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Midterm Exam II: Answer Sheet

1. *(35%) External liberalization in transition economies is complicated by the problem of industries that actually destroy value at world prices.*

   (a) *Carefully explain the meaning of negative value added at domestic prices and at world prices. How can the same industry produce value added at domestic prices but destroy value at world prices?*

   brief answer NVA^d (at domestic prices) means that the revenue from sales is less than the domestic cost of purchased inputs, which we can write at $VA_i^d \equiv p_i^d z_i - p_m^d M_i < 0$, where z_i is output of firm i, p_m^d is the domestic price of purchased inputs, and M_i is its purchases of inputs from other firms. NVA at world prices would then be defined by $VA_i^* = p_i^* z_i - p_m^* M_i < 0$, where the asterisk refers to world prices. The reason we can have $VA_i^* < 0 < VA_i^d$ is that domestic and world prices may differ. In planned economies enterprises did not trade directly with the outside world – there was a foreign trade ministry. This allowed domestic and world prices to differ. If the domestic price of output is above the world price and the domestic price of purchased inputs (read resources) is below the world price then this is clearly possible, since it makes domestic value added appear larger.[1]

   (b) *Why are transition economies likely to have problems with negative value added producers? Why is the presence of sectors (not just firms) that produce negative value added problematic for liberalizing economies? Would you expect to find this problem in market economies? Explain.*

[1] Recall that one can show this by defining the implicit and explicit tariffs. Let the explicit tariff on good i be t_i. Then $p_i = (1+t_i)p_i^*$. In addition to tariffs on imports, the price of material inputs may be distorted. Let t_m be the implicit export tax on material inputs. Then we can write $p_m(1+t_m) = p_m^*$. Now if we divide goods prices by material prices we get:

$$\frac{p_i}{p_m} = (1+t_i)(1+t_m)\frac{p_i^*}{p_m^*} \equiv (1+\tau)\frac{p_i^*}{p_m^*} \tag{1}$$

where τ is the coefficient of protection. We can now compute value added at world prices:

$$V_i^* = p_i^* z_i - p_m^* M \tag{2}$$

and if we use the expressions for p_i^* and p_m^* in terms of the domestic price we get:

$$\begin{aligned} V_i^* &= \frac{p_i z_i - (1+t_i)(1+t_m)p_m M}{1+t_i} \\ &= \frac{p_i z_i - (1+\tau)p_m M}{1+t_i}. \end{aligned} \tag{3}$$

It is clear from (3) that even if $V_i > 0$, V_i^* can be negative if τ is large enough. A condition for this would be that the implicit tariff on materials is too large. This is not farfetched for STE's.

brief answer Under Soviet planning enterprises were not selected based on market prices. Entry and exit was not determined by market conditions, and there was a soft-budget constraint. There was only the weakest mechanism for production to conform to world prices – the preferences of planners not to waste resources, but this was tempered by many factors, most important the lack of information. This explains why whole sectors could be destroying value, not just individual firms that are badly run. With prices distorted and soft-budget constraints and output targets, it is certainly possible for NVA to be a significant problem. In market economies it would be less of a problem because it requires explicit subsidies to maintain such activity. It may be that Amtrak destroys value, but it has explicit political support. Without such subsidies the firm would go bankrupt. In market economies lossmakers eventually exit. But in a command economy price distortions are so pervasive that the subsidies are hidden from view. In planned economies lossmakers do not exit.

(c) *What implications, if any, does the possibility of negative value added producers imply for transition?*

brief answer Perhaps the most important is that rapid price liberalization may render some sectors and many enterprises bankrupt. This could make it politically difficult to impose hard budget constraints since closing whole sectors of the economy may be very unpopular. It may make it difficult to wait for restructuring to improve performance since that requires privatization which takes some time. It may suggest that some temporary protection may be important, though that has its own consequences. The implications for hardening budget constraints are perhaps the most significant, though the whole transition is affected by this.

2. *(30%) Privatization can lead to improvements in both equity and efficiency. Why might there be no trade-off between these two goals in transition? Explain. Will this necessarily be the case for economies in transition?*

brief answer Along the production frontier there is a trade-off between efficiency and equity, but inside the frontier it is possible to increase both, for example, as in figure 1: Whether

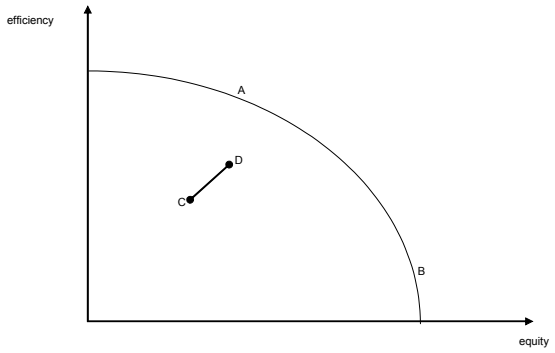

Figure 1: Equity versus Efficiency

this is the case depends on the nature of the distortions. One of the distortions in planned

economies was that good performance was taxed heavily, which weakened incentives, but led to official equality. If restraints are lifted and resources are privatized it may be the case that efficiency and equity may be in conflict, at least in the short run until it is feasible to tax effectively (and government are not captured by the newly wealthy). The alternative case is pictured in figure 2:

