

Voucher privatization*

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Several Eastern European countries have initiated mass privatization programs to transfer state-owned assets to the general population. We show that the decision to pursue mass privatization and even the specific design of the programs are largely dictated by politics. Nonetheless, politically feasible programs can also be made attractive from an economic standpoint in terms of maximizing value, fostering free and efficient markets, and promoting corporate governance. In general, the design of economic institutions is critically shaped by political factors, although satisfactory economic results can be achieved in spite of political constraints.

Key words: Privatization; Vouchers; Economic reform

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1. Introduction

Since 1990, several countries in Eastern Europe have initiated mass privatization programs. These programs provide for a rapid giveaway of a large fraction of previously state-owned assets to the general population. This transfer of assets is unprecedented in recent history in that it is comprehensive, rapid, and, most important, virtually free.

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Many economists have actively participated in the design of mass privatization programs. Studies by Blanchard et al. (1991), Frydman and Rapaczynski (1991a,b), Lipton and Sachs (1990), and Bolton and Rolland (1993) have described, advocated, criticized, and made recommendations for these programs. This study does not recommend any particular program, although we have done so elsewhere [Boycko and Shleifer (1993) and Shleifer and Vishny (1993)]. Rather, we use the case of Russian privatization, with some attention to the Czech and Polish privatizations, to illustrate a more general proposition, namely that the design of economic institutions is critically shaped by political factors. Specifically, we try to show that the choice between a mass privatization program and conventional privatization through sales, as well as the actual design of the privatization program, are determined first and foremost by a country's politics. Nonetheless, satisfactory economic outcomes can be obtained despite political constraints.

Our study complements recent work by Jensen (1991), Roe (1990), and others, who examine the role of political pressures in shaping the market for corporate control in the United States. Russian privatization offers an attractive opportunity to study the political determinants of the evolution of economic institutions for two reasons. First, the changes we are describing are truly enormous, with a substantial part of the economy moving from state to private ownership. The political forces unleashed by this change are extremely powerful, and their influence is very clear. Second, we have personally participated in the design of Russian privatization, and hence can present a first-hand account of both the political constraints it faced and the policies chosen under these constraints.

Section 2 argues that the case for mass privatization as practiced in, say, Russia and Czechoslovakia, rather than conventional privatization through sales as practiced in Western Europe, Latin America, Asia, and Africa, is largely political and not economic. Discussions of whether conventional or mass privatization is better from an economic point of view miss the point that in Eastern Europe, the former is politically infeasible. We try to show that while mass privatization is the only politically viable alternative, it does not entail abandoning the quest for improving the efficiency of firms.

In section 3, we show how the choice of mass privatization and even the specifics of program design are largely dictated by politics. Based on the cases of the Czech and Russian voucher privatizations, we argue that politically feasible programs can also be made attractive from the viewpoint of economic efficiency. We illustrate this claim with a discussion of the mechanics of vouchers and voucher auctions. Section 4 concludes.

2. The politics of mass privatization

Two broad strategies for privatization must be distinguished. The first is the sale of individual enterprises or their shares for cash or promises of future

payments [see Kikeri, Nellis, and Shirley (1992)]. Sometimes these sales take the form of auctions or investment tenders, in which case the winning buyers offer the best price or the best investment program and employment guarantees. In other cases, the sales are direct and noncompetitive. In still other cases, shares are sold through public offerings. This standard approach to privatization has been used in the United Kingdom and elsewhere in Western Europe, as well as in Asia, Latin America, and more recently Hungary and Germany. It has also been tried, and abandoned, in Poland.

The alternative approach to privatization, which is new to Eastern Europe and other post-communist economies such as Mongolia, is mass privatization. It is usually distinguished from ordinary sales along three dimensions. First, the allocation of assets to the population in mass privatization is free.¹ Second, a much higher fraction of the economy's assets is usually covered in mass privatization. Third, because the allocation of shares is free, mass privatization requires less preparation and hence is also faster than ordinary privatization. It is hard to identify the defining feature of mass privatization, but the first two are probably more important than the third.

Mass privatization has been tried in Lithuania, Poland, Czechoslovakia, Mongolia, and Russia, and can take a variety of forms that can also be combined with each other. It can take the form of free grants of some shares to workers and managers in their own enterprises (almost all countries). It can also take the form of the distribution of vouchers to the whole population, with the subsequent exchange of these vouchers for shares in state enterprises (Czechoslovakia, Mongolia, Lithuania, and Russia). Finally, mass privatization may involve a direct allocation of shares to specially-organized mutual funds, followed by the distribution of shares in these funds to the population (Poland). Mass privatization has also been typically combined with sales of some assets through cash auctions or investment tenders (all countries).

