

REPPRESSED INFLATION IN THE EAST
EUROPEAN ECONOMIES

RUPA M. REGE

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**REPRESSED INFLATION IN THE EAST
EUROPEAN ECONOMIES**

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**BY
RUPA M. REGE**

**GOKHALE INSTITUTE OF POLITICS AND ECONOMICS
PUNE-411 004**

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Gokhale Institute of
Politics and Economics,
Pune-411 004.

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CHAPTER I

INTRODUCTION

In this dissertation, we study the phenomenon of repressed inflation in the socialist context. The particular socialist countries, chosen for this purpose, are the CPEs (Centrally Planned Economies) of Eastern Europe, i.e., Bulgaria, Czechoslovakia, the GDR, Hungary, Poland and Romania. Since, the main focus of this dissertation is on the gradual changes in the socialist viewpoint as well as the policies of repressing inflation over a period of time, we have omitted Yugoslavia from our study. Unlike other CPEs, inflation in Yugoslavia has never been repressed to any noteworthy extent. In fact, the decentralization of decision-making and workers' self-management are responsible for the transformation of Yugoslav inflation into a market phenomenon, which make Yugoslav inflation qualitatively different from that in other CPEs.

Further, the inflation that comes about in the consumption sector is viewed, in all socialist states, as much more subject to a control, than in the production sector. So retail prices are still heavily fixed everywhere by state agencies.

In our study, we have restricted ourselves to the repression of inflation in the consumption sector alone.

We have dealt with the CPEs of Eastern Europe, as a

group. Even though there are significant differences in their economic institutions and levels of development, the following facts have allowed us to combine them into one group:

- (i) All allocate resources centrally in physical terms, at fixed prices;
- (ii) All have similar financial systems; and
- (iii) All share a similar experience in controlling inflation.

Since, all these CPEs hold the same standpoint about the inflation problems and have taken parallel strong measures for repressing inflationary tendencies over a long period, all are faced with similar adverse repercussions of their sustained repressed-inflation policy.

So our analysis of repressed inflation, i.e. its various manifestations and their long-run effects on important economic variables such as savings and labour supply, etc., our comments on the faulty financial planning in these CPEs, are relevant for all the CPEs under consideration. Consequently our final conclusion about the future prospects for the policy of repressed inflation in the socialist countries is designed for the entire group of these CPEs.

The crux of our study is as follows:

All economies aiming at maximum social welfare view full employment and stable prices as a must. In market economies, macroeconomic theory points out that these aims are contradictory and there is a necessary trade-off between unemployment and inflation. In socialist countries, inflation and unemployment,

both are unacceptable for economic as well as social reasons. Assuming that these countries do attain full employment, the possibilities of inflation are high for them.

But these countries claim that they do exercise successful control over inflation. This is revealed through their price statistics for the state markets, in which the increases in retail prices before the 1970s appear to have been extremely insignificant. It is said that this was possible due to the previous system of directive planning. Under this system, there used to be firstly, the priority allocation of resources in physical terms and then on this, the superimposition of fixed prices and incomes in monetary terms. This was achieved by the method of passive planning. This system was claimed to have avoided open inflation.

However, there appears to have been a sudden change in socialist pricing policies since 1970. The prices of many important raw materials and final consumption goods were raised in all these CPEs. This tendency is positively felt in the later half of 1970s and has continued even in the 1980s.

It is increasingly said by many socialist as well as Western economists that this is the consequence of the growing costs of maintaining fixed prices, over a long period of time. Even when the price rises were repressed in these CPEs, the inflationary tensions were felt in many other forms such as unfinished construction, expressive of the excess demand over the supply of capital goods; through excess savings, expressive of the same phenomenon in the field of consumer goods. Also,

queues, waiting lists and marginal price increases on the parallel markets and many other phenomena.

The burden of these indirect costs of inflation has increased so rapidly that today all Soviet-type economies have adopted a policy of retail market equilibrium.

In our study, we have made an attempt to focus on these gradual changes in the socialist attitudes of repressing inflation, by carrying out a survey of the literature on the comparative analysis of the costs associated with repressed and open inflation. Finally, we have made a comment on the future prospects for the revival of repressed inflation policies in these CPEs on the basis of this analysis.

Our chapterwise breakdown is as follows.

In the second chapter, we discuss pricing policies adopted in socialist countries. For this, we explain at the outset the theoretical framework for socialist prices and the objective requirements of their price systems. Then we proceed to many empirical characteristics of their price systems, such as

- (i) the institutional determination of prices;
- (ii) the two-tier price system and its weaknesses;
- (iii) the changes in the actual formation and structure of prices with historical development and partial reforms carried out at various times.

Finally, we review the price debate in socialist countries over the past few years and highlight various price proposals put forward in this debate, with a view to optimize and improve

the existing price structures.

We then consider the 'repressed inflation policy' and its various aspects for these CPEs. This is accomplished in the third chapter. We first discuss the importance of the control of inflation, in their overall welfare maximization policy. Next we explain the meaning and nature of repressed inflation in the CPEs. We then give a theoretical framework explaining the effects of repressed inflation on output and employment - in terms of both partial equilibrium and general equilibrium analysis. This contains the review of research by Barro and Grossman, with a due elaboration of the concept of the supply multiplier.

After having reviewed the theoretical implications of repressed inflation, we consider the actual position of East European countries with respect to repressed inflation, by comparing the average annual changes in consumer prices for the CPEs and the industrially developed capitalist countries.

Having established the fact that price inflation was considerably repressed in these CPEs upto 1970, we then consider various indirect manifestations of inflation in CPEs, when its usual direct manifestation is repressed.

We elaborate the phenomenon of forced savings in these CPEs, which is regarded as a consequence of repressed inflation. This phenomenon is discussed increasingly in the context of repressed inflation, as it is easily quantifiable and so the trends in forced savings are studied to understand the trends in repressed inflation.

Chapter III also gives an analysis of the costs associated with repressed and open inflations.

In Chapter IV, we use the hitherto developed indicators of repressed inflation to indicate the trends in repressed inflation over a period of time, for the Bulgarian and Polish economies. We restrict ourselves to Bulgaria and Poland only as, it is practically not possible to cover all the CPEs under consideration for various reasons. But, since Bulgaria and Poland lie at two extremes in the pattern of their socialist organizations, the trends of repressed inflation in these two countries give us an average picture of the trends in repressed inflation for the entire group of CPEs.

In the last chapter, i.e. the chapter on concluding remarks, we try to summarize our findings on repressed inflation in these CPEs from the previous three chapters and make comments on the possible future for repressed-inflation policies in the CPEs.

We also comment on the possible directions of further research in this area, that are needed before a firm judgement about the relative costs associated with repressed inflation can be made.

A tentative welfare-based framework, incorporating transaction costs in both state and free markets, is given in the Appendix.

CHAPTER II

PRICING IN SOCIALIST ECONOMIES

2.1 The Theory of Pricing

Karl Marx had presupposed two ways in which a Socialist State could organize its economy. These are commonly described as the two phases of communism.¹

The ideal situation would be that of an upper phase of communism, where the principle of "From each according to his ability and to each according to his needs",² could actually be put into practice. In the words of Ernest Mandel,³ "As society gets richer and as planned economy ensures a mighty expansion of the productive forces, it acquires the resources needed to socialise the costs of satisfying an increasing number of needs for all citizens. As the standard of living of the citizens rises, the elasticity of demand for more and more goods and services declines to zero or even becomes negative, in relation to price reductions and increases in incomes. For these two reasons, the advances of planned economy make it possible to transfer more and more goods and services

1 Karl Marx in 'Critique of the Gotha Programme', from Karl Marx and Frederick Engels, Selected Works in two volumes, (1949), Vol. II, p. 23.

2 Ibid.

3 E. Mandel, Marxist Economic Theory, (1969), p. 659.

into the category of those, which can be distributed in accordance with needs."

Thus, this upper phase of communism is characterised by the conditions of abundance of goods and services and an extraordinarily developed state of productive forces. These make possible a direct barter of goods and services and render the application of distribution devices, such as wages and prices superfluous. Such an economy essentially takes up the character of a 'moneyless' economy.

However, this is just a hypothetical situation, expected after a considerable advancement in productive forces and technology. What the founders of the planned economies of socialism, faced after the overthrowing of capitalist systems is commonly understood as the lower phase of communism (or a transitional phase of socialism).

During this phase, the productive forces are still in their developing state and commodities are not available in abundance.

Therefore, the functioning of distributive agents such as wages and prices, becomes essential. In the words of Mandel, "So long as the economy continues to be fundamentally a money economy and the conditions of relative shortages exist, rationing by purse governs the distribution."⁴

After having set aside a certain portion of the social product, from which every member of a socialist state can have

4 E. Mandel, Marxist Economic Theory, (1969), p. 654.

an equal share (i.e. social benefits), the remainder is meant for distribution according to work-performance.

Every person is entitled to a certain portion of this remaining part of the social product, depending upon what he contributes to it by making use of his labour power. Thus this share of social product, for every person, is governed by his wage income and the ruling market prices.

Thus, in this phase, the principle "From each according to his ability and to each according to his needs",⁵ is modified to "From each according to his ability and to each according to work done."⁶

Thus, a transitional phase of socialism is characterised by a simultaneous existence of the socialization of the means of production and the private appropriation of the available social product. This necessitates the existence of wages, exchanges, etc., which in turn make the functioning of certain categories, a must under socialism. These are the market, money and prices.

The specific feature of price in socialism appears, first of all in the circumstance that the state considers the price category to be an organic part of its function in organizing the economy.⁷ So under socialism the planning of the

5 See footnote 2.

6 Karl Marx in 'Critique of the Gotha Programme', from Karl Marx and Frederick Engels, Selected Works in two volumes (1949), Vol. II, p. 22.

7 Csikos Nagy, 'Towards a New Price Revolution' (1979), p. 75.

processes of extended reproduction and distribution, governs the planning of prices and wages.

Prices have to play a definite role under socialism. They are expected to serve as an expression of commodity value in money terms. This commodity value is understood in the usual Marxian sense: the average quantity of socially necessary, direct and indirect labour expended on the production of a given commodity.⁸

Planned prices are expected to emphasize that the basic Marxian thesis of the labour theory of value, the law of value, the content of prices, the factors determining the trend of prices, etc., remain valid in socialism. The changes in the price level and the price ratios of commodities should be based on the changes in their values.⁹

The starting point of the concept of 'planned prices' is as follows.¹⁰

As a result of the development of productive forces and labour productivity, live and embodied labour necessary for producing one unit of the commodity decreases and so does the magnitude of value. This is the precondition and at the same time a result of technical progress and is essential in order to satisfy the growing needs of society. This is the general

⁸ Frederick Engels, 'Karl Marx' from Karl Marx and Frederick Engels, Selected Works, (1949), Vol. II, p. 151.

⁹ Csikos Nagy, 'Towards a New Price Revolution' (1979), p. 75.

¹⁰ Ibid.

economic law of labour saving, which has gained a primary significance in socialism. This law is also known as the Marxist theory of decreasing commodity value. According to the concept of planned prices, favourable circumstances are created in a developed socialist state, in which this law can assert itself. By favourable circumstances we mean scientific and technical progress, trends towards specialization, improved methods of planning and control, etc.

However, planned prices do not measure directly the social input; the law of value is indirectly manifested in price trends.

2.2 The Functions of Prices Under Socialism

Even though it was generally believed that on ideological grounds, prices under socialism should be governed by the labour theory of value, the practice is quite different.

In reality, the authorities hardly ever conformed to the Marxian ideal and fixed prices to suit their practical policy objectives.¹¹ These policy objectives take into account certain basic considerations such as the desired distribution of national income amongst different social groups, the postulated level of accumulation (saving) and the safeguarding of plan fulfilment.

Yakovets¹² has given the following, as the aims of

¹¹ J. Wilczynski. Profit, Risk and Incentives Under Socialist Economic Planning (1973), p. 82.

¹² Yu V. Yakovets. Prices in a Planned Economy. Moscow (1974).

price policy, to be achieved in the long term development of the price system, of any socialist economy.

(i) The prices must be an increasingly precise reflection of the level of the socially necessary labour input.

(ii) In the long-run, prices must encourage the acceleration of scientific and technical progress, improve the quality of products and ensure a rational utilization of resources.

(iii) The scientific-technical revolution must be expressed in the expansion of the range of products and in the acceleration of an exchange of products. This implies that the production of new products of low efficiency must be discouraged through the price-system.

This is generally achieved through the system of limit prices. These limit prices of new products are determined beforehand, while elaborating the technical standards for new products.

These are set at such levels as to make new products cheaper than similar articles already produced by 20 to 25 per cent (calculated at an identical use-value).

Other modern ways of pricing are also suggested.

A World Bank Country Study on Romania¹³ had mentioned certain basic pricing principles, which should govern the price regulations under socialist systems. These are as follows:

¹³ A. Pepper and A.C. Tsantis. 'Romania', A World Bank Country Study (1979), p. 58.

(i) The uniformity of prices of similar commodities, throughout the country;

(ii) The stability of prices through permanent controls; and

(iii) Monitoring of prices with respect to quality, costs and economic conditions.

The principal functions of prices discussed by the same study in the context of Romania, are as follows and are relevant for any socialist economy, still in its developing phase.

(i) To serve as a means of aggregation and an indicator of value for measuring inputs, outputs and the contributions of various economic units in the social product.

(ii) To reflect the social cost of production and to help allocate resources to different economic sectors.

(iii) To stimulate economic efficiency, improve qualitatively the production, and encourage cost-reductions.

(iv) To distribute national income and goods.

In short, the pricing system is supposed to supply data for the valuation of goods and economic calculations in such a manner as to promote efficiency, accelerate production and cause a maximally equitable and rational distribution of available goods and services.

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 not be
 equitable
 what then

Thus planned prices are expected to promote the desired production and consumption patterns and not to allow the law of value to function autonomously so as to produce disruptive effects on the economy.

2.3 The Institutional Framework for Price Determination

The overall price policy is laid down in each socialist country¹⁴ by the Council of Ministers and the Council's powers include:

- (i) laying down general principles and procedures to govern price determination;
- (ii) defining the functions of different price setting bodies;
- (iii) fixing the prices of products and services of key importance.

The 'State Price Planning Commission' carries out the function of "administration of pricing" via the issue of directives, regulations and recommendations to subordinate bodies.

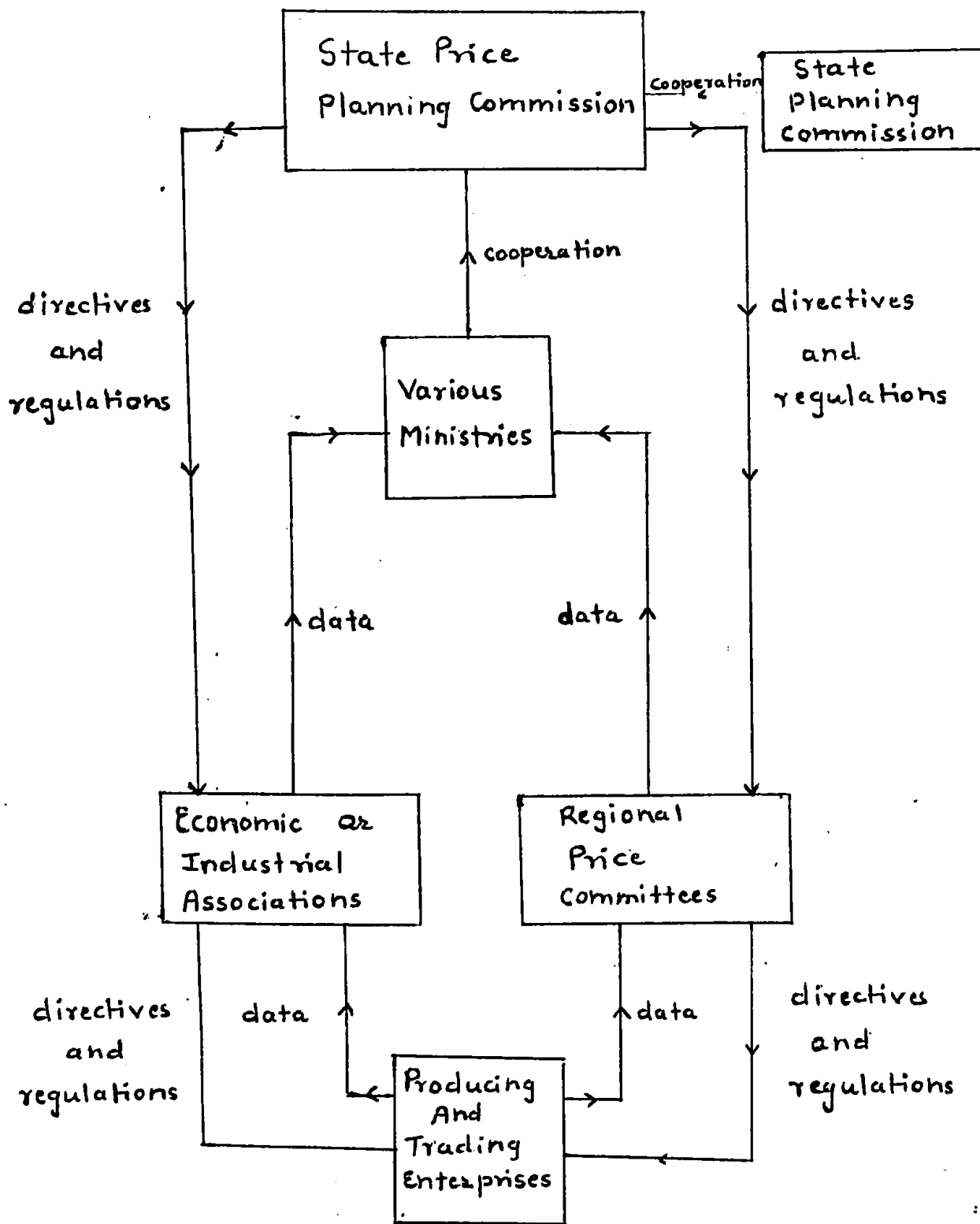
It receives cooperation for these matters from the 'State Planning Commission' and various ministries. It is the task of these ministries to study the data supplied by various economic and industrial branches or associations, regional price committees, each of which is in constant communication with producing and trading enterprises.

The following diagram summarizes the contribution of various administrative bodies to this task of price fixation.

However, in each socialist country the actual formation and structure of prices have always changed with their historical

¹⁴ J. Wilczynski. 'The Economics of Socialism' (1982), p. 132.

Figure 2.1



development and partial reforms carried out at different times, in accordance with changing economic and social circumstances.¹⁵

Initially the actual price fixing was highly centralized in each country in the hands of the State Price Planning Commission, with the most crucial matters reserved for the Council of Ministers. This was a phase of extensive economic growth, implying a growth process based on quantitative increases in labour, capital and land.¹⁶ During this phase, the prices were essentially accounting prices (i.e., the ones determined after the allocation of resources in physical terms had already been effected). Such prices differ from scarcity prices which are determined by resource scarcities, production functions and the desired bill of goods. Scarcity prices perform an allocative function in the sense that the choice between alternative production methods is determined on the basis of such prices.

But when all decisions in production and allocation are made centrally and the predetermined bill of consumer goods is allocated among consumers by outright rationing, prices play no role in the allocative process.¹⁷ They are exogenous to physical planning and can be set at will, as pricing is just an accounting device.

15 Ibid.

16 J. Wilczynski. 'Socialist Economic Development and Reforms' (1972), p. 25.

17 B.A. Balassa. 'The Hungarian Experience in Economic Planning' (1959), p. 92.

In the case of all European socialist countries, upto about mid-1960s, the extensive component of economic growth was relatively dominant and increasing. But the economic reforms, particularly those since the early 1960s, have been largely designed to steer these economies towards predominantly intensive growth.¹⁸

By intensive growth is meant a growth process based on increases in overall productivity, i.e. increase in the efficiency of labour and the better utilization of capital, land, etc. An intensive growth process is generally identified with technological advancement.

When this phase began in the socialist countries, the attention of planners was diverted towards the most efficient utilization of resources, which required in turn conscious efforts to devise such prices as would give expression to scarcities. The economic reforms in general and the price reforms in particular were needed in the Eastern European countries in the 1960s when their economic structure had changed and had become more mature and complex and when the efficiency of planning had declined.¹⁹

The major price reforms in the socialist countries have been as follows:²⁰

18 J. Wilczynski. 'Socialist Economic Development and Reforms' (1972), p. 26.

19 A. Nove, Hans-Hermann, Hohmann. 'The East European Economies in the 1970s' (1982), p. 1.

20 J. Wilczynski. 'Socialist Economic Development and Reforms' (1972), p. 79.

(i) As a principle governing price formation, the Marxian concept of production price (distinct from value) had been adopted. This production price is a full-cost price which takes into account the capital charges.

