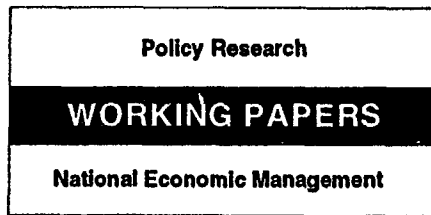


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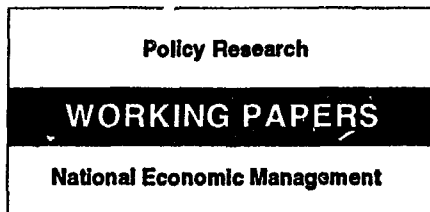


Economic Development Institute  
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# Unemployment and Labor Market Dynamics in Russia

Simon Commander  
Leonid Liberman  
and  
Ruslan Yemtsov

**Lack of a credible reform program has weakened any impulse toward large-scale restructuring of firms in Russia. Net changes to employment have been limited, and have involved mostly ancillary or clerical staff.**



WPS 1167

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The past 15 months have seen the beginning of structural change in Russia but a failure of the economy to stabilize. The balance sheet, conclude Commander, Liberman, and Yemtsov, suggests that a return to centralized control remains almost impossible, but the decentralization that has occurred contains many undesirable features.

In framing their analysis, the authors draw on aggregate data and firm-level data from the first-round results of a 1992 survey covering 41 firms in the Moscow region. The survey results suggest that the greater autonomy of firms has facilitated the exploitation of market power while failing to dampen the demand for easy credit from the budget or banking system. For the most part, that demand has been satisfied, enabling firms to meet current wage claims and, to a lesser degree, sustain output levels.

Buoyant nominal profits can be traced either to pricing behavior derived from market power or to transfers or subsidies channeled through the fiscal or monetary system. This in turn has artificially sustained the revenue side of the government accounts.

Official unemployment was no more than 1 percent of the labor force by the end of 1992, but evidence on the importance of marginal unemployment indicates that the underlying pass-through into open unemployment will be great. By the third quarter of 1992, this "augmented" unemployment rate approached 4 percent of the

labor force. Even so, the authors observe non-trivial outflows from unemployment to jobs, and in some regions to jobs in the private or collective sector.

In Russia, outflows to state sector jobs dominate. Survey evidence shows considerable turnover in the state sector and resilient hiring. Much of the churning in labor markets seems to be through voluntary separations and job transitions. Net changes to employment have been limited, and have involved mostly ancillary or clerical staff.

Commander, Liberman, and Yemtsov discern a core or membership rule dominating Russian firms' decisions, which it would be dangerous to assume will be maintained. They interpret it as a holding strategy in a complex game the firms have been playing with government. Lack of a credible reform program has weakened any impulse toward large-scale restructuring of firms.

Wages have been more volatile and have greater regional dispersion, but the authors predict no large consistent shift in relative wages. Rather, the wage path has probably been governed by current revenue streams and additional transfers, and then set consistent with the stable employment rule. The path of wages over 1992 is clearly associated with changes in Russia's monetary and fiscal stance and allied institutional features.

The Policy Research Working Paper Series disseminates the findings of work under way in the Bank. An objective of the series is to get these findings out quickly, even if presentations are less than fully polished. The findings, interpretations, and conclusions in these papers do not necessarily represent official Bank policy.

## **Unemployment and Labour Market Dynamics in Russia**

**Simon Commander, Leonid Liberman and Ruslan Yemtsov <sup>1</sup>**  
**The World Bank, Institute for Economic Forecasting, Russian Academy of  
Sciences and Moscow State University**

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<sup>1</sup> We thank Olivier Blanchard, Timothy King, Jeni Klugman, Paul Ross and Michael Walton for comments; Natalya Golubeva and Irina Perova for help with data. The paper has been prepared as part of the World Bank research project on "Labour Markets in Transitional Socialist Economies".

# **Unemployment and Labour Market Dynamics in Russia**

**By**  
**Simon Commander, Leonid Liberman,**  
**and Ruslan Yemtsov**

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### Introduction

The attempt in early 1992 to stabilize the Russian economy was set around a reasonably comprehensive price liberalization accompanied by tight money and fiscal restraint with announced goals for changes in property rights. The macroeconomic component fell rapidly to pieces by the second half of the year. Fiscal and quasi-fiscal deficits expanded to between 35/40% of GDP over the year and significant money financing resulted predictably in high and rising inflation. Consumer price inflation exceeded 1500% for the year with 25+ % monthly increases over last quarter of 1992 and the first quarter of 1993.

There are clear signs of structural change, however muted and dispersed. The expansion in the private service sector appears particularly striking, if largely unmeasured and regionally diverse. Privatization, de facto and de jure, has been initiated and open unemployment has emerged. But by early 1993 no more than 2% of the labour force was classified as unemployed and considerable ambiguities remain regarding rights to title and control. Not least, the political context remains largely antithetical to any orderly reform.

This paper concentrates on the interaction of macroeconomic and structural changes with key labour market variables. Due to coverage and other data issues, we devote a good amount of attention to laying out the evolution of these variables prior to embarking on some preliminary analysis of the findings. Our starting point is a brief examination of the macroeconomic environment and developments on the real side of the economy. We concentrate on the dominant state sector and hence largely ignore the non-trivial changes in title and growth of new private entities that has been occurring. Clearly we risk downplaying the creative part of the current employment process. Our discussion of wage and employment shifts is both aggregative, using regional and branch data, but also draws heavily on firm or establishment level information. In particular, we work with the first round results of a survey undertaken in the Moscow Region in November 1992 and covering 41 firms<sup>2</sup>. The results are used to get a better handle on firm-level decisions and constraints, including the path of financial variables over 1991 and 1992.

We then turn to unemployment and the characteristics of the unemployment so far generated. In Section 7 we try to interpret the effects of these changes on wage and employment behaviour. We note that, if appropriately specified, wage behaviour appears to be weakly related to local labour market

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<sup>2</sup> A full discussion of the sampling procedure and results can be found in Commander et al (1993b)

conditions. We conclude by emphasizing the dominance of a stable employment target in firm decisions over the last fifteen months. We suggest that perhaps the dominant objective of Russian firms has generally been to restrain the rate of job separations. It seems likely that current revenue streams and credits have been channelled to wages where firms have suffered significant negative shocks and that wages have been set to be consistent with short run employment stability. One implication is that the current employment overhang is indeed very large.

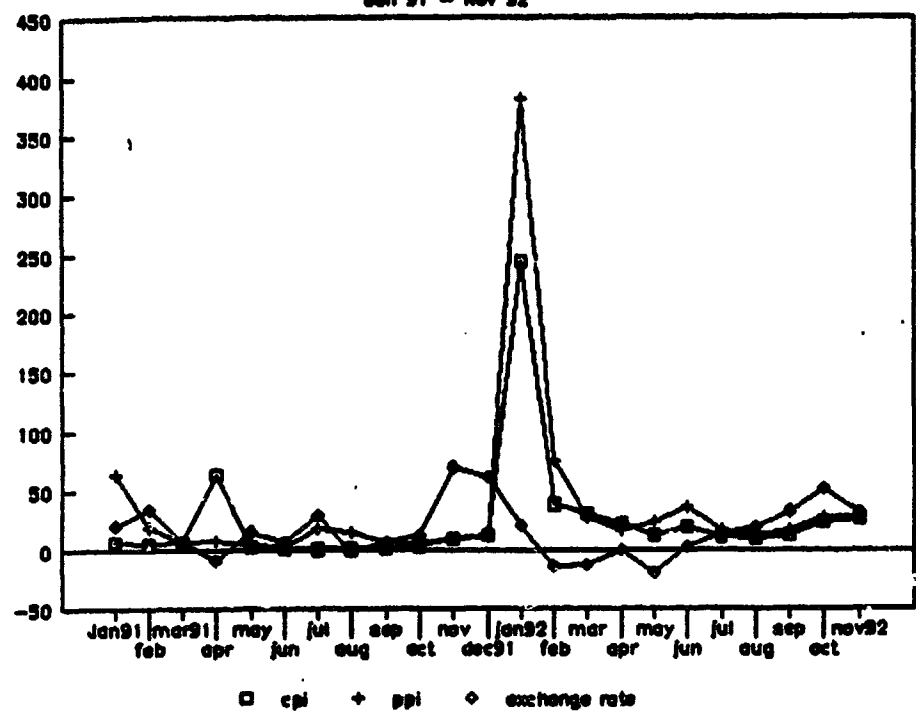
### **1.1: Macroeconomic Environment**

At the heart of the stabilization was the liberalization of producer and consumer prices. The jump in the price level of January 1992 was enormous; producer prices rose by 382% and consumer prices by 245% over the previous month. It was followed initially by high but declining monthly inflation, albeit with fair variance in regional changes and considerable instability. But, as Fig. 1 indicates, producer and retail price changes accelerated rapidly in the second half of 1992 and early 1993 when monthly inflation rates exceeded 25%. This acceleration and the corresponding instability of relative prices can be traced to a number of factors. First, despite the size of the initial price jump in January 1992, only a partial liberalization of prices had occurred. Subsequent measures of price decontrol have still left a large residue of domestic prices partially liberalized, hence there has been the expectation of future price increases; second, the behaviour of price setters in the economy and the structure of competition prevailing in particular markets and third, the fiscal and monetary stance was greatly relaxed. The associated fall in the exchange rate was non-neutral with respect to inflation as currency substitution eroded the monetary base and hence the inflation tax (see Fig.4).

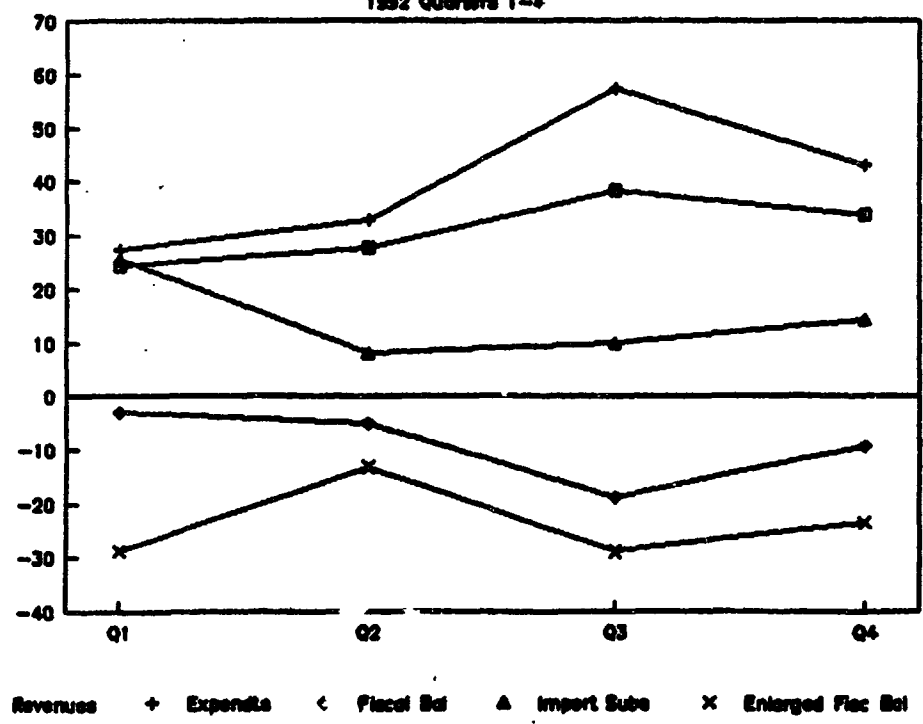
Several features of the Russian inflation should be emphasized. First, there has been very high dispersion in retail price changes across regions (see Table 1). While the measured monthly variance declines over 1992, the range has remained very large and volatile, as indicated by the upward drift in the coefficient of variation for the last quarter of 1992. Among other facts, this points to the presence of continuing differences in the degree of price liberalization across the economy and the pervasive presence of localized price controls. De facto centralized controls over energy prices, agricultural products, transportation charges and certain other items have also been maintained.

The mesh of liberalized and regulated prices has, not surprisingly, resulted in a confusing and volatile price structure. The striking divergence in the rate of increase of consumer and producer prices that Figure 1 indicates requires explanation. One reason may be of statistical coverage. Producer prices have been collected by branch from a very small number of the largest firms. This sample may not be

**FIG. 1**  
**Russia: Price and Exchange Rate Changes**  
 Jan 91 - Nov 92



**FIG. 2**  
**Russia: Fiscal Accounts (Shares of GDP)**  
 1992 Quarters 1-4



□ Revenue + Expenditure < Fiscal Bal ▲ Import Sub × Enlarged Fiac Bal

FIG. 3

### Russia; Real Money Aggregates

dec 91 - Jan 92 (dec91 prices)

