

Determinants of Enterprise Performance During Transition

by

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Abstract

This paper takes the form of a comparative study of the body of research upon enterprise performance and restructuring in established market economies and transition economies (TEs). We firstly examine issues related to empirical studies of enterprise performance and restructuring, including the influence of historical cost accounting, reverse causality, sample selection bias and transition specific factors. Subsequent analysis is sub-divided into three broad themes with separate sections examining the extent to which relations between performance and competition, ownership and finance respectively differ between established market economies and TEs. We find that evidence of the influence of competition is weak even in established market economies, and hence it is not surprising that this is equally true of TEs. By contrast, the influence of ownership has been well documented in the western literature, although TE evidence remains sparse at this stage. Finally, we note the strong influence of finance upon enterprise performance and restructuring. We therefore suggest that improved financial provision is of fundamental importance to encourage the microeconomic reform required to enable sustainable long-term macroeconomic development in TEs.

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1. Introduction

To date much of the analysis of economies undergoing transition has focused upon macroeconomic developments, particularly macroeconomic stabilisation, in part because most progress has occurred in this area. However, recent developments suggest that macroeconomic stability may be difficult to sustain in transition economies (TEs) without underlying microeconomic reforms to improve enterprise performance and efficiency. Whilst privatisation has contributed to reform at the microeconomic level, evidence has emerged which suggests that this is a necessary but not sufficient condition for successful microeconomic development.

This paper reviews the current body of knowledge of the factors which influence enterprise performance and restructuring. Each of sections 2 to 5 are divided into two subsections; the first subsection examines the theoretical background and Western experience of the area under consideration, whilst the second examines application of Western theory to, and evidence from, the TEs. Section 2 begins by examining the development of enterprise performance indicators and their application in studies of Western enterprise performance and restructuring, before considering how these should best be applied to TEs. Section 3 then considers the relation between performance, restructuring and competition, whilst sections 4 and 5 analyse that between performance, restructuring and ownership, and performance, restructuring and financing respectively. Section 6 concludes.

2. Enterprise performance and restructuring

2.1. Theory and Western evidence

The concepts of enterprise performance and restructuring are relatively fluid, and therefore any analysis which attempts to elucidate determining factors must firstly establish relevant indicators. Typically, one would consider that improvements in firm performance would be reflected by such factors as increased profitability, efficiency improvements, and possibly increased output, whilst restructuring would be reflected by such factors as investment spending on fixed capital and/or assets¹. However, of these, the wealth of literature that has emerged which analyses Western market economies has traditionally focused upon measures of enterprise profitability and efficiency.

At the simplest level, we may define profitability as in equation (1) below:

$$\Pi = p \cdot x - [rK + wL + p_m M] \quad (1)$$

where K , L and M represent capital, labour and material inputs respectively, with r representing the cost of capital, w , the wage rate and p_m , the price of the material input. Output (x) is defined by the general production function:

$$x = A \cdot f(K, L, M) \quad (2)$$

¹ Capital expenditure may be considered to be a possible measurement of long-run restructuring behaviour on the part of the enterprise, and thus a positive performance indicator. However, such an assessment would require that the expenditure is well focused and directed. This point is returned to below.

and:

$$p = p(x) \tag{3}$$

if we assume that the firm is in less than perfect competition, and so faces a downwards sloping demand curve ($p'(x) < 0$). Hence, changes in the competitive environment within which the firm operates, as reflected by changes in (3), will clearly influence performance — the nature of this relation is the focus of section 3.

The majority of applied studies utilise profitability indicators related to (1) in one of two ways. The first approach is to look at the return to the total capital of the firm — the return to both equity holders and debt holders combined, i.e. the entire liability side of the balance sheet. In this case, profit is measured before deduction of interest. The standard accounting ratio to measure profitability in this case is operating profit — earnings before interest, tax and depreciation — as a percentage either of sales (the markup, $\Pi/p.x$), or as a percentage of total assets (the return on assets, Π/K). The second approach is to look at the return accruing only to equity holders. This means that interest charges (the cost of debt) is treated as a cost. The usual accounting ratio used here is profit after interest and depreciation (but usually before tax), as a percentage of equity (the rate of return on equity).

In their comparative study of the performance of private, state owned and mixed US enterprises, Boardman and Vining (1989) use four alternative profitability measures, namely net income, return on equity, return on assets and return on sales, whilst identical indicators are used by Megginson *et al* (1994) in their study of the performance of newly privatised enterprises. As Boardman and Vining note, the nature of historical cost accounting conventions such as the treatment of depreciation, and the timing of profits and capital expenditure causes the latter three accounting ratios to differ from economic rate of return. However, in defence of such measures they cite previous research which has illustrated that such accounting ratios are sufficiently highly correlated with economic rate of return to be regarded appropriate proxies.

The correlation between profitability and efficiency may be illustrated by the fact that the general formulation in equation (2) above included a multiplicative efficiency term, which reflects total factor productivity:

$$TFP = \frac{x}{f(K, L, M)} = A \tag{4}$$

and hence increases in total factor productivity will result in reduced unit costs of production, so, *ceteris paribus*, increasing profits. Notably however, there are problems associated with the use of total factor productivity in applied studies owing to the difficulty of reliably measuring capital stock. Equation 4 above illustrates that calculations of total factor productivity should ideally be based upon the flow of capital services derived from the stock of capital. As the flow of capital services is unobservable, however, the market value of capital would provide the best alternative proxy; unfortunately, its historic book value rather than its current market valuation is reported in accounts. This leads Megginson *et al* (1994) to note that historical cost accounting conventions and inflation generally result in inaccurate

measurement of the value of stock variables such as capital, and hence induce bias into measures of total factor productivity. In addition, changes in relative prices will influence the market value of capital (for example, the oil price shock of the 1970s increased the price of intermediate inputs and consequently reduced the market value of capital embodying energy-intensive technology) and thus the book value of capital, which is based upon historical cost accounting, will no longer reflect the true value of capital and the flow of services it provides.

Hence rather than attempt to measure total factor productivity, most applied studies (see, for example, Boardman and Vining (1989), Megginson *et al* (1994), Vining and Boardman (1992)) examine changes in efficiency in terms of labour productivity. Given that labour productivity may be reflected as the ratio of total output (or sales) to labour employed (x/L or $p.x/L$ above) its use as a measure of performance is consistent, in that it will be correlated with total factor productivity and hence profitability.

When deriving the above indicators, it was implicitly assumed that the level of capital employed (and hence the level of equity in capital) remained fixed; given that this assumption represents the traditional economic distinction between the short and long run, analysis was therefore of short-run indicators. Consequently we regard short-run restructuring behaviour to include measures which reorganise those components of the input bundle which are deemed to be variable in the short run, without influencing the level of capital employed by the firm, which narrow product lines, and so on. Whilst introducing such a distinction between short-run and long-run restructuring behaviour however, we should stress that restructuring remains a dynamic phenomenon. These short run developments may therefore be broadly categorised as cost reduction measures, which improve the efficiency of the firm and hence increase profitability and the aforementioned performance indicators. By contrast, long-run restructuring is generally related to revenue-enhancing measures, such as changes in the internal structure of the organisation, and investment in capital, which will again lead to improved performance. Hence, when Megginson *et al* include two alternative measures of capital investment (capital expenditure to sales and total assets respectively) in their analysis, they attempt to analyse long-run restructuring measures at the enterprise level.

Whilst investment may be regarded as a prerequisite for long-run restructuring and performance, it must also be considered to be a necessary but not sufficient condition: investment spending must be well targeted to enable the future development of the enterprise. In this regard, long-run estimates of expected firm performance may be reflected by the valuation which financial markets place upon the continuation of the firm. Many Western studies have used Tobin's Q (or more precisely the 'market to book ratio' as a proxy for Q) as a measurement of expected long-run enterprise performance (see, for example, Rajan and Zingales (1995)). Tobin's Q effectively illustrates the valuation of the firm in terms of its replacement value, and is calculated as the ratio of the market value of the enterprise (value of equity plus debt) to the replacement value of the assets of the enterprise. Thus higher values of Q illustrate that the firm is considered to be more valuable as a going concern than as a collection of individual assets. Notably, however, as Tobin's Q depends upon the market valuation of the firm and hence the expectations of the financial markets, its reliability is dependent upon financial markets being fairly well developed. Furthermore, inflation has a variable impact on the market to book ratio as it will artificially reduce the book value but not the market value of capital, and hence in order to establish reliable measures of Q it is necessary that the economy under study is relatively stable at the macroeconomic level.

A final factor relating to measured profitability can be seen by noting that in equation (1) above, we have treated w , the wage paid to labour, or more precisely, to the employees working within the firm, as exogenous and entirely market-determined. A common theme in the Western literature on wage determination and corporate governance is that this assumption is often violated — both workers and managers are often able to appropriate profits in the form of higher wages or other remuneration or rewards. In this event, although the textbook short-run profit function suggests a negative correlation between wages and profits, a positive correlation may in fact be observed, as a result of the power which insiders have to expropriate profits. Under these circumstances the causal route is reversed, to run from profits to wages. Moreover, the extent to which these ‘rents’ are then allocated between increased wages and employment is the subject of a large literature which examines the bargaining process and objectives of the insiders².

Whilst we return to these issues in section 4 below when considering the relation between corporate governance and enterprise performance, here we additionally note a resulting example of the caution which may need to be exercised when interpreting empirical evidence. Rather than reflecting insider power, it may be that a measured positive correlation between wages and profits simply reflects labour quality, as firms are required to pay higher wages in order to attract more productive or skilled staff which in turn increase profits. We consider further such examples of measurement problems in the following section.