Relative to the more conventional sales of assets, mass privatization has attracted a great deal of skepticism (Jacques Rogozinski, the head of Mexican privatization, entitled his 1993 article on Russian privatization 'Too Much Vodka!'). Accordingly, in this section we discuss what moved East European governments to choose mass privatization. We argue that the choice is largely political, although economic benefits are not completely sacrificed. To make this argument, we first set out the economic objectives and political constraints of privatization.

From the economic efficiency viewpoint, four objectives of privatization are usually mentioned [Blanchard et al. (1991), Frydman and Rapaczynski (1991a,b), Lipton and Sachs (1990), and Bolton and Rolland (1993)]. The first

¹This is not strictly true. Czechoslovakia charged a participation fee of about \$35, although the value of the assets each citizen received was vastly higher. In Russia, with more populist politics, the participation fee was around 50 cents.

objective is that firms actually become private, in the sense that political control and subsidies disappear. Whenever political control and subsidies remain, firms continue to cater to the wishes of politicians, which will typically not be consistent with employment reduction, changes in product mix, and other aspects of restructuring. Second, assets should be allocated to the most efficient users. For example, many managers need to be replaced, and a lot of capital must be moved from military to civilian production. Privatization must facilitate this reallocation of assets. Third, efficient governance mechanisms to oversee the management of the privatized firms must be set up, to make sure that the new owners actually restructure the privatized firms. These mechanisms become critical when privatized firms seek new private capital, since in a market economy new capital only comes with substantial external control. Finally, to avoid continued mismanagement of assets under state ownership, efficiency-promoting privatization must be fast. Timing is of particular importance in a country like Russia, where the transition from communism is accompanied by massive theft of state assets by managers.

These economic efficiency considerations would be paramount if privatization were pursued by a benevolent and omnipotent government. Such a government would simply decide on a strategy of finding the best buyers, such as an auction, and would even help with efficient governance mechanisms. In practice, however, privatization is usually pursued in hotly-contested political environments. As a result, not only must a feasible privatization strategy address the demands of the many powerful political groups that have claims on public assets, it must also be popular with the citizenry of a country. Otherwise, the program is unlikely to be politically accepted, and once accepted, it is vulnerable to being stopped or even reversed when political tides change.

Political feasibility requires acceptance by the major political power groups as well as by the population at large. To be acceptable to the power groups, a program must be of greater benefit to them than to an average citizen. Privatization programs all over the world, for example, have recognized the special demands of the managers and employees of privatizing companies. In earlier papers, we discuss how the special privileges of 'stakeholders' critically shaped the Russian privatization program, which offered substantial benefits for managers, workers, and local governments [Boycko and Shleifer (1993), Shleifer and Vishny (1993)]. But when the government worries about elections, political feasibility also demands that the program be accepted by the population at large, and not just the 'stakeholders'. Successful programs are inevitably populist programs.

For a program to be attractive to the population at large, it must have several characteristics. Despite the special privileges to stakeholders, the program must be regarded as equitable and fair, as opposed to being a transfer to one particular privileged group. The 'stakeholders' should get their cut, but an average citizen should be able to get something out of the program as well. As

we will discuss below, most governments shape their privatization programs so as to benefit large segments of the population. Almost as important as distributing benefits broadly is the idea of getting the population excited about and involved in the privatization process. The critical mechanism for achieving this goal is to offer each citizen some choice in the assets to be received in privatization [Frydman and Rapaczynski (1991a,b)]. Choice raises public interest and involvement in privatization, whereas a simple assignment to people of pieces of paper that are allegedly claims to assets does not arouse nearly the same enthusiasm.

Next we discuss the economics and politics of conventional sales and mass privatization. While it is hard to deny that conventional sales have better efficiency properties, politically such sales are often simply infeasible. In contrast, mass privatization is politically much more attractive and meets economic objectives reasonably well.

2.1. The economic case for sales

The argument for conventional privatization is essentially the efficiency argument for auctions. When companies are sold in auctions to single buyers, they are bought, on average, by the highest-value users. In turn, the highest-value users should be the ones capable of reaping the largest efficiency gains from restructuring. The ownership stake of these buyers gives them the incentive to resell the firm if they fail to secure the maximum value from its assets. In addition to allocating the assets to the best users, auctions have the advantage of maximizing government revenue. With perfect capital markets, the efficiency case for auctions seems compelling.

