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Ukraine on the Brink of Hyperinflation

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Abstract

Our retail price surveys show that food prices increased about fifteen times over the past year in Kiev while nominal wages rose less than ten times. This dramatic fall in the measured real wage was not compensated for by any significant improvement in the quality, assortment or availability of food products. Furthermore, our surveys show food price increases in excess of 20 percent per month in three of the last four months. In September and October 1992 the Ukrainian currency depreciated more than 40 percent against the dollar on the black market.

This new evidence shows how Ukraine's gradualist and partial reforms have contributed directly to an accelerating collapse of the currency. In this context, the recent change of Prime Minister will only be meaningful if the fundamental fiscal and monetary problems are addressed. The imminent de-linking of the Ukrainian currency from the Russian rouble is unlikely by itself to stabilize the monetary situation. There is continued talk about introducing a new currency, perhaps at the beginning of 1993, but at best this would be irrelevant and at worst it would further destabilize the economy. Unless radical countermeasures are taken soon, Ukraine faces the prospect of hyperinflation.

1. Introduction

Will the new Ukrainian government pursue a radical package of economic reforms -- as urged by most western advisers -- or will it continue the partial reform policies of its predecessor? In particular, will it attempt to jump start the Ukrainian economy by conducting a "monetary reform," either through de-linking the non-cash (**beznalichnye**) Ukrainian coupon from the non-cash Russian ruble or even by issuing a completely new currency?[1] In any event, what is the likely immediate economic future of Ukraine?

Although it remains too early to fully answer these questions, there is an important set of relevant issues which can now be addressed. These concern the way in which prices have increased over the past year in Ukraine and the precise nature of the current inflation. The assessment offered in this paper is based on original data about prices, the availability of goods, and real wages in Kiev over the past year. Information about the retail food market is the result of weekly surveys carried out since fall 1991 by our own researchers, while the wage data was obtained directly from interviews with managers.[2] Although this data set does have some limitations, it is considerably better than the official statistics, and it offers good measures of the current inflationary process in Ukraine.[3]

The available evidence indicates that Ukrainian inflation is high, unstable and tending to increase. Food prices have risen more than fifteen-fold over the past year, and since July there have been three months in which our index of food prices has increased more than 20 percent. Real wages have fallen dramatically over the past year, to between half and two thirds of their level one year ago. This fall in measured real wages has not been compensated for by any improvement in the quality, assortment or availability of food products. We must therefore interpret these numbers as indicating a dramatic fall in Ukrainian living standards.

In addition, in the month from mid-September to mid-October 1992 the Ukrainian currency depreciated about 40 percent against the dollar. From October 1st to November 4th this rate fell a further 46 percent. In September our retail food price index increased 23 percent, even though key retail prices continued to be held constant by de facto price controls. During October prices in the free food market rose for almost every good. Ukrainian inflation is high, unstable and likely to accelerate further.

The implication is that the most fundamental economic problem in Ukraine today is the rapid emission of money due to both the large budget deficit and the provision of credit by the central bank at low nominal interest rates. Our interviews with managers over the past two months suggest they are expecting higher inflation and that their firms are beginning to adjust their nominal contracts, particularly wage payments, more frequently. Furthermore, managers are finding increasingly effective ways to reduce their real tax liabilities.

Unless the inflation problem is addressed at once and decisively, monetary theory and the history of hyperinflations suggest all other economic policies will become irrelevant as prices surge higher at an accelerating rate. In such a context, introducing a new currency -- without radically changing current fiscal and monetary policies -- would at best be irrelevant and at worst introduce an extra element of monetary instability.

But a full set of stabilization measures would be hard to implement at short notice, in particular because the government's tax base is weak and being further eroded by managers' tax avoidance schemes. The new government has not yet shown any signs it can resolve these issues. Ukraine appears to be on the brink of a hyperinflation which will make all other policy issues seem unimportant.[4]

Section 2 reports evidence on prices and the availability of goods in fall 1991, and section 3 examines the precise nature of price increases at the beginning of 1992. Section 4 provides further evidence on the acceleration of inflation during 1992, particularly since the summer. Section 5 evaluates changes in real wages over the past year, and section 6 concludes that Ukrainian experience should be interpreted as a cautionary tale about the dangers of incoherent and gradualist economic reform.

2. Background: Fall 1991

Over the past year Ukraine has faced an unusual set of macroeconomic constraints. Despite declaring independence in August 1991 and becoming formally independent after a referendum on December 1st, Ukraine has remained very much influenced by Russian macroeconomic policies. This is primarily because the borders between the two countries remain almost completely open, at the same time as Ukraine has remained in the Russian ruble zone -- using so-called non-cash (**beznalichnye**) rubles for many transactions, particularly between enterprises.

