Lessons from Transition Economics
John McMillan

Report by Philipp Maier*

1 Introduction

The lectures by John McMillan were centered around the following question: Which lessons can be learned from following transition economies? Economic transition gives lessons for policy on how economic reform has to be managed, and transition provides the economist with the possibility to study modern microeconomics in a 'natural experiment' as it involves new fields of economics such as game theory or principal-agent theory. It provides economists with a laboratory for studying markets in an early stage: Markets are difficult to observe once a market economy has developed, but they are essential in transition economies. Since they are not yet fully developed, they can be studied very conveniently. Transition forces us to think about these things from a different perspective.

A market system is a system of interlinked changes:

Complements In order for markets to work, the incentives have to be set right. Incentives might be complementary if doing more of one increases the return to doing more of the other. In an extreme case, one might even imagine a 'threshold' for reforms, meaning that these exists a certain 'minimum package' of reforms. If reforms do not exceed this threshold, then they are fruitless.

Substitutes Incentives might also work as substitutes, such as legal enforcement might be replaced by reputation and privatized coercion.

These two approaches are best viewed in a country approach, where one country is thoroughly studied. Doing so the focus will first be on China. Afterwards, an issue-by-issue approach is used by examining one issue at a time, such as laws or security of property

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rights, before some empirical work by McMillan and other authors will be presented. A short conclusion summarizes the lessons.

2 China

Had one looked at China and the proposed reforms in the 1980s, no economist would have predicted these reforms to work. However, China turned out to be extremely successful in economic transition: Agricultural output has exploded and poverty has been relieved among the farmers. Per capita growth in 1980-1989 was no less than 8% (real) and while consumption levels increased, income inequality did not.[1]

China has followed a gradual approach, which were supported by favorable initial conditions, such as a relatively decentralized economy and large inefficiencies in the first place. However, it has to be stressed that China's reforms were not developed on scratch, but slowly and not without luck a successful path emerged. Typically, reforms started at the low level and were–if successful–extended to a greater level (bottom-up reform).

2.1 Agriculture

An example for the bottom-up approach is the 'household responsibility system' of the agricultural sector which led to the dissolution of the communes: A small village in Anhui province decided to secretly parcel out the commune's land to the peasants. While the land was still owned by the state, each peasant could keep any output that was beyond a certain personal quota. This immediately lead to high grain surpluses, since marginal profits increased to 100% for each peasant. While at first this reform was blocked by local authorities, soon the Chinese government realized the chance to stimulate agricultural growth and gave its blessings. When communes distributed land to their peasants on national scale, this lead to the biggest antipoverty program in world history, eliminating hunger among 800 million people whose incomes doubled.[2]

The increased output of the Chinese agricultural sector was due to (a) extra and better inputs, (b) higher prices for agricultural goods and (c) an incentive effect (the abolition of the communes). To quantify the latter effect, the production function is used to derive that, between 1978 and 1984, 2/3 of the output growth resulted from increased productivity. Using 'some tricks and some heroic assumptions', McMillan, Whalley and Zhu computed

[1] See McMillan, Whalley and Zhu (1989).
[2] See McMillan, Whalley and Zhu (1989).

that an impressing 78% of the productivity growth was due to the household responsibility system and only 22% to price increases. The Chinese farmers worked 44% less hard before the reform than after, which means that the effort levels under the commune system were as if the marginal payment rate was 30%.

This illustrates an essential point in transition economics: Economies that are producing in an very ineffective way have in principle 'favorable starting conditions' for reforms, because if a country produces far inside its production possibilities, small reforms such as introducing incentives and competition might lead to quick and high initial gains. These 'favorable starting conditions' comprise inefficiencies such as misaligned prices, unproductive firms and ineffective wage schemes.

Another example of how relatively small reforms in China have lead to big welfare gains are Township-village enterprises.