Value in the Marxian sense is expressed as $V = C + v + m$ (i.e. constant capital + variable outlays + a surplus product mark-up proportional to variable outlays only).

A production price on the other hand includes a surplus product mark up proportional to constant capital and variable outlays combined. Thus production price is higher than value.

(ii) There had been a tendency to raise the level of producers' prices to increase the profitability of many branches of the economy and to eliminate the need for planned deficits.

(iii) The opposition to marginalism, at least on the production side, had weakened and such concepts as the marginal rate of substitution, marginal cost, marginal land, marginal enterprise had been generally accepted as economic realities.

(iv) There was a tendency to revise producers' prices where they were still fixed centrally, in accordance with the major changes in costs and demand.

(v) The degree of difference between the retail and producers' prices²¹ had been considerably reduced, on the grounds of efficient functioning of the market.

21 This is further discussed in Section 2.4.

(vi) There had been a considerable decentralization of price determination, particularly in Yugoslavia, Hungary, Czechoslovakia and Bulgaria and least in the GDR and Romania.

(vii) In most of these countries, (Yugoslavia, Bulgaria, Hungary, Czechoslovakia, the GDR and Poland), attempts were made to link domestic prices with those prevailing in world markets.

These reforms indicate that the allocation of resources was increasingly guided by efficiency prices, instead of merely consisting of efforts to achieve a balancing in physical units. The price reforms of 1960s discussed above were adopted in various combinations and with various degrees in different socialist economies.

The reform-model of the countries such as the USSR, the GDR, Bulgaria, Romania, Poland, etc., was essentially conservative.²² In these countries the range and depth of reforms was limited. The price and financial policy instruments were intended to supplement planning but not to replace it. Though many rigidities of physical planning were relaxed, the enterprise decision making processes were not made independent. The economic levers such as prices were designed to induce enterprises to achieve the desired plan targets with a greater concentration on the improvement of quality and lowering of the costs.

22 Hans-Hermann, Hohmann. "Economic Reforms in the 1970s - Policy With No Alternative," from 'The East European Economies in the 1970s' (1982), p. 2.

On the other hand, the reform model of the countries such as Hungary, Czechoslovakia and Yugoslavia (in the earlier phase) was a far-reaching model oriented towards market economy concepts.²³ Here, the gradual decentralization of price setting was introduced in order to provide enterprises with economically significant yardsticks for autonomous decisions.

However, these reforms did not continue with the same intensity in all countries.²⁴ In countries such as the USSR, the GDR, etc. (where the reforms were quite mild from the beginning), modifications and restrictions of the reforms still occurred. Gradual recentralization measures were adopted around 1970. While Hungary's New Economic mechanism was maintained despite some restrictions, Czechoslovakia had to adopt a conservative course of economic policy, as prescribed by the USSR, after 1968.

In spite of all such retardations of reforms, the planning systems of Eastern Europe represent today a more modern and relaxed form of planned economy than the initial Stalinist model (i.e. the centralized command economy). Organization and planning methods have been improved and many absurdities of enterprise planning have been overcome.

However, in many countries such as the GDR, Romania, Bulgaria (and now Czechoslovakia), the basic character of the

23 Ibid.

24 Ibid.

central administrative economic system has remained intact.

However, as regards the price fixation, the following changes are noticeable in all East European socialist countries.²⁵

To meet the challenges of intensive growth, all seven socialist countries under consideration have introduced at least some elements of price flexibility.

Yugoslavia has freed a large proportion of her prices from central administrative control, especially since 1965. Bulgaria, Czechoslovakia and the GDR have introduced highly elaborate price systems under which the degree of flexibility depends on the type of goods. There are fixed prices for goods which have a substantial effect on the level and structure of production costs and on the cost of living - such as metals, fuels, consumer necessities, etc.

There are ceiling prices, or cases in which prices are allowed to fluctuate below the maximum level fixed by the state. These apply to many raw materials and less essential household items, where competition among sellers is desirable.

There are free-range prices in which the state sets maximum and minimum levels applicable to selected articles and prices can move freely within this range. The items covered here are mostly less important raw materials, semi-luxury consumer goods, etc.

25 J. Wilczynski. 'Socialist Economic Development and Reforms' (1972), p. 27.

There are also free prices that are allowed to fluctuate freely according to market supply and demand. Included in this category are mostly luxuries and non-standardized items.

The flexible price system is most liberally and widely practised in Hungary.

In the GDR, enterprises in the most productive branches are required to pass on the benefits of increasing productivity in the form of price reductions (rather than in the form of higher taxes on profits).

In Poland, (and to a lesser extent in Romania), a considerable price flexibility is ensured as some prices are now negotiated between enterprises in accordance with state-prescribed regulations. Also, an increasing proportion of consumer goods, especially foodstuffs sold directly to private consumers, are determined in relatively free markets.

The degree of price flexibility is further increased as a result of the use of target (or goal) pricing. By this we mean the application of price mark-ups and mark-downs to promote improvements in quality, a greater differentiation of products, the introduction of new articles, etc. Target-pricing has gradually become a more effective weapon of economic policy than it was before.

2.4 The Dual Price System or The Two-Tier Price System

The dual-price system is an important characteristic of all socialist economies and it gives rise to a variety of problems.

In this system, producer and consumer prices have different roles.²⁶ Producer prices have an accounting function in production (and they contain "socially necessary costs" augmented by a low profit margin) whereas consumer prices are used to distribute the consumer goods actually produced among consumers.

In the last stage of production a turnover tax (plus a wholesale and retail trade mark-up) is added to the producer price to form the consumer price. Thus, accumulation or surplus product is realized in the consumer price.

Variants of the dual price system are presently used in all these socialist countries.

Under the dual price system, there are no common prices for the participants in commodity exchange.²⁷ For the producers, the only relevant price is the factory (settlement) price that determines revenue.

The buyer is interested exclusively in the retail (selling) price which determines his real income, whereas the factory price is completely irrelevant to him. The producer is interested in the highest factory price and does not care about the retail price. In such a case, a customary procedure to reduce the difference between two prices is to reduce the state's proceeds from the turnover tax.

26 B.A. Balassa. 'The Hungarian Experience in Economic Planning' (1959), p. 98.

27 G.R. Feiwel. 'Growth and Reforms in Centrally Planned Economies' (1977), p. 109.

To the producer prices or factory prices, when the wholesale margin is added, we get the wholesale prices, as received by the producing enterprises in the socialised sector, from the state.

These wholesale prices, under the directive system, have three functions.²⁸

(i) To provide information to enterprises on supply and demand conditions and on the planners' preferences.

(ii) To serve as a measure for giving incentives, for the execution of plans for profit.

(iii) To redistribute resources between enterprises and from enterprises as a whole to other expenditures, determined by the Government.

To these wholesale prices, when the turnover tax and retail margins are added, we get the retail prices.

These retail prices apply only to consumer goods and services and along with wages they are intended to execute the consumption plan²⁹ (i.e. they are set at such levels as to ensure that the consumption goods and services produced are sold for the total sum of wages less savings and taxes and also to influence household purchases in such a way that the entire output of each product or service is exactly disposed of).

28 Kaser and Zielinski. 'Planning in East Europe' (1970), p. 79.

29 Ibid., p. 80.

The major deficiencies of this dual price system are as follows.³⁰

(i) Producer prices are based on average labour costs, so the difficulties associated with the limited availability of natural resources and the time-structure of production are disregarded. Also, the scarcity value of the factors of production should really be indicated by marginal costs rather than average cost.

(ii) Changes in consumer demand will not influence the enterprises to change the production accordingly, since the enterprises will be affected only by the producer price/cost ratio of production.

2.5 The Price Debate in Socialist Countries

The price debate in socialist countries arose from the increasing complexity and interdependence of their economies, which is an inevitable consequence of the development process.³¹

The planning and the implementation of economic activities required more indirect and decentralized instruments to complement or replace the system of directive planning.

The use of prices in economic calculations and in the evaluation of the performance of various producing enterprises was felt as an objective necessity.³² The initial price

³⁰ B.A. Balassa. 'The Hungarian Experience in Economic Planning' (1959), p. 98.

³¹ A. Pepper and A.C. Tsantis. 'Romania', A World Bank Country Study (1979), p. 59.

³² C. Bettelheim. 'The Transition to Socialist Economy' (1975), pp. 187-188.

structures could not serve these functions and were seen to be incoherent within themselves.

Thus, the purpose of the price debate was to make possible a coherent revision of the price system. The prices were no longer expected to remain as accounting devices only. In more decentralized systems, they have to govern the activities of producing enterprises by reflecting appropriately the social expenditure incorporated in the given products.

Bettelheim³³ has given the following as the main concerns of the "price-debate".

(i) To try and simplify the "price-structures" by making the formation of prices and their evolution subject to a few simpler rules. The simplicity and universality of the rules applied in price formation are necessary to make the prices comparable and economically significant;

(ii) To eliminate "subjectivity" in the fixing of prices;

(iii) To reconstruct the price system so that it can function as an instrument of economic calculations, i.e., a means of guiding certain decisions.

The following are the various price proposals, made during the course of the "price-debate".

(i) Value-type price system: In this system, price equals value,³⁴ where value consists of three parts:

33 Ibid.

34 B.A. Balassa. 'The Hungarian Experience in Economic Planning' (1959), p. 99.

C = Value of equipment and materials used in production;

v = Labour costs;

m = Surplus value.

So, price = $C + v + m$, where m in this price is proportionate to labour costs (i.e., $m = v.M/V$, where V = aggregate labour costs and M = aggregate surplus product).

This system differs from the dual price system, where the price used to be (C + V). In a value-type price system, surplus value is added at every stage of production and accumulation is realized even in the producer price of every commodity. Thus in a value-type price system every price includes a net income in proportion to wage-costs, which is necessary to meet social needs and cause expansion of production.³⁵

This system, however, produces widely differing profit rates in industries, with differing capital/labour ratios. Further, it does not take into account the consumers' preferences for various commodities, since it is based on the labour theory of value.

(ii) Averaged Value-type Price System: Bettelheim³⁶ has referred to this system as the system of prices based on "own costs". This term might be slightly confusing. Because

³⁵ S. Ganczer. "Price Calculations in Hungary, Mathematical Methods," Economics of Planning (1965), Vol. V, p. 68.

³⁶ C. Bettelheim. 'The Transition to Socialist Economies' (1975), pp. 191-194.

under this system, the cost of production that serves as a basis for calculation, is not necessarily the actual cost of production, but an official cost of production. This official cost of production is usually, the average cost of production estimated at a particular moment and so it may differ widely from the actual cost of production of a particular enterprise. Thus the term "own costs" must have been used to indicate an official cost of production "own" to a particular industry. Thus in this system the prices would be formed by building the net income into the prices of individual products proportionately to their prime costs (or average costs).³⁷ This net income is obtained by multiplying the cost of production by a certain 'standard of profitability'. As regards the standard of profitability, the profitability margin is generally kept variable between the different products. Many socialist writers have criticised this system by saying that true prices require a uniform standard to be applied to all products.³⁸

-fixed cost?

To a large extent, this is in fact how prices were for a long time actually determined in the USSR and in most of the socialist countries.³⁹ To represent this system symbolically,

$$P = AC + p(AC)$$

P = selling price

p = a standard of profitability

AC = average cost of production for a given enterprise.

37 See footnote 35.

38 See footnote 36.

39 Ibid.

The main advantage of this system is that it is extremely simple to operate. At any moment, the standardized cost of production of a given product can be worked out by considering the actual money expenditures as one's basis, without going into the detailed meaning of these expenditures.⁴⁰

At the same time, this system cannot be justified on theoretical grounds. Emmanuel⁴¹ calls this system irrational and absurd, on following grounds.

"It raises the price of the products of those branches where the coefficient of raw materials is high (these are the industries with low organic compositions such as light industry branches) while it lowers the prices of the branches with a low coefficient of raw materials (which are the industries with a high organic composition, such as heavy industry branches)."

Many socialist countries have abandoned the system of own-costs, as a result of domestic price reforms. In countries where the system has not been completely abandoned, they are moving farther and farther away from a pure system of own costs, and this system is often combined with others.⁴²

(iii) The Production-Price Type Price System: Production prices contain the cost of production supplemented by profit

40 Ibid.

41 A. Emmanuel. 'The International Division of Labour and the Socialist Market' (1966), p. 5.

42 See footnote 36.

calculated on fixed and variable funds.⁴³

So,

$$P = (c + v) \left(1 + \frac{M}{C + V} \right)$$

where c = constant or fixed capital outlays,

v = labour costs,

M = aggregate surplus product,

C = aggregate fixed costs, and

V = aggregate labour costs.

Here, to obtain the selling price, the cost of production should be supplemented by a profit mark up which should depend upon C, V and M. Thus, the formation of prices would be realized in a way that the allocation of net income among products and branches would be in proportion to fixed assets and working capital tied up in the production of the products and in the branches concerned.⁴⁴

The main advantage of this system is that it takes into account not only the individual cost of each product but also (to a possible extent) its quantifiable social cost and this is extremely important from the viewpoint of a society which is based on the social ownership of the means of production and which aims at maximizing social welfare.

Also, this system enables the central planning organs to exercise better control over the use made of production funds by various enterprises.

⁴³ B.A. Balassa. 'The Hungarian Experience in Economic Planning' (1959), p. 100.

⁴⁴ S. Ganczer, in 'Economics of Planning' (1965), Vol. V, p. 69.

However, this system gives rise to a number of difficulties.⁴⁵

The practical need for adopting the rates of profitability that differ widely between the branches makes the structure very much different from the production-price type structure. But the adoption of a uniform profitability rate for all branches, would mean the raising of certain prices which it seemed necessary to keep stable.

Also, the prices of mutually substitutable products have to be kept linked. There are problems associated with the unevenness of the costs of production of different production units, within one and the same branch of production.

There is also a problem of choosing between average cost pricing and marginal cost pricing,⁴⁶ i.e. whether to take as basis for calculation the average cost of production for a given industry (or a production branch) or the maximum cost of production (i.e. the cost of an additional unit produced or the cost of an enterprise which operates at the highest cost, but which is nevertheless essential if the needs are to be covered). However, the practice continues to favour average cost pricing.

In Soviet industry and in all other socialist countries, where the price reforms were attempted in the direction of the production-price type system, the price systems have expressed

⁴⁵ C. Bettelheim. 'A Transition to Socialist Economy' (1975), pp. 195-200.

⁴⁶ Ibid.

very imperfectly the difference in social costs among different products.⁴⁷

This may have unfavourable consequences as regards the decisions which enterprises have to take on the basis of prices. However, these countries consider these reforms as just the beginning of a long process of reforms in price systems and their management and planning systems. There are two noteworthy problems associated with price structures based on "value". These are the transformation and the simultaneity problems.⁴⁸

The transformation problem is about the transformation of values into prices of production. On the one hand, the transformation can be a purely quantitative process, deriving the numerical levels (or ratios) of prices of production, by solving a set of simultaneous equations.

On the other hand, the transformation means a qualitative difference and relationship between the value and the price of production.

Now, the value type price structures are based on "value" in the Marxian sense. In Marxian terminology, value consists of three parts: C (value of fixed capital); v (labour costs); and m (surplus value).

If r denotes the value rate of profit received by each

47 Ibid.

48 B. Fine and L. Harris. 'Rereading CAPITAL' (1979), pp. 25-27.

unit of capital (i.e. the total surplus value as a percentage of capital as a whole, expressed in values), then in the sphere of exchange values ($c + v + m$) are transformed into the prices of production i.e. $(c + v) (1 + r)$. But in all this, capital advanced is treated as untransformed values, i.e. C and v are in terms of values rather than the prices of production.

Thus, this implies that capital assumes the price relation as it comes out of the sphere of production, but it enters the sphere of production as unmodified values. No consideration is given by Marx to the question of how prices of production are transformed back into values, as capital re-enters the sphere of production from exchange.

This is the crux of the transformation problem.

Also, the capitalists have to buy labour power and means of production on the basis of prices of production and have to sell their final commodities also on the same basis. Thus value, which is supposed to govern the prices of production is itself determined by the prices of production. This is a simultaneity problem.

For Marx, the value rate of profit on capital, i.e., r , is equal to the price of production profit rate, i.e. r' . Because of this, he could derive the prices of production by marking up the costs by $(1 + r)$ believing this to be equivalent to $(1 + r')$.

But the price of production rate of profit r' depends only upon the technical relations of capital and the wage rate,

whereas the value rate of profit does depend on the allocation of capital between industries.

Thus, conceptually the prices of production differ from "value" in the strict Marxian sense.

(iv) The Price System Based on World Market Prices: This system proposes that the basic prices of the domestic price system should be capitalistic world market prices,⁴⁹ that are important from the point of view of foreign trade. Not only the prices of goods actually exported or imported, would be fixed on this basis, but of all products either home-produced or imported.

Ganczer had criticised this system as it does not take into account the domestic conditions of production.

However, this proposal had only a limited influence on practical policy. Within some of the CMEA (Council for Mutual Economic Assistance) countries, certain attempts in this direction were made. For instance, Hungary, Poland, Czechoslovakia and Bulgaria have attempted to move in this direction.

But in practice, the prices of these European socialist economies are essentially formed on the basis of one of the three price systems, described earlier.

(v) A System of Rational Prices: "Rational Prices" are necessary for any economy aiming at an optimum utilization of its resources. The term "rational" is used in this context in the sense of optimality.

49 S. Ganczer in 'Economics of Planning' (1965), p. 69.

These prices can be arrived at:⁵⁰ (a) Either on a decentralized basis, competitively; or (b) computationally on a centralized basis.

The competitive decentralized solution was suggested in the 1930s by Oscar Lange, who described his method as a "trial and error" method. This method works as follows.

It begins with the existing price-structure and subsequently by learning from supply-demand conditions and important macro-social considerations; it makes successive adjustments in the initial prices, to ensure equilibrium in all the markets. This method is also known as the method of "successive approximations". However, this method has never been put fully into practice by any socialist country.

The second method, i.e. the computational centralized one, is well suited to a computer age. Its founders are the three Soviet economists: L.V. Kantorovich, N.S. Nemchinov and V.V. Novozhilov. Their ideas attracted attention in the late 1950s. Their viewpoint was that all prices must reflect all social costs, including non-labour charges, i.e. standard capital charges and differential rent.

The actual prices are arrived at by solving an immense number of simultaneous equations involving many different plan variants, according to the postulated major objectives. This does require a comprehensive network of nodal computer centres in each country, capable of storing, updating and processing

⁵⁰ J. Wilczynski. 'The Economics of Socialism' (1982), pp. 137-139.

heterogenous data. It was agreed that such prices should be applied only for planning purposes and should not be allowed to interfere with the socially desirable distribution of national income. These prices are also known as shadow prices, since they do not perform any distributive function.

Even though the development of this mathematical concept of optimal pricing does constitute an important milestone in the socialist literature, the actual establishment of such a price system was not possible owing to a number of difficulties, such as the lack of adequate information, the lack of a proper computational basis, etc.⁵¹

2.6 Additional Remarks

It is now well accepted that the price system constitutes an organic part of the entire economic organization of planned socialist economies.

These economies are the ones which want to develop a new structure of production relations in the context of the social ownership of the means of production. So the objective requirements of their price system and its functions differ widely from those in the free market economies.

However, they are still in a process of constructing their economies, in a best possible manner so as to suit their political and social requirements. Devising new and better price systems, coherent with their macro-social objectives, is an important aspect of this process.

51 S. Ganczer, in 'Economics of Planning' (1965), p. 70.

The major problem which these socialist economies have to face is the co-existence of socialist property relations and the private appropriation of certain benefits.

As Bettelheim⁵² has stated, these countries have to maintain two levels of calculation, which are quite distinct from one another.

- (i) There are calculations on a social scale, which are carried out in physical quantities.
- (ii) There are calculations performed at the level of economic subjects, that are carried out in terms of prices.

This leads to the existence of two levels of decision making.

- (i) There is a direct economic calculation, without any recourse to money categories, which comes under central economic planning.
- (ii) There are indirect economic calculations, performed by means of a price-system, which come under the management of individual enterprises.

The disappearance of this duality requires a long process of transformation of production relations and a considerable advancement of production forces that would lead to a social integration of the labour processes.

Until then this duality will continue. Even though the prices constitute a transitional category for the socialist economies, it will take ages for them to get rid of the price

⁵² C. Bettelheim. 'A Transition to Socialist Economy' (1975), pp. 232-233.

system completely. For the moment they have to endeavour constantly to make their price structures more and more efficient in order to make the best use of their potential capacities for maximizing social welfare.