When some potential bidders cannot raise the funds to make their bids, low prices can result, assets may not end up in the hands of the highest-value users [Shleifer and Vishny (1992)], and shareholdings may be less concentrated than efficient corporate governance calls for. However, the winner in the auction is still likely to be an alliance between some high-value user and a core investor, such as a bank or a foreign partner, each of whom has a substantial stake in the firm's success. In these cases, the providers of funds will also monitor the management since their own money is at stake. Indeed, the need for an effective governance system has been viewed as one of the most important objectives of privatization. In Eastern Europe, effective governance is more likely to come about through monitoring by large shareholders and banks, as opposed to takeovers and other stock market mechanisms. Sales through auctions meet the objective of governance to the extent that fund providers, such as banks or outside (perhaps foreign) investors, have the incentive to put in place an effective governance system.

These arguments for privatization through sales are compelling. In light of these arguments, most countries with developed market economies have

adopted this privatization strategy. In some of these countries, such as Chile and Mexico, conventional privatization has become a stunning success. Most state firms have been sold through competitive procedures to single private buyers who have subsequently made substantial progress in restructuring them. In other cases, initial public offerings were used, and again large efficiency improvements followed [Megginson, Nash, and van Randenborgh (1992)]. In all cases, governments have received substantial proceeds from privatization. Throughout the world, privatization through sales has been a great success [Kikeri, Nellis, and Shirley (1992)]. Why, then, are East European governments choosing mass privatization?

2.2. The political case for mass privatization

Eastern Europe must live with two fundamental facts that distinguish it from Western Europe, Asia, Germany, and Latin America, where privatization by sales has succeeded. First, because virtually all assets are in state hands, private wealth available for buying assets is low, while the supply of assets to be privatized is high. By some estimates, wealth available for the purchase of assets in Poland and Czechoslovakia amounts to between one and ten percent of the artificially low book value of assets [Bolton and Rolland (1993)]. Most Russians do not have significant wealth either (although by some estimates, Russia experienced \$20 billion of capital flight in 1992), and Russia needs to privatize over 25,000 firms. In contrast, Chile and Mexico had strong private sectors and considerable private wealth, and needed to privatize only a few hundred firms.

Of course, low wealth does not by itself pose a problem for privatization (as opposed to public revenue), since it only implies low prices of privatized assets. Other things equal, assets would still be distributed to efficient users who would try to arrange efficient governance. More important than low wealth is the extremely uneven distribution of private wealth, with black market businessmen and ex-communist officials holding the lion's share. As a result, if auctions are held, not only will prices be low but there will be only a few (not necessarily politically attractive) buyers. The idea of selling state assets for very low prices to communists, criminals, and foreigners has not been terribly popular in Poland, Russia, or Czechoslovakia.

The main appeal of mass privatization, then, is to allow much broader segments of the population to benefit from privatization. The prospect of a giveaway has bolstered the public support for privatization, and reform more generally, in Eastern Europe. Privatization in Czechoslovakia received enormous public support and led to the election of Vaclav Klaus as the prime minister. The perception that privatization will benefit Czechs more than Slovaks is in part responsible for the split up of the country and the slowdown of privatization in Slovakia. In Russia, President Yeltsin devoted his major address on the first anniversary of the failed communist coup to the

announcement of voucher privatization. The politics of Eastern Europe demand mass privatization.

Indeed, in many countries in Eastern Europe, privatization through sales such as in Chile or Mexico is simply not a relevant alternative to mass privatization. Efficient as it may be, such privatization is simply unacceptable to voters. The failed privatization through sales in Poland, where the population saw it as a sellout to the Germans, makes this abundantly clear. In East Germany, the sales to West Germans were extremely unpopular despite the massive transfers of resources to East Germany that accompanied privatization. Even in Mexico, where private ownership is much more widely accepted than in Eastern Europe, the government has promised to allocate the proceeds from privatization to social insurance funds, so that the public as a whole can benefit. The trouble with using the Mexican strategy in Russia is that the public will (correctly) expect such funds to be stolen by bureaucrats.

The public appeal of mass privatization, and voucher privatization in particular, makes it sustainable. The distribution to the public of vouchers that can be exchanged for shares represents an extremely strong commitment to actually privatizing assets. In Russia, the distribution of vouchers has completely shifted the public debate over privatization from the question of whether to privatize to the question of how to privatize. And when a less reformist government came into power in January 1993, it could not stop privatization because doing so would have rendered vouchers worthless. Direct sales, of course, are easier to stop or slow down if the government or public sentiment changes. In fact, companies directly sold at low prices to a few wealthy individuals become attractive targets for renationalization.