2.2 Township-village enterprises (TVE)

These new enterprises are (after agricultural reforms) the second most important reason to explain China's growth. TVE's started in rural areas in the 80s when small villages set up firms, owned by the village (thus publicly-owned), producing small goods such as low-tech consumption goods. Their ownership is vague, typically they are run by the major of the village, but they do not have the usual mechanisms of corporate control. However, they were so effective that by 1990, thus 10 years after the reform started, they were efficiently producing about 50% of industrial output. Being such a big success, these firms grew quickly and thereby also helped solving the potential unemployment problems the booming agriculture created.[3]

These firms operate efficiently because of external and internal pressure. Such pressure might in general comprise capital-market discipline, labor-market discipline, internal discipline and product-market discipline.

- Capital-market discipline is weak in China since the banks do only limited monitoring and moreover, banks are still state-run which means that they have little incentive to monitor effectively. However, the TVE face hard budget constraints, since there is no higher-level government to bail them out.

- Labor-market discipline is relatively weak too: Manager's careers only partially depend on their job performance.

[3] See Chang and Wang (1994) for details.

- Internal discipline is somewhat stronger, since TVE's can fire workers from outside the village (but not local workers). Wages are based on individual's performance and manager's contracts are based on sales and profits.
- Product-market discipline indeed provides the highest pressure on the firms: Competition is severe because of low entry-costs, and profitable firms initiate competitors.

To sum up, competition on the product market, combined with hard budget constraints has been enough to induce firms to be productive. The unclear ownership did not seem to harm the TVE's competitiveness, despite the arguments from Public Choice theory that publicly-owned firms tend to underperform. In China they performed well, since their managers faced harder incentives than the traditional state-owned firms.

2.3 State firms

Using this lesson, the Chinese government also tried to gradually reform the state-owned enterprises (SOE). Reforms consisted of three steps:

1. In the old system, before the state sector reforms began, SOE had to remit all of their profits to the state, which made off for the lack of income taxation. Now, enterprises can retain some profits, in some cases 100% at the margin. This is obviously a fundamental reform since (as microeconomics tell us) the marginal effects are the important ones.
2. A dual-track price reform was introduced: The central plan still stayed in place, but firm could sell some output on markets and buy some inputs on markets. Thus two prices evolved for goods, one the one hand the state-set 'plan price' and on the other hand market prices for excess goods. While the plan still stayed in place, its importance shrank relatively as output rose. The fact that some inputs still have to be bought from and some outputs have to be sold to the state to fulfill the plan also creates an (intended) system of net subsidies for some firms, while other firms face a net tax: Firms are subsidized by getting inputs at low state-set prices and taxed via a low state-set price for its output. The flipside of the coin, however, is the scope for arbitrage which has excessively been exploited by well-connected people and some communist party members.
3. The firms have increasingly been grated autonomy, e.g. the right to decide what to produce and how to produce it. The turnover of managers in the 80s was huge, and they were increasingly been paid on firm performance.

These reforms have led to a growth rate of industrial production of 4.5% per years in 1980-1989, compared to 0.4% in 1957-78. Workers bonus payments rose from 10% of pay in 1980 to 18% in 1988, this strengthening of worker incentives is correlated with higher productivity and higher worker incomes.

The need to restructure SOE lead to an evolving managerial labor market.[4] As said before, the turnover of managers was high and new managerial contracts correlated payment significantly with firm's profits. Manager were in most cases appointed by the industrial bureau or, especially for poor performing firms, by 'competitive auctions': Before the auction, the firms' accounts were opened to anyone. The bids for these auctions consisted of promises of future profits and business plans, and bidders were evaluated on their promised profits, their management plan and their competence.

The effects of manager selection can be summarized as follows: If the industrial bureau reappointed a manager, the firm's performance did not improve, whereas performance improved under a new manager. Was the manager selected by auction, the performance improved if the incumbent won the bidding, whereas new managers (outsiders) did not improve the performance. The latter effect can be explained by adverse selection: The incumbent is the one who has the best knowledge about a firm's potential, if his bid is the highest and he wins, then this is because he can best judge the true value of the firm.

The reform of the SOE, which involved many different steps, illustrates that reforms should be introduced in packages. Regression analysis showed that internal reforms (profit retention, change of manager) alone do little, only if combined with external reforms (managerial autonomy and competition on the product market), growth is generated.

2.4 Policy lessons from China

The following policy lessons can be drawn from China:

1. Abolish the agricultural communes as quickly as possible. This will lead to huge welfare gains, even if the lands remains publicly owned.