For this purpose, these economies do not allow complete autonomy to their price systems. As we have seen in the previous sections of this chapter, their prices are essentially administered or planned. The overall plans for investment and production are drawn up first, and then a system of prices relevant for the fulfilment of these plans is derived from them.

Thus prices are free or they govern entrepreneurial activities only to a very limited extent and within the broad sphere of exogenously planned economic activity.

Further, this price system is controlled outright. Its stability is recommended for general social stability.

It is considered to be an important task of the central planners to ensure a balance between aggregate spending and production, so that there will not be any acute pressures on the prices due to transitional imbalances. The possibility of inflation is considered to be extremely remote under such planned conditions.

Also, the prices are being kept stable at relatively low levels. The main purpose behind this is to reduce, as far as possible, the inequalities in consumption, a condition claimed to be essential for maximizing social welfare.

However, these intentionally repressed prices create a variety of problems for these economies, which are as serious

as the problems created by rising prices in the market economies.

It is now well accepted that inflation does exist even in the socialist economies, though in a concealed form. However, it can be studied by considering its peculiar but different manifestations in these socialist countries.

It is our intention to review the available literature on "repressed inflation in East European Economies" and to comment on its possible continuation in these countries in the coming years.

In this chapter we have reviewed, in brief, the theory of pricing in socialist economies and their actual price structures with special reference to the functions of prices under socialism, their institutional determination in various countries, the changes in these price structures in accordance with the changing socio-economic strategies, etc. We have also talked about, though briefly, the price debate in these socialist countries which helps us to understand their newly developing views on the role of the price system.

This background will help one in understanding the nature of socialist inflation and its various manifestations, which are discussed in the next chapter.

CHAPTER III

REPRESSED INFLATION

3.1 The Meaning of Repressed Inflation

As we have seen in the previous chapter, the socialist countries regard retail price stability as an important contributor to social stability. For this reason their prices and wages are heavily controlled.

These countries hold a definite view regarding the inflation problem. Their standpoint with respect to inflation becomes clear from the following statement of Lerner.¹

"When there is a continuous increase in money demand in relation to money supply and a continuous rise in prices, a process is generally foreseen. In such situation of foreseen price rise, there is no excess demand. People expect to spend more money in the future, but they are also willing to pay higher prices. So the expected demand and supply are equal." Lerner regards this situation of rising prices as one without any evils of inflation.

But when there is no coordination between the people's plans of future expenditure and continuously rising price levels, a discrepancy is created between the expected demand

¹ A.P. Lerner. "The Inflationary Process — Some Theoretical Aspects," Review of Economics and Statistics (1949).

for goods and services and actually expected supplies. This might lead to a situation of excess demand with all its attendant evils of inflation.

According to Csikos Nagy,² socialist countries endeavour to follow Lerner's prescription. Under centralized planning, the rise in the price level takes place in harmony with the trend of relative incomes. The price and incomes policies are institutionally integrated into the central control of the economy, so as to avoid the negative effects of inflation.

In fact, the control of inflation is a part of their welfare maximization policy, that has several objectives such as full employment, price stability, a high growth rate, a viable balance of payments, etc.

Inflation has to be avoided, if the stability of the monetary system is desired. Escalating inflation reduces confidence in money and reduces its effectiveness both as a store of value and as a medium of exchange.

Uneven inflation distorts relative real income levels and price ratios, which may jeopardise the achievement of maximum equity and efficiency.

In the market economies, the central task of the price system is the efficient allocation of resources, whereas in the socialist economies, price systems are also used as a means for achieving distributional objectives.

² Csikos Nagy, "Towards a New Price Revolution" (1979), p. 89.

Thus, in the free market economies, whenever excess demand develops, movements in the price system act to produce equilibrium by operating on some section of the economy. It is the function of this price system, to keep expected savings and investment in balance so as to achieve the equilibrium between aggregate demand and supply.³

Thus, whenever inflation is open, the role of prices as rationing agents is well accepted.

Socialist countries, on the other hand, try to avoid inflation by repressing price rises and thus prevent rationing by means of price increases. They substitute instead a distribution system based partially on legal or administrative controls. Ration coupons and Governmental priorities or allocations have to accompany money if the commodities are to be obtained.

Thus under conditions of repressed inflation, the Government interferes directly with the working of the distributive functions of the price system through controls.⁴

The basic objective of the socialist governments, in applying freezes to their retail prices, is to ensure a critical minimum amount of all basic goods and services to their people. They do not want inequalities in consumption to take place, to the same extent, as the inequalities in

³ Charlesworth. "The Economics of Repressed Inflation" (1956), pp. 13-14.

⁴ Ibid.

incomes (where incomes are still determined on the basis of work performance).

In short, the socialist distributional objectives are achieved through the controlled functioning of their price systems. The prices of means of production (including wages) are used to govern resource allocation while other means are employed (for instance, subsidized prices in the state markets, ration coupons, etc.) to achieve distributional equity.

3.2 Effects of Repressed Inflation in Partial and General Equilibrium Frameworks

When the Government consciously interferes with the working of price-systems, by setting maximum prices, the following results are considered as obvious.⁵

(i) The setting of maximum prices will either have no effect or it will cause a shortage of the commodity and reduce both the price and the quantity actually bought and sold, below their equilibrium values.

(ii) Effective price ceilings will give rise to strong pressures for a centrally administered system of rationing.

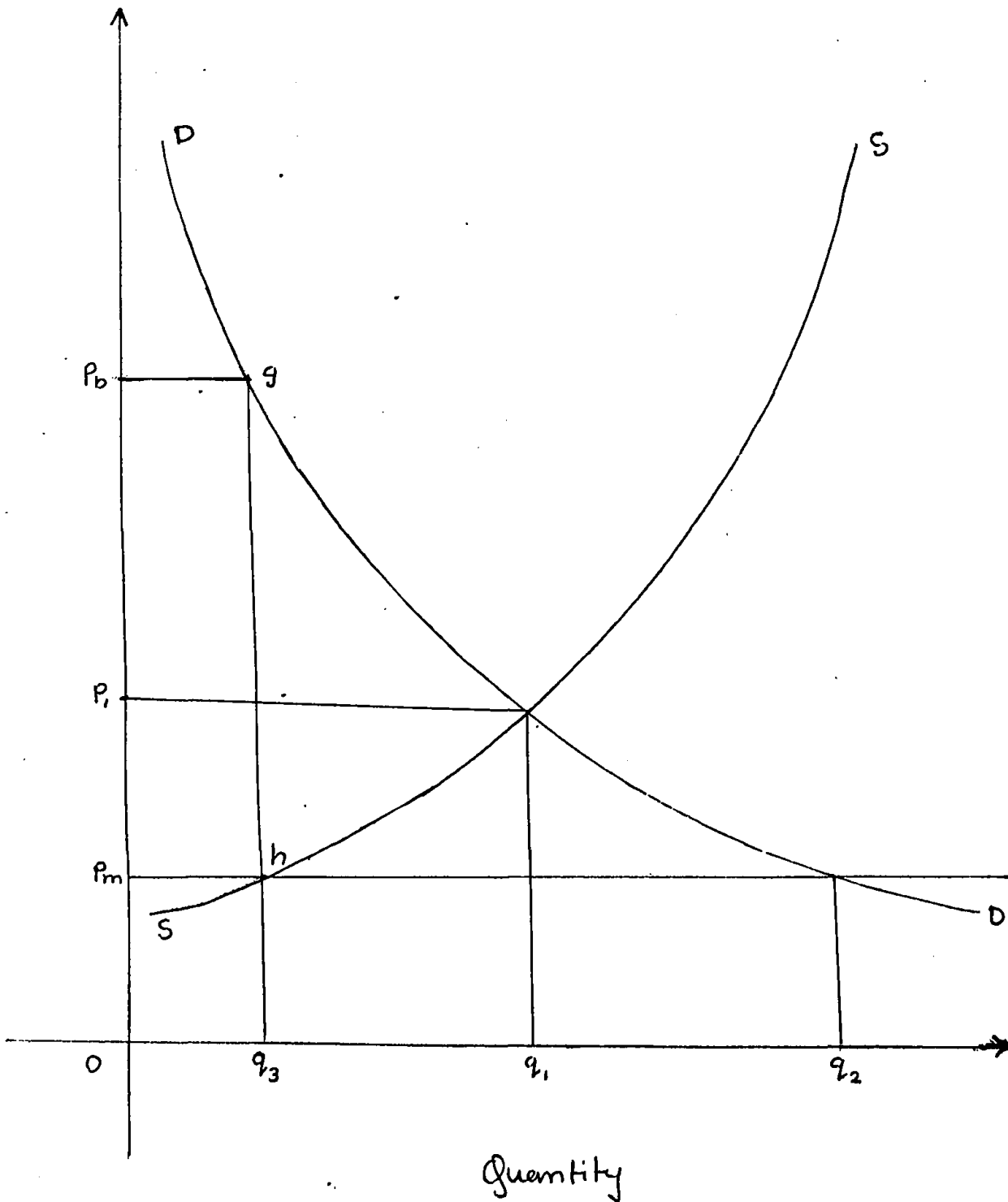
The following diagram (Figure 3.1) will help us in understanding these results better.

In this Figure, the demand and supply curves are drawn to show the market demand and supply for a given commodity. Its equilibrium market price is P_1 at which q_1 of its quantity is actually traded.

⁵ Lipsey and Steiner. 'Economics' (1969), 2nd edition, pp. 115-116.

Figure 3.1

A Commodity Subject To An Effective Price Ceiling



But if the Government-set maximum price is P_s (this is an effective ceiling price as $P_s < P_1$; if the ceiling price were P_b instead, it would have no effect on the market equilibrium, as $P_b > P_1$), then the quantity demanded would increase to q_2 but the quantity actually supplied would fall to q_3 .

The buyers would naturally experience shortages in the extent to which their desired commodity is available.

The actual price-quantity combination under this situation, would be (P_s, q_3) which shows that both the price and quantity have fallen below their equilibrium values. At the fixed ceiling price P_s , there is an upward pressure on price, indicated by the upward pointing arrow. However, P_s remains in effect regardless of this upward pressure created by the excess demand in the market.

Since, at this lowered price P_s , the demand pressures are acute, the Government has to undertake the function of rationing, otherwise the marketed quantity of this commodity would be distributed on a first-come-first-served basis or on the basis of sellers' preferences, which would cause an inequitable distribution.

Thus, if the ceiling price is enforced with a certain distributional objective in mind, then its effectiveness requires the existence of an efficient, centrally administered system of rationing.

The theory of repressed prices also predicts⁶ that the

6 Ibid.

potential for a profitable black market will always exist whenever effective price ceilings are imposed. This is because, it will pay some people to buy at the controlled price and sell at the black market price. In Figure 3.1, if P_b is a black market price and oq_3 is the actual quantity sold in the black market then $\underbrace{P_s P_b F_c}_{\text{is the black market (or illegal) surplus earned over this quantity.}}$

This is, however, a simple partial equilibrium framework, explaining the consequences of repressed prices of an individual commodity.

But there are certain definite implications for the overall output and employment of a given economy, in which this repressed inflation is widespread. Barro and Grossman⁷ have made an attempt to develop an analytical framework for the determination of output and employment, under repressed inflation.

They have defined repressed (or suppressed) inflation, as a situation in which, at existing wages and prices, the aggregate demand for current output and labour services exceeds the corresponding aggregate supplies. They have called this situation as one with non-wage and non-price rationing.

They have begun by considering a simple aggregative framework, in which three well-defined economic goods exist.

⁷ Barro, R.J. and Grossman, H.I. "Suppressed Inflation and the Supply Multiplier," Review of Economic Studies, Vol. 41 (1974).

These are labour services, consumable commodities and fiat money. They have further defined only two forms of economic decision making units; the firms and the households.

Labour services are the only variable input into the production process; other inputs have a fixed quantity; and they are characterized by the fact that they have no alternative use and have zero user cost.

Consumable commodities are the only form of current output, there are no investment goods and the consumables are not storable.

Money is the only store of value, it serves as a medium of exchange, and unit of account. Money transactions are costless, receipts and disbursements of money are perfectly synchronised. The nominal stock of money is exogenous and constant. | ?

The real wage rate is the number of units of consumables per man-hour of labour services.

Given this, their discussion follows the conventional demand-multiplier analysis; i.e., they take a particular vector of the price level and real wage rate as given and then work out the levels of output and employment implied by that vector. In particular, they focus on the combination of that real wage rate which would be consistent with general market clearing and a price level which is lower than that which would be consistent with general market clearing.

Thus, this is a situation in which the price level and nominal wage rates are too low, i.e. in which the infla-

Problem?

tion of the price level and the nominal wage rate is being suppressed but in which relative prices (i.e. the real wage rate, etc.) are at the correct level.

When a particular market is experiencing excess demand, voluntary exchange implies that the actual level of transactions will be supply determined. *why?*

Therefore, under suppressed inflation voluntary exchange implies that actual employment will equal the total quantity of labour services supplied. A representative firm will not be able to obtain its notional demand for labour services. Thus, its effective supply of consumables is a function of this given level of employment. This implies that the effective supply of consumables can vary even with the real wage rate fixed. As long as the excess demand for labour services exists, at the given real wage rate, the effective supply of consumables varies with the level of labour services supplied. *Output not at full empl. level? why? Real wage not low.*

Similarly, when there exists an excess demand in the commodity market, a representative household will not be able to purchase its desired quantity. In addition to being a wage and price taker, it has to act as a quantity taker also. Given this constraint on consumption, the household must choose amongst two options, or a combination of them.

- (i) It can continue to accept employment equal to its notional labour supply, thereby maintaining notional income so as to accumulate the money balances in the form of forced savings.

(ii) Alternatively, it can accept less employment, substituting leisure for the current consumption which it cannot obtain.

Given this, its effective labour supply and effective savings demand depend not only upon the current consumption constraint, which the representative household directly perceives, but also upon the expected future time path of this constraint upto a distant future date.

If the household regards the excess demand for consumables as a purely transitory phenomenon, it tends to increase its forced savings without reducing its supply of labour services.

Alternatively, if the representative household anticipates a permanent supply-imposed constraint upon consumption it would tend to increase leisure so as to compensate for the shortfall in its current consumption, which would lower its current savings.

From a qualitative standpoint, Barro and Grossman ultimately arrived at the conclusion that "there will be some reduction in labour supply, so long as the representative household regards a supply imposed constraint on consumption as anything more than a transitory phenomenon".

They have regarded this as the apparently paradoxical implication that excess demand for consumables can result in decreased employment and so in decreased output.

Barro and Grossman have developed a concept of "supply multiplier" in their analysis which is analogous to that of

the demand multiplier and it operates in an economy as follows.

Suppose that initially the real wage rate and general price level are consistent with general market clearing. Now suppose that M is increased, which has the effect of raising the general market clearing price level and nominal wage rate equiproportionately. But with the actual price level and nominal wage rate fixed, the situation would be such that the real wage rate would still be at its market clearing level but the actual price level would now be below the market-clearing level.

This disturbance would initially result in an increase in the notional demand for consumables and a decrease in the notional supply of labour services. Thus, this creates excess demand in both markets.

As an immediate consequence, the representative household perceives a supply-imposed constraint on its consumption and so reduces its effective supply of labour services below the notional supply.

At the same time, the representative firm perceives a supply-imposed constraint on its employment which reduces its profits and hence its effective supply of consumables below its notional supply.

These initial effects give rise to an induced chain of effects, which cause further reductions in the effective supplies of labour services, actual employment and profits and hence in effective supplies of consumables. However, the induced reduction in profits implies a reduction in non-wage

wealth and hence creates a partially offsetting stimulus to effective labour supply.

This entire process cumulates until the actual levels of output and employment settle well below their general market clearing levels.

less than full employment situation in capitalist economies

This multiplier process, by which an initial decline in employment brought about either by a decline in the notional labour supply function and/or by a decline in the effective labour supply below the notional level, causes a decline in output, which leads to further declines in employment, and so on. This is described by Barro and Grossman as a supply-multiplier process.

?

The conventional demand multiplier is applicable to a situation of general excess supply, in which output and employment are constrained by demand; whereas the supply multiplier refers to a situation of general excess demand in which output and employment are constrained by supply.

The actual levels of employment and output, when the supply multiplier is operative depend upon the interaction between the household's marginal propensity to work, given a change in consumables available for purchase and the marginal productivity of labour. As the demand multiplier equals the reciprocal of one minus the propensity to consume, the supply multiplier equals the reciprocal of one minus the propensity to work.

The important conclusion of their analysis is as follows.

"In standard macro-economic analysis, excessive price and nominal wage levels lead to deficient demand for consumables, which depresses output and employment below the full employment level. In this analysis, deficient price and nominal wage levels lead to excessive demand for consumables and also lead to depressed levels of output and employment.

Thus both excessive and deficient demand for final goods are bad and the fact is that any chronic failure of markets to clear will lead to a shortfall of output and employment. Both output and employment are maximised at the general market clearing wage-price vector."⁸

However, Barro and Grossman's analysis was extremely simplified. But they have given its implications even when a more general framework is considered.

In reality, the expected constraint on consumption at various times in future would depend upon the past and present experience with respect to consumption constraints and a numerous other special circumstances such as war, famines, and other contingencies.

The actual effect of repressed inflation on output and employment would depend upon the relationship between the current consumption constraint and the expected future time path of consumption constraints.

The weaker is this relationship, the smaller would be the short-run supply multiplier. The consideration of various

⁸ Ibid.

dynamic elements in this analysis, implies that the more persistent the shortfall of consumption below notional demand, the larger would be the average expected future consumption shortfall. In effect, the long-run supply multiplier would be larger than the short-run supply multiplier.

If we further relax the assumption of "absoluteness" of the consumption constraint and allow for the existence of black markets, our previous conclusion requires several modifications.

In socialist countries, where rationing and price controls are legally enforced, the potential for black markets does exist. These black markets open the opportunity of purchasing additional quantities at higher prices. But simultaneously the consumption constraint is weakened. The higher prices of black markets include the transaction costs of engaging in illegal activities.

Thus for each household, its consumption constraint is determined not only by the quantity available in open (or legal) markets but also by the extent of its own activity in search, exhortation, bribery, etc.

This additional consideration also enters into the determination of the magnitude of the supply multiplier and introduces an interesting subject for further analysis.

3.3 Manifestations of Repressed Inflation in Socialist Economies

In the previous section, we have discussed the theoretical implications of repressed inflation for an economy, in which it is experienced.

We now consider the actual position of East European socialist countries, with respect to repressed inflation since 1960.

The price stabilizing policy of these socialist countries becomes clear from Table 3.1.⁹

Table 3.1 : The Annual Average Extent of the Changes of the Consumer Price Index, in the Period 1960-1973 for the Socialist Countries

Country	Foodstuffs	Other articles	Altogether
Bulgaria	+1.5	+0.1	+0.8
Czechoslovakia	+0.4	+0.8	+0.5
GDR	+0.2	-0.3	-0.1
Hungary	+1.4	+0.6	+1.8
Poland	+1.2	+0.4	+0.7
Romania	+0.7	-0.5	-0.1
U.S.S.R.	+0.5	-0.6	-

Note 1 : Because of the different calculation methods and the deviations of the spheres of goods and business, the consumer price indices published in the European socialist countries cannot be compared.

Note 2 : With the exception of a few countries, the published price statistics represent the retail trade (or the socialist retail trade) price index.

Note 3 : These are actual changes and not percentages. *9 as % would-be lower? why not 9?*

In the above Table, Yugoslavia is not included as the inflation in Yugoslavia is open; Yugoslavia has accepted the

⁹ Csikos Nagy. Towards a New Price Revolution (1979), p. 89.

role of market price, since it suits best the worker's self-management. Also, the Yugoslav dinar is a trade currency. As a consequence, the effect of world market inflation on Yugoslavia assumes the same form as in most market economies.¹⁰

For the same time-period, the inflation rate (the annual average change of consumer price index) of industrially developed capitalist countries is as follows:¹¹

Table 3.2 : The Annual Average Change of Consumer Price Index for the Advanced Capitalist Countries (1960-1973)

Year	Consumer price (inflation rate)	Year	Consumer price (inflation rate)
1960	2.0	1967	3.0
1961	2.0	1968	3.9
1962	2.7	1969	4.9
1963	2.8	1970	5.6
1964	2.5	1971	5.1
1965	3.0	1972	4.5
1966	3.4	1973	7.6

Note 1: The countries included are the U.S.A., Great Britain, Austria, Belgium, Denmark, France, the German Federal Republic, Holland, Norway, Sweden, Switzerland, Canada and Japan. *Base point*

Note 2: The source of this Table is International Monetary Fund, Research Department; calculations based on the IFS data. ?

