

**CEPREMAP**

CENTRE POUR LA RECHERCHE ECONOMIQUE ET SES APPLICATIONS

**STADIES OF LABOUR :  
RUSSIA IN THE TWENTIES**

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## **ABSTRACT**

Russian monthly data, for the period 1922 - 1928, are used to examine the transformations of the labour market during the New Economic Policy. It is established empirically that 'classical' forms of capitalism did not exist in that economic sphere. Some explanations are noted and discussed.

## I. INTRODUCTION

The topic of this paper is twofold: What was the labour economics in Russia in the twenties ? What can be the appropriate methods for studying the transformations in labour forces ? The New Economic Policy (NEP) enforced from 1922 to 1928 was one of the processes of transformation of economical behaviour and one of the few examples of liberalization in planning economy. NEP, by reintroducing the market, made it possible to form new economically autonomous firms, free to conduct purchase and sale on their own initiative. During this period many forms of ownership were restored (including foreign ownership of property) and many reforms of the monetary and fiscal systems were attempted. But did the labour market really exist ? Different opinions have been put forth on this question. In 1930 the political magazine "Bolshevik" (Bush (1989)) stated that the proletarian party had no reasons to hide the fact that the work force still remained a market commodity. Nevertheless the labour economist Gerchuk (1924) indicated that in Russia the market was not a place of labour price setting. The historical foreshortening in Russia leads us to assume that the twenties gave rich material to analyze the transformation in labour relations in the specific conditions depending on market and on planning. For labour relations it was not a temporary deviation from a centrally regulated economy to a market mechanism, as it was the case with the commodities and the finances. Here we suppose to be accomplished the process blending the simultaneous transition from a traditional 'archaic' labour organization to both a 'competitive' labour market and an 'institutional' labour organization.

In this paper we are mainly concerned with the empirical aspects of labour economics. Such a descriptive analysis can now be performed due to the existence of new

statistical techniques and also to the rediscovering of data forgotten for many decades. The special statistical service, named the Short Run Forecasting Institute (KI, in russian Konjunkturij Institute), was created in 1920 in Moscow and it published hundreds of economic indicators from 1922 to 1928. Its activities were ended effectively in 1928 and the data were no longer available until recently. Consequently a very small number of empirical studies have been performed since 1928.

Section II is focused on historical framework of labour market specificity in Russia in the twenties. Section III discusses the possibilities of transformations in the labour functional relations. The statistical framework and its associated concepts are briefly explained in section IV to clarify the tests of transformations, and that approach is applied using the monthly data series. Some conclusions are presented in section V.