As a result, the two economies have remained closely linked, and when the Russian government announced that state controlled prices would be increased and "freed" at the beginning of 1992, the Ukrainian government felt the need to do likewise. However, Prime Minister Fokin and his colleagues declined to take further systematic reform measures. Ukraine over the past year has been characterized by the disintegration of state control over the economy, at the same time as the state has done little more than encourage the central bank to hand out low interest credits to favored sectors. "Gradualism" in Ukraine has meant changing the previous structure of industry and trade as little as possible. At the same time, spontaneous priviatization has swept through the state enterprise sector.[5]

The Ukrainian government began independence with a budget deficit which subsequently grew. The deficit has been covered by the printing of money, with still further monetary emission through credits at low nominal interest rates which are still used to effectively subsidize selected industrial sectors. The numbers for 1991 are shown in Table 1.[6]

What was the situation last year in terms of the price and availability of food? In fall 1991, our survey in Kiev shows that goods in state stores had stable prices although there were some shortages -- seen in the lines for goods and in the periodic absence of some goods. For example, our data at this time -- shown in Table 2 -- indicate milk and bread were usually available, although with lines.[7]

Table 3 measures inflation by tracking the cost of a typical basket of goods.[8] The basket of goods used in this calculation is the monthly ration of soldiers by the former Soviet (now Ukrainian) army. This ration comprises the following: 0.9 kg of butter, 1.5 kg sugar, 4.5 kg of meat, 12 kg bread, 2 kg cabbage, 2 kg of tomatoes, 2 kg of cucumbers, 9 kg of potatoes and 8 eggs. (The ration also includes some less important goods for which we have not collected prices and excludes at least one important category of good -- milk and other dairy products.) In this price index, we use the state store price in all cases when a good is available in these stores, except when the line for a good is longer than 15 people, in which case we use the price in the "peasant market" ("**kolhoznii rinok**" is the Russian term).[9] This provides a crude measure of the way in which the shortages and waiting in line pushes up the cost of goods.

Table 3 shows that there was significant inflation already in November and December 1991, when the price index increased 16 percent and 26 percent respectively. These price increases were almost exclusively due to increases in the price of goods in the peasant market. The major increases in state prices were still to come.

3. Price Surge: January 1992

By the end of 1991 it was clear that the Ukrainian government intended to follow Russia at least partially and raise the prices of some goods at the beginning of January 1992. The government in Kiev also announced that it would introduce a new form of cash money, the coupon-karbovants, at the beginning of the year.[10] (Hereafter the coupon-karbovants will be referred to as simply the coupon.)

In effect, the government signalled clearly that prices would rise sharply in the New Year and the predictable result was that people bought all the goods they could find. By December 23rd there was no bread, milk or eggs in any the stores which we survey. In fact, none of the 22 goods on our list was available in the surveyed stores on that day. During the last two weeks of December, most goods, including bread, were absent from the seven stores surveyed, and the longest recorded line was 150 people waiting for milk.

Table 2 shows data on three key goods -- bread, milk and eggs -- in one store since July 1991.[11] The details of what happened to these goods are reported here because each is important to Ukrainian consumers, with bread probably the most vital. The anticipatory jump in prices is shown in Table 4, which gives the price of different goods in the market in the first and second weeks of December 1991 and in the first week of January 1992. The rate of growth was highest for meat products and for tomatoes, but all prices -- with the curious exception of butter -- increased by more than 200 percent. Table 3 shows that our measure of the retail price index increased more than 400 percent in January 1992. The goods situation did not improve immediately once prices were increased. In the first two weeks of January, no surveyed store had more than 8 types of goods out of the 22 goods on our list.

The price increases of January did not by themselves initiate an unstoppable inflation spiral. From mid-January to early March, prices in state stores were held constant -- with the exception of eggs, see Table 5 -- and prices in the peasant market actually fell. It appears that the extent of anticipatory purchases at the end of 1991 was so great that prices in the free market actually overshot. According to our data, from the first week of January to the first week of March there was a 22 percent fall in prices in the peasant market. Table 7 reflects this with a 6 percent fall in the retail price index in February and a 3 percent fall in March.

This should have been a major assistance to the government in holding down prices and Table 3 shows extremely good inflation results through June -- for all months except April, which showed an increase of 7 percent per month, i.e., an annualized rate of 125 percent. At the same time the black market exchange rate of the coupon stabilized against the ruble and held at around 120 coupons to the dollar from February to June -- see Table 6.[12] However, this price stability proved not to be lasting.