10 Ibid., p. 89.

11 Ibid., p. 70.

Though Tables 3.1 and 3.2 are not directly comparable, we still find that the inflation rate for the industrially developed capitalist countries is much higher than that for the socialist countries over the period 1960-73.

As stated earlier, in socialist countries the stability of the consumer price level is centrally maintained in harmony with incomes, in the form of planned pricing. Socialist countries give due weightage to the principle of complexity, i.e. they always take into account the effects on income relations of any price change. For instance, when industrial producer prices are modified then this will affect the profitability of the production branches concerned. The price changes are brought about in such a way, as to affect the viability of different production branches in a desired direction. Price changes may be aimed at providing certain definite conditions for enterprise decisions. This is accomplished with the help of the use of financial regulators, along with the price changes, e.g. taxes, subsidies, credit terms, etc.

The policy of consumer prices is part and parcel of the living standards policy¹² that includes various other policies along with that for consumer prices such as wage policy, the policy of social benefits, employment policy, etc.

Planned pricing implies not merely the control of retail prices but also the control of wages and incomes in harmony with prices. Thus, the consumer price plan comprises

12 Ibid., p. 90.

of the likely modifications in the relative prices, the induced changes in the consumer price level brought about by the changes in relative prices and the differentiating effects of these price changes on the incomes of different social income groups.

However, the "altogether" category in Table 3.1 shows that over the period 1960-73, the average annual change in consumer price indices for all East European economies is extremely insignificant. The inflation in this period was considerably repressed.

The question that emerges now is that "whether price stability based on administrative measures, does provide full protection against all evils of open inflation?"

The standard evils of open inflation perceived are as follows.¹³

Inflation has its impact on all kinds of prices such as prices of commodities and securities, on wages, profits, rents, interest rates, taxes, exchange rates, etc. It acts as a powerful machinery for wealth redistribution, which is essentially inequitable in nature. It also often reduces production by stimulating wasteful speculation, destroying capital spending habits of the economy and thrift, and in other ways destroying normal economic process and breaking down normal standards.

To answer the above question in the light of these

13 Kemmerer, E.W. The ABC of Inflation

standard evils of open inflation we proceed as follows: First of all we see that, in all socialist countries the inflation which was being repressed, gets manifested in a number of different forms. These manifestations are as visible and inconvenient to the consumer as rising prices.¹⁴

The common symptoms of inflation in socialist countries are¹⁵ long queues and shortages of goods and services; though the mere existence of queues should not be taken to mean the indication of inflation. Queues can be drawn by new products or by the wrong estimation of the intensity of demand at planned prices.

But when the excess demand sustains itself for a long period of time, inflation under the repression of price rises, gets reflected in long queues for goods and services.

The other form of repressed inflation is quality declines, which are not peculiar to socialist countries, but its incidence appears to be greater in socialist countries than in the capitalist countries.

As managers of various enterprises are not allowed to adjust their prices frequently in accordance with costs, they resort to unplanned cost increases by reducing the quality of their outputs. So long as they are faced with the two important constraints, minimum costs and maximum outputs, quality tends to suffer whenever its maintenance is not fully

14 Haddad, L. "Inflation Under Socialism," Australian Economic Papers (June 1977), pp. 44-52.

15 Ibid.

rewarded.¹⁶ Thus whenever the products of inferior quality are brought into the markets at higher prices, these can be taken to be disguised price rises.¹⁷ These disguised price rises were common, when the authorities emphasized quantity targets and when the acute shortages of essential raw materials and final consumer goods were felt.

The possibility of reducing costs by quality declines instead of raising productivity or introducing technical progress appears to be much greater and easier and requires less inputs.

The innovative spirits get discouraged in the socialist systems. Unless the innovation is planned and directed from above, it is rarely introduced by management. Even when it is introduced and new products are produced, there is a tendency on the part of management to raise prices, more than the corresponding increase in quality.

Besides, changes in the available product-mix create the problem of determining the right price. As there are no rigorous criteria for proper comparisons of the two products and as changes in quality, shape, style, colour, etc., are not objectively quantifiable, this opens the possibility for hidden changes in the price level and neither the consumers nor the authorities can detect this form of inflation.

16 Ibid., p. 45.

17 Csikos Nagy. Towards a New Price Revolution (1979), pp. 93-95.

In the producer goods sector, inflation assumes less obvious forms such as hoarding of materials and labour, black marketeering, bribery, etc. Uncertainty of supply and high rewards for overfulfilling the plans induce managers to accumulate inputs over and above current needs. This is a kind of speculation, though not against future price rises, but against uncertainty of supply.

Also, to acquire additional inputs bribes are paid. According to the Soviet economist Petrakov "bribery is a concealed form of price increase plus a risk premium".¹⁸

Black markets are also tolerated which though illegal, serve the important function of removing bottlenecks and maintaining the working of the centrally planned system.

The development of the productive forces and rising living standards achieved thereby transform the consumption patterns of the consumers. But various imbalances in the internal functioning of an economy, bottlenecks, etc., do not allow the supply structure to change accordingly.

These shortages of various commodities cause forced purchases by which consumers are forced to spend on commodities which they do not desire to consume actually. Thus consumer preferences are severely restricted, which is considered to be a manifestation of inflation.

The shortages of non-substitutable products and inflexible demand cause forced savings. The consumers

18 "New World" (Novy Mir), August 1970, pp. 178-180.

prefer to save their incomes in the hope that the desired items will be available later.

Excess demand associated with repressed inflation causes irregularities also in the labour market.¹⁹ Excess demand on the consumer market affects adversely labour discipline, as it prevents workers from using their wages freely.²⁰

Excess demand for means of production creates bottlenecks in the plants; disproportions within individual enterprises impede the most rational utilization of the available manpower; the result is unemployment within the factory, to a varying degree.

Excess demand in the means of production sector creates many imbalances such as the accumulation of large stocks of unfinished products, disturbances in the organization of production and investment, delays in the completion of new projects, etc.

Thus, we find that repressed inflation caused by administrative price stability also disturbs normal economic processes and can break down normal standards.

It also creates the potential for speculative activities and black-marketeering that ultimately lead to an inequitable distribution of final commodities. Though prices are stable, this stability is not a result of the continuous

*more to
than open
inflation*

19 Csikos Nagy. Towards a New Price Revolution (1979), pp. 94

20 Ibid.

supply of various final goods as well as producer goods in adequate quantities to various economic units that require them. So the excess demand pressures become acute and they create all sorts of imbalances. The production and investment activities suffer due to shortages and bottlenecks on the one hand and due to lack of efficiency implied by the artificially enforced low prices on the other. These prices, as they do not reflect the market scarcity conditions continuously, obfuscate economic calculations, distort comparative costs and benefits to be derived from their production.

Under extensive centralized planning, the quality of production suffers as it cannot be controlled fully by administrative measures. Malpractices such as cheating the consumers, hoarding of the necessary raw materials, bribery are promoted.

Also, the limited availability of various goods and services restricts severely the consumer preferences.

Besides, this enforced price-stability implies a rigidity of the system. Prices have to be altered considerably if they are to serve as effective choice coefficients.²¹ This is a requirement of any dynamic economy.

Thus, we find that the repression of price rises has many serious consequences which require further analysis.

²¹ C.R. Feiwel. Growth and Reforms in Centrally Planned Economies (1977), pp. 105-107.

3.4 Forced Savings in the Socialist Economies

In this section, we plan to analyse the phenomenon of forced savings in the socialist economies, as it has been regarded as a definite manifestation of repressed inflation involving the possibility of a financial crisis.

This does not mean, however, that other manifestations are less serious and require no great attention. But the reason for emphasizing this particular phenomenon is that it is easily quantifiable and therefore is increasingly used as an indicator of repressed inflation.

In fact, the growth of savings is generally taken to mean an increase in well-being, because poor people do not save. But in the socialist context it can be the evidence of another phenomenon.²² Since their population has a very limited (almost nil) opportunities for investing, all savings are intended for future consumption; mostly for the purchase of various consumer goods and obviously people do not postpone consumption very willingly, when they do not gain anything as a result.

The practice of building up big savings deposits with a long-term outlook, say as insurance does not in itself explain the rapid growth of savings deposits in the CMEA countries.

For these reasons, it is said that the overwhelming

²² I. Birman. "The Financial Crisis in the U.S.S.R.," (1980), Soviet Studies (Vol. 32), p. 88.

part of all savings is forced and they grow rapidly, primarily because people are unable to spend their money rationally.

However, there are certain economists who claim that the increasing savings deposits in the socialist countries are a sign of their increased well-being, because these savings are increasing along with the retail trade turnover.

Fogaras²³ has given the following two Tables to compare the growth of the stock of savings deposits in some socialist countries with the development of retail trade turnover between 1970 and 1976. It should be noted, however, that the period which Fogaras has covered is beyond the 1970s (i.e. the period during which many socialist countries have begun making the revisions of their price systems). A comparison of these tables shows clearly that not only were the stock of savings deposits rising dynamically in every socialist country during 1970-76, but so was the retail trade turnover.

The conclusion of Fogaras' paper was that the economies of the CMEA countries developed soundly between 1970 and 1976, in good proportions and generally without the phenomenon of forced savings. This is because the expansion of the saving processes took place together with a considerable increase in the supply of consumer goods. So their population's increased demand for banking services is a sign of the rising standards of living in the socialist countries.

23 I. Fogaras. "Savings Deposits in CMEA Countries," Acta Oeconomica, 21 (1979).

Table 3.3 : Stock of Savings Deposits and Retail Trade Turnover in Some CMEA Countries (At Current Prices)

Country	Currency	Stock of savings deposits ('000 millions)			Retail trade turnover ('000 millions)		
		1970	1976	Increment (%)	1970	1976	Increment (%)
Bulgaria	Leva	4.0	8.7	115	5.5	8.1	47
Czechoslovakia	Koruna	63.5	126.1	99	163.2	220.2	30
Poland	Zloty	114.8	334.1	191	450.1	939.4	84
GDR	Mark	52.1	80.2	54	64.6	86.3	29
Soviet Union	Rouble	46.6	103.0	121	155.2	220.1	36
Hungary	Forint	42.1	92.9	121	140.6	233.1	57

Table 3.4 : Stock of Savings Deposits in Percentages of Retail Trade Turnover in the Years 1970 and 1976

Country	1970	1976
Bulgaria	73	107
Czechoslovakia	39	57
Poland	25	36
GDR	81	93
Soviet Union	30	47
Hungary	30	40

But there were many contradictory views also, expressed around the same time. According to Zwass (1979)²⁴ and Nove (1979),²⁵ centrally planned economies (i.e. CPEs) are definitely characterized by persistent excess demands arising from taut planning and by shortages of consumer goods arising from the priority given to heavy industry and investment. So their conscious repression of prices has definitely led to the excessive accumulation of money balances, which is involuntary or forced. Forced savings in these countries have emerged as a result of the broad gap between supply and demand, which persisted for a long period of time.

In this paper, the terms monetary balances or liquid assets or liquidity are used in a broad sense, to include even the private savings deposits in them. Following Hartwig,²⁶ we have defined liquid assets as cash and deposits in banks including savings deposits which can be converted into cash and demand deposits at short notice. Savings deposits therefore possess a very high degree of moneyness. So increase in the amount of savings deposits can be taken to mean an increase in the total liquidity.

24 A. Zwass (1979). "Money, Banking and Credit in the Soviet Union and Eastern Europe," Eastern European Economics, Vol. 17, pp. 57-77.

25 A. Nove (1979). "Inflation in Communist Countries," in D. Heathfield (ed.). Perspectives of Inflation: Models and Policies.

26 K.H. Hartwig (1983), Soviet Studies, Vol. 35.

Whatever might be the realistic circumstances for the CPEs, (i.e. whether the excessive accumulation of liquidity in these countries is forced or unforced), it is alleged that a sustained increase in the amounts of forced savings for a long period of time would definitely distort the planning processes within socialist economies. So they should always endeavour to keep liquidity generation in control.

Birman²⁷ has particularly pointed out the following evil effects of excessive accumulation of forced savings, endangering their planning processes:

(i) When money becomes cheaper because of excessive liquidity, the aspiration to higher wages becomes a poor stimulus for the growth of output and the redistribution of labour. In many East European socialist economies,²⁸ this becomes crucially important, as their rate of development is falling, raw materials are becoming increasingly expensive, capital formation is being constrained and expected increases in the labour force in the near future are very negligible. These conditions demand a perfect monetary management, suiting their production conditions.

(ii) The colossal surplus of money in the hands of people creates a very powerful pressure on the consumer goods market and in spite of the growth of production and the

27 I. Birman (1980). "The Financial Crisis in the USSR," Soviet Studies, Vol. 32, p.

28 Ibid.

increases of prices, a goods famine may develop and continue to increase.

Also, by paying people more money than the value of goods produced, the Government is practically forced to increase prices, which aggravates the dissatisfaction of the population.

(iii) The existence of a large mass of excess money in the hands of the population creates a number of difficulties in solving many social problems, in particular in equalising the incomes of various groups of the population.

The problem may be excessive creation of money.

These considerations thus demand a rethinking of the policy of repressed inflation, in the light of its repercussions on the stability of monetary system.

Many attempts are being made in this direction.

Hartwig (1983)²⁹ has recently challenged the whole concept of forced savings, in the context of repressed inflation in the CPEs.

He argues that repressed inflation increases transaction costs which leads individuals to increase the proportion of their wealth or income, held in monetary form. The factors causing an increase in transaction costs are the rising prices of goods and services in free markets, the need to bribe to gain access to goods and the need for ready money to be able to take advantage of those consumption

²⁹ Hartwig, K.H. (1983). "Involuntary Liquid Assets in Eastern Europe, Some Critical Remarks," Soviet Studies, Vol. 35.

opportunities which do arise suddenly.

Hartwig thereby claims that in these circumstances, increases in monetary balances are voluntary, representing changes in the equilibrium portfolio of assets held by individuals.

but occasions
by conditions
of repressed
inflation.

Hartwig also refuses to accept queueing as an indication of the shortages of goods associated with repressed inflation. To him, queueing does not indicate that people cannot buy what they wish and therefore cannot spend their money. But queueing only shows that private households evaluate the disutilities of queueing less than the disutilities arising from higher prices in the second economy³⁰ or from paying bribes.

Do?

These remarks of Hartwig have recently been used by Walness (1985)³¹ to develop a theory of the income velocity of circulation of money in CPEs in conditions of repressed and open inflation.

This theory is a theory of demand for money and begins with the quantity theory identity ($MV = PV$ or supply of money = demand for money).

T

In equilibrium, this quantity theory identity ($MV = PV$)

F

³⁰ 'Second Economy' is a term commonly used to indicate illegal and black market activities.

³¹ P.T. Walness (1985). "Inflation in the Consumer Goods Market in Poland, 1971-82," Soviet Studies, Vol. 37, No. 3, pp. 403-416. Similar arguments were put forward by Stevenson and Trevithick (1977) in the context of the effects of British prices and incomes policies.

must hold and in individual assets portfolios, desired money balances must equal actual money balances. The quantity theorists had treated the velocity of circulation of money as a constant in their analysis, as it is very slow to change, given the institutional arrangements for monetary transactions.

But a sustained and anticipated open inflation imposes a negative return on money balances. So under these circumstances the percentage of income (or wealth) held in monetary form declines and the income velocity of circulation of money increases.

On the other hand, repressed inflation tends to increase the percentage of income (or wealth) held in money form and the income velocity tends to decline.

So the fall in the velocity in the short run can be taken to be indicative of repressed inflationary pressures.

Walness has employed this theory to explain the trends in inflation for the Polish economy.³² He has computed the actual measures of income velocity for the Polish economy, for the period 1971-82. His results show a general, though not a consistent, trend for this velocity to fall and for the growth of money supply to outstrip the growth of money incomes in Poland.

The conclusions of Walness' paper are very important. He finds that in overall terms, financial planning has not succeeded in preventing excess demand and official price

Why?
You do not
expect prices to
decline.

How

controls have not succeeded in suppressing inflation in the Polish economy.

why? Thus Hartwig's conclusion that all accumulated money balances within socialist countries are voluntary and consistent with the equilibrium levels of individual assets portfolios, cannot be accepted without reservation. Though Walness has carried out his analysis only for the Polish economy, the circumstances in other CPEs are not very different from those in Poland. How?

Let us consider the Tables 3.5 and 3.6.

From these two Tables, we find that there is a general tendency for the private savings deposits in CPEs to decline in 1970s, when they have allowed their consumer prices to increase quite openly.

This is quite obvious and consistent with the income velocity theory of demand for money, explained earlier.

If Hartwig's position were to be accepted as valid, i.e. if the increasing money balances in CPEs are to be treated as consistent with their equilibrium level, we find no reason to explain the drastic price increases undertaken in CPEs in the middle of 1970s, in the sphere of state retail trade. ? mean

It seems more plausible that the liquidity pressures within CPEs must have grown so rapidly that they have far exceeded their equilibrium levels needed for the stability of the monetary system. This has led CPEs to undertake drastic price increases to mop up the excess demand in the

**Table 3.5 : Consumer Prices - Average Annual Growth Rate
(in Percentages) for CMEA Countries**

Years	Bulgaria ¹	CSSR ¹	GDR ³	Hungary	Poland ²	Romania ³
1961-65	1.2	N.A.	-0.1	0.5	2.2	N.A.
1966-70	0.7	1.9	-0.2	1.0	1.6	0.2
1971-75	0.2	0.1	-0.4	2.8	2.4	0.5
1976-80	4.0	2.1	0.1	6.3	6.8	1.4
1973	0.2	0.3	-0.8	3.4	2.6	0.7
1974	0.5	0.5	-0.5	1.7	6.8	1.1
1975	0.3	0.6	0.1	3.8	3.0	0.2
1976	0.3	0.8	0.0	5.0	4.7	0.6
1977	0.4	1.3	-0.2	3.9	4.9	0.6
1978	1.5	1.6	0.0	4.6	8.7	1.6
1979	4.5	3.9	0.2	8.9	6.7	2.0
1980	14.0 ¹⁾	2.9	0.7	9.2	9.1	2.1
1981	0.4	0.8	0.2	4.6	24.4	2.0
1982 ⁴	0.2	5.8 ⁵	N.A.	6.8	100.2	17.5

1 - State retail price index.

2 - Consumption in wages and salary earners' households.

3 - Retail prices and tariffs.

4 - Provisional.

5 - Estimated.

Source : COMECON Data (1983), Table II/2.32.

Table 3.6 : Private Savings Deposits - Average Annual Growth Rate (in Percentages) at Current Prices for CMEA Countries

Years	Bulgaria	CSSR	GDR	Hungary	Poland ¹	Romania
1961-65	15.1	12.7	12.3	29.8	25.9	-
1966-70	16.0	12.2	10.8	15.6	17.5	-
1971-75	13.7	12.8	7.6	14.1	21.4	-
1976-80	-	6.1	5.8	12.3	10.2	-
1973	16.2	15.2	8.6	13.7	25.9	-
1974	13.2	8.8	7.8	14.2	24.3	-
1975	10.1	8.0	7.3	14.8	16.2	-
1976	7.3	8.9	6.5	14.3	10.3	-
1977	6.6	8.6	7.3	15.8	10.9	-
1978	4.4	4.5	6.9	16.1	10.4	-
1979	-	3.2	5.3	8.7	11.6	-
1980	-	5.4	2.9	7.0	7.9	-
1981	-	5.9	3.2	10.2	34.8	-
1982	-	7.5	-	9.8	30.4	-

1 = With the General Savings Bank and Cooperative Bank.

Source : COMECON Data (1983), Table IV/3.1.

consumption sector and to reduce the disorganizing effects of too much money in private hands.

From Walness' Paper we find that in Poland, in spite of the recent substantial price increases, the money supply growth has continued. This is indicative of future inflationary pressures.

From Table 3.6 we find that the situation of other

CPEs is not qualitatively very different from Poland. The growth rate of their private savings deposits is quite high, even though they have allowed widely open price increases in 1970s. This can be taken to be indicative of the failure of financial planning in controlling the excessive liquidity.

Walness³³ has offered the following explanation for the building up of excessive liquidity in CPEs.

Theoretically, institutional arrangements in the CPEs are such that it appears that money supply within their economies is tightly controlled. There are in fact two money supplies in the CPEs. One circulates in the producer goods market and consists of bank balances of socialised enterprises. This money supply can be used to purchase producer goods but not consumer goods. The second money supply circulates in the consumer goods sector. Though the households are free to spend their incomes and bank balances as they wish the same does not hold true for the enterprises. The banking system is supposed to exercise a considerable control over the spendings from the bank balances of socialised enterprises. The Bank in CPEs is an arm of the Government and forms a part of the system of plan implementation and enforcement. It is the task of this banking system to supervise and check actively whether the expenditures of enterprises are made for authorized purposes. Thus Bank is a State monopoly in CPEs and financial, monetary and credit policies are a matter of central planning.