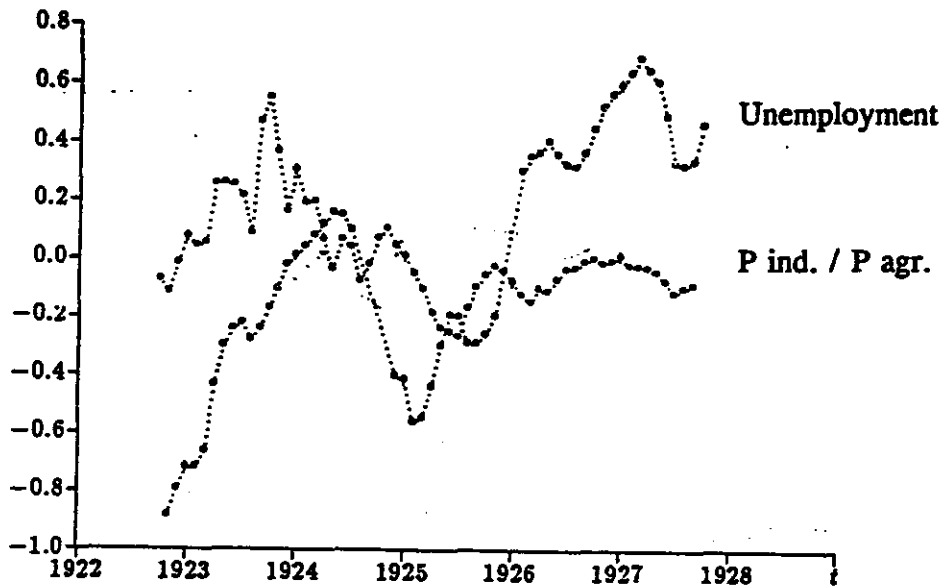
## II. A BRIEF HISTORICAL EXCURSION

### **Traditional boundaries of Russian economy**

In 1917 about 85 percent of the population was living in the countryside and agriculture continued to be the determinant for the economy during the NEP period. The management rule in agriculture was family farming. Despite the small incomes and the archaic technic, this production structure remained particularly stable (see Chayanov (1922)). The quantity produced depended on the size of the family, on its needs and on its work ethic. But the war (1914-1918) and the "war communism" economic policy (1918-1921) disturbed that stability (see Malle (1985)). The starvation and the evolution of prices to the detriment of agriculture led to the mass scale migration of the rural population into the cities. Unemployment was viewed as a consequence of that demographic, social and economic context of peasant economy destruction and thus, in contrast to the situation in other European countries, the prime reason for unemployment was viewed not in economic depression. Employment increased from 6.7 in 1924 to 10.4 million in 1929, sufficient enough to absorb more than the natural rate of growth of the able-bodied urban population (Perrie & Davies (1990) p.43).

Such a conclusion is to be reexamined. One possible way to do this is to analyze the unemployment in relation with the relative industrial/agricultural prices evolution (see figure 1).

**Figure 1. Movements of unemployment and of ratio between industrial and agricultural prices.**



The figure 1 shows the dynamic of relative prices and of unemployment indicating, more or less clearly, the possible causal relationship between unemployment changes through the rural migration. In 1923 the industrial prices increased in respect and agricultural prices and the unemployment rose till middle of 1924. After that, the prices ratio was relatively stable and the unemployment decreased. Since 1926 the industrial prices are controlled and are artificially low. As for unemployment, it increases since 1926 probably independently on migration process.

The importance of rural migration in creation of excessive labour reserves can be appreciated also through the unemployment structure, depending on some individual characteristics.

**Table 1. Proportion of unemployed people**

Unemployed among	YEARS			
	(in january)		(means)	
	1922/23	1923/24	1924/25	1925/26
<b>Industrial workers</b>	24.4	25.1	15.6	16.3
<b>Brain workers (white collars)</b>	44.5	35.8	18.7	21.2
<b>Unskilled workers</b>	18.0	25.5	53.6	50.4
<b>Migrated from rural areas</b>	–	–	14.0	11.6
<b>Members of trade-unions</b>	–	–	47.8	56.9

Sources: Gertchuk(1925), Sushkin (1927).

The decrease of unemployment rate for industrial and brain workers prior to 1926 and its rapid increase for unskilled workers indicate a possible influence of rural migration.

The unemployment was important even at the end of the twenties, despite the employment policy and reconstruction. The total number of unemployed was about 1.5 million when the labour force represented 10.8 million. Between 1922 and 1926 ten million individuals were registered through "labour exchanges". The labour exchanges were opened to distribute unemployment benefits to organize temporary social services, to provide instruction and redeployment, and to provide housing for the unemployed.

### **Social and statistical definitions of unemployment**

The analysis of the labour force and of its future growth were the subject of Bazarov's work (1928). From his point of view, in order to draw correct inferences about overpopulation it was not sufficient to estimate a simple balance of work time. In presence of latent unemployment, which is characterized in Russia more by a 'beggary' living level than by the work force not utilized, the "'excess' worker is everyone who, dissatisfied with his situation, is ready at any time to leave a long-occupied place and to present his labour force in the market". As Bazarov rightly emphasized, the search for such unemployment insights is needed to transpose the problem into the analysis of peasant living conditions. The studies of peasant budgets in different rural areas of Russia were performed by the Research Institute of Agrarian Economy since 1912 (Chayanov (1912)), but were abandoned at the end of the NEP, when Bazarov's work was written.

Two other points are important for Bazarov's framework. First, the reconstruction and industrialization seemed to be the way of creating new type of enterprises, different from barrack-factory shops. He imagined the utilization of domestic cottage craft as a principal form of work organization, traditional in Russia and efficient for the reduction of unemployment. Second, the work organization was to be inscribed in decentralized reconstruction strategy and regionalistic planning. This approach indicated the search to incorporate changing economic organisation into special unemployment theory.