2.2 Enterprise Restructuring and Performance in Transition Economies

The process of transition resulted in rapid changes in the economic milieu faced by enterprises in central and eastern Europe and the former Soviet Union. Price liberalisation and the establishment of markets for both outputs and inputs necessitated changes in the product mix of enterprises and reform of the input mix. Accordingly, the early stages of transition witnessed short-run restructuring measures, predominantly intended to reduce costs of production. Such measures included the narrowing of product lines and the rationalisation of input use, most notably displayed as labour shedding. Much of this behaviour occurred following liberalisation but prior to privatisation, as enterprise control remained in the hands of insiders (managers and workers) who sought to defend their positions.

The implications which liberalisation had for long-run restructuring hold parallels with the example of that caused by the oil price shocks of the 1970’s referred to above. Rapid price liberalisation, the collapse of the CMEA in 1991, the loss of domestic demand resulting from falling real wages and the liberalisation of trade, all had huge repercussions for the return to capital earned by enterprises.

Whilst the short-run restructuring measures outlined above occurred post-liberalisation but before privatisation, as insiders engaged in defensive measures to secure their continuation, longer run restructuring was generally not instigated prior to privatisation. The state was reluctant to become involved in restructuring enterprises prior to privatisation owing to the sheer scale of the task, which would have been far larger than that required even in the Western privatisation programmes. Moreover, governments were anxious to create shareholding democracies as rapidly as possible in order to secure support for the reform process and demand for improved institutional and legal frameworks, and corporate

² See, for example, Ashenfelter and Johnson (1969).

governance as examined below. Furthermore, given the incumbent knowledge base, many governments felt that restructuring could be more effective and better directed if it were left to new owners.

Consequently the nature of economic reform entails that empirical measurement of performance and restructuring in TEs is subject to ‘transition specific’ difficulties, in addition to those common to analysis of established market economies. As noted above, given that inflation and the nature of historical cost accounting have implications for the measurement of stock variables in established Western market economies, the high and volatile rates of inflation experienced by many TEs throughout transition, together with variations in accounting standards as economies have attempted to adopt Western standards, have strong implications for analysis of enterprise performance in TEs. The difficulties associated with stock measurement are further exacerbated in a TE context owing to the difficulty of assessing the value of stocks, and especially capital stocks, inherited from the pre-reform era. As a result, most studies of enterprise performance in TEs place less emphasis upon indicators that are based on capital stock, assets or equity (the latter owing to the lack of reliability of data derived from fledgling stock markets). As discussed above, the lack of reliable stock data ensures that difficulties in establishing efficiency measures based upon total factor productivity were generally even more pronounced than in Western market economies in the past, although as the transition process has continued, the reliability has tended towards Western standards.

Claessens and Djankov (1997) attempt to circumvent the problems associated with capital stock measurement by using consumption of energy as a proxy for the flow of capital services, in order to utilise total factor productivity as a measure of the relative efficiency of state and private enterprises. Their total factor productivity calculation is performed as a two stage procedure, based upon the methodology of Basu and Fernauld (1995). At the first stage they estimate a production function of the form:

$$\Delta y_{i,t} = \hat{\alpha}_i + \beta_L \Delta l_{i,t} + \beta_M \Delta m_{i,t} + \beta_E \Delta e_{i,t} + \hat{\varepsilon}_{i,t} \quad (5)$$

where Δ represents log differences between periods t and $t-1$, so permitting the estimation of the marginal product of each factor. Equation (5) is estimated at a 2 digit industrial level in order to permit deviations in marginal factor products between sectors. Total factor productivity growth in period t is then measured at the second stage as the sum of the fixed effect and regression residual:

$$\Delta \hat{t}_{i,t} = \hat{\alpha}_{i,t} + \hat{\varepsilon}_{i,t} \quad (6)$$

Alternatively, given the preceding discussion concerning the correlation between measures of total factor productivity and labour productivity, Earle and Estrin (1998, 1997a,b, 1996) use labour productivity (output per employee) as a strong indicator of efficiency performance in TE enterprises. However, whilst rejecting assessments of total factor productivity on the grounds that capital stock data may be unreliable, there remains some question over the reliability of labour force data, as enterprises may attempt to lower their expenditure upon social security contributions by underreporting their number of employees. Nonetheless, if, as is more common, employers’ social security bills are dependent on the level of wages paid to employees rather than as a lump sum per employee, such evasion will be more likely reflected

by inaccurate reporting of wage rates than in the actual physical number of employees — hence there will be no bias induced to measurements of labour productivity.

It is also unclear whether flow-based measurements, especially profits, are more reliable in a transition context. Levels of effective taxation significantly below official nominal rates have been well documented in many TEs, and bear testament to high degrees of tax evasion and non-compliance. Therefore incentives to underreport certain indicators, which may, for example, increase the tax liability of the enterprise are likely to introduce further bias to flow data such as profits. Consequently such flow data may therefore be biased at the level of individual enterprises, hence generating unreliable relative performance measures.

The above considerations also suggest that measures aimed at restructuring enterprise activity may be even more desirable candidates for the evaluation of enterprise performance in a TE than in an established Western economy. Earle and Estrin (1997a,b) utilise several alternative indices detailing restructuring behaviour in areas such as product market restructuring (changes in output/sale structure), employment changes (layoffs and turnover), unbundling (the change in the boundaries of the firm via mergers or de-mergers), changes in wages and compensation, and investment. The indices are in turn aggregated to form an overall restructuring index against which alternative ownership forms are compared.

As a long-run indicator, Tobin's Q has been applied to studies of more advanced TEs such as the Czech Republic (Claessens *et al* (1997), Claessens and Djankov (1998)). As the measure is dependent upon reliable stock market data and asset prices, however, it may be readily applicable only to analysis of reasonably advanced TEs, which have achieved a degree of macro-stabilisation and where stock markets have begun to function appropriately. Although recent evidence from Russia suggests that the Russian stock market is developing, it remains fledgling and the previously slow pace of macro-stabilisation suggests that estimates of Q may not be entirely reliable, particularly when one wishes to attain a time series of Q values to analyse changes in performance. Nonetheless, Perotti and Gelfer (1998) utilise the market to book ratio as a proxy for Tobin's Q in their analysis of investment performance in Russian enterprises using data from 1995 to 1996. Their findings suggest that during this period Tobin's Q was a reasonably robust explanatory variable, whereby investment undertaken by enterprises which were members of financial-industrial groups was generally found to be sensitive to the market to book ratio and hence the market valuation of the enterprise. At a more disaggregated level, Perotti and Gelfer report results which suggest that bank led groups were more sensitive to market valuation than industry-led groups.

In addition, a further useful indicator of enterprise performance and restructuring in a TE may be the extent to which the enterprise is able to compete on the world market. The liberalisation of external trade during transition began a process of opening the economies of central and eastern Europe and the former Soviet Union to compete in world trade. However, as noted above, although some countries (for example Hungary, the Czech Republic and Poland) have been able to redirect a reasonably large proportion of their trade to established market economies, the process has been made more difficult as a result of differences in product standards. The EBRD (1997) notes that even in 1997 exports from eastern Europe to the European Union (EU) were generally of lower quality than those from established market economies, and were of only slightly higher quality than goods imported by the EU from China and India.

Thus consideration of the proportion of sales which are exported, therefore reflecting enterprises' ability to compete on world markets, and so illustrating qualitative improvements in product quality, marketing and so on, may be a particularly useful indicator of enterprise restructuring and performance in TEs. Nonetheless, two important *caveats* apply in this instance. Firstly, changes in trade indicators may not merely reflect the realisation of factors internal to the enterprise. Instead factors external to the enterprise resulting from the industrial policy of target markets will be highly influential. For example, although the increased import penetration of the Visegrad nations into the EU market has undoubtedly been partly influenced by internal factors, the lowering of tariff and non-tariff barriers to trade throughout the pre-accession phase has been of great significance. Furthermore, even if one controls for the development of the external milieu, there may exist difficulties in establishing export sales data at the enterprise level. Frequently, enterprises do not engage in direct export trade, but may make use of trade intermediaries. Under such circumstances if one considers all sales to such an intermediary as being ultimately bound for the world market, the indicators will fail to account for the possibility that the intermediary may consume a proportion of the goods sold itself. Finally, it should be considered that cross-country analysis of trade patterns may be distorted by the size of the country under study. Trade statistics illustrate that large countries such as the USA tend to export less as a proportion of GDP than smaller countries. Thus, whilst single-country analysis will be unaffected, one should be careful to introduce country dummy variables when undertaking cross-country analysis of TEs, in order to control for the fact that countries such as Russia are likely engage in proportionally less export trade than smaller countries such as Hungary and Poland.

Having considered alternative definitions of enterprise performance, there remain considerations as to how best these measurements should be interpreted in a transition context. The analysis of performance indicators during transition is commonly criticised for applying benchmark measures which would typically be expected to prevail in Western market economies. Under transition the economy is moving from a situation with a highly distorted price vector and may not immediately gravitate to a vector which would be typical of established market economies. Thus performance indicators may not move towards Western standards immediately, but may instead follow a path which, whilst being the correct response to continued distortions in the price vector, is not gravitating towards a Western benchmark. However, we believe that this reasoning is flawed for two reasons. Firstly, if one accepts that we cannot establish a benchmark against which developments may be assessed, any analysis proceeds without a null hypothesis and thus nothing to judge developments against. Secondly, analysing changes in performance indicators does not, strictly speaking, apply Western benchmarks; rather the analysis simply focuses on changes in the relevant indicators and assumes that these indicators should be seen to improve over time.