4. Inflation Spiral: From July 1992

By summer 1992 it was clear that the Ukrainian government had not been able to control the fundamentals of the inflation process. The evidence for this statement is found partly in official monetary statistics, but primarily in our price surveys -- once appropriate corrections have been made for continuing de facto price controls.

As Table 1 shows, up to June the budget deficit does not appear to have been the major problem -- according to official statistics the cumulative deficit was actually less in January-June than it had been in January-February.[13] Published official statistics do not include any plausible numbers for money emission before the January-June period, so we cannot calculate, for example, monthly growth rates of money during spring 1992. However, as Table 1 shows, for the January-June period about 100 billion rubles of the money growth was not due to the budget deficit, and so presumably entered the economy through low interest loans provided to state enterprises by the Ukrainian central bank -- a key element of the Ukrainian government's "gradualist" economic policies.[14] This fits with anecdotal evidence obtained from our interviews with managers of industrial firms and banks.

Information about inflation in our price surveys during this period has to be interpreted with care, because there is strong evidence that during 1992 significant de facto price controls remained on some key goods -- particularly milk and bread.[15] Table 5 shows that the price of milk was not altered from January to June and the price of bread was held constant until July. How did this pricing policy affect the balance of supply and demand?

Although the line length for bread remained about constant from January to June, milk was seldom available until after its price was increased in June (Table 2).[16] For other less crucial goods sold in state stores, there appears to have been price regulation, but probably due more to the bureaucratic inertia of changing prices in state trading organizations.

For example, Table 5 shows repeated changes in the price of eggs during spring 1992.[17] Interestingly, these changes are hard to correlate with the evidence on changes in availability of eggs shown in Table 2. After the price increases in January eggs were briefly available in state stores, although with a line. The price cuts of February seem to have resulted in eggs disappearing from the state stores, at least until April, from which date they are available with a line -- although the price of eggs was not increased until June. The most plausible explanation for these movements is that the state trading organizations dealing with eggs were trying to achieve rough balance in the market, and had a great deal of difficulty getting the price right.

In fact, bread and milk exhibit more price stability that most other goods sold in state stores during this period -- an indication that these are viewed by the government as strategic goods. A further strong indicator of price controls is that, in spite of the gathering inflation momentum and already significant lines, the price of milk was reduced in mid-September (Table 5).[18]

The most important conclusion from price behavior and the availability of goods is that while price controls have been loosened, it is not correct to say prices in state stores are now "free". Prices continue to be set by administrators, either in the stores themselves or -- more usually -- in the relevant state wholesale trade organization. These administrators respond to price and line length signals only with long and variable lags.

As a result, prices in state stores exhibit considerable inertia and should be considered as lagging behind the overall inflation of the economy.[19] The leading indicator of Ukrainian inflation is probably the black market exchange rate of the coupon against the dollar, while prices in the peasant market provide a further indicator of current and future inflation. Our retail food price index, reported in Table 3, is the best available measure of current inflation.

The second half of 1992, particularly from August, has been characterized by the rapidly accelerating depreciation of the Ukrainian currency. The best indicator of this is in Table 6, which shows the black market exchange rate for the coupon against the dollar. The coupon remained basically stable from February to June 1992, but during the summer it began to depreciate significantly. As Table 6 shows, from the beginning of September the rate has depreciated steadily, moving at least 5 coupons every two days. The more rapid depreciation at the beginning of October is probably the direct result of higher administered prices -- particularly gasoline -- at the beginning of the month.[20] In the last two trading days of October and the first days of November, the exchange rate depreciated 5 coupons a day against the dollar.

Calculation of the precise rate of depreciation over the past month depends on the period under consideration. From September 10th to October 10th the rate depreciated 38 percent and from September 12th to October 13th it depreciated 37 percent. A further acceleration of inflation may now be underway -- the depreciation from September 19th to October 15th was 47 percent, and from October 6 to November 4 it was 41 percent.

Further evidence is provided by the fact that prices in the peasant market have also started to increase. Table 3 shows that the overall price index for food rose sharply in July and August, largely as a result of the increase in official prices. Furthermore, although this index rose only slightly in September, increases to the first week of October show monthly inflation in excess of 20 percent. Considering that a large part of this index is price controlled bread, this confirms rapidly rising price inflation. Table 7 further shows that the price of almost every good in the free market rose between the first and last week of October, and there were particularly large increase in dairy products (butter, sour cream and cottage cheese).