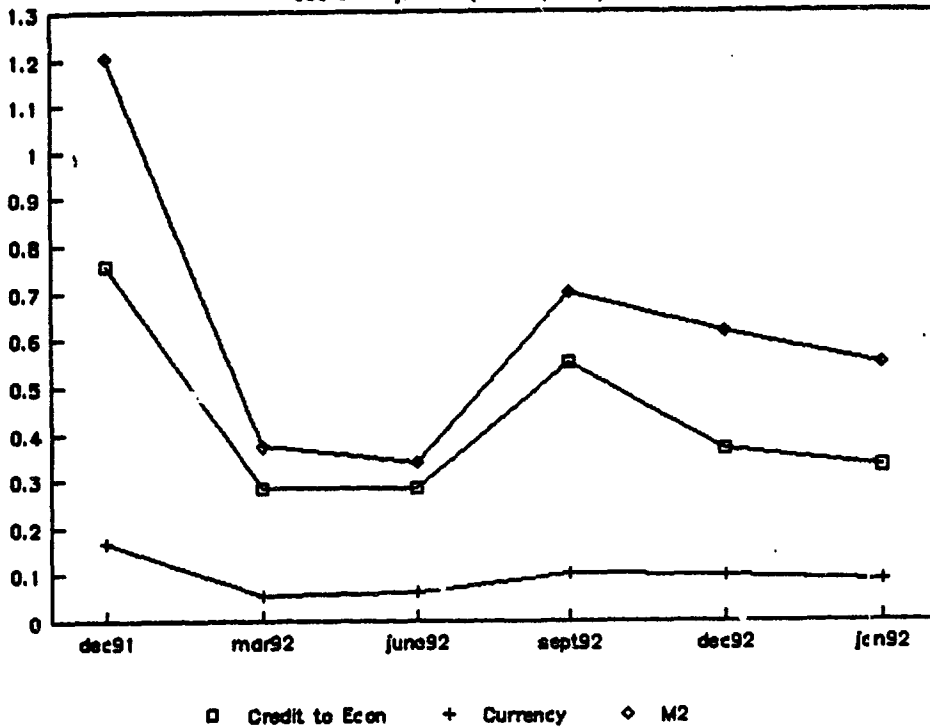


FIG. 4

### Russia: Money - Shares, Dec91 - Jan92

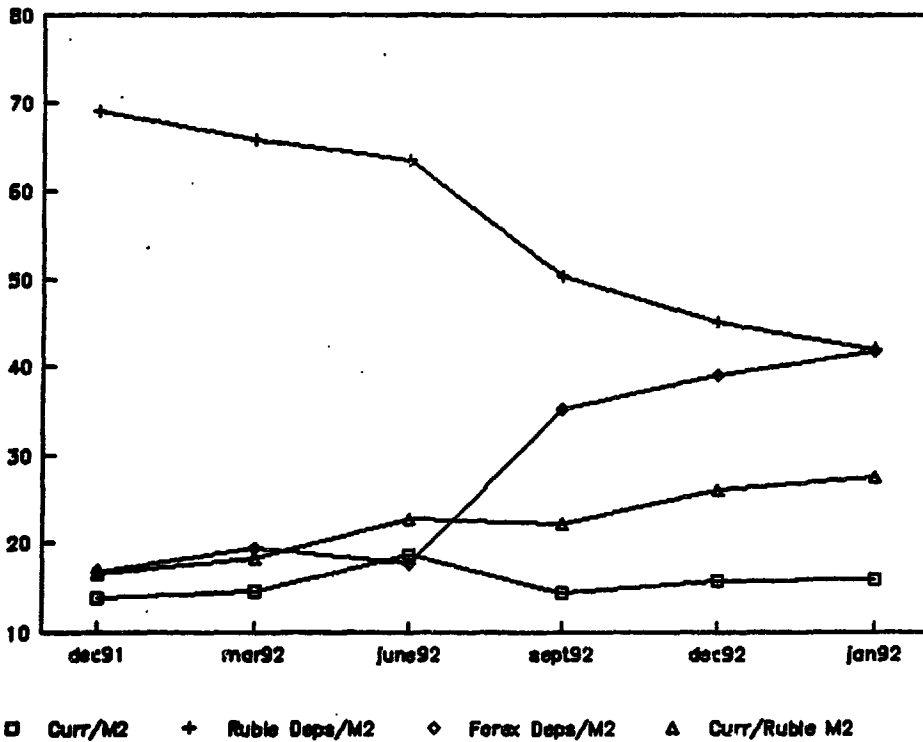




FIG. 5

Russia: Real Retail Sales

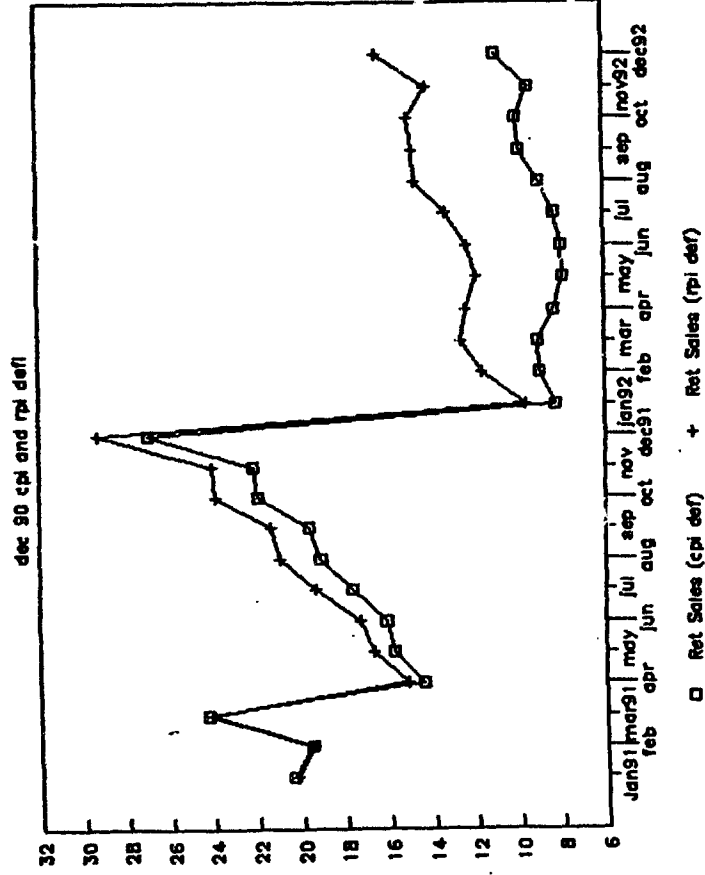
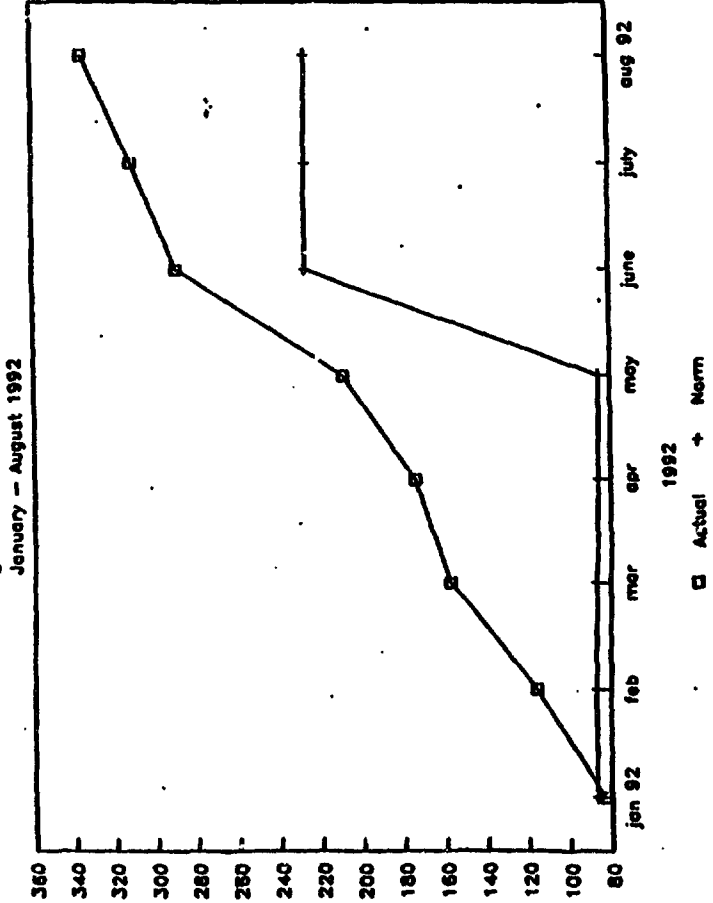


FIG. 6

Russia: Wage Bill and Wage Norm



representative and most probably overstates producer price increases. Even so, this data on producer prices would carry information on the pricing decision rule of larger firms; firms which we may assume are likely to have significant market power. Our survey evidence likewise suggests that firms with market power have largely adjusted on the price side<sup>3</sup>. This was facilitated by the associated accumulation of interenterprise arrears. In the expectation of insurance through the Central Bank, firms ratcheted up prices irrespective of underlying shifts in demand. This may explain why changes to non-energy intermediates drove the inflation in producer prices in early 1992. By contrast, final goods' relative prices fall sharply in early 1992 with some recovery later in the year as household income rebounded. Finally, we should note the importance of later and continuing adjustments to regulated energy prices and the likely pass-through to producer prices.

### 1.2: Anchors to the Stabilization

The stabilization was to be anchored primarily by money with incomes as a secondary anchor. There was no attempt to fix and use the exchange rate.

A tight monetary policy was announced with the implication that open-ended credits to firms would not be sustained. The Central Bank refinance rate was raised to 20% and subsequently to 80% by mid-year; lending rates to the firm sector reached 100/120% per annum in 1992.3Q. This implied strongly negative real interest rates throughout the year.

Initially, policy and institutional constraints combined to generate a restrictive monetary and fiscal stance. The fiscal deficit was held at around 5% of GDP at mid-year. Real broad money declined by 70% and credit to the economy by over 60% between end-91 and end 92Q1 (see Figs.2 & 3)<sup>4</sup>. Cash shortages, leading to wage and payments arrears, combined with the large cut in real household incomes, to dampen domestic demand.

The response of the firm sector to a relatively restrictive monetary stance and uncertainty over the sustainability of the announced fiscal stance was, in common with earlier episodes in Central and East Europe, a rapid expansion in inter-enterprise arrears. These jumped from around 39 million rubles in January to 3.1 billion at end-June. While in a highly concentrated productive structure, such as that of Russia, arrears can quickly be transmitted through the system as a function of the behaviour of larger

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<sup>3</sup> See S. Commander et al (1993b)

<sup>4</sup> Note that the end-December 1991 figure is a rather confusing base and overstates the subsequent cut to money and credit.

	Inflation		Range		St.Dev	CV	Nominal		Range		St.Dev	Real Wage		CV
	(% Change)		Max	Min			(% Change)	Max	Min	(Jan 92=100)				
<b>1992</b>														
<b>FEBRUARY</b>	<b>24.5</b>	<b>51.9</b>	<b>1.1</b>	<b>12.2</b>	<b>0.10</b>	<b>39.4</b>	<b>5653</b>	<b>799</b>	<b>968.9</b>	<b>0.42</b>	<b>111.9</b>	<b>0.14</b>		
<b>MARCH</b>	<b>21.1</b>	<b>53.5</b>	<b>4.1</b>	<b>10.5</b>	<b>0.09</b>	<b>36.0</b>	<b>7496</b>	<b>1066</b>	<b>1232.2</b>	<b>0.48</b>	<b>125.7</b>	<b>0.16</b>		
<b>APRIL</b>	<b>15.3</b>	<b>54.7</b>	<b>2.5</b>	<b>8.5</b>	<b>0.07</b>	<b>12.0</b>	<b>10585</b>	<b>1218</b>	<b>1563.0</b>	<b>0.45</b>	<b>122.1</b>	<b>0.18</b>		
<b>MAY</b>	<b>11.1</b>	<b>36.1</b>	<b>4.0</b>	<b>5.8</b>	<b>0.05</b>	<b>20.4</b>	<b>12558</b>	<b>1479</b>	<b>1887.0</b>	<b>0.51</b>	<b>132.3</b>	<b>0.21</b>		
<b>JUNE</b>	<b>13.1</b>	<b>25.0</b>	<b>5.7</b>	<b>4.4</b>	<b>0.04</b>	<b>37.8</b>	<b>14824</b>	<b>2124</b>	<b>2362.9</b>	<b>0.51</b>	<b>161.2</b>	<b>0.21</b>		
<b>JULY</b>	<b>7.2</b>	<b>18.6</b>	<b>0.5</b>	<b>3.4</b>	<b>0.03</b>	<b>7.7</b>	<b>15202</b>	<b>2307</b>	<b>2565.1</b>	<b>0.47</b>	<b>161.9</b>	<b>0.22</b>		
<b>AUGUST</b>	<b>7.2</b>	<b>17.2</b>	<b>1.9</b>	<b>2.8</b>	<b>0.02</b>	<b>7.7</b>	<b>16254</b>	<b>2425</b>	<b>2713.3</b>	<b>0.46</b>	<b>162.8</b>	<b>0.25</b>		
<b>SEPTEMBER</b>	<b>11.0</b>	<b>18.1</b>	<b>2.0</b>	<b>3.5</b>	<b>0.03</b>	<b>25.6</b>	<b>21065</b>	<b>3155</b>	<b>3297.9</b>	<b>0.45</b>	<b>184.2</b>	<b>0.25</b>		
<b>OCTOBER</b>	<b>22.9</b>	<b>42.0</b>	<b>9.0</b>	<b>6.2</b>	<b>0.05</b>	<b>20.0</b>	<b>27253</b>	<b>3372</b>	<b>4104.4</b>	<b>0.48</b>	<b>179.9</b>	<b>0.28</b>		
<b>NOVEMBER</b>	<b>26.1</b>	<b>47.0</b>	<b>9.0</b>	<b>6.5</b>	<b>0.05</b>	<b>19.5</b>	<b>28371</b>	<b>3718</b>	<b>4696.0</b>	<b>0.46</b>	<b>170.4</b>	<b>0.27</b>		

entities, there is some evidence that accumulation of arrears was a de facto concerted bargaining strategy for firms with respect to government. This strategy also facilitated the satisfaction of current priority claims on revenues, primarily wages.

In the third quarter of 1992 there was a clear shift in policy, led by the stance of the Central Bank. Real credit to the economy nearly doubled over the previous quarter<sup>5</sup>. Directed credit to sectors of the economy and to the banking system expanded enormously. The distinction between fiscal and monetary policy largely collapsed. Preliminary estimates of the fiscal deficit for 1992 were 11% but the measure is inappropriate. Central Bank credits to firms supported a higher-than-warranted path of nominal profits and hence of revenues. Further, the fiscal stimulus was far larger as directed credits and unbudgeted import subsidies likely amounted to a further 25+ % of GDP. Monetary policy accommodated the fiscal stimulus in so far as it was not overtly expansionary itself.

The driving mechanism behind the movement in fiscal and monetary aggregates has been the firm sector. But while arrears accumulation in the first half of 1992 was the most obvious symptom of firms' claims on government, the reaccumulation of inter-enterprise arrears at the end of 1992 and over the first quarter of 1993 is less easily explained, given the largely accommodating response of both government and Central Bank to these financing claims<sup>6</sup>. Arrears are unlikely to be a simple measure of incipient financial distress or an efficient sorting of losers and winners. With the widespread introduction of prepayment for contracts in mid-1992, firms have continued to try and capture a combination of inflationary gains through payments withholding and/or attach a high probability to further debt cancellation through the actions of the Central Bank.

The unsurprising result of the fiscal and monetary stance, and the allied political uncertainty, was not only accelerating inflation but increased financial disintermediation and currency substitution. It is striking to note that domestic foreign exchange deposits jumped to over 40% of broad money by early 1993 (see Fig.4)<sup>7</sup>. The flight from domestic money characteristically reduced the monetary base, hence cutting into the yield from the inflation tax. While the monetary base has remained large relative to

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<sup>5</sup> There are also some seasonal factors at work here.

<sup>6</sup> 3 Arrears of industrial firms -- a series of not comparable with the figures reported in the text for the first half of 1992 -- may have moved from around 1.9 billion rubles in September 1992 to over 3 bn by March 1993; but the figures are very uncertain.

<sup>7</sup> This excludes mattress money, the volume of which is not trivial.

GDP, given the unsophisticated nature of the financial system, and hence facilitated a still high inflation tax in 1992<sup>8</sup>, very negative interest rates and institutional restraints on liquidity have accelerated not only currency substitution but also a shift into currency.

The collapse in the exchange rate has been driven by the adverse expectations of agents and the switch out of the domestic currency. This has compounded the volatility attributable to a thin market. Despite continuing quantitative restraints on external trade, a super-competitive exchange rate has partly stimulated exports, primarily as a channel for capital flight<sup>9</sup>. In some cases, the export drive is likely to have exacerbated domestic goods market imbalances, further forcing up the price level.

The inability to anchor the stabilization through money was compounded by the extremely weak second anchor, wages. Wage controls were set on the wage bill of firms and capped in terms of an aggregate norm not exceeding four times the minimum wage. But given the infrequent and erratic shifts to the minimum wage, the result was that in most months -- as indicated by Fig.6 -- actual wages for All-Russia very significantly exceeded warranted wages under the wage tax rule. While this partially showed up in increased profit tax payments by firms, and hence contributed to the relative buoyancy of government revenues, the wage tax rule could not be construed as a binding constraint on firms.

As of the first quarter of 1993, the shift to full but lagged indexation has not occurred in any widespread sense, though there are signs that wage setters now explicitly target consumer price changes and, in parts of the private sector, set dollarized wages. Nevertheless, the decision at end-1992 to index pensions provides an important and more general precedent for example to wage bargainers. In a context of extreme price volatility and disturbances to relative prices, a shift to widespread indexation and hence of endogeneity of the adjustment interval, would make the economy even more vulnerable to shocks and hence to a non-linear acceleration in inflation.

## **2: Output and Inventory Changes**

Output fell by around 20% in 1992 and this deceleration likely continued through the first quarter of 1993. Although we observe fairly high synchronisation in the output decline across industrial branches and sectors, we observe no precipitous fall concentrated into one quarter, as for example occurred in Poland in the first quarter of 1990. Industry output universally declined over branches in 1992 but with

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<sup>8</sup> One provisional estimate is that the inflation tax was as high as 7% of GDP, already half the level of 1991.

<sup>9</sup> Provisional figures indicate that capital flight in 1992 was over US\$12 billion.

**TABLE 2 : INDUSTRY AND BRANCH INDICES**

**1992/1991**

	All	Energy	Fuels	Iron&St	NFerMet	Chem	Machine	Timber	Constr	Light	Food
Output	81.4	93.1	90.0	82.4	87.8	80.1	83.1	83.5	81.1	68.7	76.6
Employment	96.5	109.7	88.6	102.2	102.8	99.7	92.8	95.8	97.0	96.8	98.9
Product wages	24.1	31.2	19.7	24.0	14.1	20.5	29.0	38.8	34.6	49.1	29.3
Consumer wages	60.1	75.3	90.8	76.1	78.6	67.0	51.2	65.1	55.0	48.6	61.2
Producer prices	4126.3	3990.9	7596.7	5231.9	9227.7	5409.2	2915.0	2766.5	2629.0	1632.5	3449.5
Relative prices	100.0	96.6	186.2	127.5	226.7	131.9	69.9	66.2	62.8	38.1	83.2

**4 Q 1992 / 1 Q 1991**

	All	Energy	Fuels	Iron&St	NFerMet	Chem	Machine	Timber	Constr	Light	Food
Output	71.1	88.2	84.5	70.5	81.6	65.4	72.4	57.4	70.4	53.6	75.2
Employment	95.3	124.2	114.1	102.5	114.6	103.5	88.1	88.8	96.0	95.0	98.9
Product wages	23.4	41.3	15.8	33.4	15.3	26.2	33.6	24.8	43.3	36.7	27.6
Consumer wages	57.5	73.0	65.6	74.2	79.5	67.9	45.3	29.2	51.5	40.4	108.2
Producer prices	12368.0	8911.6	20966.3	11183.9	26120.6	13059.8	6784.9	5934.1	5985.1	5542.9	19729.8
Relative prices	100.0	71.8	170.1	90.4	212.1	105.6	54.5	47.6	47.9	44.4	160.0

some dispersion. The heaviest output losses have been concentrated in light industry and in parts of the capital goods complex, with the bulk of other branches registering decreases of between 16-20% (see Table 2). This follows on from significant output losses in 1991 implying very substantial contraction over levels obtaining at the end of the 1980s. Nevertheless, survey evidence suggests considerable intra-branch heterogeneity in the output path. Our survey in November 1992, for example, found that 58% of firms had experienced a clear decline in output over 1992 with an unweighted mean projected fall of 20/25% over the year. But 15% of firms reported output expansions and the remaining 27% constant output levels. Even within engineering and light industry -- branches with the largest quantitative contractions -- the picture was quite mixed <sup>10</sup>.