Further interpretation and measurement difficulties arise as a result of the systemic change during transition, whereby interpretation and identification of enterprise performance is frequently hampered by problems of endogeneity and sample selection bias. A classical endogeneity, or reverse causality, problem occurs in the analysis of the effects of privatisation upon firm performance. Firms which are selected for privatisation, or selected for a particular kind of privatisation, are typically not selected purely randomly. In particular, their current or prospective performance may determine in part whether they are chosen for privatisation, and the kind of privatisation that takes place; hence there are potential difficulties when attempting to establish the role of ownership and corporate governance upon enterprise performance and restructuring, as discussed in section 4.2 below. To take a specific example,

Earle and Estrin (1996) find that in a sample of more than 200 Polish firms, those that are employee-owned perform moderately well. They suggest, however, that this result is driven in part by the Polish 'liquidation privatisation' programme, which allowed insiders to buy out firms and to borrow from the state to do this. In such circumstances, management and workers will chose to take their firm private only if it is worth it to do so, meaning that the firm has to have not only good long term prospects (a good investment) but good short term prospects (so it can generate enough cash to service the debt borrowed to purchase the firm). The causality in this example runs from performance to privatisation, and not necessarily the other way around. Furthermore, studies which attempt to determine the influence of foreign ownership are required to address the bias that may be induced by the nature of the privatisation process. If privatisation programmes permitted insiders to have the first option of purchasing controlling stakes in their enterprise, it may be that enterprises which remain available for purchase by foreign owners are those which perform poorly in the short term (although they must presumably have good long term prospects, otherwise foreign owners would not purchase them).

Moreover we note that it may be that the finding that new private firms are very dynamic is due to problems of sample selection and not necessarily to properties inherent in these firms. The rate of turnover (entry and exit) is quite high in the small firm sector, leading to a survivorship bias in samples of new private firms - the firms which are included in the sample are 'good firms', the 'bad firms' having exited. The higher growth rates of these firms which this selection process generates nevertheless represents a genuine economic process - entry and exit - which contributes to economic growth; however the need to control for the inherent sample selection bias, together with the reverse causality problem highlighted above are key issues in empirical studies of enterprise performance.

Overall, the preceding discussion illustrates that it is clear that there is no consensus on a single performance indicator. Each of the indicators referred to above have their respective merits and demerits. Arguably, labour productivity may be regarded as the indicator least likely to be subject to bias, however as enterprise performance during transition is reflected by many alternative forms of development, it may be wise to consider a variety of alternative indicators, both individually and as a composite restructuring index of the form developed in Earle and Estrin (1997a,b) in order to compensate for individual biases. Moreover, such considerations suggest that it may be advantageous to utilise a mixture of quantitative and qualitative indicators in a manner such as that employed in Earle and Estrin (1996), where a variety of qualitative indicators are used such as the managerially ranked importance of restructuring strategies, in combination with more standard quantitative indicators.

3. Performance, Restructuring and Competition

3.1 Theory and Western Evidence

Several, in some cases, contradictory, themes are apparent in the industrial organisation literature concerned with the influence of market structure upon enterprise performance (see, for example, Scherer and Ross (1990)). The literature predicts that competition will serve to discipline enterprises, and tends to result in dissipated profits as firms struggle to compete with one another; hence profitability tends to increase with concentration (Tirole (1988)). Another theme in the literature is that monopoly power will tend to reduce incentives to

improve efficiency and to innovate (see, for example, Nickell (1995)) because firms with monopoly power face less competition and less need to improve their performance, their managers choosing instead to enjoy what Hicks called ‘the quiet life’. The Schumpeterian view, on the other hand, is that firms with monopoly power can accumulate economic rents and therefore will innovate more, as they are more able to afford to engage in research and development. Moreover, the prospect of earning economic rents by virtue of innovating and generating new products is itself an incentive to innovate and improve efficiency; and in this way monopoly power and performance may be positively related.

Within the industrial organisation literature, market structure is typically measured by three indices: concentration ratios; Herfindhal indices and entropy coefficients. The concentration ratio is the simplest of these three measurements, and is calculated as the sum of the market share of the largest n firms in the industry under consideration:

$$C = \sum_{i=1}^n P_i \quad (5)$$

where P_i represents the market share of the i^{th} largest firm. Thus by choosing a value for n , the concentration ratio illustrates the overall market share enjoyed by the n largest firms in an industry. However, given this formulation it is clear that the concentration ratio implicitly assumes equal weighting to all firms in the sample, and thus one of the major criticisms of this measurement is that it fails to take account of information concerning the size distribution of firms in the industry.

Rather than assume a sample of firms within an industry, the Herfindhal index is calculated using information on the total number of firms present.

$$H = \sum_{i=1}^n P_i^2 \quad (6)$$

where P_i again represents the market share of the i^{th} largest firm, and n is now equal to the total number of firms in the industry. As market shares are squared in the calculation of the Herfindhal index, smaller firms are given less weight, and as all firms are included there is no possibility of sample selection bias. Higher values of H correspond to more concentrated industries, where H assumes the value of unity if the industry is a monopoly, and the value $1/n$ when all n firms in the industry are of identical size.

Finally the entropy coefficient also includes information on all firms within the industry, and is calculated according to the formula:

$$E = \sum_{i=1}^n P_i \log\left(\frac{1}{P_i}\right) \quad (7)$$

where $\log(\cdot)$ is the natural logarithm. Higher values of E indicate that an industry is less concentrated, and thus it becomes less certain that any given firm has the ability to retain customers. However, as equation (7) illustrates, the entropy coefficient will be influenced by the number of firms within the industry, and thus inter-industry comparisons are generally

made by dividing E by its maximum possible value given the number of firms in the industry ($\log n$). This relative measure must lie between zero and unity, where unity would reflect monopoly.

There are, however, several difficulties associated with the above measurements. Firstly each measurement is based upon the concept of an 'industry'. As is common when compiling all industrial statistics, many firms produce more than one product and thus their classification into a single industry, and consequently the definition of the relevant market, may be less than clear. This also leads to considerations of product differentiation, and it is necessary to make judgements as to the point at which a product ceases to merely be a brand within the same industry and instead becomes output of an entirely different industry. Finally, in recent years increasing globalisation has meant that studies have also recently considered the international aspect of competition. Thus domestic market concentration is dependent upon not only competition between domestic firms, but also upon domestic market competition with producers from the rest of the world, as reflected by the degree of import penetration. Consequently location and transportation costs will be a determining factor upon the degree to which foreign firms are able to compete upon domestic markets, and as such determining the competitor base may also become a subjective judgement.

In addition, studies of the relation between price-cost margins and industrial concentration have illustrated the potential importance of controlling for labour market characteristics. Conyon and Machin (1991) present results based upon three digit manufacturing firm data for the United Kingdom between 1983 and 1986 which suggest that price-cost margins were positively influenced by the degree of concentration; in doing so, they are careful to take account of the possible reverse causality between concentration and margins. Moreover, they find weak evidence to support the view that import penetration may discipline domestic producers, as price-cost margins are shown to be negatively related to import penetration. However, in terms of labour market effects, they find that increasing unionisation tends to reduce margins — a result supported by Dowrick (1990) who suggests that this may arise from firms considering only the alternative wage when setting output and price, such that bargained rents are deducted from profits. The fact that this unionisation variable is not only negatively related to margins, but that its introduction increases the magnitude of the influence of concentration, suggests that failing to control for labour market characteristics in studies of this nature may bias the apparent influence of concentration downwards.

Nonetheless, although the large body of literature in this areas points towards there being a negative relation between profits and concentration, Western empirical evidence of the relation between competition and enterprise performance remains weak; Vining and Boardman (1992) claim that private firms outperform state-owned firms irrespective of the degree of competition, and hence argue that operating within a competitive industry is not enough, as privatisation is the ultimate determinant of enterprise performance. Alternatively Yarrow (1986) suggests that competition and managerial accountability may have greater influences upon the promotion of economic efficiency, than privatisation *per se*. It is unclear whether a definitive answer is likely to emerge from studies of TEs. The above analysis suggests, however, that at the very least one should control for competition in any study of enterprise performance.

3.2. Performance, Restructuring and Competition in Transition Economies

Transition means the retreat by the state from detailed micro-level direction of economy. At the start of transition, the key policy measures with respect to the enterprise sector are price liberalisation and the abolition of quantity planning - in other words, the introduction of product market competition. The same routes by which competition influences the performance and restructuring of firms in Western economies operate in transition economies as well: in particular, competition disciplines enterprises, leading to improved efficiency. The central difference between Western and transition economies is not how competition affects firm performance, but in the degree to which market forces in transition economies are either softened or distorted. Firms in transition economies face "soft budget constraints" more frequently than do firms in Western economies, meaning that they are protected from the full consequences of being unable to survive competition in the marketplace. Moreover, firms in transition economies also often obtain protected market positions of various sorts from their governments, more frequently than do their Western counterparts.

The main routes by which budget constraints are softened in transition economies are two-fold. The first is via non-payment of taxes, a mechanism that enables firms in financial difficulties to obtain what is in effect additional government financing. The second is via soft credits extended via the banking system. Toleration of tax arrears by loss-making firms is observed in both rapid reformers and slow reformers alike; soft credit, however, is more commonly seen in the lagging reformers (Schaffer (1998)).

A great deal of concern was expressed in early stages of transition, concerning the apparently rapid accumulation of large volumes of trade credit, and overdue trade credit or interenterprise arrears (IEAs), as it was thought that this signalled that firms were in effect rescuing one another. However, as Alfandari and Schaffer (1996) illustrate, the fears surrounding this apparent payment indiscipline have been exaggerated. They present data which illustrates that both the total volume of trade credit and overdue trade credit in TEs is comparable with that typically experienced in Western market economies (around 20-30 percent and 10-15 percent of GDP respectively). In addition, these stock values are now generally stable, implying that inflows of new trade credit extended are approximately equal to outflows of trade credit paid off. They suggest that competition and the hardening of budget constraints has encouraged enterprises to introduce cash management techniques expected of a market economy, such as requiring purchasers to pay before delivery of goods, ceasing shipping to debtors who default on repayments and suchlike.