Gertchuk (1924) considered other aspects of the unemployment problem, characteristic of labour market of industrial economy. He pointed out that the statistical indicators of unemployment may reflect (for workers needs) the situation on labour market, but at the



same time (for the government) the efficiency of placement services. For example, one of the indicators in Russian statistics, the number of people still unemployed at the end of the period, indicated the difficulties to be hired. Another indicator, the ratio of declared vacancies (labour demand) to labour supply is also quite meaningful. It measured principally the frequency of 'labour exchange' rotations. In order to draw correct inferences about the labour market, combining the standpoints of labour mobility and information, Gertchuk proposed to introduce the relative indicator, the 'tightness' of interior labour market. He suggested to calculate the index as a ratio of a number of placements during the period to the number of unemployed recorded at its beginning. Another view gave the indicator of 'intensity' of unemployment, proposed by Mintz. It related the number of unemployed to the number of employed individuals.

As an illustration we give the graph of the 'intensity of the placement', indicator of KI. It is the ratio of the number of unemployed who found a job during a period in consideration (month) to the total number of unemployed (calculated at the beginning plus the increase during the period).

Figure 2. Intensity of the placement

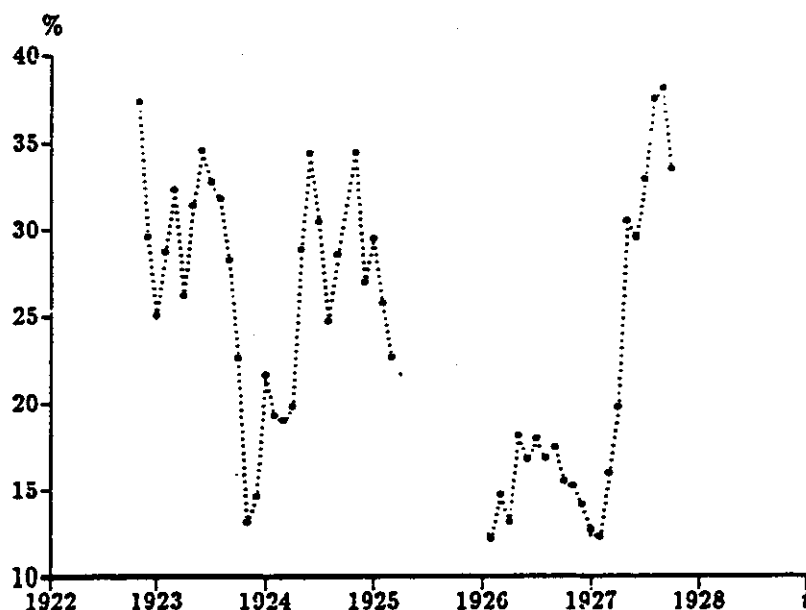


Figure 2 shows the evolution of the 'intensity of placement' during the NEP<sup>1</sup>. The percentage of placed unemployed individuals declined sharply at the end of 1923. It was very low during 1926, the year when the state decided to reduce its cost and consequently decreased the number of administrative and management jobs (Sushkin (1927), Vainshtein (1927)). It should be pointed out that the increase of placement intensity in 1927 is mainly a statistical fact, because in april 1927, the method of recording unemployment changed, diminishing its volume. Another factor of variability was the seasonality: the summer months attested the increase of relative placements occurred by engagement of seasonal workers.

In this paragraph we considered some investigations of unemployment by russian economists. We saw that the statistical indicators for unemployment studies, elaborated at that period, had market economical significations and postulated different behaviour of agents. We observed also the important variability of indicators (on the example of the intensity of the placement), which can be explained by the absence of stability in the economy in transition and by the novelty of statistical services. The utilisation of such series needs some special care.