The sharpest falls over the previous year occurred in the third quarter of 1992 (see Fig.7). This may partly be a seasonal phenomenon or reflect adjustment lags but is hard to reconcile with the information, presented above, regarding the monetary and fiscal stance. Indeed, we observe a large relaxation in the credit constraint in the third quarter. However, we also observe a generalized shift to prepayments and contract binding that may have constrained liquidity in parts of the firm sector and hence compromised current output levels.

### 2.1: Aggregate Factors

The impulses to output decline have been various and difficult to attribute. They include aggregate shocks channelled through changes in macroeconomic policy and credit market effects, in part linked to inefficiencies in the system arising from the separation of household and firm accounts. On the supply side, we have two obvious possible channels. The first comes from disruptions to intra-CIS and CMEA trade, possibly with quantitative shortfalls leading to output constrained by inputs availability. Our survey evidence suggests that this has been a non-trivial factor in restraining current capacity. The second can be traced to relative energy prices. Such a relative price effect would likely impart a common upward shift in firms' production costs and have aggregate effects if there was low dispersion in the ex ante ratio of energy to total costs across firms. We observe a sharp upward adjustment to energy prices mid-year and this is likely to have been a factor inducing further slowdown in the the third quarter.

An obviously key candidate is household demand, given the buoyancy of government spending, channelled through the fall in household incomes and wealth associated with the price liberalization. It is indeed striking that real wages fell very substantially in January 1992 (see Section 5), as did

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<sup>10</sup> See Commander et al (1993b) for details

households' real balances. The fall in measured real wages was further exaggerated by the structure of, and inefficiencies in, the financial system provoking widespread liquidity squeezes and accumulation of wage arrears by firms. Thus, a certain share of nominal wage claims over the first half of 1992 were not satisfied due to currency shortages. In addition, industry-level data indicate a significant build-up in finished goods inventory that would be consistent with a negative demand shock to firms. In 1992, as Table 3 indicates, raw materials inventory in industry increased less sharply than for goods-in-process and finished items. The latter expanded strongly with adjustments to the valuation of inventory accounting for a share of the change. Aside from the type of shock the path of inventory suggests, it likely indicates that inventory accumulation has been one pattern of response by Russian firms.

But simply emphasizing the fall in household demand for firm sector goods is problematic. In the first place, given ex ante shortages, the initial price jump will have overestimated the decrease in real purchasing power. Further, real wages recovered fairly strongly through the year after the dip of the first month. Retail sales indeed fell dramatically at the outset of 1992 (see Fig.5) but rebounded quite powerfully in the second part of the year. In addition, the official data likely understate very significantly the value of retail sales, given the important innovations in trade that occurred through the year <sup>11</sup>. Moreover, in the context of high anticipated inflation, households evidently drew down real household money balances provoking a relatively buoyant demand for goods and assets over the second half of 1992.

## 2.2: Sectoral Factors

Shocks of a more reallocative nature should a priori be traced to changes in relative prices generating differential sectoral outcomes with respect to real variables. In addition we would expect changes in the composition of government expenditure to be significant. A fall in investment would show up in lower demand for capital goods and we would also expect falling demand for military goods. Evidence on military production is hard to gather but provisional estimates indicate that military output fell by 40% and the share of military sector output in total output declined by over 11% in the first nine months of 1992 <sup>12</sup>.

A starting point is obviously to see whether we can observe output and relative price changes

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<sup>11</sup> These include, for example, the proliferation of private shops and booths.

<sup>12</sup> Centre for Economic Analysis and Forecasting (1993)