In terms of international competition, the liberalisation of trade and negative domestic demand shocks during transition have served to encourage enterprises in TEs to search for new, external, markets. However, as noted above, international competitiveness of TE enterprises has frequently been constrained by the lower quality of their products. Thus foreign competition has not only encourage increased efficiency and performance, but also improvements in product quality and marketing. In many cases, the necessitated long-run restructuring measures have been achieved via foreign direct investment, either in the form of foreign companies establishing greenfield sites (which in turn encourage domestic producers to attempt to compete with foreign producers in the domestic market), or engaging in joint-ventures with domestic enterprises, as Western companies search for new markets in the east and are attracted by lower unit costs of production.

In a transition context, competition and privatisation are likely to be mutually reinforcing. Many former SOEs traditionally operated within a monopoly position, and thus without the

introduction of competition, privatisation would simply lead to large private monopolies. The potential for monopoly dominance is further exacerbated by the fact that under central planning, key industries were traditionally located in particular areas of the country, thus increasing the potential for local private dominance as transportation costs act as a barrier to competition;³ and by the ability of firms sometimes to obtain formal or informal support from the state to generate or preserve market monopolies or protected positions. A well-known example of the latter in Russia are foreign trade concessions, e.g. enabling a particular firm to import certain goods free of import duty.

In their study of Russian enterprise performance and the disciplining effect of competition, Earle and Estrin (1998) utilise survey data collected by the World Bank in 1994, and draw upon two studies of concentration in Russia, conducted by Brown, Ickes and Ryterman (1994) and Joskow, Schmalense and Tsukanova (1994). The former of these concentration studies presents 4-firm sales concentration ratios for 2-digit branches in 1989, whilst the latter provides 4-firm sales concentration ratios for 4-digit branches in 1991. As Earle and Estrin note, the potential for foreign firms to exert a disciplining effect upon domestic producers in Russia is often understated in the literature, as data illustrates that the aggregate import share in Russian private consumption is actually rather high. Thus they construct indices of import penetration based on ratio of imports to total domestic use (the sum of domestic output and imports, less exports) for each sector in 1994. Furthermore, given the inherent difficulty in establishing the appropriate size for any given market and the main competitors who operate within the market, Earle and Estrin also include a variety of qualitative measures to the analysis, derived from survey responses from managers of firms. Managers were asked to report whether their enterprise had major competitors for its major products, and if so their number and whether they were foreign companies, and the extent to which sales revenues were generated locally (hence providing evidence of the extent of geographical/transportation cost barriers).

Although finding evidence which suggests that privatisation and competition are complements, hence suggesting that any analysis of enterprise performance must at least control for the degree of competition to which enterprises are subject, the results of the analysis provide only relatively weak evidence of any significant influence of competition. They suggest that import penetration has no obvious disciplinary effect upon producers, whilst the domestic sales concentration ratio has a slightly negative effect upon productivity. In addition there is only weak evidence of a relation between the geographic scope of enterprises' markets and performance. However, these results may in part be due to the fact that the analysis was conducted using data from 1994, when competition, though evolving, was not pervasive, and the first 'mass' privatisation phase had only ended in this year. Similarly Brown and Brown (1998), in a study using data from the Russian Enterprise Registry Longitudinal Database for 1992 to 1995, find little evidence that concentration significantly impacted upon profitability in Russia during this period. They do, however, find that profitability is positively influenced by concentration when interacted with geographical dispersion, thus possibly illustrating that local competition did play a disciplinary role in Russia in the period under study.

Finally, competition in TEs, as well as in Western economies, is provided not just by existing competitors, but also by new entrants to the market. One of the stylised facts to emerge from

³ This is particularly relevant in country as large as Russia.

the transition is the dynamism of the *ab initio* private sector. Growth of new private firms is noticeable first in trade but then spreads to other sectors. In Poland, the country where the development of the new private sector is best documented, new private firms have driven the rapid growth of the manufacturing sector since 1992. Between 1992, when recovery started, and 1995, industrial output in Poland increased by one-third, with the bulk of this increase accounted for by the new private sector (Gomulka 1997). Various reasons have been identified so far for the strong performance of the new private sector, and a discussion of these is presented in the following section. We merely note here that barriers to competition that limit the entry of new firms, risk preventing new firm formation, and depriving TEs of a vibrant small and medium-sized enterprise sector enjoyed by established market economies. This is a particular problem in slower reforming transition economies, where rent-seeking and corruption in officialdom discourage the entry and growth of new private firms.

4. Performance, Restructuring and Ownership

4.1. Theory and Western Evidence

Early studies of the relationship between ownership and performance in the Western literature concentrated upon analysis of the differences between private and state owned enterprises. Privatisation became regarded as a mechanism which would encourage effective enterprise restructuring and improve performance, via two causal routes. Firstly, privatisation introduces a financial stake for the new owners, some of which may, of course, be incumbent managers, of which there is more discussion below. As a result, monitoring of enterprise performance should increase, as poor performance will endanger the financial investment of the new owners. Secondly, passing cash flow and control rights from the state to private owners would sever the ‘umbilical chord’ of the state, so hardening budget constraints and reducing managerial discretion to pursue non-profit maximising goals. Such a move also serves to prevent state interference in the enterprise, and thus eliminates the possibility of the enterprise being required by government decree to engage in non-profit maximising public policy (for example, encouraging the enterprise to employ excess labour in key regions).

The separation of ownership and control which occurs as a result of the introduction of external investors, leads to what is referred to in the corporate governance literature as the agency problem: managers are expected to represent the interests of the external owners of the private enterprise, however it is difficult for owners to ensure that managers do so. As Shleifer and Vishny (1996) note, ideally managers and equity investors would be capable of entering into a binding contract, which would ensure that investors’ interests are fully represented. However, it is unlikely that it will be possible to specify contracts *ex ante* that accommodate all possible future contingencies. Therefore should unforeseen circumstances arise, managers assume contingent control rights that provide them with the potential to operate against investors’ best interests, by, for example, expropriating investors’ funds, engaging in asset stripping and suchlike. The discretionary control rights of managers are further increased by the existence of asymmetric information between themselves and external investors. Although it is precisely this insider knowledge which encourages investors to permit managers to operate as their agents, equally this allows managers freedom to conceal information from external investors. Such action serves to increase the costs of monitoring and therefore enables managers to pursue their own goals rather than those of the equity investor, by, for example, entrenching their position or engaging in behaviour which is

sub-optimal for the equity investor. The potential for increasing monitoring costs is particularly pertinent if there are a large number of dispersed external investors, as a free-rider problem would emerge if there are large costs to monitoring whilst the benefits accruing to each individual are relatively small.

The free-rider problem may therefore be minimised if ownership is concentrated in the hands of large block shareholders, be they individuals or investment funds. In this event, the returns to monitoring will increase, whilst it is possible that monitoring may be subject to economies of scale. Furthermore, large blockholders will be more likely to be able to utilise their voting power to influence managerial behaviour, although, as Shleifer and Vishny (1996) note, this will require a robust legal system in order to protect voting rights. This leads to the proposition that large blockholders will exercise more effective corporate governance; a finding which has been supported by a host of studies of developed market economies. Amongst this wealth of literature, Franks and Mayer (1994), in a study of German private enterprises, find that concentrated share ownership is associated with high rates of turnover of directors. Furthermore in studies of Japan, Kaplan and Milton (1994) and Kang and Shivdasani (1995) find that the existence of large blockholders increases the probability that managers of poorly performing firms will be replaced.

Alternatively Corbett and Mayer (1991) propose one of the main mechanisms by which corporate control may be enforced is that of the threat of takeover. As Shleifer and Vishny (1996) note, takeovers are an alternative mechanism by which equity ownership may become rapidly concentrated, and is more common in the United States and the United Kingdom. However, despite some evidence of the effectiveness of takeovers as a disciplinary device, (see, for example, Martin and McConnell (1991), Easterbrook and Fischel (1991)) it is necessary that the threat be credible. This is less likely to be the case if the potential costs of undertaking a hostile takeover are high, or if capital markets are not liquid.

Naturally, corporate control may not only be exercised by equity holders, but also by debt holders. In contrast to the control exerted by owners, the control rights of debt holders are contingent in nature, and are exercised when the firm defaults on its debts and goes into a creditor-controlled liquidation. The procedure of reorganisation generally results in the suspension of the contingent rights of creditors, as the debtor firm is permitted a grace period under which to formulate a reorganisation plan⁴. In many cases the main debt holder in a company will be its bank (which may of course also hold equity) and this may reduce the degree of informational asymmetry, as banks are likely to have better access to company information, together with a more detailed knowledge of the company by virtue of a historical relationship. In addition we note that whereas concentrated equity holding is credited with more effective corporate governance, Shleifer and Vishny (1996) propose that creditor control may be more effective when an enterprise has a large number of dispersed creditors, as it becomes less likely that the debtor firm will be able to reach settlement with many creditors simultaneously.

Finally, the evidence of Barberis *et al* (1996) sheds light on the importance of outside ownership in the selection of managers. They begin by asking whether it is enough for outside owners to give managers the right incentives for good performance, or whether the effectiveness of outside owners also operates via their role in replacing managers ill-suited to

⁴ Notably the grace period is of indefinite length under Chapter 11 of the United State's bankruptcy code.

the new economic milieu, for example, those who were appointed as managers of SOEs because of their lobbying ability or connections, with managers who possess the skills needed to generate strong enterprise performance in a market environment. By also utilising the instrumental variable techniques to address the endogeneity problem referred to above to analyse their survey of Russian shops following privatisation, Barberis *et al* show that simply privatisation, and the introduction of high-powered incentives for managers, are not enough to cause shops to undertake major restructuring measures (such as engaging in major renovation, keeping longer hours, changing suppliers). Rather they find that managerial turnover is also necessary for major restructuring to take place, thus supporting the available evidence from Western studies.