### **Rules of wages formation**

The decree of February 1919 introduced the first general scale of wages and salaries. The ratio between the minimal and maximal ones was 1 to 5. The level of minimal wage varied depending on production branch and geographical location. The wage problems such as the conditions of wage fixation and the efforts to narrow differentials between skills were the object of discussion in trade-unions and in the bolshevik party during civil war and 'war

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<sup>1</sup> The data for 1925 were not published by KI.

communism'. (For more details, Bettelheim (1974)).

In Russia since 1918 the trade-unions were trusted to fix the wages consulting the management of the firms. Nevertheless the results of bargains over wages were to be ratified by the Labour Commissariat. The trade-unions proposed in 1918 the generalisation of piece wage rate (wage per piece of work done). It could be differentiated taking into account the labour intensity, responsibility and qualification of the work. The Taylor piece rate system was considered as a possibility to restore the prewar labour productivity level. And only when the piece wages could not be applied, the wage per hour with 'production norms' was accepted.

After 1920, the money wage lost its significance, because of 'industrial starvation' and impossibility to buy goods at official prices, thus part of a salary was payed with food stamps and goods, taking into account an output per man and his qualification.

The pay differential between skills widened out and premium wages prevailed during the time of the NEP. In 1922 17 new categories of pay rate were introduced. From 1 to 9 they covered workers, from 10 to 13 office employees and from 14 to 17 the administrative staff. The ratio of wages within the workers categories was of 1 to 3.5 and between the first and the last categories the ratio was of 1 to 8. The absolute value of minimal wage was not fixed by the state (as in decree of 1919), and was determined by the centralised collective agreement in connection with the cost of living for each profession, taking into account the demand and supply for profession.

In 1925 the minimal rate of wage was between 5 and 10 rubles a month. Some qualifications being in shortage, the effective rate was much higher (sometimes equal to 47 rubles). Under those conditions, decentralisation of the approval of collective agreements was considered. But at the end of the NEP, towards the end of the decade, the opposite took

place and the state fixed the nominal wage rate from centre.

### **III. TRANSFORMATIONS IN LABOUR MARKET**

The above assessments leads us to assume that the twenties were a period of transformations in labour relations influenced by historical conditions, by the NEP liberalisation, and by the state voluntary policy. On one hand, during the NEP these relations could have a 'competitive' character as consequence of job seeking and labour requiring which depended both on short run market situations. On the other hand, the state of proletariat dictatorship necessitated (at least during the first decade after the revolution) improving the situation of 'leader (working) class'. The eight hour working day was introduced and the wages were determined independently of economic considerations. The institutional rules of labour policy created a kind of monopolistic, 'institutional' conditions of labour reproduction.

#### **Hypothesis for empirical analysis**

The previous look at the state of labour economics in the twenties made us think that some widespread hypothesis may be tested concerning the nature of transitions. We will proceed from the sketchy constructions interpreting some labour theories (Boyer (1979), Brunetta (1991)). It will be supposed that each form of fundamental labour relations has a relatively homogeneous configuration of social and institutional factors governing the determination of wages. Thus it is possible to verify existence, absence or predominance of some forms during the NEP. We define three forms or systems of labour relation.

'Traditional' system of economy presupposes essentially backward agriculture. Such an economy could be characterized by a similar development of employment and wages because of recent development of industry and the relative need of a work force. Unemployment, as a consequence of rural migration, could be related to the cost of living. The money wages in industry depend on harvest and agricultural prices.

The 'competitive' form of labour relations corresponds in general to a situation in which the capitalistic industry is dominant. The wages (according to the efficiency wage theory) are sensitive in this case to the industrial activity and to the workers' productivity. They are connected with employment (unemployment), but at the same time they are also in positive relationship with the cost of living.

The third form of wages formation will be named the 'institutional' one. This latter is characterized by the absence of any market impact of rate of unemployment on wages. The government voluntary decisions are very important on this field.

The verification of the hypotheses associated with these three forms of wage determination may help to reply on the question of the predominance of different kinds of labour relationship in Russia in the twenties.