In summary, the budget is out of control, credit is loose and prices are rising sharply in early November 1992. Whether a genuine hyperinflation will erupt at once depends now primarily on the response of nominal wages. Will wages lag behind price inflation, slowing overall price growth and squeezing real wages? Or will there be an explosion of wage growth? While it is not possible to answer these questions directly, we can consider the evidence on what has happened to real wages so far.

5. Real Wages

The price increases over the past year have been remarkable. Table 7 shows that prices for every good commonly available in the **kolhoznii rinok** rose between 10 and 20 times from October 1991 to October 1992. Table 3 shows our food price index has risen about 15 times over the last year. But if this is to become a runaway inflation, there must also rapid wage inflation. What is the evidence on what has happened to real and nominal wages over the past year?

Based on our interviews with managers, average wages in Kiev appear to have gone up from 400 rubles a month in fall 1991 to 2,500 coupons a month in October 1992, i.e., about 6.25 times.[21] (Both the food price index and measures of wages ignore the switch from rubles into coupons -- there were about 1.4 coupons per ruble in mid-October 1992.) These numbers suggest a dramatic fall in real wages, probably to between half and two thirds of their level one year ago. However, evaluating real wages during a period of high inflation is difficult -- the precise timing of wage payments and purchases matters a great deal and about this we do not have data.

In addition, if there have been significant changes in quality and line length, this should be taken into consideration when evaluating the purchasing power of wages. Fortunately for this study, and unfortunately for Ukrainian consumers, over the past year in Kiev there have been only minor changes in availability, assortment and quality of food.

Table 2 indicates the availability of goods in state stores has not changed much.[22] The assortment of food available, both in state stores and in peasant markets has hardly changed over the past year -- with the exception of some imported bananas now sold on the street. Although we do not have quantitative measures of food quality, our strong impression (as consumers) is that there has been no improvement.

In October 1991, of the goods in the "Ukrainian Army Ration" (Table 3) only bread and sugar were available in state stores, while the rest had to be purchased in the market.[23] The whole basket of goods would have cost 198.2 rubles. This represented 50 percent of average wages. (This is using an average wage of 400 rubles, based on our interviews at this time.)

In contrast, in Kiev at the beginning of October 1992, the same basket of goods cost 3,067 rubles -- 123 percent of average wages. (This uses an estimate of average wages in Ukraine which our interviews suggest is on the high side: 2,500 coupons.) Even though there is a considerable margin of error in these numbers, this is strong evidence that average real wages have fallen over the past year.

In addition, for at least one section of the population living standards remain unambiguously at disastrous levels. One year ago pensioners received 130 rubles, 66 percent of the cost of our basket of goods. By the beginning of October 1992, the average pension was around 1,100 coupons, 36 percent of the basket's cost. In addition to this decline, we should note that by fall 1991 the living standard of pensioners had already dropped steeply and was widely regarded as being too low. Furthermore, taking into consideration other payments which pensioners must make, particularly for their apartments, further strengthens the assessment that their living standards have fallen.[24]

An important caveat must be attached to this assessment because a great deal depends on the collective earnings of the family unit which shares an apartment. For example, it matters a great deal whether a pensioner lives with someone who earns at least an average salary. Unfortunately, a fuller assessment of living standards requires data on the composition of households and the intra-household sharing of income which we do not currently have.

The one positive change for consumers compared with a year ago is in the private trade of non-state goods. The most important market for these goods in Kiev is at the Republican stadium (home of Kiev Dynamo). Although we have visited this market almost every week during the past year, precise comparisons are not possible because the nature of products is not constant. The quality of goods on sale -- suits, sweaters, coats, etc -- varies considerably, although it is almost always higher than what is available in state stores.

There have been two positive developments over the past year. First, in 1991 anecdotal evidence suggests most goods on sale were purchased in the former Soviet Union -- many of them at low, state controlled prices -- although there were some imports from Poland. In fall 1992 more goods appear to come directly from Turkey, China, Hong Kong and Taiwan. Second, there are now more goods on sale and the range of choice is wider. Our very rough numbers on prices indicate rates of inflation in line with those given above for food products. Unfortunately, we have not been able to construct a meaningful price index for these goods.

Interestingly, while private business now appears quite active in nonfood trade, there has been relatively little entry by private business into the wholesale food trade. The retail food trade remains just as divided as before -- products can either be bought in state stores or in the peasant market.

In summary, although there has been significant nominal wage growth over the past year, there is strong evidence to suggest real wages have fallen sharply -- even after adjusting for the availability and quality of goods. Of course, by itself the recent fall in real wages does not imply that nominal wages must now rise sharply. A great deal depends on how managers respond to the pressure from workers for higher wages.