Finally, in so far as voucher privatization offers people a choice of assets on which to spend their vouchers, it greatly enhances public interest in, and enthusiasm for, privatization. Privatization is more likely to succeed when people spend time thinking about what to invest in, learning about companies, picking mutual funds, or even deciding whether to sell their vouchers, than when they simply get pieces of paper to store under the pillow or in a bank. Czechoslovakia, Mongolia, Lithuania, and Russia have all made investor choice an important part of their mass privatization programs. In Russia, privatization became the most common topic of newspaper articles, as well as the theme of the number five song on the hit parade. This level of interest would be harder to expect from privatization through negotiated sales.

2.3. Mass privatization and economic efficiency

We have argued that mass privatization is the only politically viable way to privatize East European companies. This raises the obvious question: has economic efficiency fallen victim to political feasibility? We argue below that the answer is no.

The main efficiency argument usually advanced in favor of mass privatization is its speed. Despite the organizational complexities, mass privatization is much faster than individual sales of enterprises. Sales require preparation, valuation, and elaborate auction procedures, whereas mass privatization avoids most of these steps. Mass privatization in Poland, Czechoslovakia, and Russia will surely take several years each. But privatizing Russian or even Polish enterprises by preparing and selling a few a month would take a century. And time in state hands means continued stagnation. The greater the importance of speed, the more efficient mass privatization appears.

From the perspective of other aspects of efficiency, mass privatization is more controversial. Because the incumbent managers are typically politically powerful, no mass privatization program has tried to shift control from them completely. Poland, Czechoslovakia, and Russia all envision keeping incumbent managers in place as part of privatization. This is not the consequence of using a mass privatization program, but rather of a recognition that serious opposition from existing management can derail any privatization attempt. No matter what the privatization strategy, managers simply must be retained in the short run. This political constraint was faced by reformers in every country.

For this reason, corporate governance is the efficiency criterion for evaluating privatization programs that has attracted the most interest. Even if they are initially kept on, can managers be monitored, and if necessary replaced, by private investors? Perhaps the most common criticism of mass privatization is that it abandons setting up efficient governance of privatized enterprises. The shares that will be sold to the population are likely to be dispersed, and hence no large blockholders will emerge. No one, then, will monitor the managers and enforce efficiency, and firms will remain politicized.

The recognition that the dispersal of shares among many small shareholders will not foster efficient governance has led the governments of several countries to incorporate governance-promoting mechanisms into their mass privatization programs. Interestingly, Czechoslovakia, Russia, and Poland adopted very different approaches to this problem. Not surprisingly, both economics and politics played a role.

In both the Russian and Czech programs, a significant fraction of shares is distributed to the public through vouchers. In Russia this fraction is around 80% (50% to insiders and 30% to outsiders). In Czechoslovakia, between 60% and 70% of shares were sold for vouchers. Significant blockholdings could thus form as part of the distribution of shares for vouchers or as part of the distribution of the remaining shares. (Blockholdings can also form through new share issues, which are anticipated in both countries, but have not yet begun.) To promote blockholdings, Czechoslovakia and Russia have followed similar but not identical strategies. We begin with the similarities.

First, to promote the formation of large blocks through vouchers, both the Czech and Russian programs have encouraged the creation of new private

mutual funds that accept investors' vouchers in exchange for the funds' shares. These funds could then accumulate enough vouchers to take substantial equity positions in privatizing companies. Several mutual funds in Czechoslovakia have each collected over 10% of all the vouchers, and took large positions in many of the privatizing companies. In Russia, mutual funds have also begun to take large equity stakes in privatizing companies. Since markets in company shares are illiquid, mutual funds are locked into concentrated shareholdings for the near future, and therefore have to monitor managers rather than trade shares [Coffee (1991) and Bhidé (1993)]. In Russia, mutual funds have already tried to replace managers of some companies in the first six months of mass privatization, in a few cases successfully, usually by joining forces with disgruntled workers or lower-level managers.²

Second, both the Czech and the Russian programs explicitly allow managers to acquire large ownership stakes at subsidized prices. Preliminary surveys for Russia indicate that management teams end up with an average of about 13% of the shares, which they either get at subsidized prices from the government, or acquire from the workers, or buy in voucher auctions (based on evidence from company surveys conducted by Joseph Blasi and Katarina Pistor for the GKI). Moderate amounts of management ownership are likely to alleviate agency problems considerably [Jensen and Meckling (1976)], quite aside from external control.