33 Walness (1985), Soviet Studies, Vol.37, pp.403-416.

However, in practice, the control over the supply of money and credit is not particularly tight and the centralized control and direction of money supply have made money supply endogenous to their economies rather than exogenous.

This is because money supply in CPEs has to be a passive reflection of their planned economic activity.

The process of financial planning makes the money supply accommodate changes in planned economic activity. The banking system is charged with supplying enterprises with credits for fulfilling their production and investment plans. Also, it is charged with supplying cash to cover planned changes in household incomes.

The tools of financial planning used, are the credit plan, cash plan and the balance of household incomes and expenditures.

The financial plans are not binding, i.e. they are not restrictive so far as the credits to producers are concerned. So once a task or project is planned, the banking system is normally bound to supply enough finance to complete it, even if it violates the financial plan and even if final costs are much higher than originally budgeted.

As Kornai³⁴ has pointed out, the producers' budget constraints in CPEs are rather soft, financial discipline over producers is very weak and planning for the supplies

Implication
for inflation?
for repressed
inflation?

Money supply
in a credit
savings deposit
low wages &
prices should
imply low growth
of money
supply and hence
savings deposits

³⁴ Kornai (1979). "Resource Constrained Versus Demand Constrained Systems," *Econometrica*, Vol. 47, No. 4, pp. 801-819.

of money and credit is ineffective. Even the bankruptcy of enterprises does not act as an effective sanction over them, as they are either subsidised from the state budget or re-organized to merge with another profitable enterprises.

This has led to a considerable wastage of financial resources in the CPEs and generated a persistent situation of excess demand in the producer goods market. This can be easily transmitted to the consumer goods market. As a part of this general tendency, it is also observed that often enterprises do pay wages in excess of those actually planned.

All these factors have led to an excessive creation of liquid assets not simultaneously accompanied by sufficient increases in real production. This creation of liquid assets in private hands is so large that even the substantial increases in consumer prices are not sufficient to reduce them to reasonable magnitudes. Besides the faulty financial planning has led to a constantly growing demand for credit and finance, which the banking system has to satisfy in the interests of the fulfilment of planned tasks.

As Walness has argued, this situation points to a weakness of monetary control, in spite of the State monopoly in the banking and the extensive system of financial planning in CPEs.

These countries thus have to introduce many changes in their economic mechanisms which would make their monetary control effective by making money supply exogenous rather than endogenous to their economic functioning.³⁵

35 Walness (1985). Soviet Studies, Vol. 37, No. 3, pp. 403-416.

3.5 Additional Remarks

In this chapter, we have seen that even the highly centralized planned economies are not shielded from inflation, even though their major economic variables such as production, incomes, prices, money supply are all planned and the operational economic mechanisms are supposed to ensure equilibrium.

In fact their policy of stable prices is being challenged on the grounds of economic efficiency and its effectiveness in achieving economic equilibrium.

Reviewing in this chapter, the literature on the meaning and nature of repressed inflation in CPEs, its various manifestations with a special focus on the phenomenon of forced savings which is being increasingly discussed recently, its theoretical implications for the overall output and employment, and the actual position of CPEs with respect to its impact, we now proceed in the next chapter to review the measures of repressed inflation, hitherto devised.

We make an attempt to apply these measures to the Polish and the Bulgarian economies, to get an indication of the impact of repressed inflation, in these countries. This helps us in forming roughly an overall judgement about the policy of repressed inflation, practised in many socialist countries over a long period of time.

CHAPTER IV

MEASUREMENT OF REPRESSED INFLATION

4.1 Introductory Remarks

In this chapter, we give a rough idea of the trends in repressed inflation, over the past few decades for some socialist countries. For this purpose, we have made use of well known indicators of repressed inflation developed by Holzman,¹ as well as our own indicator.

We also give tables showing the annual increases in personal savings and their share in disposable money incomes. As explained in the previous chapter, a continuous rapid growth of these personal savings in socialist countries, is generally considered to be a forced one, i.e. forced by the circumstances of repressed inflation. Therefore, the trends in personal savings help us understand socialist policies with respect to repression of their prices.

We have applied Holzman's indicators and our own indicator only to the Polish and Bulgarian price statistics. This is because, a detailed examination of all East European socialist countries was not practicable; considering the problems such as the availability of relevant price statistics, regularity in their publications, access to their English

¹ Holzman, F., "Soviet Inflationary Pressures, 1928-1957," QJE, Vol. 74, pp. 168-188.

translations and the time constraint. However, we have intentionally chosen Poland and Bulgaria for our purpose, as the trends in repressed inflation within these two countries can be expected to give an average picture of repressed inflation for the East European block as a whole. The reason is that these two countries stand almost at extremes, in their patterns of socialist organization. The Bulgarian economy is largely patterned on the Soviet model and it has retained the basic character of its economy as a centralized administrative system. Bulgaria has retained the collectivization of agriculture with all its orthodoxy, while Poland has decollectivized agriculture. During the reform period, Bulgaria only introduced very mild reforms in its pricing processes. Whereas, Poland, though included in the conservative group for analysing economic reforms, has introduced extreme price flexibility in its price systems. A large number of consumer prices are being freed from state control. Thus, if we compare the average annual growth rates of consumer prices in Poland and Bulgaria over the last few decades, we find Poland at the upper extreme and Bulgaria at the lower one.

4.2 The Nature of Socialist Markets

In all socialist countries, there are generally three markets for consumer goods; the state retail market, the free market and the black market.

In the state retail market (or the socialized trade market) goods are traded at prices fixed by the state. In

the free market (or the collective farm market) goods are traded at prices determined by market forces, but influenced by state policies. Generally, though not universally, the prices of any given set of commodities are higher in the free market than in the state retail market. The supply of commodities to the state market is strictly state determined, whereas the free market supply is dependent upon the prices prevalent in this market as well as the state attitudes toward this market.² In short, in none of these markets are prices and supplies determined entirely by market forces.

The black market is the illegal market, operating outside the sphere of state control. The prices of various goods in this market are substantially high, reflecting the risks and transaction costs involved in acquiring the goods in illegal ways. Hartwig³ interprets the excess expenditures that have to be incurred in the black market to acquire various goods as expenditures reducing the waiting time in the public sector. However, it is very difficult to keep track of the actual prices in the black market at various time periods. Such data would be impossible to obtain.

In the true sense of the term, a repression of prices is measured by the difference between their equilibrium values

² Gardner, R. "Repressed Inflation in the Soviet Union: A Temporary Equilibrium Approach," (November 1979), C.E.P.R.E.M.A.P.

³ Hartwig, K.H. "Involuntary Liquid Assets in Eastern Europe," Soviet Studies (1983), Vol. 35.

(i.e. those determined by the market forces of demand and supply) and their enforced or administered values. But for socialist countries, it is very difficult to find out the equilibrium values of various prices at various times, since prices are hardly allowed to assume their market clearing values (determined by the natural forces of demand and supply). Therefore, following Holzman we have measured the degree of repression in the price level by considering the difference between prices in the state retail market and the free market. The implicit assumption is that free market prices can be taken to be a surrogate for the equilibrium prices that would have obtained had there be no price fixation by the state. This in fact gives an indication of the extent to which prices are allowed to change in the free markets of socialist countries. Following Holzman⁴ we can also interpret it as 'an indicator of the extent to which the state failed to siphon off excess purchasing power from households'.

4.3 Holzman's First Indicator of Repressed Inflation

This indicator is nothing but the numerical difference between the free market price and the State market price of a given commodity, at a given point of time. Though this indicator is based on the difference between the actual prices, we have applied it also to price indices. Since we are going to apply Holzman's indicators to the statistics on price

⁴ Holzman, F. "Soviet Inflationary Pressures, 1928-1957," QJE (1960).

indices, it is better to comment on the weaknesses of such an application, at the outset. This is because, data on individual prices are not available in sufficient detail for the Polish and Bulgarian economies.

In any index number comparison we use relative prices such as p^n/p^o where 'n' stands for the current year and 'o' for some year, taken as a base.

(1) Even when there is only one commodity, the following problem will arise. Let the subscripts 'f' and 's' stand for the free and the state markets respectively.

We want to compare p_f in any one period with p_s in the same period. But by the use of index numbers, what we actually compare is p_f^n/p_f^o and p_s^n/p_s^o . This comparison might give misleading results about the relative magnitudes of p_f^n and p_s^n unless $p_f^o = p_s^o$ (which need not always be true).

(2) When there are many commodities, say n commodities, the general index numbers are of the following type.

$$\frac{\sum_i W_i \frac{p_i^n}{p_i^o}}{\sum_i W_i} \quad \text{where } W_i \text{'s denote the weights.}$$

What we actually want to compare is $(p_f^n)_i$ and $(p_s^n)_i$ or $\sum_i W_i (p_f^n)_i$ and $\sum_i W_i (p_s^n)_i$.

But we have information about

$$\frac{\sum_i W_i^f (p_f^n)_i / (p_f^o)_i}{\sum_i W_i^f} \quad \text{and} \quad \frac{\sum_i W_i^s (p_s^n)_i / (p_s^o)_i}{\sum_i W_i^s} .$$

This comparison will give us misleading results unless the weighting systems for both the markets are identical. This is because, generally in the construction of all index numbers W_i s are determined by the proportion of total expenditure, devoted to a particular commodity or a commodity group. Such weights need not be the same for the free and the state markets.

(3) The weights in index numbers are generally the quantities consumed of various commodities. These weights (W_i) are usually fixed, so they do not allow for the substitution effect. Therefore the index numbers are subject to a systematic bias. When we apply the base year's quantities as weights the index numbers tend to overestimate price changes and with current year's weights, underestimate price changes. Comparisons between State and free markets will be suspect unless this bias is uniform in both markets.

(4) The overall index number is a weighted average of individual prices. There might in fact be some sort of an aggregation bias. Unless this bias is uniform across state and free markets, the comparison of index numbers across state and free markets is suspect.

These are problems for given categories of commodities. A variety of problems may also arise due to the fact that a given commodity group, say "all foodstuffs", may include different commodities for the State market and the free market. This is because all commodities available in the State market are not available in the free market and vice-versa.

Still, we are going to make use of the statistics on price indices, to get a rough idea of the price differentials in the free and the State markets.

In the case of Poland, we have applied this indicator to basic food items, since data on their price indices are regularly published in Poland's statistical year books.⁵ The particular commodity groups considered are as follows:

- (i) All Foodstuffs;
- (ii) Meat and Poultry;
- (iii) Dairy Produce and Eggs;
- (iv) Vegetables, Potatoes and Fruit.

For Bulgaria we have also chosen selected commodities from basic food items for the computation of this indicator. The commodities belong to the following categories:

- (i) Foodgrains;
- (ii) Meat and Eggs;
- (iii) Milk;
- (iv) Vegetables, Potatoes and Fruit.

The period considered for Poland is from 1953 to 1979 and for Bulgaria from 1965 to 1977. The following Tables will give us the indicator of repressed inflation for these economies.

[A] Indicator of repressed inflation based on price indices, for the Polish economy -

$$R_1 = P_F - P_S$$

Where R_1 = measure of repression

P_F = Free market price index

P_S = State market price index.

⁵ Rocznik Statystyczny, various years.

Table 4.1 : R_1 , Using Price Indices for All Foodstuffs, Poland (1955 = 100)

Years	R_1	Years	R_1
1953	-15.90	1967	0.30
1954	-	1968	1.00
1955	0.00	1969	8.10
1956	1.50	1970	1.80
1957	0.10	1971	9.40
1958	-1.50	1972	15.80
1959	4.50	1973	17.50
1960	4.10	1974	41.50
1961	2.60	1975	43.60
1962	16.20	1976	73.20
1963	1.80	1977	87.00
1964	-3.00	1978	108.00
1965	0.80	1979	105.00
1966	-4.40		

Table 4.2 : R_1 , Using Price Indices for Meat and Poultry, Poland (1955=100)

Years	R_1	Years	R_1
1953	-10.70	1967	14.20
1954	-	1968	0.90
1955	0.00	1969	4.30
1956	4.10	1970	5.20
1957	7.40	1971	12.60
1958	12.80	1972	21.70
1959	13.50	1973	26.50
1960	2.10	1974	37.90
1961	0.30	1975	51.70
1962	3.80	1976	83.90
1963	10.30	1977	132.40
1964	15.40	1978	192.60
1965	17.40		

Table 4.3 : R_1 , Using Price Indices for Dairy Produce and Eggs, Poland (1955 = 100)

Years	R_1	Years	R_1
1953	-9.90	1967	-11.50
1954	-	1968	-9.50
1955	0.00	1969	-8.20
1956	1.40	1970	-7.00
1957	-0.90	1971	-2.80
1958	-8.90	1972	-1.10
1959	-10.10	1973	1.80
1960	-12.20	1974	5.80
1961	-12.00	1975	13.30
1962	-10.80	1976	34.90
1963	-7.00	1977	48.80
1964	-12.30	1978	61.00
1965	-13.60	1979	81.00
1966	-13.50		

Table 4.4 : R_1 , Using Price Indices for Vegetables, Potatoes and Fruit, Poland (1955 = 100)

Years	R_1	Years	R_1
1953	-3.80	1967	-9.10
1954	-	1968	-7.80
1955	0.00	1969	-1.20
1956	2.30	1970	-6.50
1957	7.00	1971	3.50
1958	8.30	1972	6.20
1959	5.00	1973	9.80
1960	7.40	1974	36.00
1961	-1.00	1975	32.00
1962	14.50	1976	-
1963	-10.80	1977	-
1964	-10.80	1978	-
1965	-9.10	1979	-
1966	-16.40		

Note: For the years 1976 to 1979, R_1 is not computed on account of the non-availability of relevant price information.

[B] Indicator of Repressed Inflation Based on
Actual Prices, for the Polish Economy

Here, we have computed R_1 for the individual commodities for which the price information was available. These are potatoes, white cabbage, onions, carrots, sweet beet and dessert apples. Thus all commodities are from the group 'vegetables, potatoes and fruit':

$$R_1 = P_F - P_S$$

where R_1 = Measure of repression

P_F = Free market price of a commodity

P_S = State market price of a commodity.

Table 4.5 : R_1 , Using Prices for Potatoes, Poland
(Prices per kg in zlotys)

Years	R_1	Years	R_1
1957	-0.09	1969	-0.23
1958	-0.07	1970	-0.31
1959	-0.16	1971	-0.07
1960	-0.08	1972	0.01
1961	-0.25	1973	0.04
1962	-0.14	1974	0.21
1963	-0.36	1975	0.58
1964	-0.40	1976	0.10
1965	-0.33	1977	-0.08
1966	-0.32	1978	0.17
1967	-0.35	1979	0.03
1968	-0.38		

Table 4.6 : R_1 , Using Prices for White Cabbage, Poland
(Prices per kg in Zlotys)

Years	R_1	Years	R_1
1957	0.25	1969	-0.43
1958	-0.03	1970	-0.09
1959	0.19	1971	0.31
1960	0.13	1972	-0.56
1961	-0.10	1973	-0.01
1962	-0.31	1974	0.46
1963	-0.57	1975	-0.17
1964	-0.47	1976	-0.21
1965	-0.54	1977	-0.68
1966	-0.29	1978	-0.76
1967	-0.12	1979	-0.59
1968	-0.43		

Table 4.7 : R_1 , Using Prices for Onions, Poland
(Prices per kg in Zlotys)

Years	R_1	Years	R_1
1957	0.69	1969	-0.51
1958	0.91	1970	-0.90
1959	0.27	1971	-0.35
1960	0.09	1972	-0.85
1961	-0.11	1973	-0.82
1962	-0.11	1974	0.71
1963	-0.33	1975	0.49
1964	-0.49	1976	0.08
1965	-0.36	1977	-0.25
1966	-0.45	1978	0.83
1967	-0.36	1979	1.91
1968	-0.62		

Table 4.8 : R_1 , Using Prices for Carrots, Poland
(Prices per kg in Zlotys)

Years	R_1	Years	R_1
1957	0.57	1969	0.54
1958	0.32	1970	0.52
1959	-0.13	1971	0.69
1960	0.34	1972	-0.10
1961	0.33	1973	0.66
1962	0.74	1974	1.49
1963	0.55	1975	0.93
1964	0.43	1976	1.78
1965	0.40	1977	1.12
1966	0.59	1978	1.58
1967	0.30	1979	1.18
1968	0.32		

Table 4.9 : R_1 , Using Prices for Sweet Beet, Poland
(Prices per kg in Zlotys)

Years	R_1	Years	R_1
1957	0.34	1969	0.28
1958	0.34	1970	0.49
1959	0.06	1971	0.59
1960	0.21	1972	-0.25
1961	0.52	1973	0.49
1962	0.43	1974	1.25
1963	-0.08	1975	0.83
1964	0.55	1976	1.11
1965	0.18	1977	0.14
1966	0.22	1978	0.25
1967	0.53	1979	0.29
1968	0.41		

Table 4.10 : R_1 , Using Prices for Dessert Apples, Poland
(Prices per kg in Zlotys)

Years	R_1	Years	R_1
1957	-0.31	1969	-1.05
1958	-0.33	1970	-1.05
1959	-0.64	1971	-0.28
1960	-0.24	1972	-1.03
1961	0.51	1973	0.16
1962	-1.43	1974	1.67
1963	-1.10	1975	0.59
1964	-1.54	1976	0.70
1965	-0.16	1977	1.38
1966	-1.83	1978	0.15
1967	-1.16	1979	0.52
1968	-1.43		

[C] Indicator of repressed inflation based on
price indices, for the Bulgarian economy⁶

$$R_1 = P_k - P_s$$

where R_1 = Measure of repression

P_k = The Free market price index

P_s = The State market price index.

⁶ Statisticheski Godishnik Na Narodna Republika Bulgariya, 1978.

Table 4.11 : R_1 , Using Price Indices for Foodstuffs,
Bulgaria (1960 = 100)

Years	Flour	Potatoes	Fresh Fruit	Fresh Green Vege- tables	Milk	Pork	Eggs
	R_1	R_1	R_1	R_1	R_1	R_1	R_1
1965	32.40	66.40	4.40	4.50	4.30	14.10	-10.00
1970	22.20	63.50	5.90	-12.30	3.20	36.50	-10.00
1973	22.50	104.40	7.80	-25.20	12.20	33.30	-13.40
1974	26.30	88.70	3.80	-24.40	9.70	31.60	-18.20
1975	26.50	94.80	2.20	-11.50	33.80	24.30	-20.40
1976	25.30	112.60	7.20	-7.80	28.10	22.90	-22.70
1977	21.80	99.20	12.90	9.50	45.00	22.30	-20.40

[D] Indicator of repressed inflation based on
actual prices, for the Bulgarian economy -

Here, we have computed R_1 for those commodities for which the price information was available. These are ripe peas, potatoes, white wheat flour, grapes, apples, pears, dried plums, green beans, tomatoes, pork, unclarified butter and fresh milk.

$$R_1 = P_k - P_s$$

where R_1 = Measure of repression

P_k = The free market price

P_s = The State market price.

Table 4.12 : R_1 , Using Prices for Foodstuffs, Bulgaria
(Prices per kg or litre in leva)

Commodities	1960 R_1	1965 R_1	1970 R_1	1973 R_1	1974 R_1	1975 R_1	1976 R_1	1977 R_1
Ripe peas	0.06	0.32	0.19	0.37	0.38	0.40	0.40	0.42
Potatoes	0.03	0.12	0.12	0.20	0.18	0.19	0.22	0.21
White wheat flour	-0.15	-0.03	-0.08	-0.08	-0.07	-0.08	-0.07	-0.07
Grapes	0.03	0.03	0.06	0.08	0.13	0.19	0.17	0.22
Apples	0.03	0.07	0.08	0.11	0.05	0.05	0.06	0.05
Pears	0.09	0.17	0.13	0.13	0.15	0.13	0.14	0.17
Dried plums	-0.0;	-	-0.02	0.05	0.19	0.20	0.32	0.36
Green beans	-0.20	-0.08	-0.01	0.05	0.08	0.08	0.10	0.10
Pork	-	0.69	0.81	0.77	0.75	0.67	0.65	0.65
Butter	-0.22	-0.23	-0.41	-0.28	-0.17	-0.12	-0.06	0.03
Fresh milk	0.03	0.06	0.10	0.09	0.07	0.11	0.11	0.10

Findings

(1) For Poland we find that for all foodstuffs, meat and poultry, dairy produce and eggs, and vegetables, fruit and potatoes, the amount of repression has been consistently increasing since 1970. This can be either due to a persistent rise in the prices in the free market or a persistent fall in the prices in the state market or both. But from Table 3.5 (from the previous chapter) we know that the overall average annual growth rate of consumer prices in Poland has been rapidly increasing since 1970. Before that prices were heavily subsidized in Poland, mainly for political reasons. In Poland, the consumer price rise for the period 1976-78 was 18.4 per cent and for 1979 about 6.7 per cent. The freezing of basic foodstuff prices, accompanied by the increases in overall costs and in procurement prices paid to farmers by the State, has resulted in a growth of food subsidies. In 1979, these subsidies totalled more than one quarter of all budgetary expenditures. All these subsidies have created strong pressures on the existing price system in Poland. One-third of all prices in the country are set by the State Price Commission, the rest being in the hands of manufacturers. The recent rapid increase in the annual growth rate of consumer prices in Poland can be explained by the excessive pressures generated by these heavy subsidies in the past.