2. Reforms for state-owned firms should be bundled in packages and harden their budget constraints.

3. Create competition and facilitate the entry of new firms.

[4] See Groves et al. (1995) for details.

4. Don't try to plan the entire transition: China followed a bottom-up approach, thus reforms came from the ground level, and only if they worked on small scale they were introduced at the national level.

While we used the country approach so far, we will now focus on separate issues. We will cover different methods of privatization in the next section, then move on to restructuring firms.

3 Methods of privatization

Basically, three main possibilities exist to privatize state-owned firms: Auctions, negotiation with predetermined buyers and give-aways, where you give or sell shares to the public (workers or managers).[5]

Negotiation with predetermined buyers This policy tool has extensively been used in Germany after the reunification. The main feature is that bureaucrats negotiate with either one predetermined buyer or with a set of buyers. In general, these negotiations tend to take a long time and generate low revenue, compared to auctions (see below). However, the bureaucrats can easily implement desired policy goals, such as antimonopoly policy. Still, negotiating with large groups of buyers is difficult and requires bargaining-skills.

Give-aways If a country wants to privatize fast, voucher privatization is the quickest possibility. Giving away firms to the public can increase support for further reforms if the new shareholders get some profit from their shares. Moreover, it is a way to redistribute wealth among individuals: In planned economies, typically little personal wealth was hold by people in the middle-age.

Distributing shares might have also been an option in Germany to prevent the need of huge wage increases: After reunification, wages had to be increased in the Eastern part to prevent mass migration. Had the firms been privatized by distributing shares among workers, they would not only have had the chance to accumulate personal wealth, but had also had the chance to realize that huge wage increases might hurt their firm's competitive performance.

Give-aways make it hard for governments to control the economy and wide ownership prevents future governments from renationalization. However, dispersed owners have little control over managers, therefore corporate-control mechanisms have to be implemented.

[5] See Schmidt and Schnitzer (1997) for details on privatization.

Auctions The obvious advantage of auctions is that they generate revenue. Moreover, economic theory tells us that auctions reveal the true valuations of the bidders and they can be used as flexible policy tools, since you can handicap bidders if this deems necessary: For instance, to prevent foreigners to own a large share of the firms, you could state that domestic bidders only have to pay 75% of the highest bid. Similarly, antimonopoly provision could be incorporated. In fact, any criterion used in administrative allocation can also be used in an auction, provided it can be stated explicitly and is announced in advance.

The revenue generated by auctions is higher than by negotiations, as the following consideration show: Given are two buyers, who value a firm either by \$40 or \$100. We have four equally likely possibilities, $(\$40, \$40)$, $(\$40, \$100)$, $(\$100, \$40)$ and $(\$100, \$100)$. The expected auction price is then $3/4 * \$40 + 1/4 * \$100 = \$55$.

Under negotiations, the firm is sold to a single buyer and the best the seller can do is to make a take-it-or-leave-it demand. The best price to demand is \$100, which will be accepted in 50% of the cases. The expected value is then \$50, thus \$5 less than under auctions.

Finally, auctions requires less bargaining skill than negotiations and directs items to highest-value owners, i.e. are efficient.[6] The choices in auction design include whether sealed-bid or open auctions are held, whether reserve prices are set or not and what to tell bidders before and during the auction. An open auction lets bidders see each other's willingness to pay, which reduces the risk of winner's curse[7]. Open auctions also induce more aggressive bidding and higher prices.

Summary From an economic perspective, one would usually call for an auction since the most efficient outcome is achieved and the highest revenue might be achieved. However, political considerations might dictate a give-away or negotiation with predetermined buyers. An auction usually works better than a negotiated sale, and offers the highest degree of transparency. Moreover, auctions can be used as a flexible policy tool. However, in most transition countries firms were either privatized as give-aways or after a negotiation with predetermined buyers, which is clearly not the solution McMillan would recommend.

[6] See McAfee and McMillan (1987) for details.

[7] Winner's curse is the risk than the bidder which overestimates an item's value most is the winning one.