#### **IV. EMPIRICAL LABOUR STUDIES**

To check the hypotheses on the structural stage of labour relationships, we use the data of the Moscow Institute (Short Run Forecasting Institute) published in the Economic Bulletin. The hypothesis, suggested in previous section, determine the choice of variables to be retained: unemployment, cost of living, money wages, real wages in Moscow, labour productivity and agricultural prices (see Appendix). These data are very volatile at short

term, due to different factors (as we indicated in previous section). The aim of the following study is to extract from these sets of varying and chaotic data some stable results and statements. For that purpose we will :

- 1) smooth the data in order to eliminate fluctuations,
- 2) separate the trend from fluctuations through a study of the evolution of the means,
- 3) search for dynamically stable relationships through the evolution of correlations between variables.

### **Dynamics of series**

#### **i) Trends**

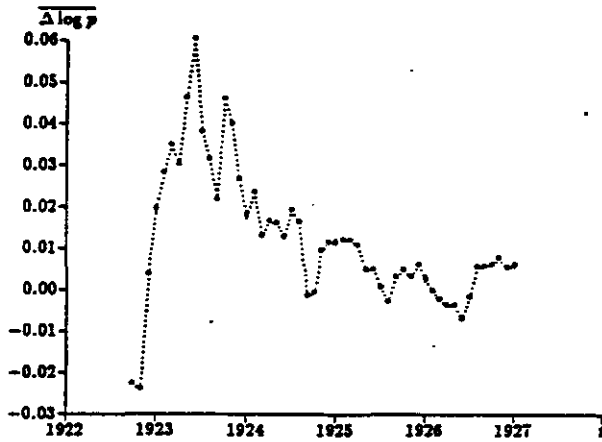
First we analyze the trends of variables by their average change, evaluated throughout six months around each date in order to eliminate the seasonal effect and to detect the middle-run evolution (figure 3).

It appears that the end of 1923 was a turning point for prices and it corresponded to a general decrease of hyperinflation. At the end of 1924 we observed a period of prices stabilization: the growth rate was close to zero. It seems that prices control began at that moment but was only achieved in 1926, stabilization being reached in a monotone way for agricultural prices. (For more details on prices dynamic during the NEP see Gourieroux & Peaucelle (1991)).

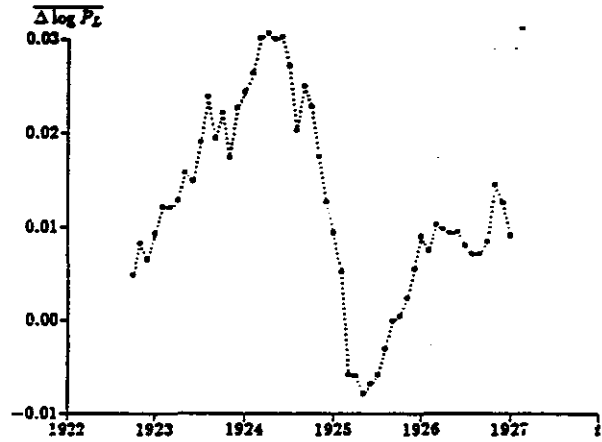
The labour productivity rate of growth attests three periods in its dynamic: the increase in 1923 and 1924, the unexpected slowdown in 1925, and a new increase after 1926.

Figure 3. Trends of growth rates ( $\log x_t - \log x_{t-1}$ )