In fall 1992 state enterprises in Ukraine are not subject to effective outside supervision of any kind. Our interviews suggest that managers are beginning to find ways to reduce their real tax liabilities. Very high inflation usually reduces the real tax revenues of government, unless taxes have been effectively indexed.[25] Not only is such indexation absent from Ukraine, but state enterprises seem peculiarly suited to igniting inflation. These enterprises have no real owners (leaving aside the property rights claimed and exercised by managers and workers themselves), cannot easily go bankrupt and are not now subject to effective supervision by the tax authorities.[26] Loans are available at low nominal interest rates, there are few effective price controls, and real wages have already fallen a great deal. Our interviews suggest managers are willing and able to pay substantially higher wages over the coming months. All the requirements for a runaway inflation spiral now seem to be in place.

6. Conclusion

The inflationary experience of Ukraine over the past year has been unpleasant. Expectations of higher prices in state stores caused panic buying at the end of 1991 and pushed up free market food prices. As was to be expected, once the price increases were implemented, there was some improvement in the supply of goods in state stores. In fact, when free market food prices fell somewhat in the first quarter and the coupon-dollar rate remained about constant, it appeared the government might be able to stabilize the economy.

However, the government of Vitold Fokin subsequently proved unable to get control of the wage-price spiral. Although not rising as fast as retail prices, nominal wages are increasing. Because credit is available at low nominal interest rates, the implicit real subsidy to borrowers increases as inflation rises. Managers have become creative in finding ways to raise wages by reducing their real tax liabilities and the budget deficit has widened as prices increased.

The change in living standards over the past year is hard to judge precisely, but the available evidence strongly suggests that real wages fell. The precise effects of the past year on the distribution of income are also hard to know, but it probably widened -- some people are able to take advantage of the new market-based opportunities, while others stay earning income only in the state sector.

The past year of economic performance in Ukraine can be considered as a case of "gradualism" pursued by (ex)-communists who realize that something called "economic reform" is required, but who are not willing to take the decisive measures. Ukraine therefore provides a benchmark against which more radical reform packages in the post-communist world can be judged.

In particular, Ukrainian experience shows the effects of partially changing the price regime, while refusing to speed the privatization of trade. In Ukraine, the "liberalizing" of prices has meant increasing state controlled basic prices, such as for energy, removing some subsidies at the level of intermediate goods, and decentralizing price setting authority to the level of the bureaucrats running state trade organizations. There has been some growth of private trade, particularly in nonfood products, but almost all shops and wholesale trade organizations remain just as much in the state sector as before. The only exception, at least in Kiev, is a few shops which are now leased but which usually offer very similar goods and services as before.

Unless the new government deals directly with the monetary and fiscal problems underlying rapid money growth, Ukraine's economic prospects remain bleak. Government policies which might be feasible at lower rates of inflation, such as an organized industrial policy which would cushion adjustment costs in some sectors, will become completely impracticable if inflation accelerates still further. Breaking away from the ruble zone, through introducing a **beznalichnye** coupon or a completely new monetary unit, would not by itself stabilize Ukraine's monetary situation. In fact, full monetary independence might both make the emission of money easier and reduce the real demand for Ukrainian coupons, thus actually leading to an acceleration of inflation.

The available evidence indicates that Ukrainian inflation is high and extremely unstable. Furthermore, unless this inflation is brought under control soon, it will probably accelerate still further. The Ukrainian government's revenue base is so weak and so vulnerable to higher inflation that open hyperinflation is quite likely. It is not yet clear that the Ukrainian government has fully recognized this problem, and even if it has, it in no way seems prepared to take the radical measures which are required. Ukraine appears to be on the brink of hyperinflation.

Endnotes

1. There has been a great deal of discussion about this new currency, but few details are yet completely clear. The most probable name would be the hryvna (in Ukrainian), otherwise known as the grivna (in Russian). Some well-informed sources in Kiev suggest it could be introduced as soon as the beginning of 1993, but this is probably a decision which remains to be made by the new government.

2. This research is part of a larger project primarily focused on managerial strategies for the privatization of state enterprises. Our research team has this year interviewed more than 200 managers in five regions of Ukraine.

3. Price surveyors visit shops at the same time on each day of the week, and watch over a total of seven state stores and four free markets in Kiev city. On alternating weeks our surveyors visit retail sales points in the center of Kiev and on the outskirts, collecting information about the price of 22 goods and -- in the case of state stores -- measuring the lengths of lines.

The present paper is a preliminary report which gives highlights of our results. Our full data set contains information for 22 goods on 3 days of every week. A subsequent paper will look in more detail at the timing of price changes and responses in the availability of goods.