4 Restructuring Firms

Once firms have been privatized, they need to be restructured, just as losing state-owned enterprises.[8] If a firm is sold, then the government needs not do the restructuring, otherwise we get a situation just like in China where we observe that restructuring of state-owned firms tends to be tackled very slowly.[9]

Restructuring usually means adopting new incentive systems and to redesign internal hierarchies, but also to impose new financial oversights such as new accounting systems. Often these changes can best be implemented if a new manager is hired, which is able to handle the new environment and who is also able to find new lines of business and new trading partners. These problems might be put into the categories 'incentives' or 'inefficiency' and 'informations', both of which are complementary in that changes might have little effect unless they are implemented as a package.

Inefficiency If we use modern microeconomics to analyze the situation of a restructuring firm, then in an principal-agent setting, the principal is the planner (or the owner, in a market economy) and the manager is the agent. Inefficiencies might arise in situations where the agent's work cannot be perfectly monitored due to (a) possibly different objectives of principal and agent and (b) high informational costs. To overcome this situation, one needs to strengthen the incentives by, for example, change the principal (which usually means privatization), change the objective of the bureaucrats or shorten the hierarchy to cut informational costs.[10]

Centrally planned economies tended to be inefficient because (at first glance) managers overstated their costs and exaggerated their input needs, but the underlying problems was that the incentives were not correctly set. Privatization programs in Russia showed that dispersed ownership brought no gains (which can easily be explained by the high costs to monitor the manager's effort), while concentrated institutional owners got higher labor productivity than state-owned enterprises.

Overall, privatization in Russia has achieved only very little, this is because even managers of privatized firms often still face soft budget constraints (the state continues to bail-out the privatized firms just as the SOE) and little external pressure was put on the

[8] While the problems related to restructuring unprofitable firms can now best be observed in transition countries, one should not forget the difficulties to implement such changes to a firm in a market economy. In the 80s, for example, the US carmakers needed nearly a decade to restructure to be able to compete against the Japanese.

[9] See Jefferson and Rawski (1994).

[10] See for example Bolton and Roland (1992).

firms or the managers (due to the lack of developed financial markets, since the state-owned banks have little incentive to monitors a manager's performance). Moreover many privatized firms are still monopolists.

Installing better managers therefore complements to strengthening incentives. However, new incentives and new people are to some extend a contradiction, since a manager must be offered a long-term contract to motivate him to restructure. Job security, however, prevents from seeking better people and working harder. Empirical evidence from privatized small Russian shops show that if the old manager of a firm becomes an owner, then less structuring (in terms of changing supplies, laying off employees) occurs than when the owners were new people.[11] Evidence from China's state firms show that the performance of firms with a new manager improved, while if the incumbent managers gets a new contract, then the performance did not change.

In addition to new managers, capital- and product-market disciplines complement internal incentives.

- Capital-market discipline: Usually government monitoring has been quite weak (soft budget constraints), since credit allocation has been centralized. To prevent banks from bailing-out losing firms, credit allocation should be decentralized (such that banks are too small to bail out), this can be achieved by creating a private banking system (or decentralized the state banks as an interim measure, as can be found in Poland).

- Product-market discipline: In many transition economies, product-market discipline is high. Less important factors are price reforms (Russia), antitrust enforcement or trade liberalization (Poland), most striking is the fast entry of new producers. Especially in poorer countries, entry of small firms is very high and competition is fierce among these firms which often fill out niches and thereby make high profits. Moreover, competition tends to shrink state firms' profits, so the revenue to the government falls. This usually induces bureaucrats to speed up restructuring these losing firms.

Information To function, markets need information. If information is hard to get, search costs will lead to higher prices and inefficient matches. Market institutions and customs for information transmission develop only gradually, since at the beginning of the transformation, buyer-seller networks (which could lower search costs and provide quality incentives)

[11] See Barberis et al. (1996).

do not exist. High information costs are also required to make decisions on locations and on brand names or warranties.

A way to overcome the information shortage is loyalty, thus sticking to one trading partner for a long time. This will be treated in more detail in the next section, when empirical work is presented.