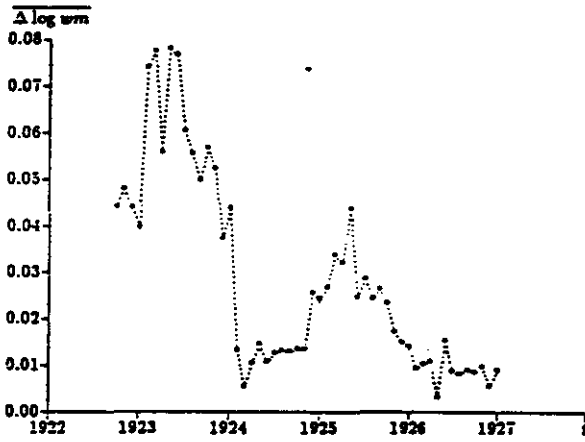
3.1 Agricultural prices



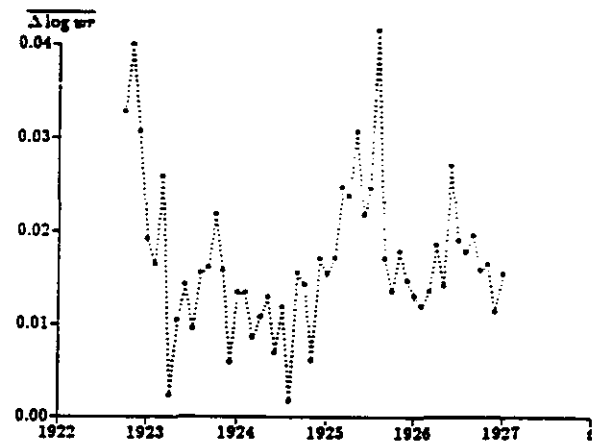
3.2 Labour productivity



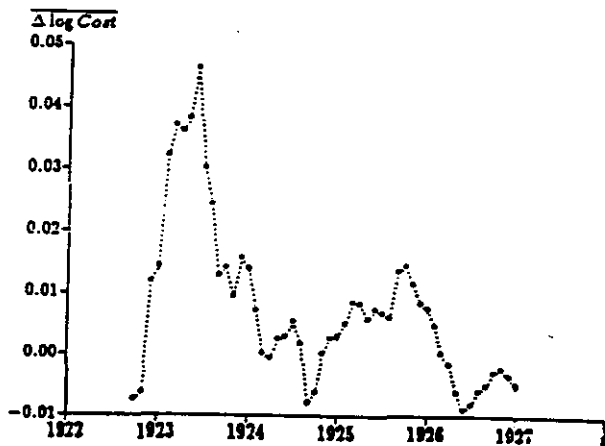
3.3 Money wages



3.4 Real wages



3.5 Cost of living



3.6 Unemployment

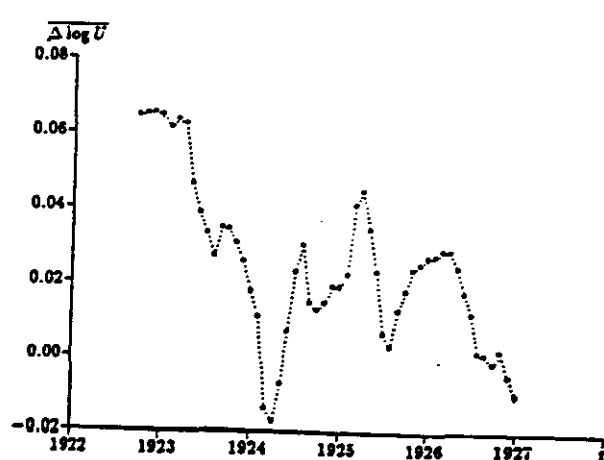


Figure 3.3 shows that the money wage volatility was very important before 1924, the period on which there was high inflation. It was also remarkable during 1925, but very stable after 1926, indicating the possible control of wages growth. As for stabilization in 1924 it can be attributed to successful money reforms.

For the real wage indicator, we may observe principally the period following after 1924, because the official definition of the indicator did not change after that moment (see Appendix). We can see the similarity of real wage rate and money wage rate dynamics. The decline of the variability signifies the existence of some control of wages growth since 1926.

The cost of living was highly variable during that period, especially at the beginning of the NEP. One notes, moreover, that its dynamic was comparable to the money wage dynamic.

The unemployment volatility was equally high, but it had a general decreasing trend.

On the one hand, this first analysis of dynamics (figure 3) indicates the similarities of evolution of money wages and of the cost of living, inconsistent with the hypothesis of 'traditional' form of wage formation. On the other hand, the comparison of money wages trend with unemployment trend arguments in favour of 'institutional' form of wage formation to the detriment of the 'competitive' one.