4. For example, hyperinflation would probably have a significant disruptive impact on the privatization process, although it is still too early to judge precisely in what ways. The current situation remains as described in Simon Johnson and Santiago Eder, "The Prospects for Privatization in Ukraine," RFE/RL Weekly Reports, September 18, 1992.

5. For an explanation of the principal causes and effects of spontaneous privatization, see Simon Johnson and Heidi Kroll, "Managerial Strategies for Spontaneous Privatization," Soviet Economy, #4, 1991.

6. It is currently quite hard to find published information on which sectors receive explicit subsidies. Our interviews with managers in October 1992 indicate important subsidies remain on milk, meat and coke, although we do not have numbers on their overall size. There may still be a subsidy on coal, although there appears to be some confusion about this among managers of coal mines in Donetsk.

7. Opinions differ, but it is not uncommon to hear locals claim a real line (**ochered**) exists only if more than 10 people are waiting.

8. Unfortunately, the Ukrainian Academy of Sciences' Institute of Economics, which prepares the official price index, refused to reveal the weights used. Translating literally,

the responsible person said "this data is for the government, not for you."

9. Throughout the past year, as usually in the past, the peasant market has offered people a wider range and higher quality products than is available in state stores. However, prices are almost always higher than in state stores.

10. There has not yet been any change in the money used for so-called non-cash (**beznalichnye**) payments, for example between enterprises. This money is still **beznalichnye** (Russian) rubles, in principle convertible at one-for-one with **beznalichnye** rubles in Russia. The coupon is therefore a rather unusual type of money, because it is used only for the payment of wages and the purchase of consumer goods. A **beznalichnye** coupon may soon be introduced.

The exchange rate of the coupon in its first days was high. On its first day, January 8, one coupon was worth 8 (Russian or Soviet) rubles, but within two weeks one coupon could only buy 2 rubles and by the end of February the coupon and ruble were trading one-for-one.

11. The availability of goods in this store was broadly in line with other stores, although one characteristic of the goods supply situation is that products do appear in a seemingly random pattern -- delivered to different stores at different times of day.

12. We did collect information systematically on the black market exchange rate during this period, precisely because it hardly moved.

13. Although there are problems with using price indices during a period of such high inflation, the evidence suggests that by August 1992 the real budget deficit had risen dramatically. Government spending was 20.2 in January and 167 in August (Table 1). Our price index, rebased to equal 100 in January, is 159 in August 1992. This implies real spending in August was 5 times higher than in January, and that the deficit was 11 times larger in real terms than in January. (In nominal terms the deficit was 3.2 in January and 59 in August.)

14. A full explanation of the Ukrainian inflationary process would need data on the relative importance in money issued of cash coupons and **beznalichnye** rubles, and some estimate of how much of these **beznalichnye** rubles was spent in Russia. During 1992 the Ukrainian central bank could and did, in effect, write checks on the Russian central bank.

Also important is the time required to transfer funds from Ukraine to Russia and vice versa -- in spring 1992 this was about 3 months, so payment orders in process probably represented a significant delayed inflationary push. Unfortunately, we do not have data on the amount of payment orders outstanding at any time. The precise links between prices in Russia and prices in Ukraine also need further detailed analysis, particularly because the border between these countries remains essentially open -- there are check-points on major roads for trucks, but cars can usually pass freely and there are back roads along which any vehicle can cross.

15. Formally, the only form of price control is that "profits" in trade intermediaries cannot exceed 25 percent of sales. No such restriction exists on producers of goods.

16. It is strange that although bread was available with only a short line until the summer, line lengths actually have increased after bread prices were raised in July. One possible explanation is that the general rise in food prices in summer 1992 pushed down real incomes such that poor people, particularly pensioners, actually bought and consumed more bread than before. It is also possible that expectations of rising inflation induced people to buy and store bread -- although in warm weather the ability to store bread is limited by people's freezer capacity.

17. One significant difference between eggs and milk or bread is that when eggs disappear from state stores they can -- and often do -- appear in the peasant market.

18. The fact that Table 2 does not show an immediate increase in line length or the disappearance of milk should not be interpreted as meaning that the lower price of milk in mid-September will not have these effects. The problem is that although our price surveyors go to the same shops on the same day of the week and at the same time, we have no evidence to suggest that deliveries to stores are made at the same time of day on each occasion. For example, the September 22 survey, which found a line for milk of only 5 people, may have taken place closer to a milk delivery than the September 8 survey which found 4 people.

19. It may also be the case that the costs of key goods rise while their prices are held constant and the government directly or indirectly finances the difference. While this mechanism seems plausible, we unfortunately do not have any direct evidence.