Fig 7

### Russia: Industrial Employment & Output

Jan. 1991 - Nov. 1992

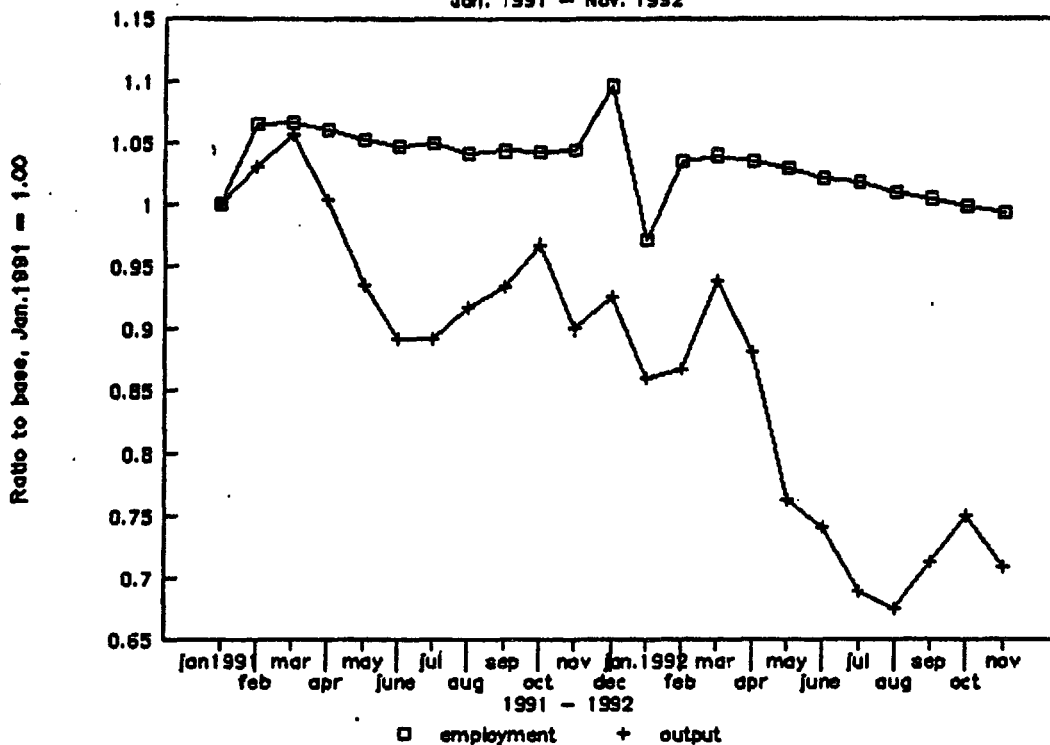


Fig. 8

### Output/relative price changes

nov1992/jan1991

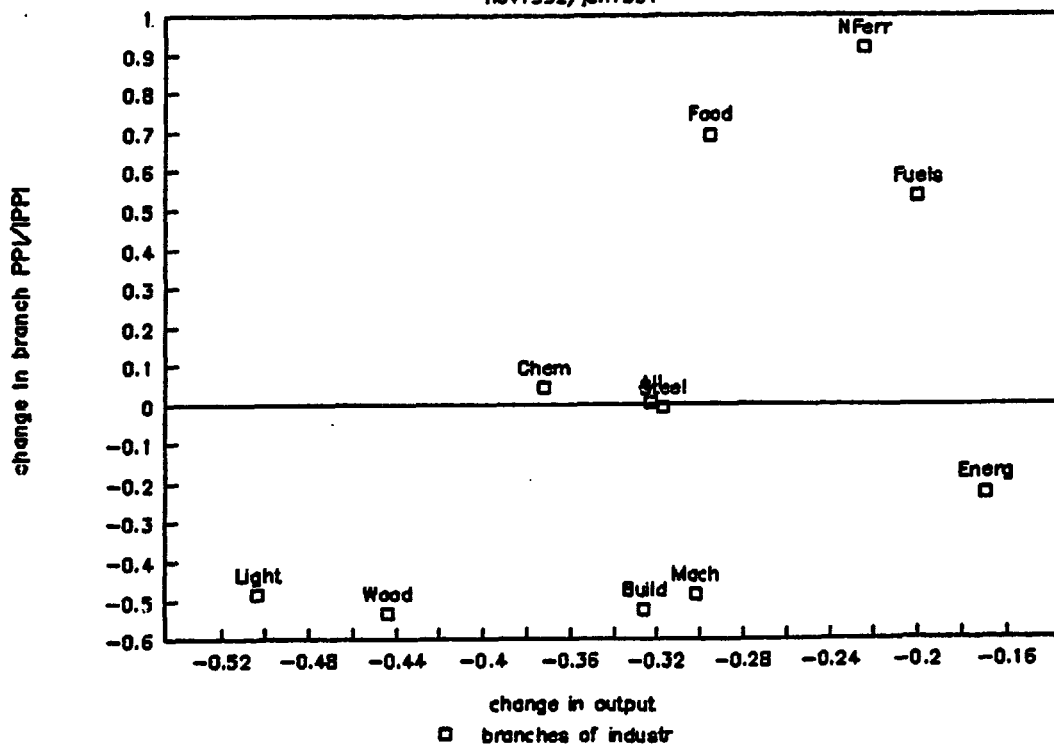


Fig. 9

Output & Profit Changes -- Firms with Market Power

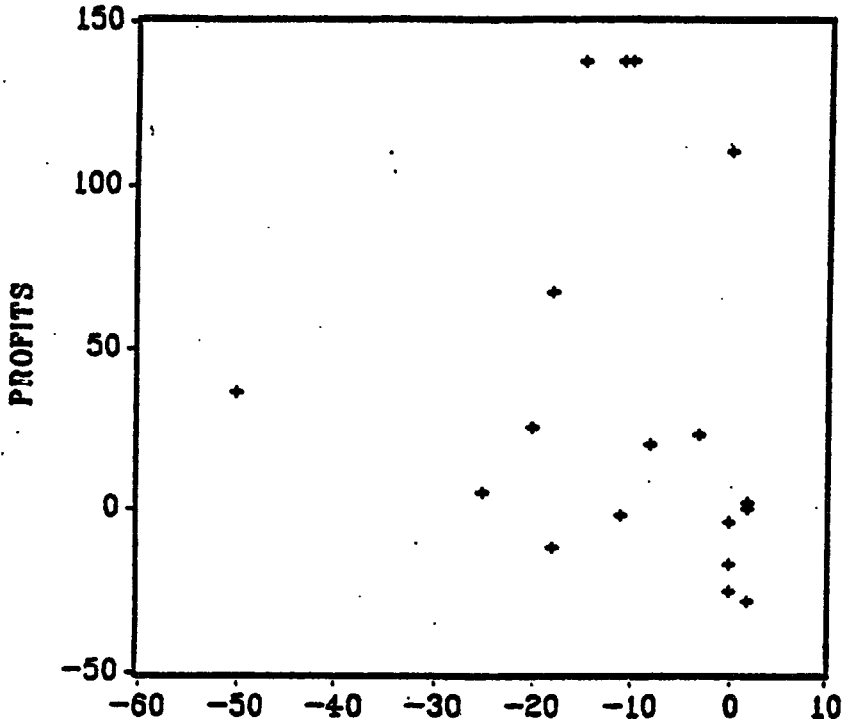


Fig. 10

Output and Profit Changes -- Competitive Firms

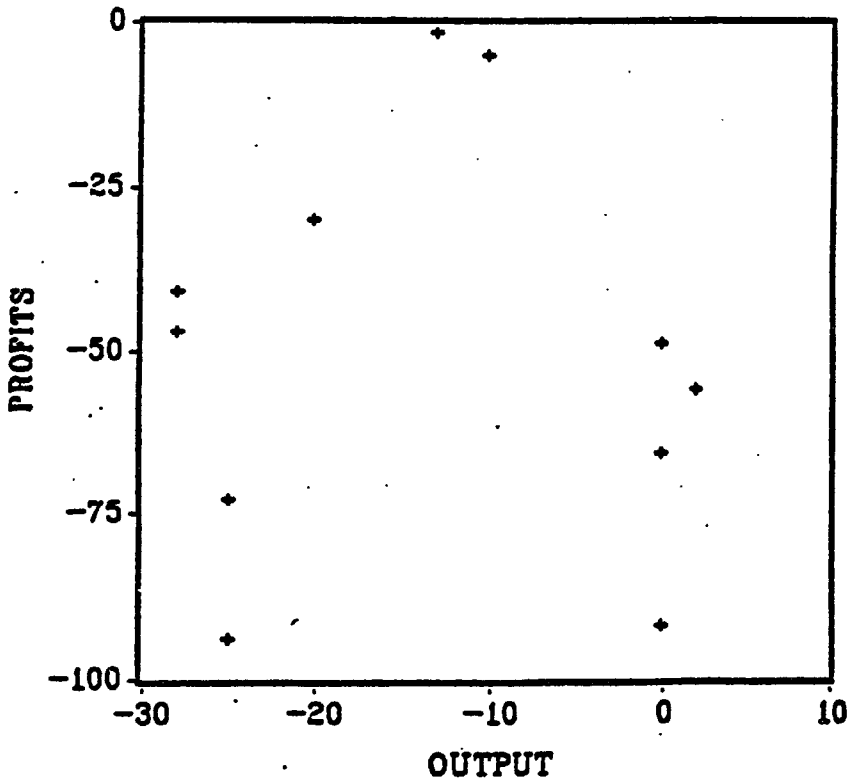


Fig. 11

Output/employment changes

nov1992/jan1991

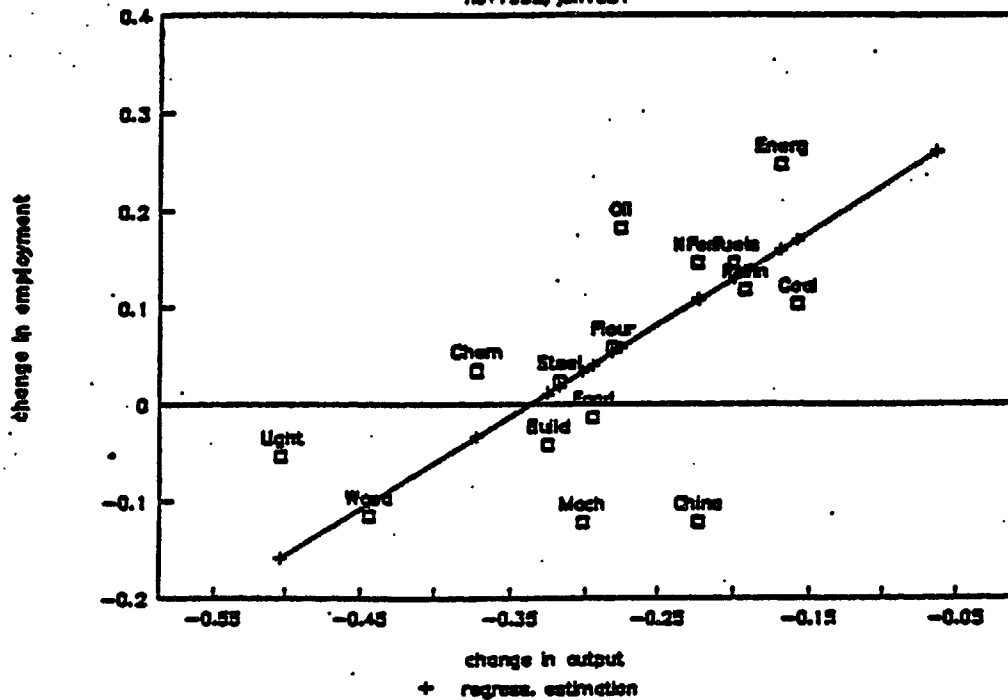


Fig. 12

Russia: Job Findings in Private Sector

1992, Collective and Private

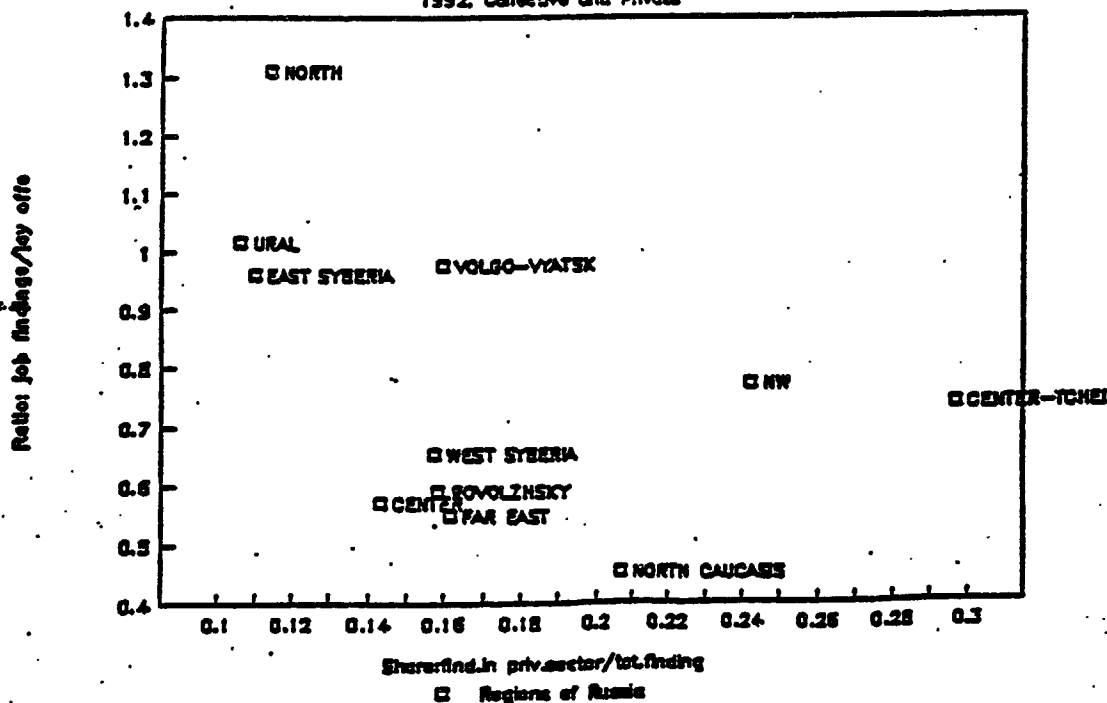


Fig. 13

Output and Employment Changes: Firms with Market Power

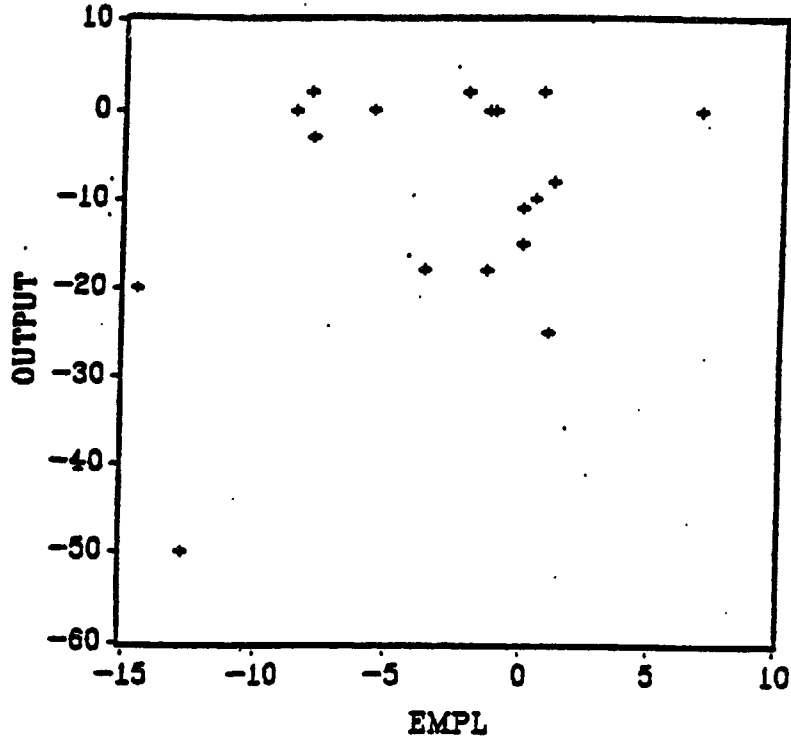
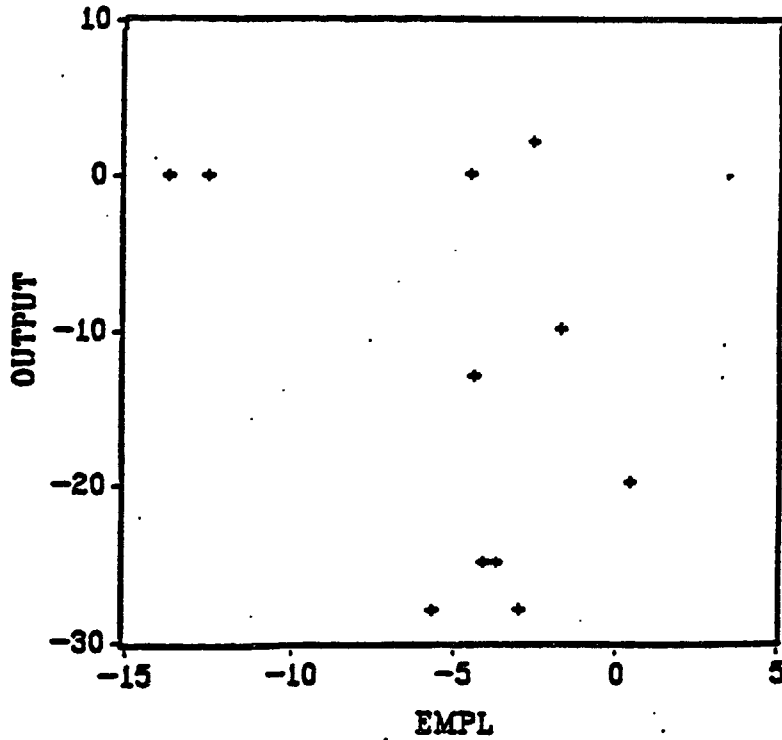


Fig. 14

Output and Employment Changes: Competitive Firms



moving together. Given the closed nature of the economy, it is not surprising to find no association between output changes and a summary competitiveness measure, such as short-run shadow branch profit rates<sup>13</sup>. At first inspection, branch series indicate an increased dispersion in the changes over 1992 with considerable monthly volatility. Preliminary regressions relating the change in branch output relative to industrial sector output with the change in branch relative prices, gives a clear and reasonably robust association in the changes over the majority of branches. The association is weakest for energy, building materials and food branches but particularly tight for machine-building and light industry, where household demand shocks and falling investment expenditures have presumably motivated the downward shift in their relative prices. The scatter (Fig.8) likewise indicates that relative output and relative price changes have been positively correlated, providing some limited evidence in favour of a structural component to the distribution of output losses. We should note, however, that this has not been translated into changes to employment; a point dealt with in more detail in Section 4 below.

### **3: Financial Performance in the Firm Sector**

Given what we now know about output and arrears in the firm sector, we might have expected a sharp deterioration in financial performance across branches. This is probably an underlying reality but the reallocation of resources through the budget and directed credits has subsequently shown up in higher than projected revenues. Higher flows to firms have supported higher nominal profits and hence higher tax revenues, in part through the profit tax. But the general picture is likely to be diverse and, given the large disturbances to the price level and turbulence in relative prices, we would expect volatility in firm profits and a higher measure of randomness in their distribution over branches. This is indeed the picture that emerged from the first year of the Polish stabilization<sup>14</sup>.

In the absence of branch level information on the profile of profits, we have to rely on the survey results with the information covering 1991 and the first three quarters of 1992. This has the further advantage that we are able to classify firms crudely in terms of their market status. Thus, 60% of firms were classed as monopolists or oligopolists, here defined as between 2-5 producers. Competitive conditions only dominated in light industry and in the trade firms.

We observe fair persistence in both sales revenues and gross profits at branch level over early

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<sup>13</sup> Short run shadow profit rates with capital and labour priced at zero are given in Senik-Leygonie and Hughes (1992).

<sup>14</sup> See Pinto et al (1992a)

1991 levels, even if there is greater intra-quarter variation in 1992. For firms classified by market power, it is striking to observe the divergent movements in real revenues and profits for competitive as against firms with market power. Competitive firms suffer an unambiguous negative shock to gross profits and sales over 1992. Although there is considerable dispersion in the level of profits at the firm level. Thus, at first inspection we find no evidence of a generalized sales and profits slump among the sample. There is one exception -- the largely budget-financed science sector firms whose revenues indeed turn strongly negative in real terms, particularly in the first half of 1992 when the explicit stance of the government was to reduce budgetary flows to firms. But the bulk of the discussion below centres on the industrial and trade firms in the survey.

In principle, the net profit position of firms ought to provide some indication of retained profits and hence of the implicit trade-off between current allocations and the longer term viability of the firm. This is more complicated in the Russian context as the allocation rule governing the distribution of gross profits has been qualitatively different than in a market-based system.

The net profit position of firms reflects the distribution of gross profits over the respective funds, profit tax and interest payments. In general, firms are expected to assign all gross profits but can hold back a certain share. In 1992 the dispersion in net profits was considerably greater than for gross profits. Indeed, over a quarter of the sample registered negative net profits in at least two of the three reported quarters of 1992. However, almost all these firms reported negative profits through 1991 which obviously weakens the argument that negative profit shocks were loaded into 1992. Further, given uncertainty over rules regarding investment allocations, profit tax rates and self-financing requirements as well as strongly negative real interest rates, it is not surprising to find firms assigning more than current gross profits. This can reflect a drawing down of financial reserves or commitments which firms seek to cover ultimately through financing by the banking system.

For 32 firms where we have information on both changes in output volume and changes in real profits we are able to break this down in terms of market attributes, classifying in terms of monopolists, few producers and competitive firms. Figs. 9-10 provide scatters relating output and gross profit changes. For firms with market power it is clear that negative shocks to output have mostly been associated with positive changes in gross profits. This does not hold for competitive firms. The firm level information thus seems consistent with the path of the more aggregated producer price series available for branches at a Russian level. The implication is that we are continuing to observe the behaviour of de facto price setters able to control directly gross value added.

Finally, we can also note the general stability of the shares accounted for by the respective funds in the allocation of gross profits. In particular, it is striking to note the resilience of investment and technical development fund allocations. While we cannot satisfactorily capture the end-use of fund expenditures, we do not observe any notable shifting off resources towards bonus payments or the social fund, where the translation into current wages would be easier.

#### 4.1: Changes in Employment in 1991 and 1992

Several features of the former Soviet system are important in understanding recent developments. They include *ex ante* high labour force participation, high concentration in employment, as in output, and a heavy weight to industrial in total employment. Trade and services accounted for no more than 12% of total employment in 1985. In addition, the skill profile and its bias toward manual labour reflected the stock of technology and the extensive growth strategy of earlier periods. While unemployment was minimal, job turnover, particularly at the base of the skill structure, was fairly high, running in the range of 15% per annum in industry in the late 1980s.

Job losses precede the 1992 reforms. For industry, aggregate employment in 1991 was already down nearly 8% over the peak in 1986 and this trend holds for the major branches, save construction. This is generally related to the enterprise reform law and the wage and employment setting regime allowed under that reform. Greater decentralization of wage bargaining combined with an explicit tax on wages gave incentives for employment reductions and motivated higher turnover through changes in relative wages across firms.

Aggregate data provide some insights into employment changes over 1991 and 1992 and are striking in showing relatively little employment loss, given the size of shocks to output. This holds for both the state sector as whole and for industry. Total state sector employment fell by around 3% in both 1991 and 1992. Over the full period, GDP fell by around 30%. For industry, the decline is also relatively smaller; employment being down under 4% in the first reference period. In 1992 net job losses decelerated and total industrial employment fell by under 2% <sup>15</sup>. Around 85% of gross job losses were accounted for by changes in the machine-building branch and, indeed, several branches registered net increases to employment over the year (see Table 2).

Fig.11 provides a scatter for output and employment changes over the major industrial branches for the period January 1991 to November 1992. It shows quite clearly that branches with the largest

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<sup>15</sup> Part time work fell by 5/6% in industry over 1992.

TABLE 3a

Employment flexibility, some indicators for August, 1992, Russia by regions

REGIONS	Ratio of personnel in involunt. leaves to industr. employ.	Ratio of employees with reduced hours or week to ind. empl.	Ratio of Marginal Empl. (col.1+2) to Employment in Industry	Unemploy Rate: Jobseek/ Labour Force	Ratio of Marginal Employ. to Labour Force	Ratio of Total Marginal Employ. +Unempl. (Broad) to Labour Force
	1	2	3	4	5	6
RUSSIA	3.96%	3.86%	7.81%	1.39%	2.36%	3.75%
North	3.20%	2.69%	5.88%	2.04%	1.86%	3.91%
North West	5.41%	6.04%	11.45%	1.58%	3.25%	4.83%
Center	4.86%	4.30%	9.16%	1.46%	2.79%	4.25%
Volgo-Viat.	7.10%	9.33%	16.43%	1.37%	6.28%	7.64%
Centr.-Chernoz.	6.29%	5.15%	11.44%	1.43%	3.36%	4.80%
Povolzhsk.	2.36%	2.90%	5.26%	1.19%	1.68%	2.87%
North Caucas.	5.19%	3.99%	9.18%	1.33%	2.16%	3.50%
Ural	4.55%	3.12%	7.66%	1.07%	2.83%	3.90%
West Siberia	3.53%	5.97%	9.49%	1.48%	2.62%	4.10%
East Siberia	3.28%	1.00%	4.28%	1.20%	1.18%	2.38%
Far East	1.65%	0.96%	2.62%	1.03%	0.60%	1.63%
Kaliningrad	0.55%	0.38%	0.94%	2.48%	0%	2.74%



output losses have adjusted employment most but with huge asymmetry in the changes. The relationship is not systematic and perhaps more striking is the general increase in employment over the majority of branches despite significant output losses.

But this story is somewhat misleading. While it is true that formal separations and net job losses have remained small in both the state sector as a whole and in industry, large numbers of workers since mid-1992 have been placed on short time work and involuntary leave. This strategy would be consistent with inducing active job search behaviour or secondary employment by de facto reductions in primary employment. In many contexts, this appears equivalent to providing dole within the firm, as labour costs are pared back to minimum wage levels or below.

Unfortunately, we lack good time-series that would enable us to get some measure of the employment overhang embodied in short time and involuntary leaves. A Goskomstat firm survey in October 1992 indicated that as much as 25% of all firms have placed some fraction of their labour force on unpaid leave or short time working and that this share had doubled since June 1992. While we lack time-series information on this phenomenon we have a very detailed breakdown for August 1992. As Table 3a indicates, for the industrial sector roughly 8% of the current workforce was on involuntary leave or short time work. In nearly 40% of oblasts over 10% of the industrial labour force were marginally employed. This share rises to over 20% in regions, such as the North West, where military production has been concentrated<sup>16</sup>. Quite obviously, the dominant response of firms has been to place workers in marginal employment without formal separation. In crude terms, this may be taken as a measure of the employment overhang. Releasing the marginally employed into unemployment in 1992.Q3 would have raised the unemployment rate by 275%.

In summary, while net job losses have remained small and with limited regional dispersion, this probably disguises the parallel phenomenon of labour hoarding through short time work and involuntary leave. In addition, significant numbers of workers have been placed on minimum wages, signalling the intention of firms to shed those jobs without denying transitional insurance.

#### **4.2 Private Sector**

If the story on the state-side of the employment picture is of gradual job destruction, alongside

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<sup>16</sup> Take the example of Novosibirsk oblast where we know that military employment exceeded 40% of total employment pre-1991; employment losses have been trivial but marginal employment amounted to 25% of industrial employment.

a rather high degree of churning -- with workers moving at quite high rates between firms -- the picture with respect to the private and cooperative sectors -- the sectors in which we might expect some job creation -- is less evident. This is partly because of confusion arising from the very widespread reclassification of title that has been occurring in both years <sup>17</sup>. In the case of cooperatives, official survey data show a 40% decline in employment between January and July 1992, while private firms' employment increased by over 10%. Even so, this would imply that combined employment in these categories in mid-1992 comprised no more than 3% of total employment. Further, the relatively high share of secondary workers -- 16% as against the economy-wide average of 3.5% -- suggests that many of these firms may be small, part-time operations. It seems that official data capture very inaccurately the path of private sector employment and likely grossly underestimate.

One indication of the degree to which private job growth is underestimated is provided by the data on the direction and number of job finds of those leaving unemployment. Although only 16% of job finds at the Russia level are in collective or private firms, we can see very wide dispersion over the regions with 25/30% levels being reported in several regions (Appendix Table 1). Fig.12 relates that share to net job finds. Of interest is the apparent inverse association of private sector finds with net job finds; indicating the obvious discrepancy in the respective growth and destruction rates for jobs <sup>18</sup>.

#### 4.2: Employment Changes: Firm Level Data

Questions of coverage and data reliability make firm level data attractive as a countercheck. We can explore employment decisions in more detail using our survey results. This yields some striking results that can be summarized as follows; (i) high rates of turnover, especially among skilled and semi-skilled workers, (ii) very low levels of involuntary separations across all firm size classes and branches, (iii) considerable new hiring by firms, largely to replace separating workers and, consequently, (iv), a generally fairly low level of net job losses through 1992.