However, there are some interesting findings also. We find that for all categories there are cases where the state market prices have exceeded their corresponding free market

prices. For the categories such as dairy produce, eggs, vegetables, potatoes and fruit this has happened quite frequently. The main reason for this is that the state market prices once determined, continue to be unchanged for many years. But free market prices, though they get affected by the State's policy toward this market, are also dependent upon market conditions and thus change according to market conditions. This flexibility of free market prices sometimes leads to a lowering of free market prices below their corresponding State market prices. In such situations, we have found negative values for the extent of repression.

During 1945-56 in Poland, the State market prices of most consumer goods were very high and this partly explains the low amounts of repression for all the four categories before 1956. But after that, i.e. during the Gomulka period (1956-1970) there was an emphasis on the improvement of living standards which resulted in policies favouring repressed inflation.

(2) For Bulgaria, the period covered is only from 1965 to 1977, as we were constrained by the information available from Bulgarian statistical yearbooks. However, we observed certain peculiarities with respect to the availability of information on prices, ruling in the State and the free markets. As regards foodgrains, the price statistics on almost all its components were available for the free market. But for the State market, price information was available only for one or two components of foodgrains. For the State

market the price statistics were available for various processed commodities such as bread, rice, salami, canned fish, cheese, chocolates, wines, salt and vegetables and fruit conserves, etc., which were not available for the free market. This tends to indicate that in Bulgaria it might be the case that a majority of the perishable and unprocessed or unrefined commodities are available in the free market and a majority of refined and processed commodities are available in the State market. Whatever the explanation may be, these circumstances have left us with very few commodities for which a comparison between free market and State market prices can be carried out. These are flour and white wheat flour from the category of "foodgrains"; "dairy milk and butter"; pork and eggs from the category of "meat and eggs" and potatoes, fresh fruit, green vegetables, tomatoes, etc., from the category of "vegetables and fruit".

We observe that excepting fresh green vegetables and eggs, the amount of repression is positive and sizable for all commodities for the period under consideration. For fresh green vegetables and eggs, almost for all years, the State market prices have exceeded their corresponding free market prices. This might be due to the low adaptability of the State market to changing circumstances and the relative flexibility of the free market.

A look at the comparisons based on individual prices shows that excepting white wheat flour and butter, the State market prices were consistently lower than their corresponding

free market prices. We also find that since the 1970s, for many commodities the amount of repression has increased. From Table 3.5 in the previous chapter we know that in Bulgaria, since the middle 1970s, the average annual growth rate of consumer prices in the State market has been showing a sizable increase. But the increased amount of repression since then implies that the free market prices must have increased substantially and at a rate faster than that for the State prices.

4.4 Holzman's Second Indicator of Repressed Inflation

Holzman's first indicator merely shows a numerical difference between the State market and the free market prices of the same commodity. However, there is always a limit to the quantity of a commodity available in the State market. When a person wants to consume more than what is available in the State market, he has to pay a higher price for the additional quantity obtained in the free market.

Holzman's second indicator is designed to show the additional expenditure that a person has to incur due to a higher price in the free market, as a proportion of the expenditure which he would have incurred if there had been no limit to the quantity available at the subsidized State market price.

This proportion will be high if the price differential between the State and free markets is high, or the actual quantity purchased in the free market is high, or both.

Thus, Holzman's second indicator shows the disadvantage

of buying in the free market with the help of the price differential weighted by the quantity purchased in the free market.

So,

$$R_2 = \frac{(P_k - P_s) Q_k}{(Q_k + Q_s) P_s}$$

where R_2 = Measure of repression,

P_k = The free market price,

P_s = The State market price,

Q_k = The quantity purchased in the free market,

Q_s = The quantity purchased in the State market.

For the computation of this indicator, we have proceeded as follows:

$$R_2 = \frac{(P_k - P_s) Q_k}{(Q_k + Q_s) P_s}$$

Dividing this by Q_k throughout we get,

$$R_2 = \frac{(P_k - P_s)}{P_s (1 + Q_s/Q_k)} \quad \dots (1)$$

To obtain Q_s/Q_k , we compute first

$$\frac{P_s Q_s}{P_s Q_s + P_k Q_k}$$

as this value is readily obtained from the information available in the statistical year books.

$$\frac{P_s Q_s}{P_s Q_s + P_k Q_k} = \frac{P_s}{P_s + P_k Q_k/Q_s}$$

Given the values of P_s and P_k we can obtain the value of Q_k/Q_s , the reciprocal of which gives us the required value Q_s/Q_k .

By substituting this value in (1) we obtain R_2 .

We have computed R_2 only for the category of 'all foodstuffs' for Poland; since we could not find out the values for ' $P_s Q_s$ ' and ' $P_s Q_s + P_k Q_k$ ' for other categories, from the available statistical year books.

Despite this limitation, this value of R_2 does provide some indication of the extent of repressed inflation.

Table 4.13 : Ratio of Expenditure in the State Market to the Total Expenditure, on All Foodstuffs, Poland

Years	$\frac{P_s Q_s}{P_s Q_s + P_k Q_k}$	Years	$\frac{P_s Q_s}{P_s Q_s + P_k Q_k}$
1955	0.8158	1967	0.8357
1956	0.8238	1968	0.8473
1957	0.81005	1969	0.8325
1958	0.8263	1970	0.8318
1959	0.8309	1971	0.8343
1960	0.8417	1972	0.8388
1961	0.8371	1973	0.8382
1962	0.8419	1974	0.8641
1963	0.8363	1975	0.8594
1964	0.8365	1976	0.8451
1965	0.8394	1977	0.8428
1966	0.8384		

We find from this Table that as regards foodstuffs' consumption in Poland, the bulk is purchased from the State market and only nominal quantities are obtained from the free market. Also, from 1955 to 1977, there have not been any major fluctuations, in this proportion.

Table 4.14 gives the computed values of R_2 .

Table 4.14 : R_2 , Using Price Indices, for All Foodstuffs, Poland

Years	R_2	Years	R_2
1955	0	1967	0.0004
1956	0.002	1968	0.001
1957	0.0001	1969	0.0106
1958	-0.002	1970	0.002
1959	0.006	1971	0.011
1960	0.005	1972	0.018
1961	0.003	1973	0.020
1962	0.018	1974	0.034
1963	0.002	1975	0.037
1964	-0.004	1976	0.059
1965	0.001	1977	0.064
1966	-0.006		

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Note: In order to compute R_2 , we have used the relevant price indices for the State and the free markets (with 1955 = 100), rather than the actual prices.

Findings

We find from Table 4.13 that as regards the 'all foodstuffs' category in Poland, a very low proportion of expenditure on them is being incurred in the free market.

The value of R_2 has been on increase since the 1970s but this is mainly due to a growing discrepancy between the State market and free market prices rather than the increase in expenditures being made in the free market. This is clear from Table 4.13, which shows that the proportions of

expenditures incurred in the free and the State markets have remained more or less constant for the period 1955-1977.

The main reason for the growing discrepancy between the State and the free market prices has been the policy of the State of granting heavy subsidies on foodstuffs, which have kept the State market prices at low levels rigidly for a long period of time.

Till the 1970s there are many fluctuations in the value of R_2 . However, with very few exceptions, the value of R_2 is always positive for all foodstuffs in Poland. This means that almost for all years under consideration, the State market prices for all foodstuffs have been lower than their corresponding free market prices.

4.5 The Ratio Indicator of Repressed Inflation

We have applied this ratio indicator of repressed inflation to Polish and Bulgarian data in order to study the relationship between the rate of change of repression and the rate of change of free market prices and State market prices.

From Holzman's two indicators we can only determine the extent of difference between free market prices and State market prices. But it will be more interesting to know the relative influence on the rate of change of repression, of the rates of change of free market and State

market prices. This would enable one to determine whether the changes in repression depend more on changes in State market prices or on changes in free market prices.

In computing this indicator, we proceed as follows.

$$\text{Let } R_3 = P_F/P_S$$

where P_F = The free market price

P_S = The State market price.

$$\log R_3 = \log P_F - \log P_S$$

$$\therefore \Delta \log R_3 = \Delta \log P_F - \Delta \log P_S$$

$$\therefore \frac{\Delta R_3}{R_3} = \frac{\Delta P_F}{P_F} - \frac{\Delta P_S}{P_S}$$

[A] For Poland, we have computed this indicator by making use of price indices rather than individual prices as the relevant information was not available on individual prices.

Table 4.15 : Ratio Indicator of Repressed Inflation, for All Foodstuffs, Poland

Years	$\Delta P_F/P_F$	$\Delta P_S/P_S$	$\Delta R_3/R_3$
1955-56	0.003	-0.012	0.015
1956-57	0.054	0.068	-0.014
1957-58	0.011	0.026	-0.015
1958-59	0.057	0.002	0.055
1959-60	0.009	0.014	-0.005
1960-61	-0.007	0.006	-0.013
1961-62	0.128	0.017	0.111
1962-63	-0.120	-0.002	-0.118
1963-64	-0.026	0.016	-0.042
1964-65	0.013	0.006	0.033
1965-66	-0.048	-0.002	-0.046
1966-67	0.046	0.005	0.041
1967-68	0.030	0.024	0.006
1968-69	0.074	0.016	0.058
1969-70	-0.025	0.027	-0.052
1971-72	0.040	-0.008	0.048
1972-73	0.020	0.010	0.010
1973-74	0.167	0.015	0.152
1974-75	0.014	0.003	0.011
1975-76	0.177	0.027	0.150
1976-77	0.100	0.058	0.042
1977-78	0.124	0.061	0.063
1978-79	0.037	0.082	-0.045

Note: For the period 1955 to 1979,

i) Correlation Coefficient between $(\frac{\Delta P_F}{P_F}, \frac{\Delta R_3}{R_3}) = 0.92$ ✓

ii) Correlation Coefficient between $(\frac{\Delta P_S}{P_S}, \frac{\Delta R_3}{R_3}) = -0.0096$

Table 4.16 : Ratio Indicator of Repressed Inflation, for
Meat and Poultry Meat, Poland

Years	$\Delta P_F/P_F$	$\Delta P_S/P_S$	$\Delta R_3/R_3$
1955-56	0.041	0.001	0.040
1956-57	0.031	0.000	0.031
1957-58	0.053	0.005	0.048
1958-59	0.072	0.073	-0.001
1959-60	0.035	0.187	-0.102
1960-61	-0.010	0.004	-0.014
1961-62	0.026	0.000	0.026
1962-63	0.047	0.000	0.047
1963-64	0.036	0.000	0.036
1964-65	0.003	0.000	0.003
1965-66	0.010	-0.001	0.011
1966-67	-0.005	0.019	-0.024
1967-68	0.057	0.152	-0.095
1968-69	0.021	0.000	0.021
1969-70	0.016	0.011	0.005
1970-71	0.064	0.021	0.043
1971-72	0.026	-0.030	0.056
1972-73	0.027	0.000	0.027
1973-74	0.062	0.002	0.060
1974-75	0.069	0.000	0.064
1975-76	0.144	0.000	0.144
1976-77	0.184	0.000	0.184
1977-78	0.215	0.056	0.159
1978-79	0.134	0.115	0.019

Note: For the period 1955-79,

1) Correlation Coefficient between $(\frac{\Delta P_F}{P_F}, \frac{\Delta R_3}{R_3}) = 0.7342$

2) Correlation Coefficient between $(\frac{\Delta P_S}{P_S}, \frac{\Delta R_3}{R_3}) = -0.54$

Table 4.17 : Ratio Indicator of Repressed Inflation, for Dairy Produce and Eggs, Poland

Years	$\Delta P_F/P_F$	$\Delta P_S/P_S$	$\Delta R_3/R_3$
1955-56	0.026	0.013	0.013
1956-57	0.050	0.071	-0.021
1957-58	0.020	0.090	-0.070
1958-59	0.032	0.039	-0.007
1959-60	0.006	0.023	-0.017
1960-61	0.002	0.000	0.002
1961-62	0.021	0.009	0.012
1962-63	0.055	0.022	0.033
1963-64	0.012	0.051	-0.039
1964-65	-0.008	0.002	-0.010
1965-66	-0.001	-0.002	0.001
1966-67	0.019	0.003	0.016
1967-68	0.022	0.006	0.016
1968-69	0.012	0.002	0.010
1969-70	0.012	0.003	0.009
1970-71	0.031	-0.001	0.032
1971-72	0.017	0.004	0.013
1972-73	0.020	0.000	0.020
1973-74	0.044	0.017	0.027
1974-75	0.056	0.007	0.049
1975-76	0.158	0.035	0.123
1976-77	0.085	0.016	0.069
1977-78	0.068	0.012	0.056
1978-79	0.095	0.009	0.086

Note: For the period 1955-79,

1) Correlation Coefficient between $(\frac{\Delta P_F}{P_F}, \frac{\Delta R_3}{R_3}) = 0.814$

2) Correlation Coefficient between $(\frac{\Delta P_S}{P_S}, \frac{\Delta R_3}{R_3}) = -0.419$

Table 4.18 : Ratio Indicator of Repressed Inflation, for
Vegetables, Potatoes and Fruit, Poland

Years	$\Delta P_F/P_F$	$\Delta P_S/P_S$	$\Delta R_3/R_3$
1955-56	-0.061	-0.086	0.025
1956-57	0.087	0.042	0.045
1957-58	-0.024	-0.041	0.017
1958-59	0.072	0.111	-0.039
1959-60	-0.036	-0.062	0.026
1960-61	-0.015	0.069	-0.084
1961-62	0.323	0.205	0.118
1962-63	-0.355	-0.144	-0.211
1963-64	-0.101	-0.090	-0.011
1964-65	0.106	0.079	0.027
1965-66	-0.128	-0.043	-0.085
1966-67	0.109	0.026	0.083
1967-68	0.019	0.005	0.014
1968-69	0.152	0.087	0.065
1969-70	-0.076	-0.027	-0.049
1970-71	0.112	0.023	0.084
1971-72	0.063	0.043	0.020
1972-73	0.020	-0.008	0.028
1973-74	0.291	0.138	0.153
1974-75	-0.034	-0.013	-0.021

Note: 1) The rates of change of repressed inflation, the State market and free market price indices are not computed for the period 1975-76 to 1978-79, as the information on the price indices was not available for this period.

2) For the period 1955-75,

$$\text{Correlation Coefficient between } \left(\frac{\Delta P_F}{P_F}, \frac{\Delta R_3}{R_3} \right) = 0.88$$

3) Correlation Coefficient between $\left(\frac{\Delta P_S}{P_S}, \frac{\Delta R_3}{R_3} \right) = 0.60 \rightarrow$ why not

[B] For Bulgaria, we have computed this indicator by making use of the data on individual prices. But since the data are not available uniformly for all years from 1960 to 1977, we could not obtain for all the years, the yearly changes in the rate of repression. Instead figures are sometimes available for groups of years, such as 1960-65, 1965-70 and 1970-73.

The results are given in the following Tables.

Table 4.19 : Ratio Indicator of Repressed Inflation, for Ripe Peas, Bulgaria

Years	$\Delta P_F/P_F$	$\Delta P_S/P_S$	$\Delta R_3/R_3$
1960-65	0.49	0.00	0.49
1965-70	-0.08	0.20	-0.28
1970-73	0.25	0.00	0.25
1973-74	0.01	0.00	0.01
1974-75	0.03	0.00	0.03
1975-76	0.00	0.00	0.00
1976-77	0.02	0.00	0.02

Note: 1) Correlation Coefficient between $(\frac{\Delta P_F}{P_F}, \frac{\Delta R_3}{R_3}) = 0.95$

2) Correlation Coefficient between $(\frac{\Delta P_S}{P_S}, \frac{\Delta R_3}{R_3}) = -0.65$

Table 4.20 : Ratio Indicator of Repressed Inflation, for Potatoes, Bulgaria

Years	$\Delta P_F/P_F$	$\Delta P_S/P_S$	$\Delta R_3/R_3$
1960-65	0.49	0.00	0.49
1965-70	0.12	0.24	-0.12
1970-73	0.33	0.14	0.19
1973-74	-0.09	-0.10	0.01
1974-75	0.06	0.10	-0.04
1975-76	0.08	0.00	0.08
1976-77	0.10	0.27	-0.17

Note: 1) Correlation Coefficient between $(\frac{\Delta P_F}{P_F}, \frac{\Delta R_3}{R_3}) = 0.79$

2) Correlation Coefficient between $(\frac{\Delta P_S}{P_S}, \frac{\Delta R_3}{R_3}) = -0.51$

Table 4.21 : Ratio Indicator of Repressed Inflation, for White Wheat Flour, Bulgaria

Years	$\Delta P_F/P_F$	$\Delta P_S/P_S$	$\Delta R_3/R_3$
1960-65	0.30	0.00	0.30
1965-70	-0.12	0.00	-0.12
1970-73	0.00	0.00	0.00
1973-74	0.03	0.00	0.03
1974-75	-0.03	0.00	-0.03
1975-76	0.03	0.00	0.03
1976-77	0.00	0.00	0.00

Note: 1) Correlation Coefficient between $(\frac{\Delta P_F}{P_F}, \frac{\Delta R_3}{R_3}) = 1.00$

2) Correlation Coefficient between $(\frac{\Delta P_S}{P_S}, \frac{\Delta R_3}{R_3}) = 0.00$

Table 4.22 : Ratio Indicator of Repressed Inflation, for
Grapes, Bulgaria

Years	$\Delta P_F/P_F$	$\Delta P_S/P_S$	$\Delta R_3/R_3$
1960-65	0.12	0.13	-0.01
1965-70	0.17	0.08	0.09
1970-73	0.20	0.18	0.02
1973-74	0.19	0.09	0.10
1974-75	0.13	0.03	0.10
1975-76	-0.03	0.00	-0.03
1976-77	0.12	0.06	0.06

Note: 1) Correlation Coefficient between $(\frac{\Delta P_F}{P_F}, \frac{\Delta R_3}{R_3}) = 0.62$

2) Correlation Coefficient between $(\frac{\Delta P_S}{P_S}, \frac{\Delta R_3}{R_3}) = -0.09$

Table 4.23 : Ratio Indicator of Repressed Inflation, for
Apples, Bulgaria

Years	$\Delta P_F/P_F$	$\Delta P_S/P_S$	$\Delta R_3/R_3$
1960-65	0.10	-0.03	0.13
1965-70	0.00	-0.05	0.05
1970-73	0.30	0.29	0.01
1973-74	-0.10	0.06	-0.16
1974-75	0.02	0.03	-0.01
1975-76	0.08	0.06	0.02
1976-77	-0.03	0.00	-0.03

Note: 1) Correlation Coefficient between $(\frac{\Delta P_F}{P_F}, \frac{\Delta R_3}{R_3}) = 0.49$

2) Correlation Coefficient between $(\frac{\Delta P_S}{P_S}, \frac{\Delta R_3}{R_3}) = -0.21$

Table 4.24 : Ratio Indicator of Repressed Inflation for
Pears, Bulgaria

Years	$\Delta P_F/P_F$	$\Delta P_S/P_S$	$\Delta R_3/R_3$
1960-65	0.26	0.00	0.26
1965-70	-0.09	0.05	-0.14
1970-73	0.12	0.19	-0.07
1973-74	0.10	0.08	0.02
1974-75	-0.05	0.00	-0.05
1975-76	0.08	0.08	0.00
1976-77	0.02	-0.08	0.10

Note: 1) Correlation Coefficient between $(\frac{\Delta P_F}{P_F}, \frac{\Delta R_3}{R_3}) = 0.77$

2) Correlation Coefficient between $(\frac{\Delta P_S}{P_S}, \frac{\Delta R_3}{R_3}) = -0.48$