Alternatively, the second causal route referred to above considers that improvements in restructuring and performance are a result of reductions in the influence of the state upon the privatised firm. Such a hypothesis effectively implies that politicians may have less control over privatised firms, and may be less inclined to intervene in private activity which does not concur with political objectives.

Boycko, Shelifer and Vishny (1996) formalise this line of reasoning by contrasting the influence which a politician is likely to have over the quantity of labour employed in a state owned and privatised firm. In the case of state owned firms, the politician has power to set the employment level of the firm over the efficient level in order to satisfy political goals. It is hypothesised that although the manager of the state owned enterprise may be willing to bribe the politician to lower employment, the illegality and hence unenforceable nature of such corruption will preclude this from taking place. Moreover, as the foregone profits of the enterprise cannot be measured owing to asymmetric information and the implicit subsidy will never actually be paid by the Treasury but instead will never be received, the politician is willing to maintain inefficient employment and soften the budget constraint of the enterprise. By transferring control and cash flow rights from politicians to private owners and managers, privatisation requires the politician to compensate the firm for foregone profits if it is to increase employment beyond its efficient level⁵. Boycko, Shelifer and Vishny suggest that this is less likely to occur as it would require an actual payment to be made from the coffers of the Treasury rather than simply foregoing profits, and thus privatisation is likely to lead to restructuring and improved performance. Furthermore, it is proposed that privatisation is likely to be more effective if ownership and control is exercised by outside owners (providing they are not politically motivated), rather than managers, as they are more likely to be concerned with the profits of the firm, and if monetary policy is strict and thus Treasury subsidies are less likely.

Alternatively, Rawski (1997) proposes that rather than attempting to influence the actions of private firms with *ex post* subsidies, it is more common for politicians in market economies to make *ex ante* legislative changes to the economic environment of private firms, in order to encourage them to follow political will. The nature of these *ex ante* measures, which include policies such as erecting protective trade barriers, providing tax breaks to companies locating in particular areas and so on, suggests that they will most likely be targeted upon an entire industry rather than an individual firm. Consequently, Lenway, Morck and Yeung (1995)

⁵ Although as Hillman et al (1997) note, side payments to encourage over-employment may actually encourage firms to substitute from labour to a fixed factor (such as capital) if the marginal bailout per unit of labour is relatively small, as they can be more certain of being able to cover the cost of the fixed factor.

claim that such protection will serve to lessen the competitive pressure within the affected industry, and consequently reduce entrepreneurship and innovation.

These latter considerations have led to a debate in the Western literature as to whether operating in a competitive environment, free from political intervention is sufficient to encourage enterprises to improve restructuring and performance, or whether better performance results from improved corporate governance following privatisation. Early empirical evidence of the relation between privatisation and enterprise performance proved inconclusive, however more recently (and as presented in table 1) Megginson *et al* (1994) find that enterprise performance improves following privatisation, whilst Vining and Boardman (1992) present results which suggest that although enterprise performance is generally improved by the introduction of competition, private firms outperform state-owned firms even in competitive industries. The findings from comparisons of state-owned and privatised firms in transition economies are similar - privatised firms perform better than their state-owned counterparts, and it is to these studies that we now turn.

4.2 Performance, Restructuring and Ownership in Transition Economies

At the beginning of transition, enterprises operated under a distorted incentive structure inherited from the centrally planned era. The softness of budget constraints together with the existence of asymmetric information between the centre and the enterprise resulted in a system which was typified by hoarding of productive inputs and low levels of economic efficiency. Indeed Frydman *et al* (1997) claim that any state monitoring which did occur under central planning actually had the perverse effect of increasing costs, due to the politicisation of influences upon the enterprise and the resulting increased incentives for the enterprise to maintain informational asymmetries. Furthermore, the traditional industrial structure of large dominant firms with high levels of horizontal integration constrained competition and thus competitive discipline. Frydman *et al* (1998) note that these features also served to reduce levels of entrepreneurship, as incentives were reduced and attitudes to risk were consequently distorted. Hence if enterprise performance is disaggregated into reactive (cost reducing) restructuring and pro-active (revenue enhancing) components, the latter requires entrepreneurial skill which stems from adjusting attitudes to risk.

Whilst in previous sections it was noted that the early stages of reform witnessed the liberalisation of prices and trade, together with the introduction of competition, the persistence of softened budget constraints, largely as a result of a greater degree of lobbying and bailout seeking than is common in established market economies, has typified TEs — hence managers frequently appear to have been chosen for their lobbying rather than managerial skills *per se*. Thus whilst it seems plausible to assume that the two main causal routes between ownership and performance outlined in the previous subsection exist in TEs as in established market economies, we propose that the imposition of hard budget constraints should be regarded as a *sine qua non* for privatisation to improve performance: attitudinal reform will only occur by providing managers and owners with the carrot of financial returns and/or by utilising the stick of no longer guaranteeing existence by hardening budget constraints. This raises the a potential hypothesis of whether privatisation may itself be responsible for hardening budget constraints, and thus whether the fundamental distinction between state and private ownership is the degree to which state owned firms are able to receive concessions which obviate their need for financial discipline. Such a hypothesis is supported by Boyko, Shleifer and Vishny (1993) who propose that privatisation will only

increase efficiency and result in effective restructuring if government interference is removed, by passing control and cash flow rights from state to private hands — so hardening budget constraints.

Privatisation programmes throughout the TEs have taken variety of forms, and space does not permit a thorough analysis of the many alternative procedures followed. However, in general we note that a large number of programmes, including that of Russia, have included some element of voucher giveaway. Whilst voucher schemes were regarded as being an extremely equitable way of distributing ownership, such equity was established at the cost of initially highly dispersed ownership, hence potentially limiting the monitoring of enterprise activity, as noted above. Although mechanisms for trading share vouchers emerged in many TEs, either by treating vouchers as currency or selling them to investment funds, the problems of dispersed ownership were perhaps even more acute in TEs owing to thinness of capital markets: share trading was rare in the early stages of transition, with stock markets being used mainly to float government debt, and thus there were few possibilities for concentrating shareholdings via trade. Furthermore, although it was noted above that the true disciplinary device may be takeover rather than monitoring, the potential for takeover was greatly diminished by the difficulty of purchasing shares to permit takeover, or even the ability to raise sufficient capital to finance a takeover bid.

Perhaps as a result of these factors, early studies found little evidence to suggest that privatisation in TEs led to improved performance and restructuring (see, for example, Pinto *et al* (1993)). In addition, the nature of the privatisation mechanism employed in TEs has meant that ownership forms have not simply been restricted to simply the private and state ownership forms which have been the focus of the Western literature. Instead a variety of ownership forms emerged, which were frequently characterised by concentrated insider power (Earle and Estrin (1998)). Thus whilst the majority of Western evidence stemmed from privatisations which passed ownership to outsiders, much of the privatisation activity in TEs, such as that in Russia, resulted in the creation of inside owners. Given these factors, it is perhaps not very surprising that little evidence was found to support the null hypothesis.

As a result of the variety of ownership structures which emerged, Earle and Estrin (1996) study the implications of the distinction between ownership and control of firms by workers, manager and outsiders. In doing so, they further disaggregate private ownership and control into that held by insiders and outsiders, and subdivide insider ownership and control still further to that of workers and managers. On the basis of economic theory and empirical experience from other countries, Earle and Estrin acknowledge that worker ownership and control may be regarded as having some positive features, such as improved information flows, reduced managerial conflict and improved secondary market share tradability (Earle, Estrin and Leschenko (1996)). However, conversely they consider that enterprises owned and controlled by workers will engage in slower restructuring for two reasons. Firstly, such firms will undertake lower levels of investment owing to such factors as their attitude to risk, and potential difficulties in obtaining access to capital as the implied risk of lenders may be greater. Secondly, the firms are likely to exhibit a reluctance to shed labour, as workers entrench their position.

With respect to managerial ownership, Blasi and Shleifer (1996) suggest large-scale ownership of shares by managers of firms in transition economies will be associated with a number of problems. While share ownership by managers is often used to motivate managers

in Western companies, the scale of ownership needed for this is not very large. If managers hold large stakes in their (large) firms, then managerial risk-aversion will lead to excessively cautious firm behaviour. As noted above, perhaps even more importantly, managers with controlling stakes in their own firms are likely to become entrenched, as they are able to decide whether they should retain their jobs. This ability may become far more detrimental in a transition context, and the concern is that the introduction of new management into transition firms - new managerial human capital - will be slow in managerially-controlled firms.

The findings of Barberis *et al* (1996) referred to previously are confirmed by Claessens and Djankov (1998) in a study of 706 privatised Czech firms. This study presents empirical evidence which suggests that equity holdings by managers do not have a significant influence upon enterprise performance (where better performance is measured as increased enterprise profitability, labour productivity — value added per employee — and whether the firm established a marketing department after privatisation). The importance of managerial turnover is highlighted by the finding that all performance indicators are negatively correlated with the length of tenure of the general manager of the enterprise. By disaggregating forms of managerial turnover it is also shown that managers introduced from outside the enterprise by private owners are found to improve all aspects of enterprise performance, whilst outside managers selected by the government perform less well, followed by internally promoted managers.