In addition to encouraging mutual fund and management ownership, both the Czech and Russian programs have tried to stimulate investments by active investors. In this respect, however, the two countries followed very different approaches, which reflect the different political constraints faced by reformers in the two countries.

The Czech program took an aggressive pro-blockholder stance: outsiders were encouraged to make privatization proposals in competition with those of the managers, and the Privatization Ministry let it be known that it would favor proposals that included active investors. As a result, many Czech companies ended up with blockholders in addition to mutual funds, and many of these blockholders were foreigners. Between mutual funds and these active investors, the governance problem was substantially solved. There is little doubt that, to a significant extent, this success was guaranteed by the relative weakness of the managerial lobby and by the credibility of the threat to accept nonmanager proposals if manager proposals failed to allocate shares to active outside investors.

In Russia, an attempt was also made to encourage sales of blocks of shares to outside investors in investment tenders. However, because of the political

²In one case of a furniture factory in Moscow, which had a plant in the center of the city, mutual funds joined forces with the deputy manager to oust the manager, transfer production to factories away from the center, and sell the land in the center for an office building.

influence of the managers, the government could not threaten to exclude incumbent managers from privatization if they resisted bringing in active investors. The approach to stimulating blockholdings had to be less direct. Specifically, unlike in Czechoslovakia, vouchers in Russia were tradable, and hence potential large shareholders could accumulate large blocks of vouchers and acquire large blocks of shares in auctions of shares for vouchers. Preliminary anecdotal evidence indicates that, in larger companies, this strategy for encouraging blockholdings has worked well. Many of the largest Russian companies that were privatized, such as ZIL trucks in Moscow, URALMASH heavy machinery works in the Urals, and Vladimir Tractor Works have ended up with block investors who have expressed interest in participating in company governance.³ As of this writing, managers of most companies that have acquired active investors in voucher auctions have opposed their involvement, although in some cases (such as URALMASH) managers agreed to work with them as long as the investors can help raise capital. In some places, such as the Vladivostok region, managers expressed their opposition to investment by outsiders by getting the local government to (temporarily) stop privatization. It is clear that large investments through voucher auctions will be a critical element of the emerging governance system in Russia.

Both the Czech and Russian programs, then, encouraged but did not mandate large blockholders. As a result, such blockholders appeared in some but not all companies. In the longer run, as trading begins and workers sell their shares, further consolidation of ownership is likely. We believe that these programs went as far as they could in promoting blockholdings while staying within the political constraints that privatizers faced.

The Polish approach to creating blockholders is radically different from that adopted in Russia and Czechoslovakia. The Polish program does not rely on vouchers which people exchange for shares. Instead, the government plans to create ten mutual funds managed by foreigners with some restructuring experience, and to administratively allocate to these funds shares in about 400 state enterprises. Each enterprise will have a lead fund with a 33% block of shares, with the other nine funds each getting 3% of the shares of that enterprise. Thus, a 60% block will be distributed through this process. The funds will then be allowed to trade shares, but mostly they will be expected to oversee the restructuring of firms and to attract foreign investment. As a final step, each Polish citizen will receive a tradable share in each of the ten mutual funds. Poland thus has a mass privatization program in that people receive free claims to state assets (through mutual funds), while at the same time large blockholders are created in the form of mutual funds. The Polish program is also

³At Vladimir Tractor Works, a Russian-born Harvard Business School graduate (formerly a CFO of the company) acquired a 6% stake and tried to oust the CEO. While he failed in that effort, he got on the board of directors.

easier to implement in that shares are allocated by fiat rather than through auctions.

Nevertheless, when the Russian government designed its privatization program with both the Polish and Czech schemes as forerunners, Russia opted for a model much closer to the Czech scheme. In part, this was a consequence of the sheer size of Russia and the need to have many more funds than Poland, which would make such a centralized program much less manageable. More importantly, as mentioned earlier, voucher privatization has the added attraction of greater political sustainability and the offer of free choice to investors. Finally, and perhaps most importantly, it was feared that Polish funds, because of their size and closeness to the government, would not become the tough and independent monitors of the managers who enforce restructuring. As foreigners and as semi-public institutions, the funds might become politicized and opt for more lenient policies. In fact, funds might be captured by the firms they control and become lobbyists for state credits and subsidies for these firms. They would use their 'expertise' to plead with the state to continue supporting these firms. Such funds are at risk of becoming lobbyists for subsidies instead of active, value-maximizing investors. One possible reason that Poland adopted the mutual fund system is the relatively greater power of trade unions (particularly Solidarity) and the relatively weaker power of the managers in Poland. This presumably led to a program with relatively less managerial autonomy and a relatively closer link between the companies and the government than in Czechoslovakia and Russia.