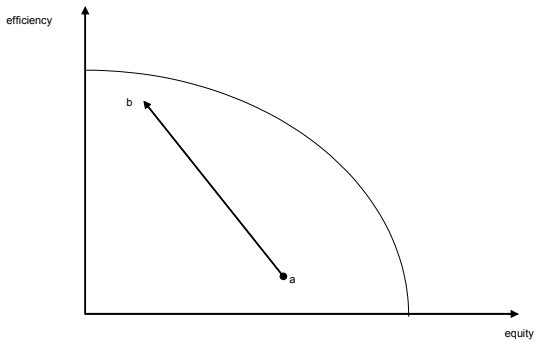

Figure 2: Privatization and Increasing Inequality

(a) *Is there no conflict between efficiency and equity in actual methods of privatization? Explain.*

brief answer There could be. Mass privatization, as in the voucher schemes, leads to more equity, but it leads to disbursed ownership. Sales, especially IPO's or Loans for Shares, leads to concentrated ownership but less equality. This is most easily seen by contrasting pure giveaway and *nomenklatura* privatization.

(b) *What drawbacks might be anticipated from a privatization program that focuses on rapid change in ownership? Are there potential benefits from such a program?*

brief answer One big benefit is reducing asset stripping. Getting new owners quickly means that looting from the state is less likely. It may also make it easier to end soft budget constraints at the earliest date. But rapid change could lead to insider control. This could lead to less restructuring, especially if the protection of outsiders is not effectively established. It may also make it harder for new entrants if incumbents gain too much power.

(c) *What would the Coase theorem suggest about the proper method to privatize state assets? Is the Coase theorem likely to be applicable? Explain.*

brief answer A simple characterization of the Coase theorem is that ownership does not matter for efficiency – only for the distribution of rents. So this implies that it does not matter who gets ownership of enterprises, just that they be well-defined so that they can be traded to the most efficient potential owners. But this is unlikely to apply in transition. First, because in a transition setting law is incomplete and thus so are property rights. Second, because contracts need to be enforceable and this is unlikely early in transition. And third because the initial distribution of property may affect the enforcement of rights. The initial recipients of state assets

may be able to control politics and push enforcement in their favor. This biases the resulting transactions and may make it impossible to reach an efficient outcome.

2. *(35%) Why might insiders (workers and managers) seek to prevent restructuring of enterprises? Suppose that restructuring will be efficient – that is it will raise labor productivity – why might insiders oppose it? Explain.*

brief answer Insiders may fear that they will lose their jobs in the restructuring. Especially if this involves cutting the workforce or replacing the original managers.

(a) *What are the key variables that would explain when insiders would oppose restructuring?*

brief answer The key variables are the size of the potential productivity gain, the proportion of workers that will keep their jobs in a restructuring, and the size of the income loss for those who are let go. One additional variable might be the chances of being hired elsewhere quickly. If the productivity gain is large there is more rents to distribute which is good for restructuring. If fewer workers are expected to be laid off there will be less resistance, if the income loss is small their will be less resistance. If the chances of getting a good job elsewhere are low there will be more resistance.

(b) *Suppose that insiders cannot coordinate their decisions to sell shares to outsiders? Will restructuring be more or less likely than if they could coordinate? Explain.*

brief answer More likely without coordination. If they cannot coordinate then workers face a free rider problem. Even if I oppose restructuring I will fear that others will sell their shares to an outsider. So restructuring will take place whether or not I sell. Hence, if I do not sell, I lose the revenue from selling but do not prevent restructuring. So I might as well sell. Whether or not I sell my share does not affect whether I am laid off or not. I merely compare the price offered with the expected returns on holding the share. Since, everybody thinks that way, efficient sales will occur. If we can coordinate our decisions then there is no free rider problem. If there is no sale there is no restructuring. So now the status quo ante of no restructuring and no layoffs is now one of the choices.

more We know that conditional on restructuring taking place, the maximum price a buyer will pay per share is given by

$$q^b = x(1+\theta) - w \tag{4}$$

where w is the wage, θ is the gain from restructuring, and x is output per worker. The right-hand side of (4) is just the gain in profits per worker. The selling price under no coordination is the selling price is bounded from below by the workers expected earnings if there is no sale:

$$q^s + \lambda w + (1-\lambda)v = x \tag{5}$$

where λ is the fraction of workers who remain after restructuring. The LHS of (5) is expected revenue from selling, and the RHS is what you get if there is no sale. Now a sale takes place only if $q^s \leq q^b$, so using (4) and (5) we obtain:

$$x(1+\theta) - w \geq x - [\lambda w + (1-\lambda)v]$$

or

$$x\theta \geq (1-\lambda)(w-v) \tag{6}$$

which simply says that the gains from restructuring must be greater than the expected loss to the workers that is due to the risk of unemployment. The higher the probability of being laid off, the less likely the workers will be to collectively sell their shares. Notice that if the wage equaled the reservation wage sale would take place whenever it is efficient, i.e., whenever $x\theta > 0$. But with this gap between the wage and the unemployment benefit workers may choose not to sell.

(c) *Are there any implications of this analysis for the design of corporate governance in transition economies?*

brief answer Yes, most importantly it suggests that insiders should not be allowed to influence how other shareholders behave. Share registries should be independent. Else, efficient restructuring will be hindered. It also suggests that good unemployment compensation will lead to more restructuring. This is clear from the RHS of (6). As $w - v \to 0$, efficient restructuring is never blocked.