For the firms in our survey it is notable that while nearly three-quarters of the sample reported net employment losses for the third quarter of 1992, over 25% actually posted net employment gains.

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<sup>17</sup> The ILO survey in June reports 27% of establishments classed as leasehold, 55% state and 18% private but the distinction is not, it appears, very meaningful in terms of economic behaviour. The state sector may be shrinking fast (down 8% over their sample between September 1991 and June 1992) but primarily by means of title changes.

<sup>18</sup> These figures originate from the registers in Employment Offices and clearly underestimate both job finds and layoffs.

**Table 3: Russia: Inventory in Industry by Type; 1991.4 - 1992.3**  
 End period nominal stocks                      Change through IVA

Type	End period nominal stocks					Change through IVA		
	91.4	92.1	92.2	92.3	(Change) 92.3/91.4	91.1	91.2	91.3
Raw Materials	326	495	938	1511	4.6	50	429	476
Goods-in-Process	55	167	273	480	8.7	72	169	125
Finished	32	170	319	583	18.2	-22	149	138
Merchandise	7	22	50	110	15.7	8	14	15
Other	9	38	107	200	22.2	2	13	45
Total	429	892	1687	2884	6.7	111	776	799

Source: Russian Goskomstat [IVA= Inventory Value Adjustment]

**Table 4: Employment Changes over 1992, 3rd Quarter**  
 Separation, Hiring and Vacancy Rates (% of labour force)

	Firm Size				
	1	2	3	4	5
Separations	10.5	10.0	9.5	5.7	7.8
Hires	7.2	3.7	4.8	2.5	9.9
Net Separations	3.7	7.0	5.2	3.3	-2.2
Expected Separations in 92.4	2.4	2.4	2.3	0.5	0.5
Vacancies	1.5	3.1	1.0	2.2	1.9
Posted Vacancy	0.1	1.0	0.7	0.9	1.1

Source: World Bank Survey

**Table 5: Job Separations by Type**  
 (% of total separations)

	Firm Size				
	1	2	3	4	5
Quits	62.2	52.3	52.9	43.4	52.7
Disciplinary Employment Reduction	8.5	3.2	3.4	7.7	4.7
Other	10.4	31.3	10.7	37.1	3.1
	19.9	13.2	33.0	11.8	39.5

Source: World Bank Survey

Further, in one quarter alone nearly 3% of the labour force experienced some labour market transition. The main results are condensed in Table 4.

Several points emerge. First, for 1992.3 total separations amounted to around 8/10% across the firm size classes and the separation rate was fairly evenly distributed. Second, net job losses were much smaller, amounting to no more than 5% for the total sample. The dispersion is fairly low but in general net job losses are more concentrated among smaller firms. Indeed, the largest firms actually experienced net increases to their work-forces. Expected job losses over the fourth quarter that are reported are similarly low and inversely associated with firm size.

Table 5 also pins down the principal characteristics of the separations process. The dominance of quits is striking and over 50% of all separations can be classed as voluntary. Explicit job reduction decisions display considerable variance and amounted to around 17% of gross job losses for the full sample. Total involuntary separations comprised less than a quarter of reported total separations. The weight of quits in total separations reinforces the view that the Russian labour market remains characterized by rather high turnover at local level, if not across regions where institutional, housing and other constraints tend to be more binding.

The persistence in hires raises some interesting questions. Relating output changes to employment changes in the sample is instructive. As with the aggregate data, most striking is the absence of a clear and predictable relationship between output and employment movements. Indeed, for the 25% of the sample that reported positive net hires in 1992.3, nearly 70% projected output losses over 1992 with an unweighted mean decline of 15%. There is significant dispersion over branches and firm size classes with respect to employment changes but there is clear asymmetry with regard to the size of shocks to output. For the outermost observations where output losses ranged between 35-50%, employment contraction averaged no more than 15%. Figs. 13-14 put together the direction of output and employment changes for the survey firms. The scatters again classify in terms of market power and are mainly remarkable for showing no predictable relationship between output and employment changes for either types of firm. The clear conclusion that can be drawn, bearing in mind the limitations of the one quarter recall period, is that employment adjustments have occurred and there are signs of rapid turnover within localized labour markets. But the adjustments have uneven and restricted given the size of changes to output. At first approximation, we may assume that labour productivity has declined.

The survey results reinforce the conclusion gathered from more aggregate data sources regarding the continuing high rates of turnover, very low levels of involuntary separations, significant hiring and

a generally low level of net job losses in Russia through 1992. However, several factors repay more attention. First, the high level of quits and hires for workers -- in both cases the proportions are significantly above the share of workers in the firms' labour force. Second, there is the dominance of production workers, rather than unskilled workers, in these quits. It seems likely that this process has been promoted by emerging competition for workers and by the persistence of apparent shortages for skilled or production workers. The recent liberalization of the wage setting and wage structure -- while quite evidently highly incomplete (see Section 5) -- appears likely to have promoted local job turnover as production workers chase relative wage adjustments. This obviously begs the question of why labour demand for such workers remains so relatively buoyant. The answer seems mainly to be found in fixed factors or technology. What we know about work organization in Russian industrial plants also emphasizes the strong and somewhat mechanical association of plant to labour.

Involuntary labour shedding has consequently been concentrated on non-production workers and, in particular, women. We know from the unemployment data that women comprise over 70% of the unemployed at the start of 1993. We also know that this share has not been shifted by the growing weight of layoffs in total inflows to unemployment in 1992. The clear implication is that production workers have remained largely untouched by unemployment and by the process of involuntary separation. Firms have, wherever possible, dispensed with ancillary workers, largely concentrated in administrative work and in many cases female labour. However, even here the job losses in industrial enterprises remained very limited by the end of 1992. The bulk of job losses have been concentrated in the state budget or non-material sector, not in industry. This also explains the high weight of female and clerical workers in total unemployment.

### **4.3: Labour Hoarding**

The relatively gentle decline in employment relative to output in industry is striking particularly given the widespread acknowledgement of extensive and continuing labour hoarding. The marginal employment measure already alluded to gives some indication of the general scope of the phenomenon. Further, nearly two-thirds of sampled firms reported excess employment levels in 1992.3. This was fairly equally distributed across firm size class and branch and, with the exception of the largest firms where the estimate was below 1%, was put at between 8-14% of current employment.

At first glance, one might expect institutional factors governing dismissals and/or union presence

to impede involuntary separations<sup>19</sup>. But this appears generally not to be true. Unions are present in most workforces but carry negligible bargaining power so that in only 10% of cases where excess employment was present were dismissal rules and worker protest cited as factors of any significance in governing employment decisions. By contrast, in nearly two-thirds of those cases the motive for labour hoarding was the belief that output would shortly expand, warranting current retention of excess workers. In 25% of cases, the argument given was that such workers were not a significant financial burden to the firm.

The latter response can also be related to the presence of minimum wage workers within firms. Average industrial wages exceeded minimum wages by a factor of between 5-12 times over 1992. Evidence from the survey suggests that some firms -- particularly in machinery and light branches -- have begun to place parts of their labour force on or around minimum wages with minimal work requirements. Minimum wages were reported for nearly 5% of the sample workforce and in several cases was in the range of 20/25%<sup>20</sup>. This amounts to de facto provision of unemployment benefit within the firm, with, of course, the difference that workers still have access to some firm-provided benefits. Assuming the rough distribution of wages in total labour costs from the firm-side and constant access to non-wage benefits, resort to minimum wages would have allowed firms to make per capita labour cost savings of at least 45% over 1992. Taking benefits -- primarily housing -- as a short run fixed cost, wage reductions to the minimum wage level would be equivalent to or, in some cases, less than outright severance costs<sup>21</sup>.

### 5.1: Wages in 1991 and 1992

Initial conditions with respect to wages can be summarized as follows. Wage levels were low with non-monetary components being a substantial part of personal income<sup>22</sup>. And low wage levels have continued through 1992 and 1993, as Fig.16 makes clear. The ratio of average industrial wages

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<sup>19</sup> Firing decisions were taken by the administration alone in 60% of cases, by the administration in association with the trade union in 15% of cases and by the factory council in the remaining 15%. Opposition to dismissals arose from the trade unions in half the sample, but significantly no opposition was reported in a third of cases.

<sup>20</sup> 13% for engineering firms; 9% for light industry.

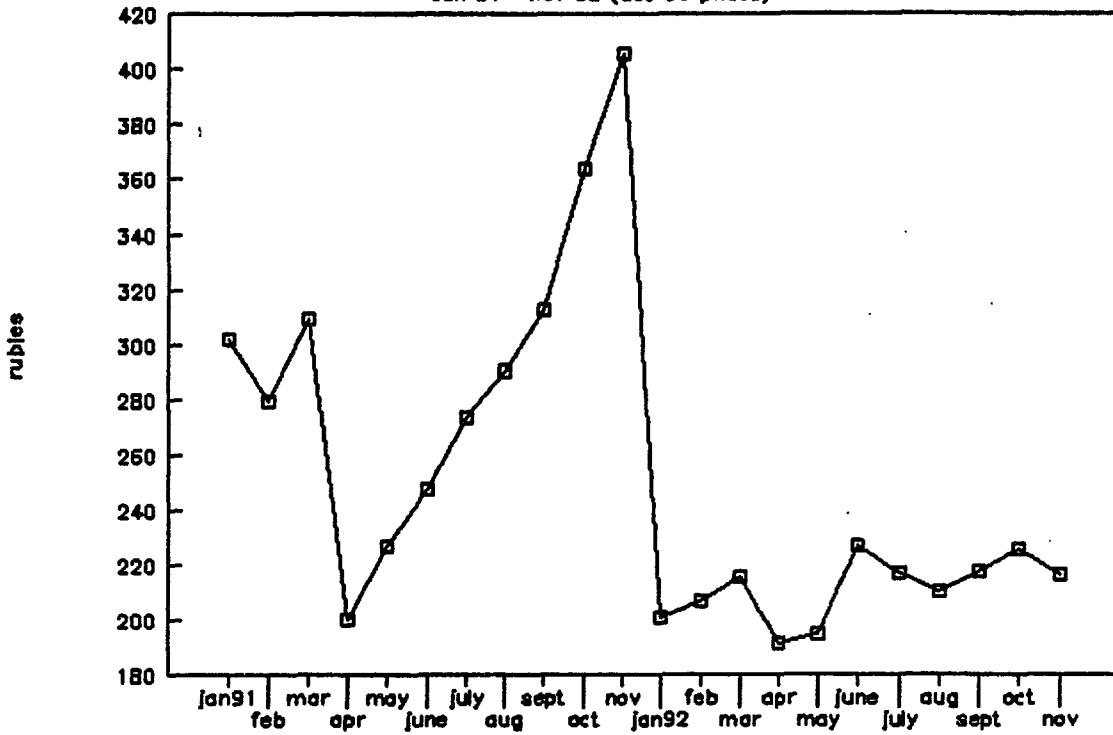
<sup>21</sup> Note also that a minimum wage 'dole' would have been roughly equivalent to average benefits payments through 1992.

<sup>22</sup> Non-monetary benefits currently amount to 35/40% of labour costs and take a wide variety of forms, including housing. See Commander et al (1993b) for a fuller discussion of these issues; also World Bank (1993).

Fig 16

### Russia: Real Industrial Wage

Jan 91 - Nov 92 (dec 90 prices)

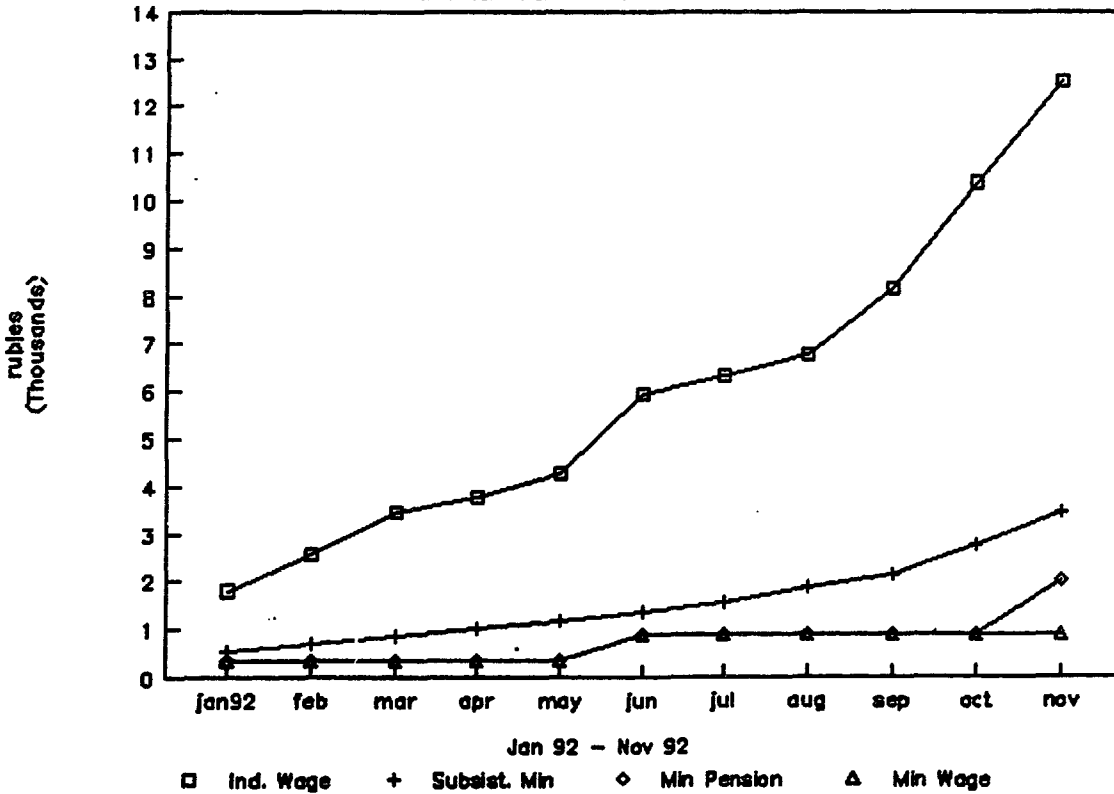


□ Industry Wage

Fig 17

### Russia: Industrial Wages, Minimum Wages

Minimum Pensions and Subsistence



Jan 92 - Nov 92

□ Ind. Wage    + Subsist. Min    ◇ Min Pension    Δ Min Wage

Fig 18  
Russia: Industrial Real Wages by Branch

Jan 91 - Nov 92 (dec 90 prices)