3. Design of voucher privatization

The previous section has established the critical role played by political factors in East European countries' choice of mass rather than conventional privatization. In this section, we discuss some specifics of the design of a voucher privatization program, focusing on the design of the voucher itself and the design of the voucher auction. In both regards, Czechoslovakia and Russia adopted very different approaches. As before, we try to show that their choices were shaped by the different politics of the two countries.

3.1. Designing a voucher

A voucher is a piece of paper given to each person participating in mass privatization. It is exchangeable for shares in privatizing companies. In designing the voucher, some critical questions arise. First, should the vouchers be denominated in cash or in points? Russia opted for the former strategy, while Czechoslovakia chose the latter. Second, should vouchers be tradable? While most countries, including Lithuania, Mongolia, and Czechoslovakia, did not

allow trading in vouchers, Russia made them freely tradable. We discuss the arguments for and against these choices of voucher design.

There are many strong reasons for denominating vouchers in points. First, such vouchers are clearly not currency, which makes them less money-like. The problem with people using vouchers as money to make purchases is that it raises the effective money supply and hence the price level. Second, denominating vouchers in points avoids the risk that vouchers will trade at a discount to face value and people will feel cheated. In Russia, for example, vouchers were issued with the face value of 10,000 rubles. Within the first two months they fell to a discount of 60% in market trading, creating a serious political problem. Denominating vouchers in points as the Czechs did eliminates this problem once and for all.

At the same time, denominating vouchers in currency has one important political advantage which essentially caused the Russian government to adopt this strategy. A currency denomination makes vouchers appear like securities and gives a much clearer impression of a government giveaway to the public. In Russia, where the public acceptance and support of privatization was *much* more tenuous than in Czechoslovakia, the popularity of a giveaway became the engine of privatization. Moreover, denomination in currency makes a much stronger commitment to irreversibility. It is one thing to cancel privatization once people are distributed booklets with points; it is quite another to cancel privatization once people are distributed securities with a face value of 10,000 rubles. Currency denomination also has technical benefits, such as the ease of share sales to insiders for vouchers at fixed prices. For these reasons, the Russian government accepted the possibility of unpopular discounts and chose to give vouchers a currency denomination.

Perhaps the greatest innovation of Russian privatization is the free tradability of vouchers. The main argument against free tradeability is that vouchers are not currency or securities, but rather the mechanism for implementing privatization. Unless converted into shares, they should not be treated as securities. One could also make the paternalistic argument that the market value of the vouchers will be lower than the true value of underlying assets, and hence letting them trade will enable rich buyers to take advantage of poor sellers. Finally, letting vouchers trade may cause 'speculative excesses', as futures, options, and other markets in vouchers develop. These arguments carried the day in most countries. Czechoslovakia, Lithuania, Mongolia, and others all prohibited trading vouchers.

In a rare display of liberalism, Russia allowed free trading of vouchers. The arguments here were both political and economic. Tradability lets those people who want cash right away, particularly poorer people who have great immediate consumption needs, to sell their vouchers fast and at fair prices. These people would then view privatization as a pure if small giveaway and presumably support it. Tradability is thus consistent not only with the importance of choice

in voucher privatization, including the choice not to become an owner, but also with the protection of the poor. On the latter point, we should stress that trading in vouchers will take place even if it is forbidden, as it did in Mongolia, with the result that the poor receive very bad prices in illiquid markets. The best price protection is competitive and open markets for vouchers. If people can check the price in several places, and if voucher buyers compete, prices will presumably be at least reasonably fair.

The second argument for allowing free trade in vouchers is that it vastly improves opportunities for potential large investors. Potential large-block investors have to assemble large blocks of vouchers, which would be extremely expensive without organized and liquid markets. Liquid markets thus not only offer a better deal to small voucher holders, they also improve the opportunities for block accumulation and thereby foster better corporate governance. As discussed above, share acquisition in voucher auctions has become the principal way for forming large blocks of shares in Russian companies. Such acquisition would be impossible without liquid voucher markets. In this way, tradable vouchers have played a key role in promoting effective corporate governance in Russia.

A final argument for free trading of vouchers is that it facilitates the development of financial markets. The largest commodity exchange in Russia dedicated a floor to voucher trading as soon as vouchers were introduced. This has become the first active and liquid financial market in Russia (without much regulation), with all the learning benefits that such a market entails. As a side benefit, the daily price of a voucher presents the government and the privatization officials with an unbiased public appraisal of the likely success of reforms and the stability of the government.