## **ii) Joint dynamics: correlations**

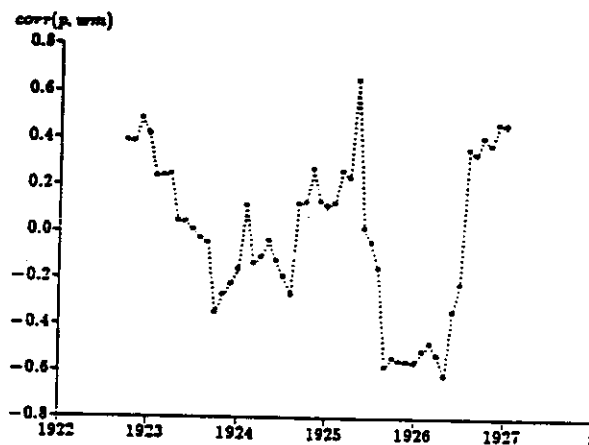
The previous empirical exercises suggested that several variables (their growth rates) may have joint dynamics. We shall now analyze short-run links between series, by



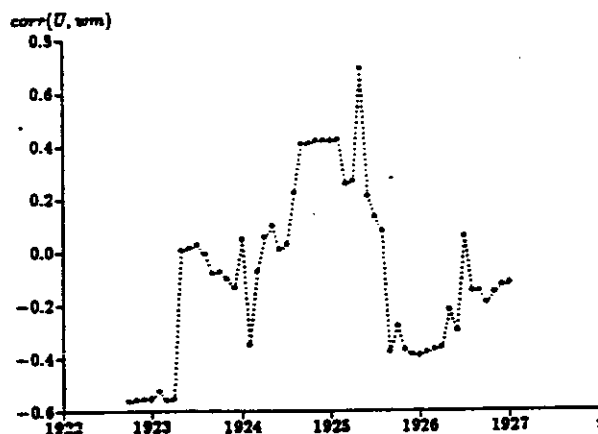
considering their moving correlations computed on twelve successive months. We have only retained some of the possible correlations, those which we consider as more linked with the hypotheses set out earlier. The graphs of correlation curves are given in figure 4.

**Figure 4. Correlations**

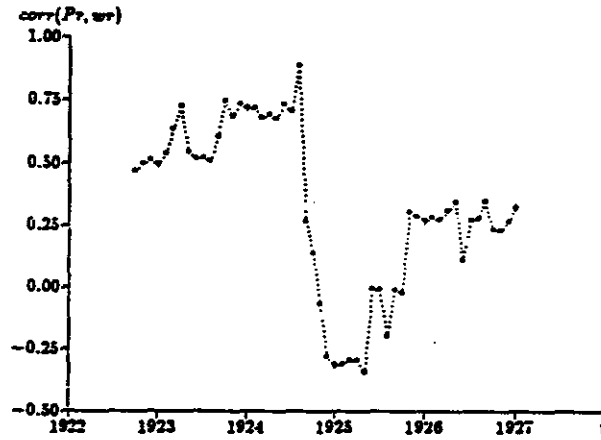
**4.1 Agricultural prices and money wage .**



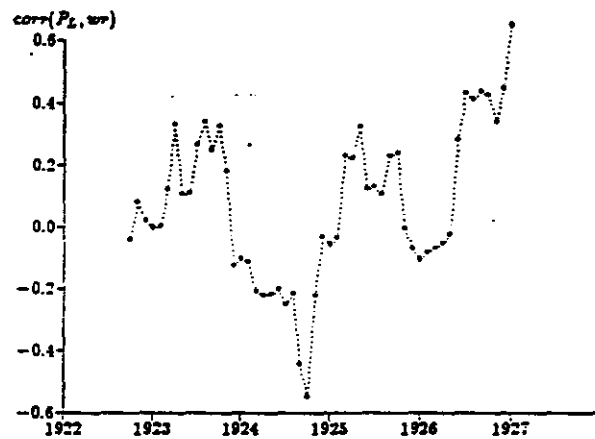
**4.2 Unemployment and money wage**



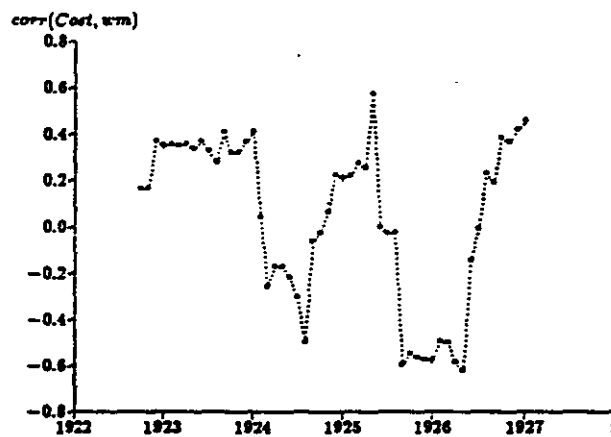
## 4.3 Real wage and industrial production