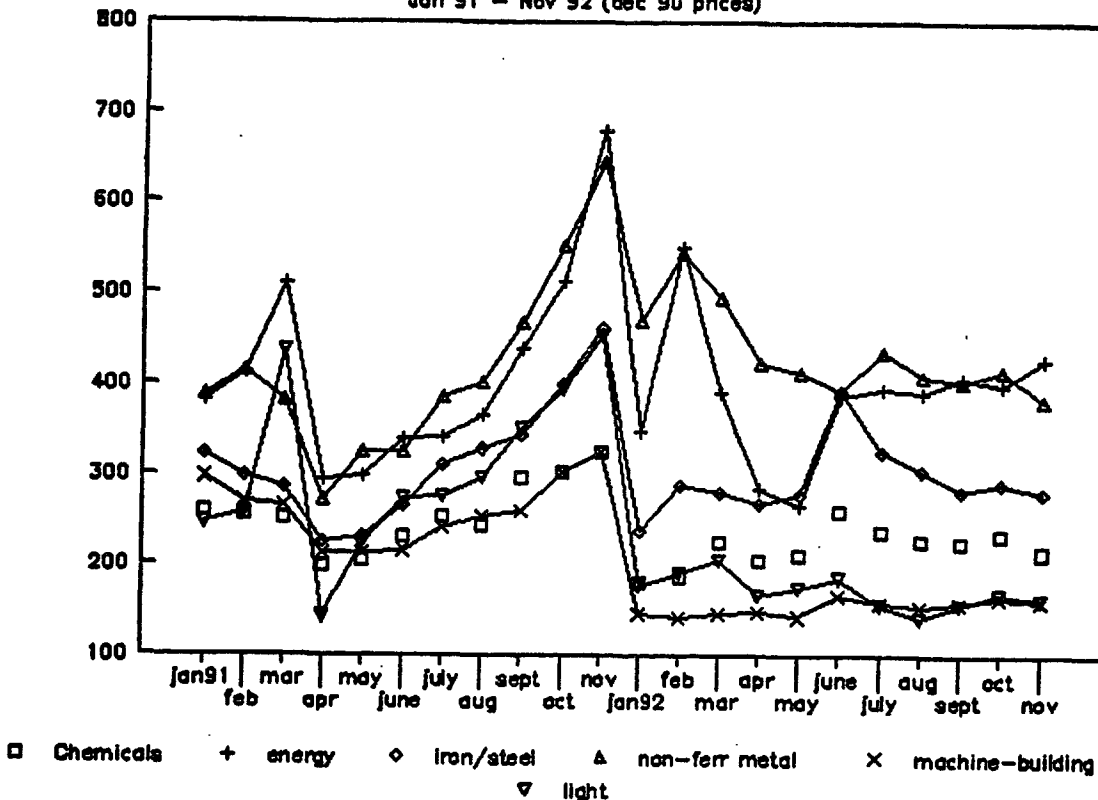
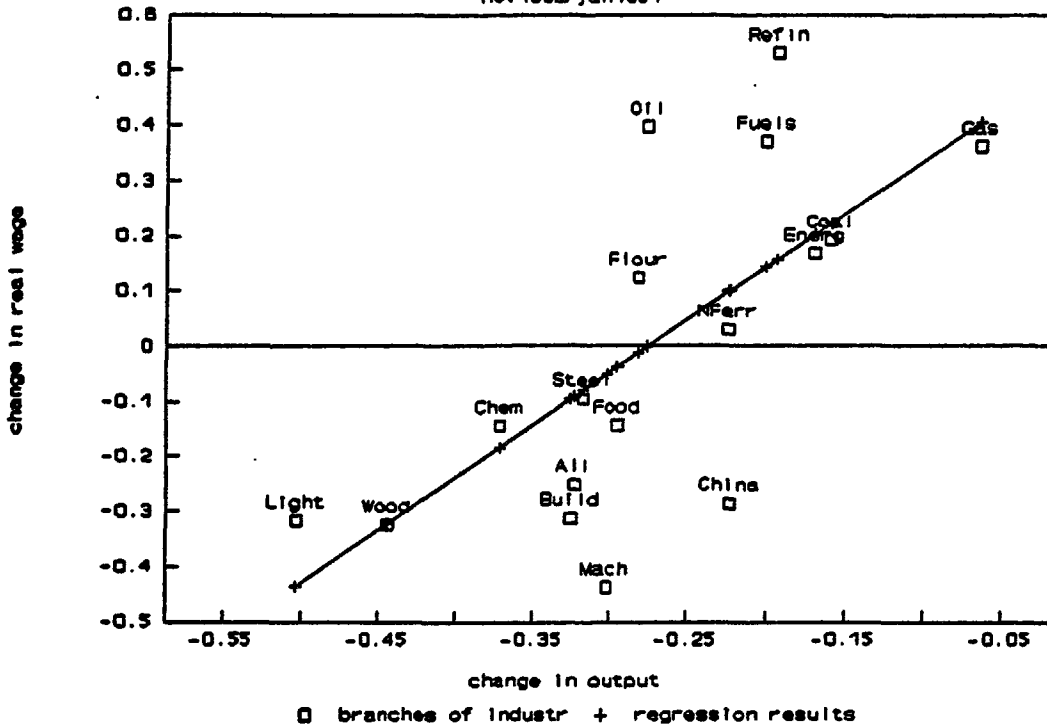


Fig 19  
Output/real wage change (cpi)

nov 1992/Jan 1991





to a minimum subsistence basket has generally not exceeded 4, with minimum wages and pensions consistently below that absolute poverty indicator<sup>23</sup>. Wage dispersion was very limited, even including bonus payments used to motivate workers. The wage structure betrayed a bias toward production workers with low or negative returns to skills accumulation. The Enterprise Reform Law of 1988 had, in principle, allowed for greater decentralization of wage and employment decisions and weaker restraints on changes to the wage level and structure<sup>24</sup>. In general, the main result was relative wage and employment stability alongside higher across-the-board nominal claims. Loss of control over nominal wages was clearly an important component driving the acceleration in inflation over 1991.

With regard to the wage level, we have the obvious problem in measurement across scarcity regimes, complicated in 1992 by the additional problem of cash shortages and liquidity constraints. Both drive a wedge between notional and actual claims making identification of the real-real wage almost impossible. Further, the presence of secondary work -- in 1991 this was measured at 3.5% of total employment in the state sector -- and its likely expansion omits components of aggregate wage income. In addition, the evidence of short time work and unpaid vacations forced on workers by firms would result in reduced de facto nominal wage payments. Despite these important caveats, the aggregate data carry information both with respect to the direction of change and the structure of relative wages.

At first glance, official wage data show statistical real claims accelerating in 1991. At the peak in December 1991, statistical real wages were roughly 50% higher than in January 1991 and double the level of January 1988 when the Law on Enterprise Reform was enacted. The climb in statistical wages is followed by a precipitous fall over the first quarter of 1992. The January price jump alone engineered a 55% decline over December 1991 (see Fig. 17). This decrease is common across industrial branches. The decline is yet larger -- around 75% -- when measuring average industry sector product wages. Thereafter, we observe some pick-up in wage claims, particularly in the second half of 1992. By early 1993 average industrial wages were converging back to early 1991 levels. This is consistent with survey evidence regarding wages.

We can supplement the discussion of branch level wage developments by looking in some more detail at the evolution of regional wages. This has merits for several reasons. First, the data appear to

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<sup>23</sup> The construction of the minimum consumption basket is discussed in more detail in World Bank (1993).

<sup>24</sup> See Oxenstierna (1990) for a description of the Law and its implications.

be more reliable. Second, for real wage calculations we need factor in the non-trivial differences in regional price levels to which we have already alluded. The dispersion in regional changes, though declining over much of the year, remained significant. While we do observe broad convergence over the year in the annual rates of regional retail inflations, this disguises strong monthly fluctuations.

Nominal wages disaggregated by region are striking for the high variance across region as indicated by the coefficient of variation. While we observe no trend over 1992 we do find a major increase in variance when compared with 1991. Deflating by regional retail prices, we observe considerable dispersion and instability. The coefficient of variation indeed increases significantly throughout 1992. Differences in the path of regional real wages have to be related not only to disparities in regional inflations but to divergent nominal wage claims.

Using the retail price deflators we report regional real wage indicators for the first eleven months of 1992 in Table 6. Basing to January, we observe an average real wage expansion of between 60/70%<sup>25</sup>. The expansion in real claims is common to all regions but with significant variance and wide monthly movements. The overall picture is of some resurgence in wages and a restoration of wage levels of early 1991.

Evidence from our survey provides some interesting, complementary evidence for the path and structure of wages over the period 1991.3 - 1992.3. Table 7 provides the raw information categorizing in terms of firm size. Several features are notable. First, the predictably low dispersion in the wage levels across firm size class and the bias in the wage structure toward skilled workers. Nominal changes across the period show a generally high degree of convergence, though with clearly stronger wage increases reported in the larger firms and for higher level staff, in particular. Real statistical wages indicate a fall of between 35-45% for most workers, with, however, much lower decline for all workers in larger establishments.

### 5.2: Relative Wages

With respect to relative wages, there is some upward drift in the standard deviation and coefficient of variation across sectors and some initial evidence of that continuing in 1992. But the overall impression looking at relative sectoral wages over 1991/92 is of little change, indicating the power of institutional features in the wage setting that have tended to dominate the redistributive effects

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<sup>25</sup> Note that we are using regional retail price deflators not the consumer price deflator used for the aggregate data.

**Table 6: Russia - Regional Indices for Wages, Prices and Employment-November 1992 (Jan92=100)**

Region	Nominal Industry Wage	Retail Price Index	Total Employment	Unemployment-----	
				Broad	Narrow
North	642	447	98	200	363
NW	678	441	93	292	556
Centre	684	424	96	231	622
V-Viatsky	776	376	98	305	1782
C.Chernozem	764	421	103	193	920
Povolzhsk	805	380	99	170	1061
N.Caucasus	591	415	101	202	698
Urals	756	484	98	187	1520
W.Siberia	726	462	90	205	1406
E.Siberia	553	415	99	160	768
Far East	643	554	92	185	810
Kaliningrad	681	361	96	268	450
RUSSIA	696	432	98	209	751

**Table 7: Wage Levels, 1991.3Q - 1992.3Q: Moscow Region  
By Firm Size and Type of Employee: Monthly Wages (roubles) 1991 and 1992 Third  
Quarters**

	Firm Size (employment)										
	1991.3Q	1992.3Q	1	2	3	4	5	1991.3Q	1992.3Q	1991.3Q	1992.3Q
V. ce- Director	826	8192	1175	10583	1209	13581	1186	13766	1058	16896	
ITR Professional	803	6773	904	5559	791	7952	796	8001	546	6533	
Skilled Workers		903	8070	808	6927	877	9410	738	8566	681	9151
Unskilled Workers	539	5897	524	4600	400	3591	275	3354	299	4207	

**Firm Size Categories: 1= 80-350; 2= 351-700; 3= 701-900; 4= 901-1500; 5= >1501 employees**

**Source: World Bank Survey**

**Table 8: Real Statistical Wage Index; by Firm Size and Type of Work; (1991.3=100)**

	Firm Size				
	1	2	3	4	5
Vice- Director	64	58	72	75	103
ITR Professional	54	40	65	65	77
Skilled Workers	58	55	69	75	87
Unskilled Workers	70	57	58	79	91

**Source: World Bank Survey**

transmitted through high and unstable inflation. This is confirmed by our firm survey which indicates that in 60% of the sample there was no change or a decline in wage differentials. Table 8 indicates the rather close convergence in rates of change across the main grades, so that by 1992.3 relative wages had shifted surprisingly little. This can probably be attributed to the fact that in over 80% of cases wages remained administratively set, rather than bargained. We do however find a clear widening in wage differentials at the top of the wage structure. This suggests that the compression imposed by the previous tariff wage structure is at least beginning to come apart, even if the process has remained somewhat muted.

There is, however, some fragmentary evidence that wage differentials have widened in favour of groups of organized groups. Miners and energy sector workers initially expanded their ex ante wage differentials both with respect to industry in general as also with respect to skilled or professional workers. It is indicative of the perversity of the Russian wage structure that while miners and university lecturers' wages were roughly comparable in 1989 by May 1992 the former received average wages over six times that of the latter. This gap may have narrowed and has certainly fluctuated widely in the presence of lagged contract renegotiation, but by the third quarter of 1992 was still around a multiple of four <sup>26</sup>.

An emerging correlation between output and/or employment losses and wages is indicated by analysis of regional wage movements and relativities. Relative wages of regions with the highest observed job losses, such as the North-West and Central Regions, decline in 1992. Fig.19 provides a scatter relating output changes to changes in the consumption real wage for the major industrial branches. Again, we find some clear indication that higher downward adjustments to wages have been associated with lower real wage claims. Firm level information likewise suggests that wages have tended to be systematically lower in firms with the highest output and employment contraction <sup>27</sup>. This may signal the appearance of a weak, emerging association of wage behaviour and levels of employment in regional labour markets. Given very limited mobility of labour, local labour market variables, such as unemployment, could be expected to be the incipiently targetted variable. This is a point to which we return in more detail later.

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<sup>26</sup> *Economicheskaja gazeta*, May 1992 and *Delovoy Mir*, October 1992

<sup>27</sup> See Standing (1992)

## 6: Unemployment

Although the changes to measured unemployment have been significant in absolute numbers, they have started from a very low base. As already mentioned at end-1992 total jobseekers amounted to around 1.8% of the labour force <sup>28</sup>. Different shocks have their counterparts in the type of unemployment generated. In principle, some component of changes in employment can be attributed to aggregate, sectoral and labour supply shocks. Given the nature of reform one might expect sectoral shocks to have larger than normal effects on both demand (unemployment) and supply sides (vacancies) of the labour market <sup>29</sup>. Further, we might expect the labour supply shocks to be non-trivial, given the ex ante high participation rates. This might be offset if a decline in real incomes -- hence substitution effect -- dominates. At this stage, we lack sufficient information to pin down the extent of exit from the labour force.

Fig.20 plots the path of unemployment over several measures for the latter part of 1991 and 1992 <sup>30</sup>. Using the most inclusive - the broad - measure we observe more than doubling of registered job searchers and the unemployment rate for this measure between December 1991 and November 1992. After initially sharp monthly acceleration, we notice some deceleration in the rate of increase after May 1992 and particularly in the fourth quarter. This is true for all three measures of unemployment, including benefits recipients. It seems likely that the deceleration was associated with the increased flows of credit to the firm sector in the third and fourth quarters allowing firms to retain workers, even on reduced wages.

Data on the regional distribution of unemployment (Appendix Table 2) shows that there is still little dispersion in unemployment rates by region and we observe relatively little dispersion in the growth rates of unemployment across regions. This may point to a fairly widespread and apparently common

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<sup>28</sup> The data on unemployment have been provided by the Russian Federal Employment Service.

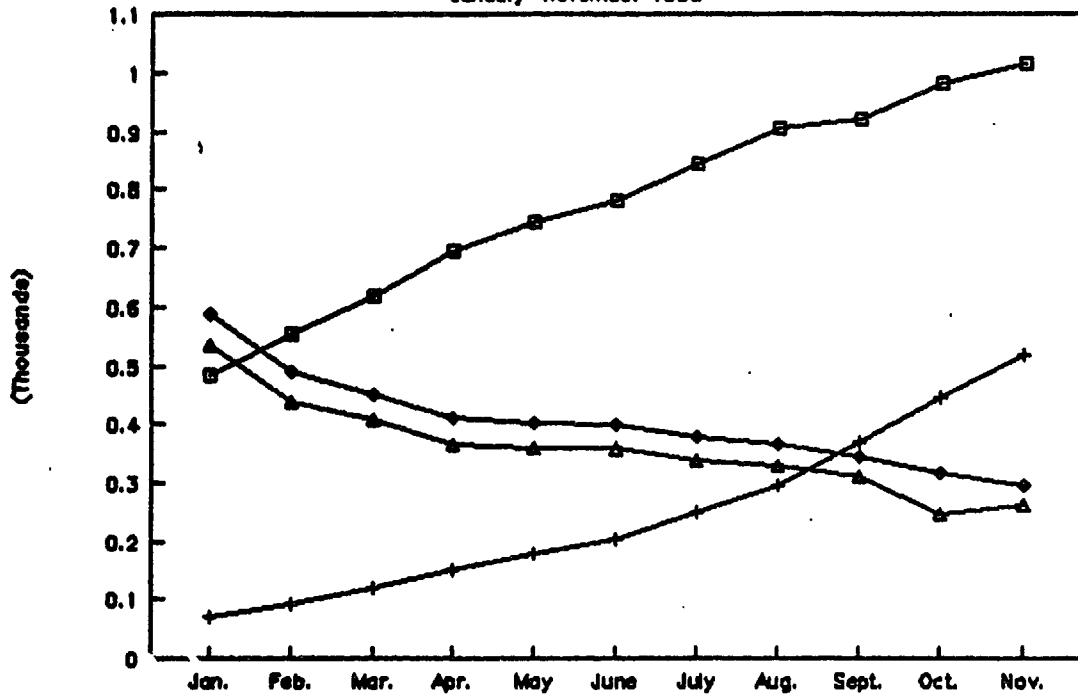
<sup>29</sup> At least relative to North America where aggregate activity shocks have generally been found to shift unemployment and vacancy rates the most. See Blanchard and Diamond (1989).

<sup>30</sup> The broad measure comprises all jobseekers registered at a Labour Office. Those recently dismissed and still getting severance pay are put in this pool. The narrow measure includes all active job searchers who cannot be matched with employment by the Labour Office. Benefits recipients have to have at least a year's work history and be actively searching for work. In most cases, benefits eligibility ceases after one year.