3.2. Voucher auctions

In designing voucher privatization, the critical issue is how to exchange vouchers for shares in companies. Economists looking at this issue agree that the best strategy is to run auctions of shares [Bolton and Rolland (1993)]. Auctions have tremendous economic and political benefits. First, auctions generally allocate shares to those who value them most, and hence are much more efficient than other rationing devices. Second, auctions produce market valuations of companies from the start and hence facilitate subsequent trading. Third, auctions do not require bureaucrats to assign values to companies, thus avoiding arbitrariness, delays, and corruption. Fourth, auctions are much less susceptible to corruption and sales to friends at low prices than direct sales. Fifth, and perhaps most important, auctions give people a choice of what shares, if any, to buy, thereby fulfilling one of the political imperatives of mass privatization. For both economic and political reasons, then, all countries using vouchers have opted for voucher auctions over fixed-price and discretionary sales.

Designing auctions for mass privatization imposes a host of requirements that do not often arise in the discussions of regular auctions. First, these auctions must be administratively simple so that bureaucrats can actually run them. Second, it must be possible for millions of investors to bid even when they know next to nothing about auctions or the companies offered for sale. Third, these investors as a rule must succeed in getting shares in auctions. They cannot feel shut out because they are routinely outbid by professionals, which would thwart the purpose of mass privatization. Fourth, the auction procedure should assure that small investors do not end up paying more for shares than professionals. These four criteria all deal with the administrative feasibility and political attractiveness of auctions. It is also desirable for informed professional investors to be able to influence auction prices, so that prices emerging from auctions actually reflect the relative values of companies, and therefore the efficiency benefits of auctions obtain.

These criteria raise many questions of auction design. Should auctions be centralized, with shares of each enterprise sold *simultaneously*, or should the privatization authorities auction shares one firm at a time? How can auctions be kept relatively simple for investors and auction administrators? How can the perception of auction-rigging be avoided? These questions of auction design are addressed next.

3.2.1. Centralization of auctions

Czechoslovakia and Russia have followed different strategies for auctioning shares. In the Czech scheme, auctions took the form of centralized price-adjustment mechanisms over several rounds. First, shares of all companies were simultaneously put on the market at fixed prices that were loosely related to values. Voucher holders then presented their demands for the quantity of shares they wanted at these prices. If the demand for shares of some company at the initial price fell below the number of shares available, then the demands were satisfied at that price, and the price was reduced for the next round. If the demand exceeded supply by only a small margin, bidders got proportionately fewer shares than they asked for and the bidding for the stock ended. If the demand exceeded supply by a large margin, nobody got any shares and the price of the stock was increased for the next round. The rules for price changes were not described.

This procedure had several advantages. First, although the auction process took several months to complete, when it was finished all the shares were allocated and firms were privatized. Second, the centralized approach left no room for 'problems' that delay auctions of shares of individual companies, and hence no room for lobbying by the managers to postpone the auction. As a result, managers could not as easily avoid privatization as they could with a decentralized procedure. Third, the centralized procedure had the main

efficiency benefits of auctions, namely that those who placed the highest value on a stock were able to acquire it, and that some initial market price was established.

Unlike Czechoslovakia, Russia had vastly more companies and vastly more participants in the auctions, so the centralized procedure seemed unmanageable. But much more important to the Russian choice of decentralized auctions was the political reality of Russia. As we have mentioned, the managerial lobby in Czechoslovakia was considerably weaker, and the central government considerably stronger, than in Russia. As a result, the Czech central government could pull basically all companies into the privatization process regardless of the consent of the managers. In Russia, this would have been impossible. Privatization had to start on the voluntary basis, with managers of companies who wanted to privatize leading the process. Moreover, managers had to have some control over when their company was privatized and what fraction of shares was offered for vouchers. In order for the managers to consent to voucher auctions, then, the process had to be decentralized and pushed to localities. Once this was done, managers of many companies realized that they could profit from privatization and need not fear the immediate takeover of their company in the voucher auction. As a result, many more consented to putting their companies through the process, and privatization escalated. There is little doubt that a more centralized and rigid procedure would have encountered vastly stronger opposition from some managers, who might have subverted privatization.

3.2.2. *Designing a simple voucher auction*

The most natural voucher auction of shares would call for each bidder to submit the number of shares he wants and the maximum price he is willing to pay. In Eastern Europe, such an auction would be impossibly difficult for millions of participants, and hence very unpopular, because there is no information at all about valuation, since book values of assets are not informative (for example, they are not adjusted for inflation). Even if an investor knew the book value of the company, the market value could *plausibly* be anywhere between zero and 100 times book value. If their bids are anchored to book values (and true values are much higher), small investors might end up with no shares of desirable companies and all the shares of bad companies, which informed investors avoid. This outcome would create a political backlash against privatization. This type of auction, then, does not meet the requirement of bid simplicity and accessibility to small investors.