## 4.4 Real wage and labour productivity



## 4.5 Cost of living and money wage



First of all we verify the existence of 'traditional' form characteristics. Logically, the agricultural crisis bring to agricultural price explosions and increase the cost of living, squeezing the consumption of industrial goods and leading finally to a slump in money wages. The movements in agricultural prices and money wages are, in such an economy, in opposite directions. In short-term their rates of change should be negatively correlated.

We see that the negative correlation could be observed (figure 4.1), but principally at the end of 1925, and at the beginning of 1926, when the importance of agriculture on economic performance was, officially, no more high. The jump in correlation estimations in the middle of 1926 and their later stabilization indicated the controlled movements of both variables (wages and prices), incompatible with 'traditional' spontaneous form of wage formation.

For testing 'competitive' labour market hypothesis we observe the pictures of some different correlations of variables two by two. Theoretically, if the 'competitive' case is confirmed, it decreases the possibility of appearance of 'institutional' case. Looking on the correlation between money wage and unemployment (figure 4.2) we see that its curve indicates the domination of negative links between them and, therefore, the role of competitive conditions on wage determination.

The figure 4.3 presents the moving correlation between real wages and production. In the 'institutional' case of wage formation, their dynamics are expected to be independent. That was the case for 1926 and 1927. But at the beginning of the analyzed period, the two variables were highly correlated. In 1924, the fall down was important. It could indicate the brutal change in policy of wage formation in the sense of decrease of market influence.

The previous case points at the possible 'institutional' forms during 1926/1927, but

the correlation between real wage and labour productivity indicates to be unfavourable for that hypothesis tendency. In 'institutional' form of wage formation, the dependence of real wages on productivity should be strong (like it is for fordist type). But figure 4.4 shows the independence and very slow monthly increase of the correlations dynamic after 1925.

Finally, concerning the links between money wages and the cost of living, which could divorce 'competitive' and 'institutional' modes, we estimate the moving correlation, presented at figure 4.5. As expected, for 'competitive' form of wage formation, the link was positive during 1923, at the first half of 1925, and during the winter 1926/27. But three breakpoints of these links prove that a single conclusion can not be given.

The comparative observation of results through 1924 - middle 1926 (on figures 4.2 and 4.5) for testing our hypothesis, seems to favour the idea of a possible 'institutional' form of wage formation during the main period of NEP. In that, labour market was overhanging other markets and the general liberalisation of economy.

In conclusion, the previous approach seemed display that no one of the main forms of wage formation had a dominate position in Russia during the twenties.

## V. CONCLUDING REMARKS

In present work an attempt is made to qualify the labour market in the twenties in Russia and to propose the method to analyze the transitions during the NEW ECONOMIC POLICY. The aim being the description of historical situations, an empirical analysis was undertaken.

First, the short-run and middle-run evolutions of usual labour variables were summarized concerning unemployment and employment, wages and productivity. Then the specificity of economic development was discussed: when the unemployment is not in relation with crisis in industry but with transition to other organizational forms of labour relations; when the wage formations don't depend on the unemployment level; when the interior migration is important and seasonal.

Some hypotheses are formulated that would settle some known forms of social wage formation. It was supposed that three principal forms 'traditional', 'competitive' and 'institutional' could exist during the NEP. The econometrical analysis of economic series allowed us to test for the dominating form. For that, the joint short-run dynamic was performed by estimation of moving correlations. The experiments make us think that the NEP was truly a transitional period, combining in it the characteristics of three ages: precapitalist, capitalist, and new consciously organized labour relations. Certainly, the short-run analysis cannot conduct a conclusive issue on dominating form, which probably had not yet existed, but it described their configurations monthly and it layed down new theoretical problems.

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