Such studies raise the question of whether, in the absence of new managerial talent and thus the potential for turnover, it is possible to re-train existing managers to improve performance. In this context Djankov (1998) surveys 137 Moldovan manufacturing enterprises to examine whether there is supporting evidence for the hypothesis that training incumbent managers will lead to improved restructuring and performance. In doing so, care is taken to compensate for a further potential self-selection endogeneity bias: engaging in training activities may simply reflect managerial type, as managers willing to undergo training may appreciate the worth acquiring new skills and be more receptive to new ideas (i.e., are simply being better managers *ex ante*). The results of the econometric estimation presented show that enterprises in which managers have engaged in retraining benefit from substantial sales increases and conduct more restructuring.

Whilst recognising the potentially beneficial impact of insider knowledge of the domestic economy and the enterprise which may be derived from incumbents, the majority of observers expected that the introduction of outside owners would generally have a positive influence upon enterprise performance and restructuring. As noted previously, this influence was expected to occur not merely as a result of improved monitoring, but also by virtue of the possibility for foreign owners to introduce new capital (thus reducing problems of poor capital access given the thin nature of capital markets during transition), and Western experience. That empirical studies have not always supported this hypothesis, may be a result of the endogeneity problem referred to previously: privatisation programmes may have permitted insiders to select enterprises in the first instance, such that external investors were left to purchase enterprises with poorer short-term prospects. This hypothesis is supported by Earle, Estrin and Leschenko (1996), whose study of Russia highlights many cases of insider buyouts at very preferential prices prior to the beginning of the official state privatisation programme, together with options for insider purchase under the state programme itself. They

also note that although shares were nominally tradable, in practice this was not always the case, hence limiting access to outsiders and contributing to the continued strength of insiders.

Nonetheless, subsequent work has been more successful in ascertaining a positive relation between outside ownership and enterprise performance, and this may be a reflection of the possibility that the tradability of shares are improving. In their study of Russia, Earle and Estrin (1997a) use the econometric techniques of standard linear regression and instrumental variables estimation, the latter in order to circumvent the problem of endogeneity, to test the relation between ownership type and enterprise performance and restructuring behaviour (as measured by their aforementioned restructuring index). Estimation results from this study illustrate that Russian firms that have been privatised to managers have restructured more and performed better compared not only to state-owned firms, but also to firms that have been privatised with dominant worker ownership. However, outside private owners is found to be associated with more restructuring activity and the best enterprise performance, with enterprises owned by investment funds undertaking the greatest amount of deep restructuring activity.

In this same vein, Claessens and Djankov (1997) examine the impact of privatisation on firm performance using data on over 6,000 firms from seven CEE countries (Bulgaria, the Czech Republic, Hungary, Poland, Romania, Slovakia and Slovenia) for the period 1992-95. They find that following privatisation, firm growth in total factor productivity increases by about 5 percent per year. They address the endogeneity problem by controlling for the observed performance of firms in 1991. In addition, Roberts *et al* (1998) present an analysis of the influence of privatisation in the Republic of Kyrgyzstan, utilising a panel dataset consisting of 90 enterprises for the period 1993-95. The results of their estimation suggest that sales and productivity growth improved in those enterprises that were privatised in 1995, but without significant differences in the extent to which privatised enterprises shed labour. Furthermore, they did not find any evidence to support the view that privatisation to outside owners led to greater improvements than insider privatisation. Unfortunately, although attempting to address the endogeneity problem by examining cohorts of firms with similar performance before privatisation, it is not clear whether endogeneity can be completely rejected. Further studies were performed by Frydman *et al* (1997), Smith *et al* (1997).

The importance of concentrated share ownership and large block holders has been examined by Claessens *et al* (1997). Using a sample of approximately 300 listed Czech enterprises, they show that firms with concentrated share ownership, and in particular firms which have large blocks of shares controlled by investment funds, are more profitable and have higher market valuations. This can be interpreted as evidence that ownership that is relatively concentrated, and concentrated in investment funds in particular, leads to better performance. These findings need to be interpreted with some caution, however, because of reverse causality problems; it is also possible that large investors such as investment funds are better at locating good investment opportunities, i.e. better performing firms.

A further study of the Czech privatisation experience by Weiss and Nikitin (1998) uses the same data but reaches somewhat different conclusions. Whilst agreeing that share ownership concentrated in public entities and operating companies is associated with improved performance, they find that ownership concentrated in bank managed funds leads to worse performance than non-bank subsidiary managed funds. Moreover, ownership concentrated in funds managed by investment companies are shown to have, at best, no effect and possibly a

negative effect on firm performance. This latter result is qualified by the hypothesis that performance may be dependent on the nature of the investment fund. Weiss and Nikitin relate these findings to the fact that the investment funds established in the Czech Republic were closed-ended funds (around 70 percent of citizens exchanged their vouchers for shares in closed-ended funds), in contrast to open-ended funds that are far more common in Western market economies. They argue that the nature of closed-ended funds reduces the potential for shareholders to exert discipline upon fund managers, owing to the fact that shareholders are not permitted to redeem their shares, as is the case under the terms of open-ended funds. Instead shareholders may only sell their shares in the funds, and although such action may lower the value of shares in the fund, it will not act to discipline fund managers who generally chose to receive a share of the assets of their funds rather than a share of fund profits. Like the Claessens *et al* (1997) paper, however, the Weiss and Nikitin study does not address the problem of endogeneity of ownership - different kinds of owners may have different effects on enterprise performance, or may differ in their selection of firms to own - and thus their results, too, must be treated with some caution.

As noted earlier, one of the stylised facts of transition has been the strong performance of the *ab initio* private sector. In the context of the current discussion we note that these firms are likely to have strong corporate governance arrangements, by virtue of the fact that they are privately owned, often with either one owner or a small number of owners who are able to monitor the management closely. Moreover, in many cases the management will themselves be the owners. More generally, the entrepreneurs who have started these new private firms were able to choose the sectors and locations in which they wished to operate, and therefore it is to be expected that they would choose the more promising ones. By contrast, state-owned and privatised firms, inherited these characteristics. Some empirical studies of *ab initio* private firms have tried to control for this last set of factors by controlling for size, location and industry when comparing new private firms with state-owned and privatised firms (Konings *et al* (1996) for Poland, Bilsen and Konings (1996) for Hungary, Bulgaria and Romania, Richter and Schaffer (1996) for Russia). These studies have found that *ab initio* enterprises are still more dynamic than state-owned and privatised firms, although it remains uncertain whether they have successfully circumvented the sample selection bias problem noted previously.

5. Performance, Restructuring and Financing

5.1. Theory and Western Evidence

The pioneering work of Modigliani and Miller (1958) illustrates that in a world where capital markets function perfectly, there are no transactions costs, bankruptcy, or distortionary taxation, and the productive activity of the firm is independent from its methods of financing, the valuation of a company will be independent from its financial structure. However, once these fundamental assumptions are dismissed, financial structure becomes relevant, as internal and external funds are no longer perfect substitutes. Furthermore, access to external financing may be restricted and the costs of alternative forms of external finance may differ. In this event, firms will attempt to reach an optimal capital structure, dependent upon the prevailing institutional structure within which they operate.

At the simplest level, institutional arrangements such as tax and bankruptcy legislation may be expected to influence the extent to which firms are willing to accumulate debt. On the one hand, by issuing debt a company is able to shield profits from tax, and thus it would be expected that there would be a positive relation between tax rates and debt exposure. Alternatively, stricter bankruptcy legislation and higher costs associated with the bankruptcy process would be expected to discourage firms from overburdening themselves with debt obligations.

These hypotheses are supported by Rajan and Zingales (1995) in their study of the capital structure of non-financial corporations in the G7 countries. By examining alternative definitions of leverage (the ratio of the stock of debt to assets) this study appears, at first sight, to contradict prior expectations founded on the traditional distinction between the Anglo-American market-based financial systems and the bank-based systems of central Europe and Japan: corporations in the United Kingdom and Germany are found to be underlevered relative to other G7 nations. In attempting to explain this apparent contradiction, Rajan and Zingales present evidence under which G7 corporations appear to predominantly obtain financing from sources which benefit most from shields under the prevailing tax legislation. In addition, as bankruptcy legislation in the United Kingdom and Germany is more biased towards creditors than debtors, in contrast to the United States for example, and thus has a stronger liquidation bias, they hypothesise that a fear of bankruptcy may be discouraging British and German firms from becoming highly levered. Nonetheless, their data does illustrate that bank lending to the private sector is more prevalent in the bank-based financial systems, and therefore they consider that as this is not reflected by leverage measures, it may be that firms are simply choosing between public and private debt rather than choosing between debt and equity finance.

At the level of the individual firm, Rajan and Zingales examine the extent to which leverage may be explained by four key factors, namely, tangibility, size, expected future profitability and current period profitability, and although the results of their regression analysis differ slightly across countries, some fairly strong conclusions are apparent. Their analysis points towards a positive relation between tangibility, defined as the ratio of fixed to total assets, and leverage, which they suggest may reflect the fact that debt may be more readily available to a firm which has high amounts of collateral upon which to secure debt, thus reducing agency problems, a point which is returned to below. Alternatively, they find that the market to book ratio (the ratio of the market value of the firm to the book value of its assets) which is used as a proxy for expected future profitability, is negatively correlated with leverage. Although there are several competing explanations for this result, they note that it appears to be driven by large firms tending to issue equity rather than debt when their stock price is high, in order to maximise their returns to issuing equity.

Size, which is proxied by the log of sales in each period, is found to be positively related to leverage (with the exception of Germany). Although again there is no clear theory to provide *ex ante* expectations as to the effect which size should have on leverage, this result can perhaps be explained by the fact that large firms may be considered less likely to suffer terminal financial distress, and consequently are able to increase their debt exposure.