20. The last data point in Table 6 shows no depreciation, but is probably not representative because it was a Saturday and the rate usually falls or holds constant at the weekend. From now on we will collect black market prices every day.

21. These average numbers have to be used with care because wage dispersion has widened over the past year. In fall 1991 about 80 percent of all wages in interviewed firms were in the range 300-500 rubles. Now the 80 percent range is 1,500-4,000 coupons.

22. These conclusions should be treated with care because, as Table 2 further shows, the availability of goods in state stores, as well as the length of lines, is continually changing and this makes month-to-month comparisons difficult. However, the year-to-year comparison seems fairly robust.

23. These statements apply to ordinary consumers, not to state organizations -- presumably such as the Ukrainian Army -- which have privileged access to food at the wholesale level.

24. Our assessment that average real wages have fallen is also strengthened if we go beyond merely food items and consider what people have to pay for their apartments. The basic

cost for an apartment in Ukraine depends on the number of square meters in the apartment and on whether there is a telephone. One payment -- referred to in Russian as "payment for the apartment" ("**zaplata za kvateri.**") -- covers most costs, including rent, water and gas. (Electricity is metered separately and telephone costs depend on use.) One year ago the **zaplata za kvateri** was usually not more than 15 rubles per month and now it is no less than 200 coupons. In addition, the cost of a monthly pass which allows the use of all types of municipal transport -- trolleybus, tram, bus and metro -- was 8 rubles a year ago and is now 60 coupons. Therefore, using the same average wages as in the text, apartment payments and transportation costs were no more than 6 percent of average wages one year ago and now constitute at least 10 percent.

25. This is known in the literature as the Olivera-Tanzi effect.

26. There are also large loopholes in Ukrainian tax laws. For example, to avoid paying the 52 percent payroll tax on wage increases, some firms "insure" their workers. A premium is paid by the firm. If nothing unpleasant happens to the worker during the insured period, usually three months at present, the insurance company returns the premium to the worker, tax-free and less a commission of about 10 percent.

Table 1

Ukraine's Budget and Money Issued, 1991-92

	Revenues	Ukrainian Government Spending	Deficit	Money Issued
1991				
January-February	54.7	77.8	23.1	n.a.
1992				
January	17.0	20.2	3.2	n.a.
January-February	48.3	72.0	23.7	n.a.
January-June	292.0	310.0	18.0	134.8
January-July	410.0	463.0	53.0	189.8
January-August	518.0	630.0	112.0	211.8

Numbers for a given year are cumulative.

Note: "n.a." indicates not available or that the available numbers seem completely implausible.

All numbers are billions of (Russian) rubles. Official data on "Money Issued" appears to be the sum of new non-cash (**beznalichnye**) rubles and cash coupons during the period, with the cash coupons valued at a one-to-one exchange rate with rubles.

Source: Uryadovii Kurer, No. 6, no. 8, No. 11, No. 25, No. 29, No. 33, No. 38, 1992. These numbers are official statistics and should be used with caution.

Table 2

Line Length in State Stores
November 1991 - September 1992

Date	Bread	Milk	Eggs
23-24 July, 1991	6	7	no line
30 July	5	10	-
26 August	3	12	15
12 September	7	10	-
24 September	4	5	8
2 October	5	5	5
15 October	4	3	6
26 November 1991	5	-	-
10 December	10	-	-
24 December	-	-	-
14 January 1992	15	60	-
28 January	7	-	10
11 February	6	-	7
25 February	5	-	-
10 March	3	-	-
24 March	3	-	-
7 April	10	-	12
21 April	5	6	6
12 May	9	-	10
26 May	7	-	8

Date	Bread	Milk	Eggs
9 June	7	8	7
23 June	9	10	9
7 July	10	10	-
21 July	15	15	7
11 August	7	7	15
25 August	15	15	15
8 September	-	4	5
22 September	10	5	-

Note: "-" indicates that this good was not available.

Source: Visits by surveyor to the same shop (Universam "Yuzhnoboprashagovskii") at the same time on the same day of the week (Tuesday, 12 noon -- 1pm). Bread and milk are average prices for the products available that day. There is only ever one type of egg on sale.

Table 3

Retail Food Price Index
(The Ukrainian Army Ration)

Date	Cost of Basket	Cumulative Index (Oct.1991 = 100)	Monthly Inflation (Percent)
October 1991	198.2	100.00	-
November	230.0	116.04	16
December	290.0	146.32	26
January 1992	1551.0	782.54	435
February	1455.5	734.36	-6
March	1405.0	708.88	-3
April	1507.0	760.34	7
May	1520.0	766.90	1
June	1537.0	775.00	1
July	1929.5	973.51	26
August	2460.0	1241.17	27
September	2500.0	1261.35	2
October (1st week)	3067.0	1547.43	23

Note: until December 1991, the "cost of basket" is in rubles, from January 1992 it is in coupons.

