section dedicated to money market. The third one is that in the period up to 1950, when these money balances can realize on consumers market largely, the trend followed that of bankbook deposits.

SBČS (1951a, table annex, tab 7b) than probably dropped further. This supports a hypothesis on existence of repressed inflation. Decrease of the ratio between black and official prices from 1946 up to the summer of 1947 cannot be decisive because decreasing prices on black market could indicate growing volume traded here and decrease in risk margin due to relaxed control. Supporting is also development after the two-tier market was introduced. The decrease in currency in circulation that occurred in 1949, proved willingness of the population to spend money, so repressed inflation in 1948 could be present in the period between 1946 and 1948. High increments in earnings and growing share of free market can imply, that after initial shock the consumption was made on account of current income. Slow growth and the reversal of the trend in case of deposits together with growing difference between currency in circulation and deposits can be explained partly by the fear from the repeated loss of money, if it had been deposited. In addition, partly by the fact the process of social change shortened the incomes of previously high or high middle classes that were reliant on accumulated savings.

Sharp decline in currency in circulation since the second half of 1951 have to be attributed namely to rise in prices and to new laws and directions restricting access of chosen social groups form ration market and the rise of prices on free market. Recurrent buying panics appeared when fears of new currency reform spread the country as it was in October 1950 in connection with polish reform or in the beginning of 1952 and 1953 and in April and May before the second monetary reform. They can be considered as expressions of repressed inflation when trust in existing money is weakened.

Conclusion

The aim of this contribution was to assess the nature of inflation in an economy in transition to soviet type of central planning. Based on Nuti's definition of repressed and hidden inflation it proved the possibility of concurrent existence of repressed and open inflation. By analyzing the sources of imbalances in Czechoslovak economy, it proved that growing uncertainty caused by unpredictable decisions of communist government and external shocks given by international political factors negatively affected the behavior of economic agents and strengthened systemic defects of economies of Soviet type. Further it showed that inflation can coexist with declining monetary overhang when that can decline faster than rate of inflation when the trust in money weakens.

It proved the key impact of structural transformation of the economy on the situation on the labor market. This was channeled through disharmony between structure of labor demand and supply and through growing uncertainty about future. It significantly affected consumer market by increasing the share of investments on national income up to the optimal rate of time preferences in the economy.

On an example of monetary policy and Czechoslovak national bank, the article demonstrated impossible coexistence soviet type of economic management with the traditional arrangement suited for market economy. In such a situation, monetary policy passively accommodated growing imbalances that stemmed partly from specific Czechoslovak situation with initial excess labor demand and contributed so to further deepening of disequilibrium those strengthened administrative methods of managing the economy.

By comparing existing indices it on Czechoslovak price development in period under study proved the inapplicability of official index of living cost in describing inflationary development during the first five year-plan. Alternative indices demonstrates serious imbalance in Czechoslovak economy, but also together with analyzed narrow monetary stock development and development of earnings related to productivity cast doubt on the need of such a severe monetary reform as realized in June 1953. On the other hand internal documents confirms efforts of contemporary statistical service to describe the development truthfully but severe organizational and social changes obstructed the achievement of success.

The lack of existing consistent time series prevented the author in making deeper quantitative study that would confirm the conclusions. So, further research on reconstructing the data is required.

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