Fig 20

### Russia: Unemployment and Vacancies

January–November 1992



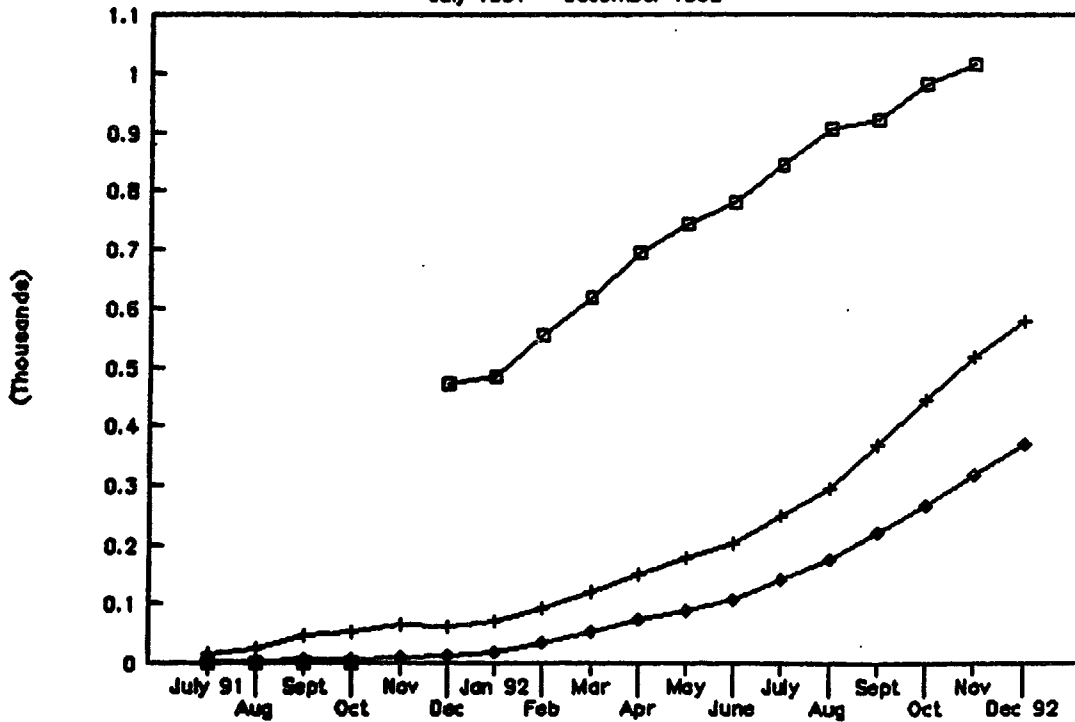
1992

□ Unempl. Broad + Unempl. Narrow ♦ Tot. Vacancies ▲ Manual Vacancies

Fig 21

### Russia: Unemployment Measures

July 1991 – December 1992



□ Total Jobseekers + Registered Unempl. ♦ Receiving benefits

Fig 22  
Russia: Mass Layoffs to Narrow Unemploy

Stocks: January - November 1992

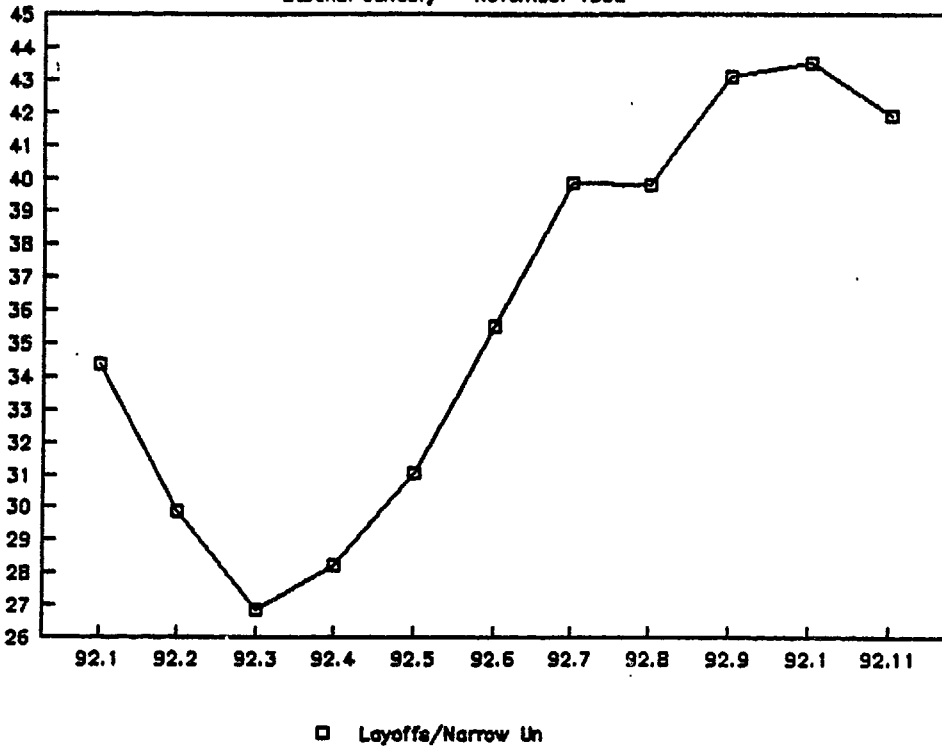


Fig 23

Russia: Unemployment inflow and outflow

January - November 1992

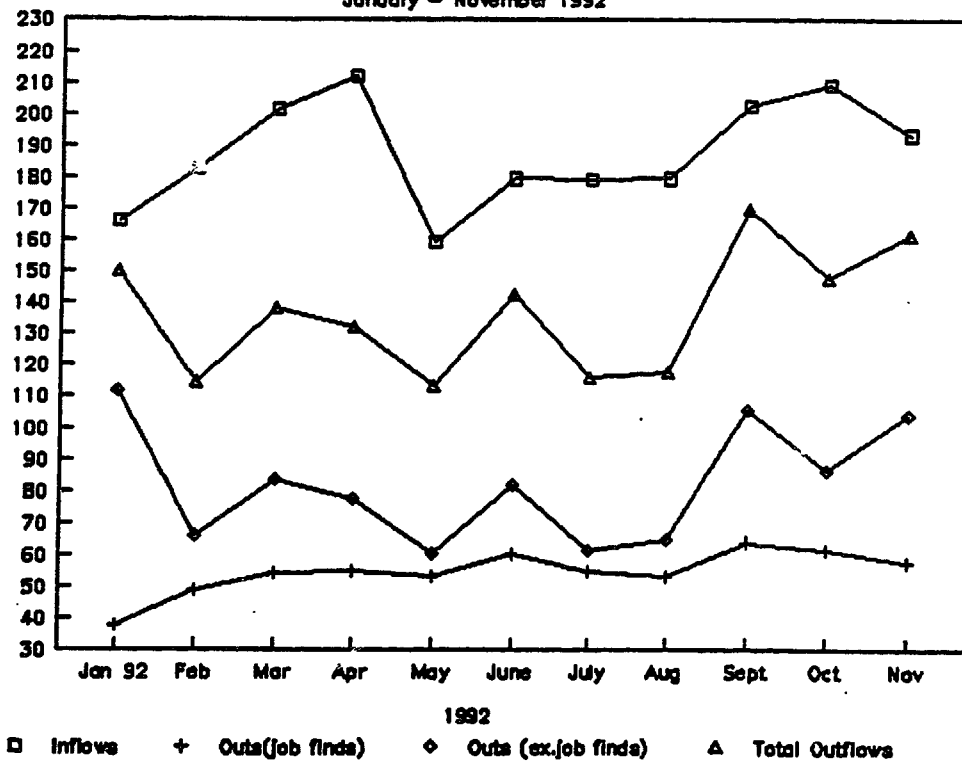


Fig 24  
Russia: Net Monthly Flows  
to Unemployment, Jan - Nov 1992

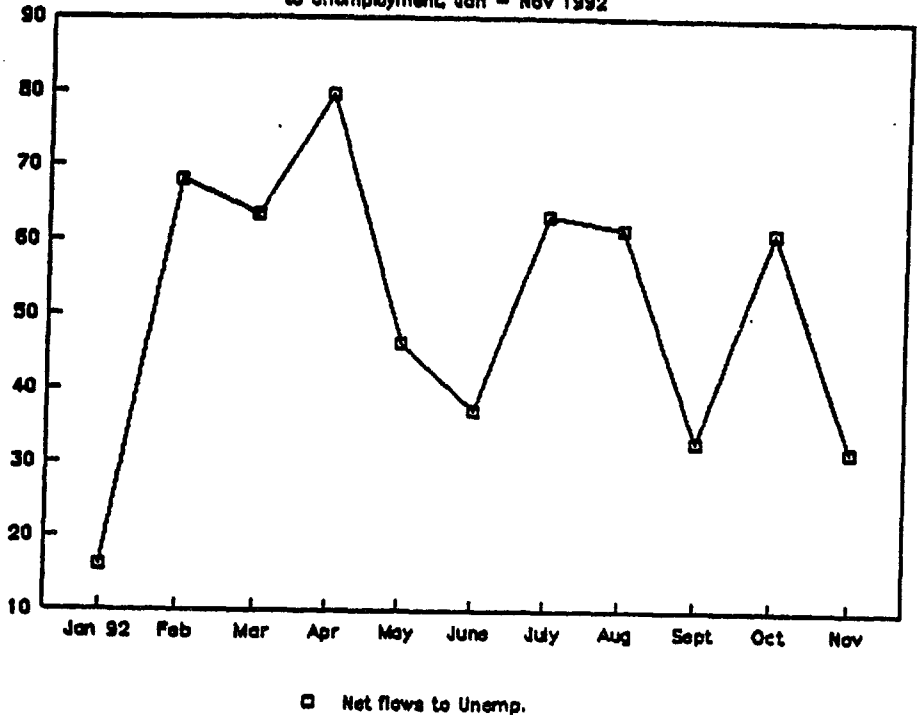
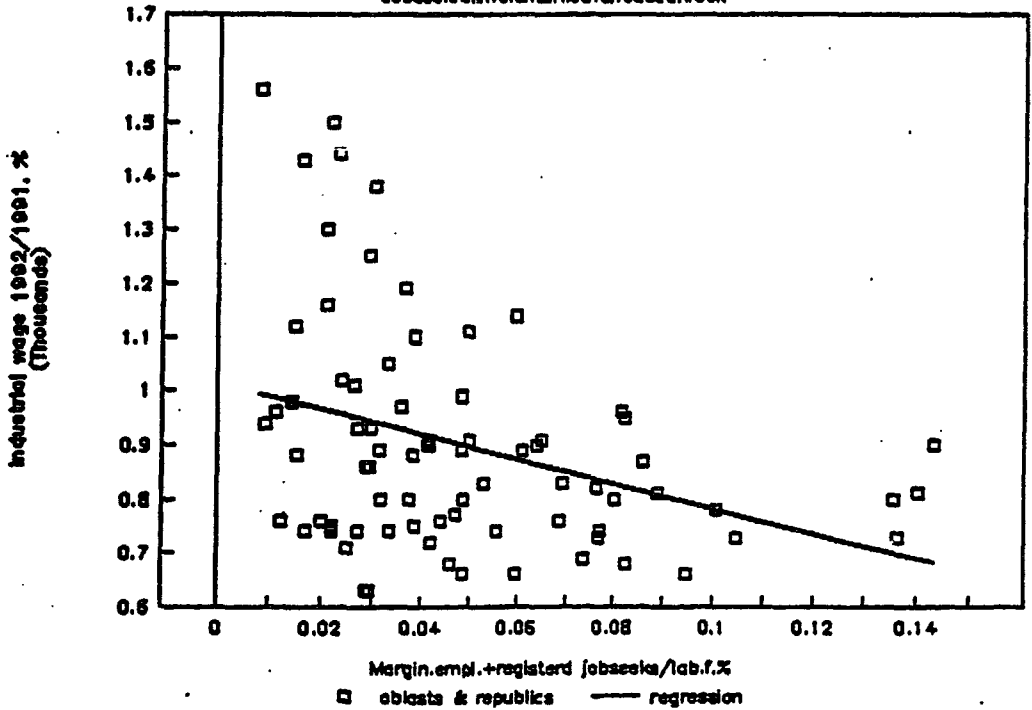


Fig 25

Unemployment/wage inflation, August 1992

Jobs seekers, involuntar. leavs. reduc'd. week





process in the generation of unemployment across regions, albeit at low frequencies <sup>31</sup>.

With respect to inflows to unemployment we can pick out transitions induced by mass lay-offs in the firm sector. This provides a very crude proxy for measuring any apparent shake-out associated with some regime change and accelerated employment separations. Fig. 22 provides the ratio of those laid-off to total (narrow) unemployment; the share shifts upwards but not by huge magnitudes. For 1992.Q4 where we have data on the origin of inflows to unemployment, we find a stable 30% share originating from mass layoffs. Further -- with the exception of the Central Region, comprising Moscow, where we find a disproportionately high level of layoffs -- regional data show such separations to be fairly uniformly distributed with surprisingly little dispersion in the changes. This again points to a common response function and path across regions.

Information regarding the composition of the unemployed and their respective durations is fragmentary. First, there are already signs of protracted durations in areas of relatively high unemployment. As of January 1993, nearly 11% of unemployed were in a current spell exceeding a year. The second striking feature is the weight of females in total unemployment and its continuous distribution over respective durations of unemployment. At least 70% of the unemployed and over 75% of those receiving benefits were women on 1 July 1992. This share has subsequently declined but not by large magnitudes. The table also indicates a significant share of youth unemployment. Around 10% of the unemployed indeed lack any work experience and are new entrants to the labour force.

Outflows from unemployment show surprising stability through 1992. For those leaving unemployment to jobs we observe little change in absolute numbers from February 1992 onwards and in the ratio of job finds to total outflows but an obvious fall in the ratio of job finds to the stock of unemployed (Fig.23). This appears to tally with the available economy-wide data on hires that indicates a continuing high volume of hiring in the economy through 1992. The fact that a consistent 40% of the monthly outflows from unemployment are reported as finding jobs is itself reasonably striking in a context of the large cumulative output declines and widespread reductions in capacity. Further, roughly 85% of total job finds in 1992 were in state firms; reinforcing the view that much of the movement in and out of unemployment is between state firms in localized labour markets. Outflows to jobs in collectives and

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<sup>31</sup> We can isolate pockets of relatively high unemployment -- Yaroslav oblast in the Centre region and parts of Northern Caucasus, for example. But at present we lack sufficient information to pick up the determinants of local unemployment.

private entities monitored by the Labour Offices still account for only 15% of total outflows to jobs, but with considerable regional variation. As regards the efficiency of job finds, for those leaving unemployment in the course of 1992, 80% did so after an unemployment spell of less than 4 months. Data for 1992.3Q indicate that over 30% of those who found a job did so within ten days of registering as unemployed.

Several points can be made with regard to the path of vacancies. In the first place, we observe a clear and sharp rise in posted vacancies until September 1991. Thereafter, vacancies fall significantly. Posted labour demand by firms at the labour office (a more reliable measure than vacancies) fell by around 50% between January and November 1992<sup>32</sup>. As Figure 20 shows, unemployment and vacancies move in opposite directions. This contrasts, say, with Poland in 1990 and 1991. There, vacancies initially increased and then decelerated rather gradually even as the unemployment rate shifted up over eight percentage points, suggesting the presence of mismatch and mobility constraints. But for Russia, there appears to be clear negative correlation between regional unemployment rates and the vacancy to unemployed ratio as well as considerable convergence in the changes for regional vacancies. These features suggest, at first approximation, the process to have been dominated by aggregate-type shocks and that reallocation effects have as yet been weaker. Of course, we are unable presently to get a proper handle on durations and hence on separating out not only the weight of changes in average duration on unemployment but also in determining the effectiveness of job search behaviour by the unemployed. But an obvious assumption would be that a reduction in search effectiveness would leave vacancies broadly unchanged even as unemployment rises. By contrast, we currently observe an inverse movement of unemployment and vacancies.

The rapid expansion in the numbers eligible for benefits can primarily be explained by the lagged feed-through of unemployed after exhaustion of severance pay arrangements and the declining share of new entrants and other non-eligible benefits categories. It also raises the issue of financing these benefits. The replacement ratio has averaged 57% of the previous year's wage over the eligible year of benefits payment. At first inspection, this ratio seems high; most OECD countries have similar ratios for gross benefits to gross wages. But several caveats are in order. First, benefits are not indexed and with high

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<sup>32</sup> We should note that most (>85%) of these posted vacancies are for manual workers, reflecting the historical bias in the composition of labour demand of Russian firms.

inflation most benefits payments collapse to the minimum level. Second, given the fact that non-cash benefits comprise around 40% of average labour income, inclusion of such benefits radically lowers the effective replacement ratio.

### **7: Interpreting Wage and Employment Behaviour**

The story of the last fifteen months is thus of an acceleration in the rate of decline of output with limited unemployment consequences. Productivity has fallen sharply while wages show recent signs of some resurgence after the sharp cut of January 1992. There is no apparent association between the rate of change in wages and the unemployment level. But several factors have to be considered. First, labour mobility has remained limited because of institutional constraints (the propiska system) and shortages in housing markets. Statistics are hard to come by but the net urban migration rate was a third of Western European rates in the 1980s and it appears that internal migration has declined further in recent years<sup>33</sup>. This makes the use of regional data particularly interesting; in effect one can count regions or oblasts as distinct and segmented labour markets. Second, a possibly better measure of labour market conditions would be combining marginal employment (see Section 4.1) with the measure of jobseekers.