Finally, profitability is generally found to be negatively related to leverage. Although on the supply side one would expect that more profitable firms would have better access to debt, the demand for debt may be negatively related to profits if asymmetric information causes banks

to charge an excessively high interest rate, as a result of their inability to distinguish between good and bad risks *ex ante*. Stiglitz and Weiss (1981) illustrate that the inability of lenders to distinguish between good and bad risks *ex ante* prevents them from charging variable interest rates dependent on the actual risk. In this event lenders are forced to increase the general cost of borrowing, which will tend to induce a problem of adverse selection as good risks are driven from the market by the high costs of borrowing. Thus the expected profits of lenders will be reduced, and credit rationing may take place in equilibrium, with good quality firms relying on internal financing rather than accumulating overly expensive debt, and thus perhaps being prevented from attaining what would be their optimal capital structure.

Additionally, there exist potential problems of moral hazard if lenders are unable to effectively monitor the performance of contracted borrowers *ex post*. Diamond (1991) examines a situation in which the banking sector monitors the performance of borrowing firms, and firms are faced with a choice as to whether to raise finance from the bank or by issuing their own paper which would be unmonitored. He finds that under these circumstances, banks play an important role in aiding firms without a credit history to gain access to finance, and to establish a record which will subsequently permit them to issue their own paper.

In addition to monitoring performance *ex post* however, debt contracts are generally specified in such a manner as to enforce appropriate *ex post* performance and eliminate incentive problems. In particular, debt contracts are generally secured with an appropriate level of collateral which creditors may claim should the firm rescind upon the contract. As noted above, at its simplest level a bankruptcy framework operates in the following manner. If a firm is unable to pay any of its creditors, the creditor is possessed with the power to enforce its contingent control rights in order to enforce its cash flow rights. The creditor does this by either arresting the collateral upon which the loan was secured, or, if this is either not appropriate or impossible, by moving for the liquidation of the firm. Typically, once a firm is placed into receivership a liquidator is appointed to represent the interest of the creditors, and to carry out the orderly disposal of the assets of the firm in a manner which will permit the settlement of creditors' claims according to their priority.

As a result of these possibilities, Nickell and Nicolitsas (1995) note that debt may serve as a disciplinary device which will prevent managers exploiting informational asymmetries between themselves and shareholders and/or lenders owing to the threat of bankruptcy and loss of control. In their study of manufacturing firms in the United Kingdom between 1973 and 1986, they present empirical evidence that companies in their sample exhibited a negative relation between 'financial pressure', which they calculate as the ratio of interest payments to cash flow, and levels of employment and wages. When performing this analysis Nickell and Nicolitsas are careful to control for a potentially spurious correlation between borrowing and employment, on the basis that exogenous shocks to the company may be expected to elicit cost reductions and increased effort together with increased borrowing to finance the short run effects of the shock. Moreover, their analysis finds a small, positive relation between financial pressure and total factor productivity.

In many cases in addition to enforcing contingent property rights and recovering creditors' claims, a bankruptcy framework may include a reorganisation track which aims to secure the continuation of any firm which is experiencing short term difficulties, but which is believed to have sound future prospects. Thus whilst Bonin and Schaffer (1998) note that bankruptcy

legislation is the central mechanism used in established market economies in order to make hard budget constraints credible, and thus to address the so-called 'flow' problem by instilling financial discipline, it typically also enables the reallocation of assets between enterprises and permits the restructuring of the debt of firms which are deemed to be viable in the longer term but which are temporarily distressed.

Under reorganisation the enterprise is granted protection from its creditors for a period of time, during which period the incumbent managers/owners remain in control of the firm, in order to establish a plan for the reorganisation of its debts. Whilst permitting incumbents to remain in control of a financially weak enterprise has the danger of weakening incentives, as incompetent incumbents may have their position entrenched whilst creditors' contingent property rights are suspended, the reorganisation track is intended to prevent the liquidation of firms with future potential and whose worth is greater than the sum of the physical value of its assets.

Therefore an appropriate bankruptcy code may be regarded as one under which firms which are viable in the longer term but which are experiencing temporary financial difficulties, are permitted to continue operations whilst reorganising their debt structure, whilst those which are not viable even in the longer term are liquidated. A firm which is making losses even before debt service would be considered to fall into the latter category, and should be closed. Under the former we would consider, for example, an enterprise which is currently making positive profits but is unable to service its debt, and is thus suffering from a stock problem whilst making positive accounting and economic flows. The case of Metallgesellschaft AG illustrates the nature of such a stock problem very nicely. A highly profitable manufacturing company, it ran into difficulties in 1994 because of the behaviour of a trader in its derivative financial products subsidiary. The company therefore found itself facing claims that it could not meet as they fell due — indeed they were of such a scale that raising funds to meet them would have cost many year's profits. The company therefore sought protection from its creditors, reaching an accommodation with them that permitted it to continue trading. In such cases, this is an economically efficient outcome since the company possesses many assets, among them its own organisational structure, that cannot, and indeed probably should not, simply be liquidated to meet claims.

The inability to reach such an economically efficient outcome is regarded by White (1996) as one of the potential costs of bankruptcy: potentially very large costs may be associated with liquidating a firm piecemeal when it is more valuable as a going concern, or allowing an inefficient firm to reorganise when its assets would be better deployed if they were to be sold off piecemeal. In addition to these costs of the actual bankruptcy process itself, including direct costs such as payments to the court, to lawyers, bankruptcy officials, and so on, White distinguishes between costs incurred during the normal business operation of a firm, when future difficulties are not anticipated, and those incurred after the onset of financial distress but before the start of bankruptcy. An example of the first category is the 'punishment effect': the relative harshness of treatment towards managers of firms when they enter bankruptcy may elicit greater managerial effort so as to avoid having to enter bankruptcy in the first place. The second kind of costs arise because managers of firms in financial distress may have an incentive to engage in costly activity to try to stave off bankruptcy; for example, by trying to gamble the firm back into solvency through undertaking very risky investments.

Finally, we note that the incentives for a creditor to file for the liquidation of a debtor may

often be weak (White (1996)). Secured creditors will often prefer to seize collateral rather than start a lengthy procedure involving other creditors. Unsecured creditors are often small and would find their direct costs of pursuing a bankruptcy procedure prohibitive, and being low on the priority list for the settlement of debts they may find their recovery rate to be small, especially if the firm has run down its assets or run up its debts by the time bankruptcy actually starts. Indeed, White reports that recovery rates for unsecured creditors in the US and Germany are on the order of 2-3%. Given these inefficiencies and costs, it is not uncommon in Western market economies for creditors to renegotiate their claims on their delinquent debtors outside a formal bankruptcy procedure.

5.2. Performance, Restructuring and Financing in Transition Economies

The preceding discussion illustrated that receiving appropriate access to credit and being monitored effectively is of fundamental importance if enterprises are to engage in restructuring activity and improve their long term performance. This is particularly pertinent in a transition context given that, as noted in earlier sections of this paper, long term physical restructuring is likely to necessitate substantial capital investment expenditure. Moreover, on the basis of the discussion in the preceding section, there is good reason to expect that enterprises in TEs are likely to experience even more acute financial constraints for a variety of factors.

As a result of the transition process, existing enterprises in TEs find themselves in a situation where past (and perhaps even present) performance is an inadequate indicator of potential future profitability, whilst *ab initio* enterprises are without a past record. Thus whilst Stiglitz and Weiss (1981) illustrate that informational asymmetries in established market economies are likely to lead to problems of adverse selection and equilibrium credit rationing, such asymmetries are likely to be even more pronounced in TEs. Of course, as in the Western case, this is of less concern if enterprises are empowered with sufficient retained earnings to finance necessary investment; however, enterprises with future potential but currently without such luxury will find themselves unable to finance the restructuring required to secure their future profitability. Moreover, the banking sector plays an even more prominent role in the early stages of transition, as without strong capital markets alternative sources of financing are limited.

Additionally, as Cornelli, Portes and Schaffer (1996) note, banks were faced with the additional role of being required to instil corporate governance and monitoring in order to minimise moral hazard once loans were actually granted. The burden upon banks was magnified by the fact that these tasks would typically be shared by capital markets and other agents in the financial sector of established market economies — agents which were incapable of doing so or did not exist in the early stages of transition. Although, as noted above, problems of moral hazard are frequently addressed by securing debt contracts with collateral over which creditors are able to enforce contingent property rights in the event of default, such action frequently served to further limit access to financing, as enterprises often did not possess sufficient collateral upon which to secure loans. Furthermore, even if firms were able to provide sufficient collateral, the nature of the bankruptcy process in the early stages of transition did little to ensure the protection of contingent property rights⁶.

⁶ In fact, the inability to fully enforce contingent control rights may have led to collateral requirements being adjusted upwards accordingly, thus further exacerbating access constraints.

The above discussion highlighted several reasons which suggest that bankruptcy would be expected to have a positive role to play in transition economies: it is a decentralised system which would permit the orderly settlement of creditors' claims via the disposal of assets, either by selling the firm as a going concern or through a piecemeal sale of assets, which could subsequently be reallocated to more profitable use. Bankruptcy, however, was rarely used in the early stages of transition, and is now only beginning to become more commonly used in the further advanced transition economies. This can be explained by the fact that creditors had, and in some cases still have, weak incentives to pursue the liquidation of a debtor firm, for a variety of reasons. Firstly, the weak legal systems which typified economies during the early stages of reform meant that even though appropriate legislation may be in place, the ability to enforce the legislation quickly and clearly may not. Transition economies lacked trained lawyers and judges and this, coupled with the absence of a body of precedent, meant that the outcome of court action was often uncertain. Furthermore, even if the outcome of the action was positive, from the point of view of the creditors, delays were common and may have given incumbents time to engage in asset stripping.