Source: our price surveys. The composition of the basket of goods and our calculation methodology are described in the text.

Table 4

Inflation in the Food Market, December 1991 - January 1992

Product	December 1991 First Week	Second Week	January 1992 First Week
Pork, 1 kg	30.00	51.25	157.50
Beef, 1 kg	26.00	45.00	125.00
Salo, 1kg	23.00	40.00	125.00
Butter, 1 kg	120.00	170.00	220.00
Sour Cream, 1kg	35.00	53.75	100.00
Tvorog, 1 kg (cottage cheese)	23.00	35.00	60.00
10 eggs	10.00	16.75	37.50
Honey, 1 kg	68.00	110.00	300.00
Potatos, 1 kg	4.00	8.75	20.00
Tomatos, 1 kg	34.00	40.00	200.00
Cucumbers, 1 kg	45.00	97.50	150.00
Cabbage, 1 kg	3.00	4.25	8.75
Onions, 1 kg	10.50	17.00	26.25
Apples, 1 kg	19.25	27.50	70.00

All prices are in Soviet (Russian) rubles.

Source: survey of prices from five markets in Kiev, averaged by market and by product on each date.

Table 5

State Prices for Milk, Bread and Eggs

Date	Products		
	Bread	Milk	Eggs (10)
July - November, 1991	0.96	0.60	2.00
2 January, 1992	5.00	1.95	22.50
20 January			21.00
3 February			15.00
11 June		18.00	17.50
2 July	16.00		
14 July			20.00
27 July			40.00
1 September		21.00	
14 September		12.00	

Note: only a change of price is reported here -- a blank denotes that the price was unchanged on this date. The date of the price change is the first date on which our survey encountered the new price, usually within two days of the actual price change.

Source: our survey of state stores.

Table 6

Dollar-Coupon Exchange Rate

Date	Buying Dollars	Selling Dollars
1st half January 1992	120	
February	120	
---------		
1 June	120	
6 July	200	
4 August	250	
---------		
4 September	280	
5 September	320	
8 September	325	355
10 September	330	365
12 September	335	370
17 September	340	370
19 September	340	370
22 September	345	375
24 September	355	380
26 September	380	390
29 September	385	410
1 October	390	415
6 October	405	435
8 October	450	470
10 October	455	475
13 October	460	480
15 October	500	520
17 October	480	500
18 October	495	515
20 October	505	525
22 October	515	535

Date	Buying Dollars	Selling Dollars
26 October	530	555
28 October	535	575
29 October	550	560
30 October	555	575
2 November	560	580
3 November	565	580
4 November	570	595

Source: private transactions to September, enquiries in front of the same store (**Univermag Ukraina**) at 4pm from September. Note that for reasons we do not yet fully understand, between October 22 and 26 (exclusive) there was no black market for dollars in this place, but it has operated as normal on every other occasion.
Our methodology is now the following: five people are asked for their selling rates and five are asked for their buying rates -- the numbers reported here are the mean prices, calculated without using implausible outlying quotes.

Table 7

Inflation in the Food Market, October 1991 - October 1992

Product	October 1991 First Week	October 1992 First Week	October 1992 Last Week
Pork, 1 kg	n.a.	250.00	320.00
Beef, 1 kg	22.00	220.00	250.00
Salo, 1 kg	15.00	250.00	260.00
Butter, 1 kg	15.00	250.00	300.00
Sour Cream, 1kg	18.00	160.00	220.00
Tvorog, 1 kg (cottage cheese)	11.00	150.00	200.00
10 eggs	8.00	110.00	128.00
Honey, 1 kg	38.00	700.00	700.00
Potatoes, 1 kg	2.00	35.00	35.00
Tomatoes, 1 kg	5.00	60.00	100.00
Cucumbers, 1 kg	9.00	60.00	60.00
Cabbage, 1 kg	2.00	20.00	35.00
Onions, 1 kg	5.00	45.00	45.00
Apples, 1 kg	11.00	35.00	50.00

Prices for October 1991 are in Soviet/Russian rubles, prices for October 1992 are in coupons. The coupon-ruble black market rate in the first week of October 1992 was about 1 rouble to 1.4 coupons.

Source: survey of prices from five markets in Kiev, averaged by market and by product on each date.