5 Contract Enforcement in Transition

The most striking thing about transition economics is the speed of entry of new firms. Although these economies do not have courts which could enforce contracts, financial markets which facilitate to get a bank loan and finally bureaucrats tend to be non-cooperative, thus although there should not be entrepreneurship in these countries according to widespread textbook views, there still is. To investigate on this issue, Johnson, McMillan and Woodruff (1998) collected data with the use of questionnaires among privately-owned manufacturers in Poland, Slovakia, Romania, Russia and Ukraine. The focus was on two particular relationships: the oldest and the newest customer, and the oldest and the newest supplier. A variety of hypothesis on trade credit and loyalty were tested.[12]

They started with the hypothesis that firms' characteristics are difficult for other firms to observe with respect to (a) is a supplier competent to produce quality goods and (b) will a customer pay its bills. Sources of information include business networks and industry associations, as well as social network in some countries (for instance ethnic networks in Vietnam), but the most valuable source will in general be experience in trading. The incentives for firms stem from both legal contracts (if they are enforced) and the prospect of future business.

Trade credit In order to operationalize the notion of 'trust' among firms, the authors have asked about trade credit (trade credit is for the firms in the sample more important as a source of finance than bank loans). It shows that not only are bills in Poland paid much faster than in Russia, but also that disputes with trading partners are usually settled without third parties. However, most firms said that the courts in principle can enforce contracts, which lead to the hypothesis that firms that believe in the courts grant more trade credit. Besides, trade credit should be granted to (a) frequent customers or long-standing relationships (both hypotheses result from microeconomic theory), (b) when the firm found the customer via other firms or a

[12] See also Greif and Kandel (1995).

social network and (c) to customers with high search costs. These factors can be summarized as 'relational contracting'.

Loyalty One would expect a higher degree of loyalty among firms when the courts do not work or the good is specific to the buyer. Loyalty is strong in transition countries, as shown by the following question: 'If a new firm showed up and offered to supply a specific input 10% cheaper than the old supplier, would you buy from the new firm?' In the sample, less than 50% of the firms would accept the offer and abandon the current supplier.

Regressions showed indeed that relational contracting are significant to determine the amount of trade credit granted, as well as the extend to which courts can enforce contracts. However, the effect of courts is smaller than effects or 'relational contracting', i.e. business or social networks, the frequency of deals or the duration of the buyer-seller relationship.

Loyalty, on the other hand is higher when the goods produced are unique to the relationship or high search costs for alternative supplier exist. Loyalty is lower on the other hand, when the courts are effectively working or the buyer belongs to a trade association.

All in all, these results confirm theoretical predictions from modern microeconomic theory. Another aim of the survey was to establish empirical findings on what constraints firms face. Several constraints could play a role, such as credit availability, contract law or security of investments (this last relates to the issue of property rights). It turns out that bank loans were less important for these firms, since there exist no apparent relation between the availability of bank finance and firm growth. Instead, financial markets are substituted by reinventing profits and most important trade credit.

6 Conclusions

The following conclusion can be draw McMillan's lectures: First and most important, entry of new firms is crucial for transition countries, while privatization turned out to be more like a sideshow. This is because rapid entry forces firms to be efficient (product-market discipline). Fast privatization on the one hand is helpful, if it creates a demand for efficiently-supplied inputs, but on the other hand hinders entry if it absorbs capital or increases market uncertainty.

Second, the bottom-up approach in China has so far been more successful than the top-down approach used for instance in Russia. While the top-down approach recommends fast privatization, this can be substituted by fast new entry, the creation of financial markets is substituted in the bottom-up approach by trade credit and reinvestment of profits. Security of property will be substituted by 'repeated games'. These are not arguments for not doing the top-down reforms, since these substitutes are imperfect. However, in an underdeveloped country they work and they are easier to implement and less likely to be hampered by bureaucrats.

From a theoretical point of view, it is amazing how much modern microeconomic theory of the last 15 years helps to understand what is going on in these countries. From repeated games to auction design, these theories have shown to be applicable in transition countries. Future research should focus on what generates the entry of new firms (entry has in general been underestimated in the literature so far) and why the restructuring of the agriculture has shown to be so easy in China, whereas in Russia it does not get off the ground. The restructuring of state-owned enterprises is far from being completed, here economic theory should focus on developing more criteria for a successful transition.

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