Secondly, in the early stages of transition the return which creditors would receive from filing for bankruptcy were often low, even in the case of secured creditors, as capital markets were thin, whilst many of the assets of the firm would have been inherited from the pre-transition era and would be of little value in the new economic milieu. Thirdly, banks as creditors may be unwilling to pursue a client into receivership, as doing so would effectively admit that the debt was bad, and the bank would be required to provision accordingly. Finally, given that in many cases the realisable disposal value of assets would be low, creditors may have delayed in filing for liquidation if they believed that it was likely that the enterprise would be rescued by government bailout in the near future.

The results from a World Bank sponsored survey of 50 Czech manufacturing firms in 1994 support the view that firms in TEs are deterred from using the bankruptcy system by these factors (Mochrie, Schaffer and Bevan 1998). Of these firms, 80% cited the existence of major obstacles to filing for the insolvency of a debtor firm that failed to pay its debts. The most oft-cited reasons were the length of time a bankruptcy procedure would spend in the courts, the large debts and low liquidation values of debtor firms (making prospective recovery rates low), the uncertainty of the outcome, and the fact that in any case it was often easier to collect on the debt outside the court system using informal means. (The Czech government's decision to delay introduction of their bankruptcy law in the early 1990s out of fears about introducing a wave of bankruptcies would thus seem to have been unjustified.)

Taken together, the factors noted above suggest that it would be even more common for enterprises in TEs to finance investment activity through retained earnings rather than debt: a result which finds empirical support in Cornelli, Portes and Schaffer (1996). Their study surveys balance sheet data derived from enterprises in Hungary and Poland at the end of 1992, and illustrates that even enterprises in these relatively advanced TEs were significantly underlevered: debt to total assets ratios of 32 percent and 41 percent are reported for Hungary and Poland respectively, as compared to the 66 percent leverage reported for G7 non-financial firms in Rajan and Zingales (1995). One concern of such a result is that it implies that firms which may be viable in the long term, but which are currently experiencing low retained earnings, are unable to invest and restructure effectively — hence their future development is constrained. Furthermore, *ab initio* enterprises are likely to be credit constrained to an even

greater extent as they have no track record and are likely to be viewed as a greater risk. This is of particular concern given that the preceding discussion illustrated that in general the *ab initio* small and medium sized enterprise sector has acted as an 'engine of economic growth' in many TEs.

This aggregate result is also supported by the results of cross-sectional regression analysis akin to that of Rajan and Zingales. Leverage is found to positively related to size and negatively related to profitability (measured as earnings before interest, tax and depreciation), as in Rajan and Zingales. However, unlike in Rajan and Zingales, there is found to be a negative relation between leverage and tangibility, which Cornelli, Portes and Schaffer suggest is likely to arise from the fact that under the traditional system investment financing was generally derived from equity issues rather than accumulation of debt. Additionally, this result may reflect the fact that there exist large deviations between the market and book values of assets inherited from the pre-transition era.

Nonetheless, although the early stages of transition appear to have been typified by ineffective monitoring and significant financial constraints on investment activities, Anderson and Kegels (1997) and Lizal and Svejnar (1997) present evidence which suggests that constraints relaxed and monitoring improved subsequently in the Czech Republic.

Anderson and Kegels utilise an accelerator model of investment, under which they perform cross-sectional regressions on Czech data for 1994. In their regressions income generated by current activities, internal cash flow, and the stock of bank loans, trade credit and all other forms of debt are regressed against investment. As Anderson and Kegels explain, if the accelerator model is to be regarded as an appropriate specification and capital markets function correctly, investment should respond perfectly to demand generated income such that financing decisions are irrelevant. However, firms which are liquidity constrained would find their investment dependent upon the amount of financing available, with the result that the coefficient upon current cash flow would be positive.

At the aggregate level the results of their analysis appear to provide support for the hypothesis that the investment decisions of firms were constrained by available credit in the period under study — the coefficient upon the cash flow variable is positive and significant, whilst that upon income is insignificant. By disaggregating their study by ownership category, however, Anderson and Kegels are able to provide some evidence which suggests that investment was not constrained by financing problems for most forms of private sector enterprise. Although their results should be treated with some caution, owing to the difficulties of assigning ownership class to the enterprises in their data, their results suggest that in 1993 a large amount of investment and debt financing took place in particular amongst *ab initio* private firms and privatised state-owned enterprises. Nonetheless, these firms appeared to be reaching their debt capacity in 1994.

Similar results are reported by Lizal and Svejnar (1997) in their study of the Czech Republic in the period 1992 to 1995. This study computes competing models of investment activity based upon the accelerator model of investment and a structural model of dynamic optimisation subject to associated adjustment costs. At the aggregate level this study finds that the accelerator theory provides a better explanation for investment activity in the Czech Republic in this period, with only mild support for the notion that cash flow influenced investment and this credit constraints were present. Moreover, this mild support appears to be

mainly derived from smaller private firms and co-operatives which appear to have relied upon receivables to finance investment activity.

By contrast, Perotti and Gelfer (1998) find evidence that a lack of available finance significantly constrained investment activity in Russian firms which were not members of financial-industrial groups (FIGs). This study utilises data for 76 quoted Russian public companies for 1995 and 1996, and as these companies are publicly traded, they are able to base their analysis on the Q theory of investment. As noted previously, high values of Q, which in this case is proxied as the market to book ratio, suggest that financial markets place a high valuation upon the expected future profitability of the enterprise. Thus in a similar manner to the accelerator model outlined previously, if investment is unconstrained by financing considerations, investment should be related only to the Q value and not to financing variables. Their results illustrate that investment was consistently related to their measure of Q for all enterprises, however the influence was significantly stronger amongst group members. In addition they find evidence which points towards enterprises which were not members of FIGs in Russia being subject to significant financial constraints. Of the firms which were participants in FIGs they find that investment was more strongly related to Q amongst bank-led than industry-led groups, and that cash flow was negatively related to investment in the case of bank-led groups, suggesting significant internal redistribution of finance amongst members.

The above discussion therefore illustrates that receiving appropriate access to credit is of fundamental importance in enabling enterprises to engage in restructuring activity. This is particularly pertinent given that, as noted in earlier sections of this paper, long term physical restructuring is likely to necessitate substantial capital investment expenditure. Consequently financial isolation programmes, such as that followed in Romania⁷, or bankruptcy codes which do not give priority to fresh financing obtained during continuation, have the potential to limit the extent to which enterprises are able to undertake appropriate restructuring measures. This is all the more true in a situation where suitable bank financing may not be readily available, as a result of such factors as macroeconomic instability, which makes lending difficult to obtain generally, and the existence of credit constraints, which may result from the inability of individual enterprises to provide sufficient collateral with which to secure financing. A study of the Russian banking sector during transition by Fan, Lee and Schaffer (1996) supports this hypothesis, concluding that the vast majority of loans secured by enterprises were short term, owing to high rates of domestic inflation, and as a consequence loans were predominantly used for working capital as they were unsuitable for long-term investment. Moreover collateral requirements were found to be high, reflecting the difficulty which banks experienced when attempting to realise returns if forced to rescind upon the lending agreement.

⁷ See Mochrie, Schaffer and Bevan (1998) for a more detailed discussion of financial isolation programmes.

Table 1: Studies of the Relation Between Ownership, Restructuring and Performance

Study	Countries Analysed	Year of Data	Ownership Structures Compared	Ownership Concentration Influential?	Managerial Turnover / Retraining Influential?	Endogeneity Problem Addressed?	Result
Meggison <i>et al</i> (1994)	Various	Various	Private, state	N/A	N/A	No	Privatisation improves performance
Boardman and Vining (1989)	Various	1983	Private, state and mixed	N/A	N/A	No	Privatisation improves performance
Vining and Boardman (1992)	Canada	1986	Private, state, mixed and cooperatives	N/A	N/A	No	Competition important, but insufficient: privatisation improves performance
Earle, Estrin and Leschenko (1996)	Russia	1994	State, workers, managers, outsiders, de novo	N/A	N/A	Yes	Limited evidence that outside ownership improved performance
Earle and Estrin (1997a)	Russia	1994	State, workers, managers, and outsiders	Yes; concentration in investment funds positive	N/A	Yes	Insider privatisation to managers better than to workers or remaining state, privatisation to outsiders best

Earle and Estrin (1998)	Russia	1994	Private, state	N/A	N/A	Yes	Privatisation improves performance; some evidence of privatisation and competition as complements
Claessens and Djankov (1998)	Czech Republic	1993-97	Insiders, government selected outsiders, outsiders selected by new private owners	N/A	Yes	N/A	Managerial turnover important, best performance from new private appointments
Claessens and Djankov (1997)	Visegrad 4, Bulgaria, Romania, Slovenia	1992-95	State, private	N/A	N/A	Yes	Privatisation leads to improved performance
Roberts <i>et al</i> (1998)	Kyrgyzstan	1993-95	State, employees, investment funds, other outside owners	N/A	No	Weakly	Privatisation leads to improved performance
Djankov (1998)	Moldova	1997	Incumbent managers only	N/A	Yes	Yes	Manager retraining leads to improved performance and restructuring
Claessens <i>et al</i> (1997)	Czech Republic	1992-95	Investment funds (separately led by banks and others), private individuals	Yes	N/A	No	Concentrated share ownership, particularly in investment funds, perform better
Weiss and Nikitin (1998)	Czech Republic	1992-95	Investment funds (separately led by banks and others), public and private individuals and institutions	Yes	N/A	No	Concentration improves performance, unless concentrated in hands of banks or closed-ended investment funds

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