Table 4.25 : Ratio Indicator of Repressed Inflation for
Dried Plums, Bulgaria

Years	$\Delta P_F/P_F$	$\Delta P_S/P_S$	$\Delta R_3/R_3$
1960-65	0.23	0.00	0.23
1965-70	-0.03	0.22	-0.25
1970-73	0.06	-0.03	0.09
1973-74	0.18	0.04	0.14
1974-75	0.01	0.00	0.01
1975-76	0.12	0.01	0.11
1976-77	0.00	-0.04	0.04

Note: 1) Correlation Coefficient between $(\frac{\Delta P_F}{P_F}, \frac{\Delta R_3}{R_3}) = 0.83$

2) Correlation Coefficient between $(\frac{\Delta P_S}{P_S}, \frac{\Delta R_3}{R_3}) = -0.78$

Table 4.26 : Ratio Indicator of Repressed Inflation for
Green Beans, Bulgaria

Years	$\Delta P_F/P_F$	$\Delta P_S/P_S$	$\Delta R_3/R_3$
1960-65	0.46	0.00	0.46
1965-70	0.18	0.00	0.18
1970-73	0.16	0.00	0.16
1973-74	0.07	0.00	0.07
1974-75	0.00	0.00	0.00
1975-76	0.04	0.00	0.04
1976-77	0.44	0.00	0.00

Note: 1) Correlation Coefficient between $(\frac{\Delta P_F}{P_F}, \frac{\Delta R_3}{R_3}) = 1.00$

2) Correlation Coefficient between $(\frac{\Delta P_S}{P_S}, \frac{\Delta R_3}{R_3}) = 0.00$

Table 4.27 : Ratio Indicator of Repressed Inflation for Pork,
Bulgaria

Years	$\Delta P_F/P_F$	$\Delta P_S/P_S$	$\Delta R_3/R_3$
1960-65	0.13	0.00	0.13
1965-70	-0.02	-0.28	0.26
1970-73	-0.03	0.00	-0.03
1973-74	-0.02	0.00	-0.02
1974-75	-0.07	0.00	-0.07
1975-76	-0.02	0.00	-0.02
1976-77	0.00	0.00	0.00

Note: 1) Correlation Coefficient between $(\frac{\Delta P_F}{P_F}, \frac{\Delta R_3}{R_3}) = 0.44$

2) Correlation Coefficient between $(\frac{\Delta P_S}{P_S}, \frac{\Delta R_3}{R_3}) = -0.84$

Table 4.28 : Ratio Indicator of Repressed Inflation for Unclarified Butter, Bulgaria

Years	$\Delta P_F/P_F$	$\Delta P_S/P_S$	$\Delta R_3/R_3$
1960-65	0.36	0.34	0.02
1965-70	0.07	0.11	-0.04
1970-73	0.03	0.00	0.03
1973-74	0.03	0.00	0.03
1974-75	0.02	0.00	0.02
1975-76	0.01	0.00	0.01
1976-77	0.01	0.00	0.01

Note: 1) Correlation Coefficient between $(\frac{\Delta P_F}{P_F}, \frac{\Delta R_3}{R_3}) = 0.04$

2) Correlation Coefficient between $(\frac{\Delta P_S}{P_S}, \frac{\Delta R_3}{R_3}) = -0.15$

Table 4.29 : Ratio Indicator of Repressed Inflation for Fresh Milk, Bulgaria

Years	$\Delta P_F/P_F$	$\Delta P_S/P_S$	$\Delta R_3/R_3$
1960-65	0.14	0.04	0.10
1965-70	0.25	0.18	0.07
1970-73	-0.02	0.00	-0.02
1973-74	-0.05	0.00	-0.05
1974-75	0.10	0.00	0.10
1975-76	0.00	0.00	0.00
1976-77	-0.03	0.00	-0.03

Note: 1) Correlation Coefficient between $(\frac{\Delta P_F}{P_F}, \frac{\Delta R_3}{R_3}) = 0.84$

2) Correlation Coefficient between $(\frac{\Delta P_S}{P_S}, \frac{\Delta R_3}{R_3}) = 0.44$

Findings

For both Poland and Bulgaria we find that almost for all commodity groups/commodities, the rate of change of repression is positively correlated with the rate of change of free market prices (or price indices) and negatively correlated with the rate of change of state market prices (or price indices). This is quite obvious, as we are measuring repression of prices in the State markets, so the repression increases with the increase in the free market prices or the decrease in the State market prices or both, and vice-versa.

In case of Poland we find that as regards all foodstuffs there is a high correlation between the free market price indices and the degree of repression, but almost no or low correlation between the rate of change of state market price indices and the degree of repression. Thus for all foodstuffs, the forces of changes in free market prices have a stronger influence on repressed inflation, than the forces of change in state market prices. The same conclusion holds good for meat and poultry meat products as well as dairy produce and eggs. However, with these latter categories, the correlation between the rate of change of state market prices and the degree of repression is not very low, as with the category of all foodstuffs.

For vegetables, potatoes and fruit we find that though the relative influence of changes in free market prices is

more than that of changes in state market prices, the difference is not much. Also for this category, there is a positive correlation between the rate of change of State market prices and the degree of repression.

This implies that the rate of increase of free market prices has been so high that the difference between these prices and State market prices has gone on rising despite the continuous increase in the State market prices.

For Bulgaria, we have considered various individual commodities. In the case of a majority of these (i.e. ripe peas, potatoes, white wheat flour, grapes, pears, dried plums, green beans and fresh milk) the rate of change of repression of their prices is highly correlated with the rate of change of free market prices. This is not the case only with unclarified butter and pork. Also, excepting fresh milk, for all the commodities there is a negative correlation between the rate of change of State market prices and the rate of change of repression.

In Bulgaria, in the case of many important food items, the prices in the State market are so rigidly fixed that for many years the rate of change in them has been close to zero, e.g. ripe peas, white wheat flour, green beans, pork, unclarified butter and fresh milk. The situation does not seem to have changed after the middle of the 1970s. So the rate of change of repression has depended more on the rate of change of free market prices.

For some commodities such as pork, the rate of change of free market prices has been negative and the rate of change of State market prices has been stationary which has resulted in a decrease in the rate of repression gradually.

Thus the overall conclusion is that for both Poland and Bulgaria, in the sphere of foodstuffs, the degree of repression of prices is governed mainly by the changes in free market prices, while State market prices show no sizable change.

4.6 Indication of Repressed Inflation in Terms of Monetary Savings

Personal monetary savings of the population represent a part of money incomes, which is not used for current consumption of goods and services. In East Europe, most of these savings are deposited in savings banks and other financial institutions.

The most noteworthy feature of these monetary savings of socialist countries is their continuous fast growth during the 1970s and early 1980s.

Savings deposits,⁷ which constitute the major part of monetary savings of the population, rose in absolute terms by between twofold in the GDR and ninefold in Poland. Even though there are inter-country differences, in all East European countries, they grew faster than money incomes.

7 "Economic Survey of Europe in 1984-85", United Nations.

8 Ibid.

Another important finding is that their rates of growth in the second half of the 1970s were lower than in the first. This deceleration has continued in the early 1980s, especially in the GDR, Hungary and the Soviet Union, but was reversed in some other countries.

There was not merely an absolute increase in the savings deposits but also an increase in the number of deposit accounts as well as in their average size.

Available data, as given in the following Tables, suggest that: (i) In Czechoslovakia the number of deposits accounts rose by one-third and the average size of accounts by about 80 per cent. (ii) In the Soviet Union the corresponding increments were 80 and 90 per cent. (iii) In Bulgaria, the number of deposits accounts grew by only 10 per cent but there was a substantial increase in the average size of accounts which rose by one and a half times. (iv) Available information also suggests that in some countries of the region the size of personal savings deposits rose faster in rural than in urban areas.

'The Economic Survey of Europe in 1984-85' gives the following Tables, depicting the changes in savings deposits and money incomes, changes in deposit accounts and savings deposits, etc.

From Table 4.30 we find that for Bulgaria, Czechoslovakia and the GDR the rate of increase in savings deposits during 1971-75 is so large, that it is almost equal to the

Table 4.30 : Average Annual Percentage Change in Savings Deposits and Money Incomes for Some CMEA Countries

Countries	Savings Deposits				Money Incomes	
	1971-83	1971-75	1976-80	1981-83	1971-83	1981-83
Bulgaria	9.6	14.3	6.3	7.5	-	-
Czechoslovakia	8.8	12.8	6.0	7.0	4.4	1.9
GDR	6.1	7.7	5.8	4.2	4.3	2.7
Hungary	12.6	14.1	12.3	10.7	8.4	7.9
Poland	18.6	21.4	10.3	29.0	17.9	38.5
Soviet Union	11.2	14.3	11.4	6.0	5.3	4.1

Table 4.31 : Changes in Deposit Accounts and Savings Deposits for Some CMEA Countries

Countries	Number of Deposit Accounts (in millions)		Average size of Deposit Accounts *(n.c.u.)		Savings Deposits (billions of *n.c.u.)	
	1970	1980	1970	1980	1970	1980
Bulgaria	7.9	8.8	494	1170	-	-
Czechoslovakia	13.6	18.1	4698	8613	-	-
Hungary	-	-	-	-	42.1	145.3
Soviet Union	80.1	142.1	583	1103	46.6	156.7

* national currency units.

sum of the rates of increase during the periods 1976-80 and 1981-83. This high rate of increase of savings deposits for 1971-75 mainly explains the overall high rate of increase of savings deposits for the entire period 1971-83.

For Hungary and Poland, the rates of increase of savings deposits are substantially high for all the three periods, i.e. 1971-75, 1976-80 and 1981-83.

For the Soviet Union this rate is high during 1971-75 and 1976-80 but has fallen down during 1981-83.

When we compare this rate of increase of savings deposits with the rate of growth of money incomes, we find that uniformly for all countries (except Bulgaria for which the rate of growth of money incomes during 1971-83 is not available), the rate of increase of savings deposits has outstripped the rate of growth of money incomes considerably during the period 1971-83. We are therefore tempted to conclude that for East European countries, growth of money incomes is probably not the only factor explaining the fast growth of their savings deposits but many other compelling factors such as the shortages of consumer goods, absence of consumer sovereignty, etc., should also be taken into account while explaining the phenomenon

From Table 4.31 it becomes clear that not merely is the average size of deposit accounts expanding, but so is the number of total deposit accounts for countries such as Bulgaria, Czechoslovakia and the Soviet Union. For Hungary

there has been a sizable increase in the number of savings deposits within ten years.

All these considerations make it difficult to accept Hartwig's reasoning that the excess liquidity accumulation in socialist countries is nothing but a provision against transaction costs associated with repressed inflation, or that the balances are maintained for speculative purposes.

Because, if there was an excessive accumulation of liquid balances due to an excess demand for money, i.e. plain cash the demand for savings deposits would have fallen rather than increased. It is visible that in socialist countries the accumulation of money balances is manifesting itself in savings deposits rather than merely in hoardings or plain demand deposits. At least a part of this increase must be due to the circumstances of repressed inflation.

'Economic Survey of Europe, 1971'⁹ had made use of the concept of marginal propensity to save to indicate the tendency towards increasing savings, for socialist countries.

The marginal propensity to save or mps here is the ratio of the increase in savings deposits to the combined increase of savings deposits and retail sales.

In 1970, in the GDR and Bulgaria the propensity to save was much higher than in any other socialist country, and the savings ratio in both the countries was nearly 0.6.

9 Economic Survey of Europe, 1971, Chapter 2, Part II.

The mps was about 0.3 in Poland and Hungary, somewhat less than 0.4 in the Soviet Union and more than 0.5 in Czechoslovakia where substantial amounts of cash holdings were channelled into savings deposits.

To form an idea about the actual increase in savings of all socialist countries in the later part of the 1970s and the early 1980s we reproduce the following Table from 'Money Income of the Population and Standard of Living in Eastern Europe, 1970-1982'.¹⁰

Table 4.32 : Annual Increases in Personal Savings Given as the Percentages of Personal Disposable Money Income, for Some CMEA Countries

Years	Bulgaria	Czecho- slovakia	GDR	Hungary	Poland	Romania
1970	8.7	5.4	6.0	5.7	2.5	n.a.
1971	8.9	6.0	4.9	4.8	5.1	n.a.
1972	10.5	6.5	6.5	4.2	7.0	n.a.
1973	11.6	6.9	6.4	5.0	8.7	n.a.
1974	10.2	4.3	6.0	5.4	8.9	3.2
1975	8.0	4.3	6.0	6.0	7.3	4.8
1976	6.3	5.1	5.3	5.7	5.2	4.6
1977	5.0	5.4	6.5	6.6	4.6	5.6
1978	3.3	3.0	6.2	7.2	5.0	6.7
1979	7.1	2.6	4.9	4.7	5.6	5.8
1980	5.7	3.6	2.6	4.3	6.0	6.0
1981	5.3	3.7	2.9	5.9	14.3	5.1
1982	5.2	5.0	3.0	5.4	12.2	1.7

This Table does not exactly give the mps for East European countries, but gives instead the ratio of the change

¹⁰ Occasional Paper No.78 of the "Research Project on National Income in East Central Europe", by Alton, Badach, Bass, etc.

in monetary savings to the total personal disposable income. It should be noted that the denominator of this ratio is more than the total savings plus retail sales. However, from Table 4.32 it is clear that the proportion of personal savings in the total disposable money income has been consistently increasing in the first half of the 1970s, for most of the countries. But it has been decreasing somewhat in the later half of the 1970s. This is quite consistent with our previous findings based on other indicators of repressed inflation, that the prices of many important consumables have been increasing even in the State market since 1975-76. Thus, an increasing proportion of savings is being withdrawn to cope up with the situation of overall rising prices since 1975-76.

4.7 Conclusion

As stated earlier, our conclusions of this chapter will be drawn for all the East European countries, even though some indicators of repressed inflation were applied to only two countries of the East European block.

We will try to synthesize the conclusions regarding repressed inflation (derived for Bulgaria and Poland from the first few indicators) and the conclusions derived for all East European countries, from the savings indicators, in the following remarks.

Remarks

In the initial stages of the building up of the socialist economies, in most of these countries the policy

of repressed inflation as a welfare measure was not very popular. This was a phase of comparatively high prices for them. This existed approximately before 1955-56. However, when the measure of repressing prices started to receive growing acceptance as a necessary step for improving the living standards, the phase of low retail prices began. The prices were consistently maintained at their low levels in the State market, even though their free market counterparts were rising. This phase lasted for a very long time, covering almost two decades (i.e. roughly from 1955 to 1975). The retail prices had to be kept low for both social as well as political reasons. Any attempts at increasing price levels in the State markets were resisted strongly by rioting or violent outbursts. During this phase, various disequilibria in the markets due to non-matching of supply and demand for individual commodities, gave rise to an overall chronic disequilibrium, which in turn resulted in growing budgetary deficits. Inefficient prices gave incorrect signals to producers and affected production adversely. The separation of domestic from foreign prices, led to an imperfect reflection of production conditions on the world market and ruined the balance of payments position of these countries. Unsatisfied consumer demands and the suppression of consumer sovereignty led to the building up of excessive cash balances and savings, which disturbed monetary management.

|| How claimed ?

|| How claimed ?

These disequilibrating effects of subsidizing heavily

consumables forced these countries to ultimately undertake price increases around 1975-76. These have continued since then and have resulted in a siphoning off the excessive accumulation of personal savings and cash balances of the population.

However the values of our indicators of repressed inflation have been increasing consistently since 1970, as free market prices have also been rising continuously and at a rate faster than that in the State market. This is evident of the overall increase of consumer prices in the socialist countries. .

Relative weights of free markets and state markets?

Further, since the time period for which these indicators of repressed inflation are considered covers mainly the phase of low and fixed prices in the State market, the rate of change of repression has remained more dependent on the rate of change of free market prices than the State market prices. [These conclusions however apply to various CPEs in differing degrees.] Given these empirical findings, in the next chapter we summarize the overall conclusions of our dissertation.

CHAPTER V

CONCLUDING REMARKS

In this dissertation, we have mainly brought into focus the gradual changes in the attitudes of the CPEs of Eastern Europe towards the phenomenon of repressed inflation.

As explained in the first chapter, full employment and stable prices are the important requirements of their welfare maximization policy. These are needed for the establishment of a just society, in which everyone is assured of a minimum standard of living. As the inflationary process has a lot of potential for distributive injustice and involves the adulteration of the value of money, it is both socially and economically undesirable. Also, unstable prices introduce an element of uncertainty into the planning process and thus constitute an obstacle in the way of achieving planned results. To avoid the adverse repercussions of inflation and price instability, all the CPEs of Eastern Europe had applied extremely rigid and heavy controls on the prices of a majority of consumables and thus forcibly maintained the prices at low levels, for many years. This phase can be described as one of repressed inflation and it existed in all the CPEs of Eastern Europe except Yugoslavia roughly for two decades.

It is well accepted that though the CPEs of Eastern

Europe progressed reasonably well during this phase, they suffered severely from a chronic disequilibrium. To quote Adam Zwass,¹ "Long years of experience have demonstrated without doubt that, although price rises may be smaller in the planned economies than in the market economies, the former have not been any more successful in achieving equilibrium. The State has a greater influence in the economic process and therefore may be able to disguise disequilibrium in different forms, but its impact on the population is just as great."

Before arriving at the final conclusions of this dissertation it is better to give a brief idea of the nature of disequilibrium,² which the CPEs of Eastern Europe are faced with. If we consider Hungary, GDR and Czechoslovakia, we generally get an impression that the shops in these CPEs are generally well stocked, necessities remain cheap and workers enjoy a lot of economic security. But the underlying trends in these economies are exhibiting alarming features. They owe heavy debts to the West and the 'Balance of Payments' (BOP) deficits make repayment of these loans difficult. All three countries face acute energy shortages, agricultural and food supplies are scarcely keeping up with demand, parti-

1 Zwass, A. (1978-79). "Money, Banking and Credit in the Soviet Union and Eastern Europe," Eastern European Economics, Vol. 17.

2 This is discussed with the help of 'The Countries of the World (and Their Leaders)', Year Book 1984; and 'World View' (1983).

cularly at the heavily subsidized prices. Behind all these difficulties lies the failure of industry to compete in productivity and quality with capitalist corporations, hence trade deficits and loan repayment problems become intensified.

Romania is one of the less developed countries of Europe. In fact, it has sustained one of the highest annual GNP growth rates in post-war Europe. However, its growth rates declined in the late 1970s and fell close to zero in real terms in the early 1980s. Like other CPEs most of its initial increase in 'National Income' came from industrial growth. This resulted in emphasis on investment at the expense of consumption. However, this investment involved increased use of agricultural raw materials for industry, large imports of advanced technology and equipment from Western capitalist countries and heavy borrowings from the West. But these resulted in many types of disequilibrium such as heavy external debts and trade deficits, acute food shortages and strict quantity rationing, bottlenecks in the supplies of essential raw materials, etc. It has also failed in the competition in production and quality with Western capitalist countries.

Poland has become an important industrial country since World War II. It had many spectacular achievements during the 1970s such as the establishment of many new industries, high indices of gross production, etc. But the Polish economic system has not been able to meet all the demands of its consumers. Basic commodities such as clothing, food and

most household appliances are not available in sufficient quantities. Substantial price increases undertaken in the later half of the 1970s have placed many products, even some rationed items, out of reach of the average consumer. There is a severe problem of getting low rent apartments. Also, due to lop-sided industrial development the conflicts between town and country are on the increase. There is a destruction of domestic markets and its debt to Western countries is the highest among all the CPEs. Recently, its growth rates of production have also been falling. In January 1982 it had dropped by 13.6 per cent, compared to January 1981 and by 17.5 per cent compared to December 1981.

As regards Bulgaria, the problems are not so severe as it has the best relations with the USSR, of all the East European economies. It receives from the USSR technical assistance, supplies of raw materials at subsidized price, large credits, etc. However, it has also been experiencing a fall in its annual growth rates and has held responsible for this, the highly centralized type of planning system. Recently, attempts have been renewed to decentralize the economic planning and decision-making process under the 'New Economic Mechanism' and its major focus was on the economic accountability of each enterprise, gradual withdrawal of subsidies, linking of wages with production, etc.

Thus, we find that the CPEs have never been successful in attaining a full economic equilibrium. It is obvious, that the fixed price system cannot alone be responsible for

this. Factors such as the mistakes in planning, unfulfilment of planned targets are equally important. But there is no doubt that the fixed price system and CPE-enterprise-incentives are together a most powerful obstacle to their economic progress. The fixed price system gradually loses its economic content and disproportionately reflects the values. This has an extremely undesirable effect on the growth of production, maintenance of essential resources and innovative investments. The hallmark of the period of repressed inflation was chronic scarcity and an unbridgeable gap between supply and demand. Portes³ says that these countries' desire to import Western technology to bring about advancement in production and the difficulty they have in diffusing it once they get it, are sufficient evidence of the unhealthy production and investment atmosphere created by the fixed price system and CPE-enterprise-incentives.