Fig.25 relates this augmented measure of slack to the change in nominal wages for the 77 oblasts or republics. While not fully compelling, we do observe a weak inverse association in our plot of the oblast-level data. Higher levels of slack are associated with lower changes to wages. Further, classifying oblasts in terms of their open unemployment levels, we observe a relatively slower growth in wages in areas of high (>2%) unemployment relative to low (<1%) unemployment oblasts (figs. 26-27). In addition, it is interesting to note that oblasts with low unemployment levels actually have higher marginal employment rates, suggesting that we are likely observing a common process where the measure of jobseekers can partly be explained by different oblast level tolerance for open unemployment and where a fairly common underlying process is at work. The dispersion in augmented unemployment rates remains rather low.

Aggregate and survey data come together in emphasizing the dominance of employment stability in firms' decision making. This view needs qualification in one important respect; firms have systematically discriminated against clerical or administrative staff, primarily females. The clear objective has been to hold employment of production and skilled workers constant. This also explains the presence of an active hiring programme as firms replace such workers.

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<sup>33</sup> See discussion in World Bank (1993).

Fig 26

### Unemployment/wage inflation, Aug. 1992

Oblasts with high unemployment rate

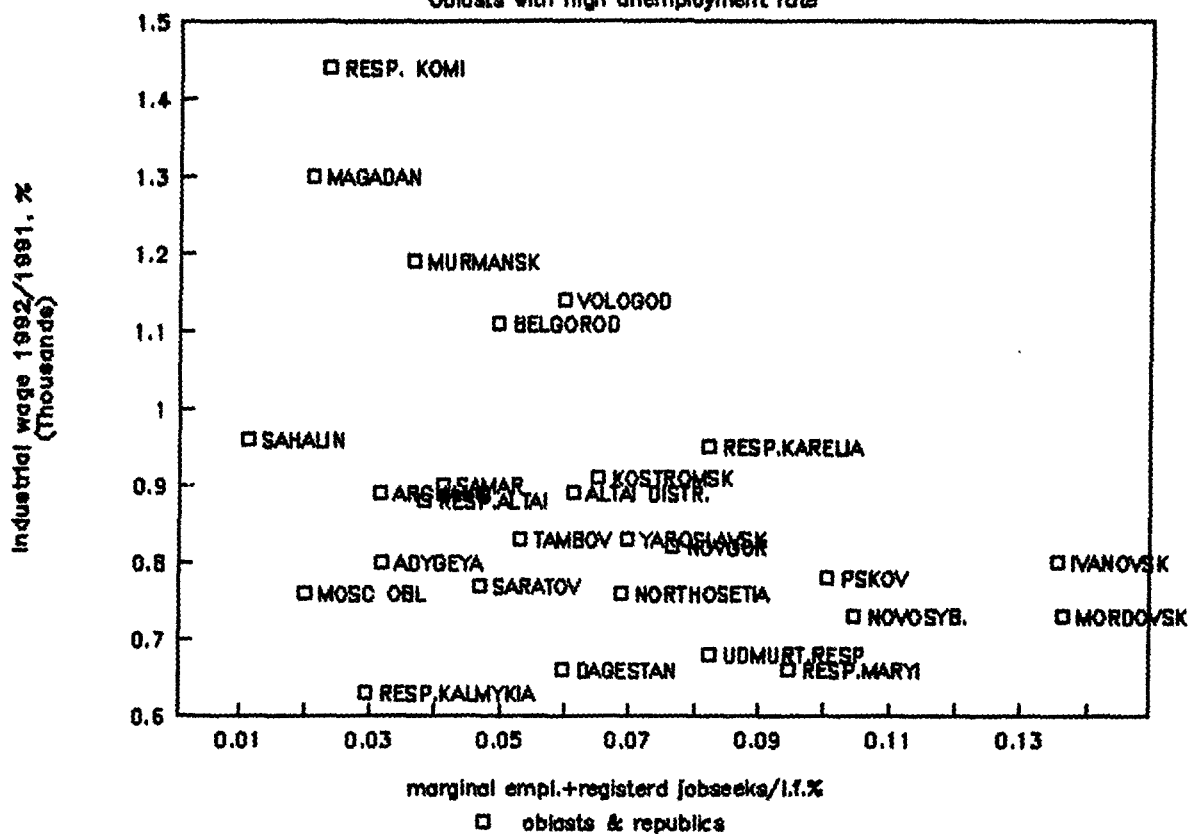
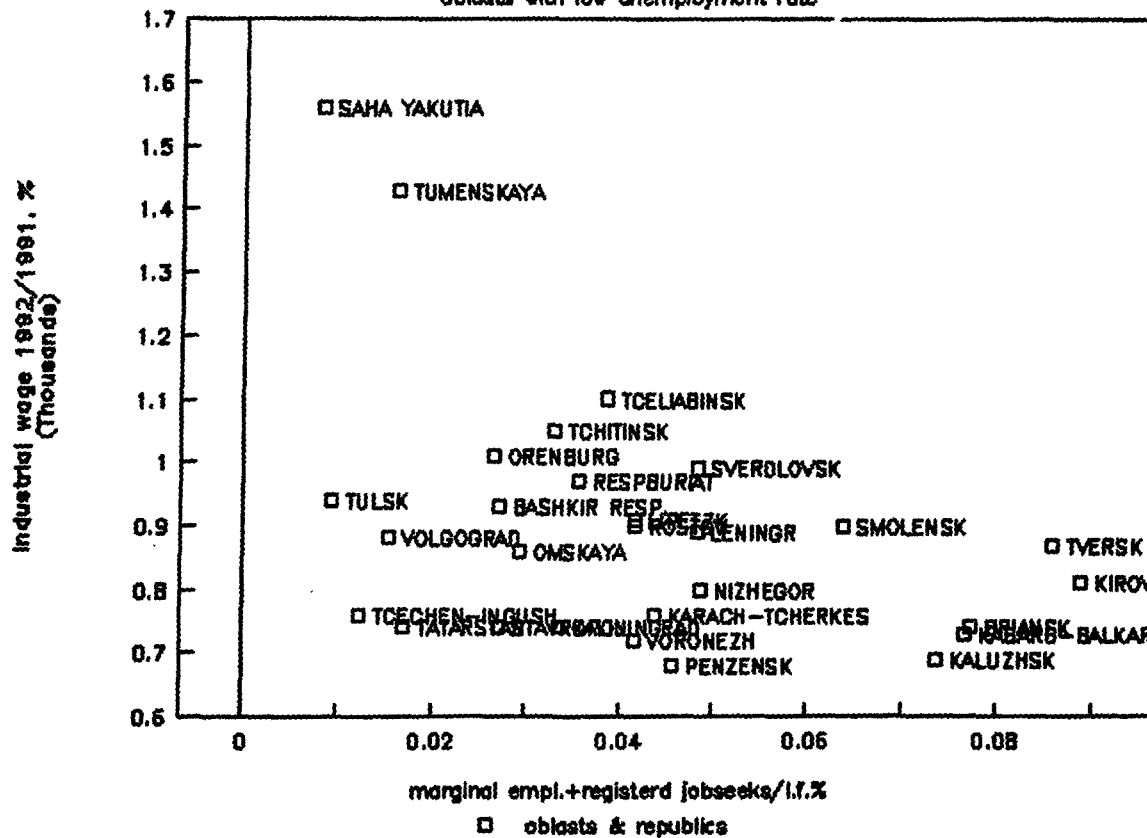


Fig 27

### Unemployment/wage inflation, Aug. 1992

Oblasts with low unemployment rate



Wage setting, though clearly reflecting the interests of insider members, appears still to be dominated by administratively set decisions rather than widespread recourse to bargaining between managers and workers. Our survey, for example, indicated that in only 17% of cases did wage setting arise from an explicit bargaining procedure and this was concentrated in the non-state firms. Similarly, despite emerging pressures for wage indexation and some preliminary steps to associate minimum pensions and wages changes to inflation in an ex post scheme, indexation is as yet not at all widespread. Aside from non-trivial adjustment lags to wages and institutional constraints arising from the banking system <sup>34</sup>, wage settlements in Russian firms have been primarily governed by current revenue flows. Firms in our survey, for example, indicated that exogenous restraints on wages and taxation were dominated by current revenues in determining the firm-specific wage path. This has given rise to significant within-quarter fluctuations originating not only from normal movements in firm financial variables but also from externally derived factors, such as the cash constraint of the first half of 1992 and the timing of budget or Central Bank transfers and credit decisions. This may account for some of the erratic movement in wages over the year and, in particular, the relative wage restraint of the first half of 1992.

The ability to satisfy current wage claims, holding employment broadly constant, has varied by type of firm. For consumer goods producers, the first half of 1992 contained a major negative demand shock from households. Real monetary balances and wages fell unambiguously and by large apparent magnitudes and we observe a very sharp contraction in retail sales. As government spending was held relatively in check over this period, we may also observe a contraction in government purchases. For non-consumer goods firms, the key issue would have been the ability to shift into cash sales, say, circuitously by barter deals or by direct export contracts. Given the frictions associated with inter-republican trade we can assume that this was not invariably an easy option, while domestic barter deals would ultimately be subject to similar negative household demand effects. The picture is obviously complicated once one introduces quantity constraints on production -- as through the inavailability of inputs -- or of restrictions on financing production through non-cash rubles. The financial system evidently amplified the negative shocks to household demand. Once the distinction over cash and non-

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<sup>34</sup> Large firms with substantial payrolls remain partly liquidity constrained by limits on withdrawals imposed by the banking system

cash rubles was almost completely collapsed<sup>35</sup> and the technical constraint on cash was broken in mid-1992, the membership rule could drive wages more rapidly and we do indeed observe more wage drift in the second half of the year.

The broad and necessarily tentative conclusion that we derive is that the dominant feature of both firm and government policy has been employment stability for core firm membership. Wages have been set consistent with this rule on a quasi-sharing basis; hence the surprisingly small shifts in relative wages in state firms. The wage path has primarily been a function of current revenues plus transfers or subsidies. The movements of output and product prices suggest that some firms have worked primarily on adjusting prices sanctioning current nominal claims and stable employment. Where the shock to current revenues has been more extreme, the bulk of firms have chosen to place staff on reduced hours or involuntary leave rather than outright separation.

### 8: Conclusion

The last fifteen months have seen a failure to stabilize the Russian economy alongside the beginning of structural change. The overall balance sheet, though mixed, indicates that a return to centralized controls remains almost impossible. Yet, the decentralization that has occurred to date contains many undesirable features. In particular, the greater autonomy of firms has facilitated the exploitation of market power while failing to dampen the demand for easy credits from the budget or banking system. For the most part, these demands have been satisfied enabling firms to meet current wage claims and, to a lesser degree, sustain output levels. Buoyant nominal profits in significant parts of the firm sector can be traced either to pricing behaviour derived from market power or from transfers or subsidies channeled through the fiscal or monetary system. In turn, this has artificially sustained the revenue side of the government accounts.

Flows to unemployment decelerated over the course of 1992, though evidence on the importance of marginal employment, indicates that the underlying pass-through into open unemployment will be large. By the third quarter of 1992, this augmented unemployment rate approached 4% of the labour force. Even so, we observe non-trivial outflows from unemployment to jobs and in some regions -- though with considerable dispersion -- to jobs in the private or collective sector. But important to note is the fact that at the level of Russia, outflows to state sector jobs dominate massively. This confirms the picture we pick up from survey evidence; that there is considerable turnover in the state sector and

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<sup>35</sup> Firms have shifted wherever possible into cash transactions, either directly or through the banking system.

a resilient level of hiring. Much of the churning occurring through localized labour markets appears to be through voluntary separations and transitions over jobs. Net changes to employment have been obviously limited as a result and largely concentrated on ancillary or clerical staff. We discern some sort of core or membership rule dominating Russian firms' decisions. It would be dangerous to assume that this strategy will be maintained. We could interpret it as a holding strategy by firms in a complex game that they have been playing with government. A lack of a credible reform programme has obviously weakened any impulse to large-scale restructuring at firm level. Wages have been more volatile and have had greater regional dispersion. We do not observe large consistent shifts to relative wages that could be predicted. Rather, the wage path has probably been governed by current revenue streams and additional transfers and then set consistent with the stable employment rule. The path of wages over 1992 is clearly strongly associated with changes in the monetary and fiscal stance and with allied institutional features.

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APPENDIX TABLE 1  
DISTRIBUTION OF LEAVING UNEMPLOYMENT TO JOB BY SECTORS  
OF ECONOMY, January- Dec. 1992

Job findings by:											
	: Total	: of which by sectors : of wich: by sectors of economy				By type of skills					
		: (property form of ent.)									
		: State	: Col-lectif	: private	+	: Agri-cul-ture	: Ser-vices	: Other	: acti-vities	with	: prev. work. exper.
		: prises	: enterpr.	: prises	: ruction	:	: *	:	:	: workers	: cleric.
Russia	724659	609119	102256	13284	295348	57431	151856	220024	486897	177010	
	100	84.1	14.1	1.8	40.7	7.9	21	30.4	67.19%	24.43%	
North R.	100.00%	88.61%	10.16%	1.23%	36.11%	4.79%	23.40%	35.70%	66.88%	17.70%	
NW R.	100.00%	75.75%	21.91%	2.34%	51.69%	3.11%	22.90%	22.30%	66.55%	30.44%	
Central R.	100.00%	85.69%	13.29%	1.02%	42.58%	7.20%	19.65%	30.57%	64.28%	28.53%	
Volgo-V R.	100.00%	84.02%	14.54%	1.44%	42.19%	6.09%	19.72%	31.99%	69.08%	23.09%	
Centr-Tchern. R.	100.00%	70.31%	26.30%	3.38%	39.93%	21.51%	16.11%	22.45%	63.70%	24.20%	
Volga R.	100.00%	84.16%	14.74%	1.10%	41.26%	10.82%	18.75%	29.17%	72.20%	24.34%	
N-Caucas. R.	100.00%	79.33%	18.26%	2.42%	37.20%	13.16%	17.25%	32.39%	67.35%	27.31%	
Ural R.	100.00%	89.40%	8.85%	1.75%	43.71%	6.26%	20.61%	29.42%	68.75%	19.61%	
W-Siberia R.	100.00%	84.23%	13.03%	2.75%	37.24%	6.66%	23.66%	32.44%	66.21%	25.84%	
E-Siberia R.	100.00%	89.01%	9.83%	1.16%	42.29%	6.03%	22.11%	29.57%	68.74%	22.63%	
Far-East R.	100.00%	83.86%	13.33%	2.81%	31.83%	6.22%	27.29%	34.67%	66.39%	22.52%	
Kaliningrad	100.00%	85.01%	12.00%	3.00%	32.57%	6.00%	19.26%	42.17%	51.68%	45.92%	
Centralized	100.00%	88.18%	11.57%	0.26%	25.27%	0.68%	18.85%	55.20%	79.22%	20.72%	
By oblasts	MAX	100.00%	52.39%	9.11%	79.62%	42.45%	53.56%	76.36%			

## Regional Unemployment Rates

APPENDIX TABLE 2

	RUSSIA	North	NorthWest	Center	Volgo- Viatsky	Central Chernozem	Povolzhsk	Northern Caucasis	Ural	Western Syberia	Eastern Syberia	Far East	Kaliningr
92.1	0.74	1.26	0.66	0.70	0.60	0.71	0.77	0.74	0.69	0.72	0.74	0.76	0.92
92.2	0.84	1.34	0.74	0.83	0.69	0.87	0.87	0.84	0.79	0.82	0.83	0.82	1.00
92.3	0.94	1.52	0.87	0.93	0.86	1.04	0.94	0.94	0.75	0.96	0.89	0.93	1.17
92.4	1.05	1.65	0.99	1.09	0.95	1.15	0.97	0.99	0.86	1.12	1.02	1.07	1.42
92.5	1.12	1.70	1.12	1.16	1.01	1.21	1.04	1.09	0.94	1.16	1.07	1.13	1.57
92.6	1.18	1.73	1.30	1.23	1.08	1.28	1.06	1.16	0.92	1.27	1.06	1.18	1.72
92.7	1.28	1.87	1.45	1.33	1.20	1.36	1.12	1.24	1.00	1.37	1.12	1.25	1.75
92.8	1.37	2.01	1.55	1.43	1.35	1.41	1.18	1.36	1.07	1.46	1.20	1.32	1.93
92.9	1.39	2.18	1.63	1.51	1.48	1.30	1.18	1.41	1.14	1.29	1.14	1.33	2.13
92.10	1.48	2.39	1.77	1.59	1.65	1.33	1.25	1.45	1.25	1.39	1.23	1.38	2.32
92.11	1.53	2.49	1.90	1.60	1.82	1.37	1.30	1.47	1.28	1.47	1.17	1.40	2.42

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