To save small investors from the need to value shares and make complicated bids, one proposal was to ask each investor to submit his or her vouchers as a bid for the company. The equilibrium number of shares which each voucher buys is then inversely proportional to the number of vouchers tendered. Thus, if the company offers 1,000 shares for auction, and 40 vouchers are submitted,

then each voucher buys 25 shares. If, on the other hand, 4,000 vouchers are submitted, each voucher buys only one-quarter of a share. Each investor submitting vouchers is assured of getting some shares, but gets fewer shares of desirable companies. This auction effectively pretends that the demand curve for each stock is unit-elastic so that investors want to spend a fixed amount, namely their vouchers, on their preferred stock.

This simple auction has several advantages. First, the bids are extremely simple: investors merely tender their vouchers. Second, small investors *always* receive some shares for their vouchers. They are never turned down. Third, all investors pay the same price in the auction and large investors do not get any advantages. From the perspective of administrative simplicity and attractiveness to small investors, this auction looks hard to beat. The only problem with this auction is that sophisticated investors can influence the price only by changing the number of vouchers they tender. As a result, the equilibrium price might be a very noisy estimate of actual value. A procedure that simultaneously enables small investors to make simple bids and gives more opportunities to sophisticated investors to influence the price would be better.

The arguments above suggest the following procedure. Let each uninformed investor make the simple bid of submitting his or her vouchers, as discussed above. Allow each sophisticated investor to make a more complicated bid, which specifies the quantity of shares desired and the maximum price. Then add up all the bids (the unit-elastic demands from small investors and the sophisticated demands) to arrive at the equilibrium price at which the total demand for shares equals the supply.

This simple procedure has all the benefits of the auction in which small investors simply tender their vouchers and it has substantial efficiency advantages as well. First, sophisticated investors are allowed to exercise their influence on price by naming a reservation price. Second, even though small investors do not know the eventual price of shares, they can free-ride on the information conveyed by the bids of the sophisticated investors, and get the shares at a price that reflects both their own enthusiasm and the knowledge of sophisticated investors. Because it meets both the efficiency objectives of privatization as well as the more-important political constraints, this procedure has actually been adopted, and used successfully, in Russia.

The end of August 1993 marked the first nine months of voucher privatization, during which period Russia had over 4,000 voucher auctions and over 25% of industrial workers ended up working for private companies. There were no complaints about the failure of the simple auctions, and relatively few bid forms were 'lost'. Interestingly, sophisticated bids were used by fewer than 2% of the bidders, and typically not by large sophisticated investors. Usually, large investors just brought in suitcases of vouchers, and tendered them to get whatever shares they could get in the auction. Evidently, even large investors had no idea what the companies were worth, and felt that shares were cheap enough not to

bother with complicated bids. This mild attempt by the designers of voucher auctions to promote greater efficiency fell victim to the overwhelming need to have simple and understandable procedures.

We have discussed voucher auctions in so much detail for a simple reason. Auctions are something economists know a great deal about; they are the bread and butter of economics. Nonetheless, when auctions were used in the Czech and Russian privatizations, it was the political constraints on auction design that were paramount. Auctions had to be simplified and adjusted to political reality even when doing so meant violating economic principles of auction design. Interestingly, despite the shortcuts that had to be taken, voucher auctions worked well in both Czechoslovakia and Russia, and have facilitated the allocation of vast amounts of state assets to private owners.

4. Conclusion

Much recent work in economics and finance has focused on the design of institutions. Some economists have made proposals for new and improved bankruptcy laws. Others have argued that the United States should move to a Japanese system of corporate governance. Still others have made proposals for redesigning boards of directors.

Many of these proposals are based on sound economic principles. Yet they often ignore the political constraints on the design of institutions. Using the cases of Russian, Czech, and Polish privatizations, this paper has tried to show how political factors have shaped economic reforms. We show that not only the choice of mass privatization itself, but even fairly specific elements of program design, must meet different political constraints in each country. Even something as economically straightforward as auction design was by no means straightforward politically.

Economists focused on efficiency need not give up, however. The Russian and Czech privatizations have shown that politically acceptable programs can go some way toward satisfying efficiency goals as well. Presumably, viable reforms in market economies can also go some way toward improving efficiency while satisfying political constraints.

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