Today the rigidity and the irrationalities of the fixed price system are being increasingly blamed. Many economists are coming up with new price proposals for these socialist countries, which are put forward with a view to rationalize the existing price structures so that they might reflect social cost perfectly and conform to socialist ideals (see Chapter II). In fact the price debate in these CPEs was the obvious consequence of their growing realization

³ Portes, R. 'The Control of Inflation - Lessons from East European Experience' (1976), CES, U.K.

about the irrationalities associated with their operational price structures. We find that the change in their economic strategy from extensive growth to intensive growth one, did induce them to undertake price reforms in varying degrees in 1960s itself. But these reforms did not bring about any qualitative change in their fixed pricing policies, until late 1970s (see Chapter II and Chapter III).

Also, it can hardly be said that during the regime of fixed prices, the inflationary manifestations were completely absent from the CPEs of Eastern Europe. There are a number of costs associated with maintaining fixed prices in conditions of excess demand such as long queues, shortages, forced purchases, black marketeering, neglect of consumer preferences, quality declines, forced savings, disincentive effects on labour supply, etc., which are regarded as socialist forms of inflation. These are as serious and disequilibrating as the effects of open inflation (see Chapter III).

However, we find from the tables on average annual increase of consumer prices (Chapter III) and the indicators of repressed inflation (Chapter IV) that there are substantial increases in both the State and the free market consumer prices of these CPEs around 1975-76. The process of increasing prices itself has begun roughly around the 1970 itself and has continued consistently since then. It is demonstrated by many economists that this step was necessitated by the enormous accumulation of liquid assets and excessive demand pressures within the CPEs.

We find that problems such as excessive generation of liquidity, shortages of consumer and producer goods are still very acute in the CPEs. A chronic disequilibrium is revealed by consistent deficits in the State budgets and the BOPs. Faulty financial planning and weak control over entrepreneurial activity have resulted in an ever-growing demand for bank loans and budgetary grants. All these factors are symptomatic of future open inflationary pressures.

Now considering these aspects of the operational price mechanisms of the CPEs, we arrive at the following final conclusions.

(i) Inflation has been inherent in the planned economies of East Europe. Even when they were highly centralized they could not shield themselves from inflation completely. The only thing they could do was to disguise its usual manifestations by exercising State control in the economic process.

It is said that the main reason for the occurrence of inflationary tendencies in the CPEs is their growth strategy that gave precedence to investment in heavy industry and defence at the expense of the consumption sector.

(ii) The CPEs of East Europe definitely seem to be moving away from their initial extreme position with respect to repressed inflation, i.e. the maintenance of fixed prices and the carrying out of planning decisions solely in physical terms, using non-price data. Even though this is a very slow process it is evident that they have realized the importance

of short term equilibrium prices for the steady growth of their economies.

(iii) From the actual experience of the CPEs we find that a rational price system does require price flexibility to a certain extent and this is a necessity of any dynamic economy. The disequilibrating effects of maintaining fixed prices are as undesirable as that of an inflationary spiral, and both endanger the long-run prospects for economic growth.

Also, price flexibility can be introduced without sacrificing the control of inflation. For the CPEs, the mechanisms of inflation-control are embedded in the entire structure of the central planning system. More flexible prices no doubt will require even larger bureaucracy, administrative costs, etc. But these should be tolerated in the interests of economic rationality.

Today, we find that such price flexibility is introduced in each socialist country to a certain extent (see Chapter I). Hungary has gone far in this direction and has re-established some of the structural relations, characteristic of a mixed economy.

(iv) The future prospects for the continuation of the rigid policy of repressed inflation seem to be extremely weak for these CPEs. From our previous discussion, we know that the symptoms of future inflationary pressures are quite certain in these CPEs and if they try to repress them any more, they would be led to a financial crisis. Even the

substantial price increases have not been able to absorb the excess money generated within their economies. They will require many years to cure the monetary disequilibrium and they will have to do it with the help of a rational price system. Also, to cure the trade deficits and restore the BOPs equilibrium, they will have to eliminate the separation of domestic prices from foreign prices and this can never be achieved with the help of rigid domestic prices.

However, they will have to devise new mechanisms for controlling prices, in the framework of price flexibility. This constitutes a big challenge for them, as in many of these CPEs the real components of growth are showing a poor response. For instance, in many CPEs raw materials have become extremely expensive, capital formation has slowed down and the flow of labour services is falling rapidly. All these factors have tremendous inflationary potential.

All these CPEs are subject to adverse forces operating in world markets which imply a strong possibility of imported inflation. For instance, rising oil prices, sharp changes in the terms of trade between primary products and manufactures, the upward trends in the prices of industrial goods produced by advanced capitalist countries, etc. But these are not applicable only to the CPEs of East Europe but also to many Western mixed economies. A lot can be done towards reducing the impact of world inflation on their domestic economies, as weapons such as the revaluing of their

currencies are always handy and the planning of investment and Government consumption along with a variety of monetary techniques could be used in preventing this from resulting in an inflationary spiral.

But inflation control should not be taken to mean the maintenance of fixed prices.

(v) It is now well established that the market clearing or equilibrium prices alone can reflect perfectly production conditions and consumer preferences and stimulate the growth process in socially desirably directions. However it is very difficult to arrive at them rationally, especially in socialist economies, which want to enforce social preferences consistently and avoid distributional injustice, inherent in the autonomous functioning of market forces. As said earlier, this would involve a lot of administrative costs and bureaucratization, at least in the initial stages. But these should be weighed against the economic and social costs inherent in the policy of fixed prices.

In fact, in order to analyse the impact of repressed inflation on long-term output and employment, it is necessary to investigate empirically for some CMEA country its effects on savings behaviour and labour supply behaviour in a systematic manner through expectations about future availability of consumables and their prices, and then make a final judgement about the costs inherent in it. This is because some economists are of the view that it is still easier to enforce

social preferences and control real variables under repressed inflation than under open inflation.

The comparative analysis of open and repressed inflation in the same theoretical framework is needed to arrive at any firm judgement about their relative superiority vis-a-vis each other.

This would constitute a possible direction of further research in the area of repressed inflation.

APPENDIX

THE WELFARE ASPECTS OF REPRESSED INFLATION

This dissertation has mainly dealt with the empirical effects of repressed inflation, viewed mostly at the macro level. We have not talked about the welfare effects of repressed inflation at all, by analysing the effects of repressed inflation in terms of the utility functions of the various members of a given society. However, it is very important to evaluate a policy of repressed inflation, in the last resort, in terms of its impact on social or individual welfare, since it is recommended as a part of welfare maximization policy.

In this Appendix, we tentatively consider this aspect of repressed inflation and our exercise is merely meant to be illustrative.

The indicators of repressed inflation that we employed in the fourth chapter were essentially monetary indicators. Their purpose was to highlight in monetary terms, the gain due to subsidized prices in the State market. One of them specifically measured directly the excess money that had to be paid in the free market, when the prices in the State market were heavily repressed. This in some sense represented a monetary gain to all those, who made their purchases from the State market at subsidized prices and thus did not lose

anything on account of the high prices prevailing in the free market. However, this monetary gain cannot be taken to mean a gain in welfare, unless the utility functions of all consumers are linear in money. And this linearity of utility functions in money need not always be the case. Therefore, before talking about the welfare aspects of repressed inflation, one has to introduce some notion of a utility function, which won't necessarily be subject to severe restrictions like linearity in money.

In this discussion, we begin by postulating a specific utility function. This can be interpreted as: (i) A social welfare function for society; or (ii) A utility function for both individuals and society, under the assumption that all members of the society have the same utility function; or (iii) A utility function for any arbitrary consumer.

We deliberately choose not to specify which of these interpretations is meant, since it can be applied both to an individual as well as to society. However, in further discussions, for the sake of convenience we have made references to an individual consumer.

This discussion will be entirely in theoretical terms, without making any reference to empirical data. Also, the choice of the utility function is arbitrary, since the purpose of this exercise is illustrative.

We now begin by considering the following simple case.

Suppose that a consumer is faced with the problem of determining the optimum consumption levels of two commodities,

X_1 and X_2 . These two commodities are supposed to exhaust his entire budget. This implies the condition of non-satiation or that the two commodities have positive marginal utilities, throughout.

We further suppose that the commodity X_1 is available only in the State market whereas the commodity X_2 is available in both the State and the free markets. Also, there is an upper limit to the quantity of X_2 , purchaseable from the State market. Let us call this quantity as X_2^S . Let P_1 be the State market price of commodity X_1 and P_2' and P_2'' respectively be the State and the free market prices of commodity X_2 ; where $P_2' < P_2''$.

There are certain costs associated with purchases from the State and the free markets. These costs can be of various types. As regards the State market, from our discussion in the previous chapters we know that the imposed subsidization of prices has a variety of effects such as degraded qualities, queues, elimination of customary discounts or special sales, in the State market. Apart from these, there are many other types of variable costs that go on increasing with the amounts of different commodities bought from the State market. We subsume all these different costs under the single heading of 'transaction costs' for the State market.

Similarly, there are costs associated with purchases from the free market. For instance, information costs, bribes, etc.

We therefore define the following two functions of transaction costs, relevant for the State and the free markets respectively.

These are very important in deciding ultimately the potential for welfare gain under repressed inflation. Before defining these transaction costs functions, we would like to comment on one simplification, which is made for the ease of computation. We have assumed that the transaction costs associated with the purchases of X_1 and X_2 from the State market are of identical form. This need not be very realistic, but as is obvious the nature of the results are not affected if this assumption is not made.

Consider the following functions.

$$(i) \quad C^S = R_1 + c(X^S)$$

$$(ii) \quad C^f = R_2 + d(X_2^f)$$

where C^S and C^f stand for the total transaction costs associated with purchases from the State and the free markets respectively.

R_1 - the fixed cost element, of total transaction costs associated with purchases of both X_1 and X_2 from the State market.

c - the per unit variable transaction cost of purchasing from the State market either X_1 or X_2 .

X^S - the total quantity purchased from the State market of X_1 or X_2 , as the case may be.

R_2 - the fixed cost element of total transaction costs of purchasing X_2 from the free market.

d - the per unit variable transaction cost of purchasing from the free market, the commodity X_2 .

X_2^f - the total quantity of X_2 purchased from the free market.

Finally, we assume our representative consumer to have a Stone-Geary type of utility function. This is an arbitrary choice. However there are two obvious advantages of considering this particular type of utility function. Firstly, it satisfies the monotonicity conditions, i.e. the non-satiation requirement. And it also satisfies the second order conditions and ensures that the optimum solution is an interior point. Thus there are no corner solutions.

Given this, the consumer's optimization problem can be formulated as follows -

A consumer may consume a combination (X_1, X_2) of commodities with $X_2 \leq X_2^s$. In this case he won't have to purchase in the free market at all. However, we will not consider this case, as it is not particularly interesting.

We are mainly interested in a situation in which $X_2 > X_2^s$. In this case he has to maximize,

$$U(X_1, X_2) = \sum_{i=1}^2 B_i \log(X_i - r_i)$$

where B_i 's are positive and $r_1 < X_1$; $r_2 < X_2$

subject to:

$$P_1 X_1 + R_1 + C X_1 + P_2' X_2^s + R_1 + C X_2^s + P_2'' (X_2 - X_2^s) + R_2 + d(X_2 - X_2^s) = Y$$

where Y represents his total budget.

Since X_2^s is a fixed quantity we can represent it by a constant K .

We define a Lagrangean

$$L = U - \lambda [P_1 X_1 + R_1 + cX_1 + P_2' K + R_1 + cK + P_2''(X_2 - K) + R_2 + d(X_2 - K) - Y]$$

Differentiation of L with respect to X_1^s and λ gives us

$$\frac{\partial L}{\partial X_1} = \frac{\partial U}{\partial X_1} - \lambda P_1 - \lambda c$$

$$\frac{\partial L}{\partial X_2} = \frac{\partial U}{\partial X_2} - \lambda P_2'' - \lambda d$$

$$-\frac{\partial L}{\partial \lambda} = P_1 X_1 + R_1 + cX_1 + P_2' K + R_1 + cK + P_2''(X_2 - K) + R_2 + d(X_2 - K) - Y$$

Equating all derivatives to zero, gives

$$\frac{\partial L}{\partial X_1} = 0 \text{ i.e. } \frac{\partial U}{\partial X_1} - \lambda P_1 - \lambda c = 0$$

$$\text{i.e. } \frac{\partial U}{\partial X_1} = \lambda(P_1 + c)$$

$$\text{i.e. } \frac{B_1}{X_1 - r_1} = \lambda(P_1 + c) \quad \dots (i)$$

$$\frac{\partial L}{\partial X_2} = 0 \text{ i.e. } \frac{\partial U}{\partial X_2} - \lambda P_2'' - \lambda d = 0$$

$$\text{i.e. } \frac{\partial U}{\partial X_2} = \lambda(P_2'' + d)$$

$$\text{i.e. } \frac{B_2}{X_2 - r_2} = \lambda(P_2'' + d) \quad \dots (ii)$$

$$-\frac{\partial L}{\partial \lambda} = 0$$

$$\begin{aligned} \text{i.e. } P_1 X_1 + R_1 + cX_1 + P_2' K + R_1 + cK + P_2''(X_2 - K) \\ + R_2 + d(X_2 - K) = Y \quad \dots \text{ (iii)} \end{aligned}$$

Since the conditions for the global maximum are also satisfied, we get the following equilibrium values of X_1 and X_2 .

$$X_1^* = \frac{B_1}{\lambda(P_1 + c)} + r_1$$

$$X_2^* = \frac{B_2}{\lambda(P_2'' + d)} + r_2$$

Substituting these values of X_1 and X_2 into the equation (iii) we get,

$$\begin{aligned} & \frac{P_1 B_1}{\lambda(P_1 + c)} + R_1 + \frac{cB_1}{\lambda(P_1 + c)} + P_2' K + R_1 + cK + P_1 r_1 \\ & + cr_1 + \frac{P_2'' B_2}{\lambda(P_2'' + d)} + P_2'' r_2 - P_2'' K + R_2 + \frac{dB_2}{\lambda(P_2'' + d)} \\ & + dr_2 - dK = Y \\ \text{i.e. } & \frac{B_1(P_1 + c)}{\lambda(P_1 + c)} + \frac{B_2(P_2'' + d)}{\lambda(P_2'' + d)} + (2R_1 + R_2) + (P_1 + c)r_1 \\ & + (P_2'' + d)r_2 + (P_2' - P_2'' + c - d)K = Y \\ \text{i.e. } & \frac{B_1 + B_2}{\lambda} + (2R_1 + R_2) + (P_1 + c)r_1 + (P_2'' + d)r_2 \\ & + (P_2' - P_2'' + c - d)K = Y \end{aligned}$$

$$\text{i.e. } \frac{B_1 + B_2}{\lambda} = Y - [(2R_1 + R_2) + (P_1 + c)r_1 + (P_2'' + d)r_2 + (P_2' - P_2'' + c - d)K]$$

$$\text{i.e. } \lambda^* = \frac{B_1 + B_2}{Y - [(2R_1 + R_2) + (P_1 + c)r_1 + (P_2'' + d)r_2 + (P_2' - P_2'' + c - d)K]}$$

This is the equilibrium value of λ and we will denote it as

$$\lambda^* = \frac{B_1 + B_2}{Y - [H]}$$

where $H = (2R_1 + R_2) + (P_1 + c)r_1 + (P_2'' + d)r_2 + (P_2' - P_2'' + c - d)K$.

Given λ^* , the equilibrium values of X_1 and X_2 are

$$X_1^* = \frac{B_1[Y - [H]]}{(B_1 + B_2)(P_1 + c)} + r_1$$

$$X_2^* = \frac{B_2[Y - [H]]}{(B_1 + B_2)(P_2'' + d)} + r_2$$

Therefore, at its maximized level

$$U^* = B_1 \log \left[\frac{B_1 (Y - [H])}{(B_1 + B_2)(P_1 + c)} \right] + B_2 \log \left[\frac{B_2 (Y - [H])}{(B_1 + B_2)(P_2'' + d)} \right] \dots \text{(I)}$$

Consider a case where no such subsidization up to a point exists with respect to X_2 , so that the entire X_2 is available only at the free market price. We assume that this does not affect the price of X_2 in the free market.

It is unnecessary to carry out the derivation yet again, since it is obvious from the above, by equating $X_2^S = K = 0$ that, in this case

$$\lambda^* = \frac{B_1 + B_2}{Y - [T]}$$

where $T = (R_1 + R_2) + (P_1 + c)r_1 + (P_2'' + d)r_2$,

$$X_1^* = \frac{B_1[Y - (T)]}{(B_1+B_2)(P_1+c)} + r_1 \quad \text{and}$$

$$X_2^* = \frac{B_2[Y - (T)]}{(B_1+B_2)(P_2''+d)} + r_2$$

Therefore, at its maximized level

$$U^* = B_1 \log \left[\frac{B_1(Y - [T])}{(B_1+B_2)(P_1+c)} \right] + B_2 \log \left[\frac{B_2(Y - [T])}{(B_1+B_2)(P_2''+d)} \right] \quad \dots \text{ (II)}$$

The difference between the U^* in equations (I) and (II) would give us the actual magnitude of the change in utility for our representative consumer, when he shifts from a situation of repressed inflation of X_2 to a non-repressed one. We will denote this change by ΔU^* .

$$\Delta U^* = B_1 \log \left[\frac{Y - H}{Y - T} \right] + B_2 \log \left[\frac{Y - H}{Y - T} \right]$$

solving for the values of H and T gives

$$\Delta U^* = B_1 \log \left[1 - \frac{[(P_2' - P_2'' + c - d)K + R_1]}{Y - (P_1+c)r_1 - (P_2''+d)r_2 - (R_1+R_2)} \right] \\ + B_2 \log \left[1 - \frac{[(P_2' - P_2'' + c - d)K + R_1]}{Y - (P_1+c)r_1 - (P_2''+d)r_2 - (R_1+R_2)} \right]$$

This expression shows us that for a positive gain in utility, due to repressed inflation, the following condition is sufficient.

$$1 - \frac{[(P_2' - P_2'' + c - d)K + R_1]}{Y - (P_1 + c)r_1 - (P_2'' + d)r_2 - (R_1 + R_2)} > 1 \quad [\because 1_n^1 = 0]$$

$$\text{i.e. } 0 > \frac{(P_2' - P_2'' + c - d)K + R_1}{Y - (P_1 + c)r_1 - (P_2'' + d)r_2 - (R_1 + R_2)}$$

So, if $[(P_2' - P_2'' + c - d)K + R_1]$ is negative, it is sufficient to ensure that the gain in utility due to repressed inflation with respect to X_2 , is positive.

$$\text{i.e. } (P_2' - P_2'' + c - d)K + R_1 < 0$$

$$\text{i.e. } (c - d)K + R_1 < (P_2'' - P_2')K$$

This shows that whether there is a welfare gain or loss depends on the differential in prices in the two markets, the differential in variable transaction costs in the two markets and on fixed transaction costs in the State market. Obviously, if there are no transaction costs, there is a welfare gain as a result of the price subsidization, since $P_2'' > P_2'$.

Thus, there are five ultimate determinants of welfare gains from the repressed inflation.

- (i) The fixed transaction costs associated with the State market.
- (ii) The variable transaction costs associated with the State market.
- (iii) The variable transaction costs associated with the free market.
- (iv) The excess of the free market price of X_2 over its State market price.

- (v) The maximum quantity of X_2 purchaseable from the State market. In this case, K .

Therefore, it would be superficial to make judgements about the welfare gains from repressed inflation on the basis of apparent monetary gains (what the consumers save in money terms on account of the subsidized prices). We should also take into account various measurable as well as non-measurable transaction costs associated with State and free market transactions and their relative magnitudes.

The purpose of this Appendix was to emphasize the following points:

(i) Even when no transaction costs are introduced, the visible monetary gains from repressed inflation cannot be taken to measure welfare gains, unless the utility functions are linear in money.

(ii) Once transaction costs are introduced, the relative magnitudes of various fixed and variable transaction costs associated with State and free market transactions become one of the major determinants of welfare gains under repressed inflation.

However, for practical purposes it is very difficult to take account of all such transaction costs, as many of them are non-apparent and non-quantifiable, even if apparent.

(iii) The ultimate magnitude of welfare gains will be determined by the mathematical form of the utility functions that the consumers have, and even within the same mathematical form, by the parameters of the specific utility functions.

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