



THE WILLIAM DAVIDSON INSTITUTE
AT THE UNIVERSITY OF MICHIGAN BUSINESS SCHOOL

*Measuring Progress in Transition and Towards EU
Accession: A Comparison of Manufacturing Firms
in Poland, Romania, and Spain*

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Working Paper Number 224
March 1999

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Measuring progress in transition and towards EU accession:
A comparison of manufacturing firms
in Poland, Romania and Spain *

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January 1999

Abstract

This paper provides new evidence on progress in transition and the 'readiness' of enterprises for accession to the EU using a detailed survey administered to approximately 200 manufacturing firms in each of Poland, Romania and Spain. A major innovation is the use of a market economy and member country of the EU – Spain – as a benchmark against which to measure progress in transition. The paper finds that new private firms (firms established as private *ab initio*) in both Poland and Romania are growing the fastest, but on measures of integration and investment, it is Polish *ab initio* private firms and privatized firms that look most similar to the Spanish. Polish state-owned firms, and Romanian state-owned, privatized and (to a lesser extent) *ab initio* private firms more often lag behind. With respect to compliance with EU directives, Poland tends to lag behind Spain but lie significantly ahead of Romania. Levels of awareness of and compliance with directives did not vary with ownership type amongst the Eastern European firms. Progress in transition at the country level seems to be consistent with improvements in compliance with the major components of the *acquis*.

* Paper prepared for the Chief Economist's Office, European Bank for Reconstruction and Development. Assistance from Savvas Kyriakides and Junior Davis in the preparation of the survey questionnaire, and the comments and suggestions of the participants at a workshop at the European Commission on 9 December 1998, are gratefully acknowledged.

Non Technical Summary

Ten countries from Central and Eastern Europe have signed Europe Agreements with the European Union (EU) and five have been assessed as being in a position to commence negotiations for entry to the Union. The first tier countries are the Czech Republic, Estonia, Hungary, Poland and Slovenia, and the second tier group are Bulgaria, Latvia, Lithuania, Romania and Slovakia. This proposed expansion of the EU is large in terms of additional countries and population, relative to previous expansions such as the inclusion of Spain and Portugal. However, in terms of increase in GDP it is relatively small because income per capita in the countries seeking to accede is much below the EU average.

The planned accession of Central and Eastern Europe applicants will, however, be somewhat different from previous accessions. This is because of the need for the acceding countries to adopt the Single European Market regulations and to prepare for membership of European Monetary Union (EMU). The Copenhagen Agreement of 1994 specifies that applicants from Central and Eastern Europe will be expected to adopt the *acquis communautaire* in full, as well to join EMU, though it is understood that adjustment periods may be required. But there is little understanding or information about the implications for enterprises in Central and Eastern Europe of being required to satisfy these requirements, for example in the areas of employment and working conditions, pay, environmental protection or health and safety. Moreover, the ability of Eastern European firms to compete successfully in a single European market against

companies from the higher productivity countries of Western Europe has not been explored. The purpose of this paper is to provide some preliminary information on these issues, drawing on a unique survey of more than 600 firms: over 200 from Poland (as a first tier country) and Romania (as a second tier country) respectively, and using over 200 firms from Spain as an EU benchmark.

The paper therefore provides the first systematic evidence on the “readiness” of enterprises from the two contrasting pre-accession countries for accession to the EU. The survey instrument was designed to address three issues:

- How far have privatised and state owned firms in the two transition economies moved in the direction of the enterprises operating in a comparable EU economy?
- How well do enterprises from the applicant countries meet the legal and administrative requirement of the *acquis communautaire*?
- How do the performance and characteristics of the Polish and Romanian firms compare with those from Spain?

The survey thus permits us to address the issue of “the ability of enterprises to withstand competitive pressure”, which is one of the requirements placed by the EU on applicant countries. We do this by studying the relationship between performance, ownership and competitive environment in the accession countries relative to the benchmark country.

We find significant differences in enterprise characteristics between firms in Eastern European and the EU with respect to ownership, foreign direct investment and exposure to trade. Polish firms founded from scratch as private companies (*ab initio*) and to a lesser extent Polish privatised and Romanian *ab initio* firms are comparable in performance to Spanish companies but Polish and Romanian state-owned firms, and Romanian privatised ones, are significantly less competitive. This gives hope that, as the process of transition replaces state-owned by privatised and new private companies, the competitive gap between transition countries and the rest of the Union will narrow.

Absolute performance levels in Polish firms are below those in Spain, but above those in Romania. But the survey suggests that there has been catch-up in Polish firms; they have higher investment rates than Spanish ones, though even privatised Romanian firms do not. However, the survey reveals a significant heritage of excess employment persisting in both transition countries, particularly in state-owned firms.

In terms of compliance with EU directives and regulations, the survey shows a considerable gap between firms in Spain and the accession countries. Only in the area of equal pay is there no gap between the firms in Eastern Europe and in Spain. Spain stands out in the degree of compliance of its firms with the working time directive, the levels of ISO certification and emissions monitoring. Poland is somewhat better than Romania in export product certification but not according to the harsher criterion of ISO. The transition indicators – ownership, corporate governance – are not significant factors in

explaining the levels of compliance in the accession countries; country effects dominate the explanation.

Overall Poland lags behind Spain and is significantly ahead of Romania in terms of compliance, but all Eastern European firms will clearly experience a major burden in satisfying the standards of *acquis communautaire*, especially the elements related to emissions monitoring and product certification.

Introduction

This paper provides new evidence on the 'readiness' of enterprises from two contrasting pre-accession countries for accession to the EU. A detailed survey was administered to approximately 200 firms in the manufacturing sector in each of Poland and Romania in the summer of 1998. In order to provide a benchmark from a large EU member country with a relatively low per capita GDP, 200 firms in Spain were also surveyed. The requirements for accession are the following: (a) the existence of a market economy, (b) the capacity to take over and implement the *acquis* and (c) the capacity to withstand competitive pressures. An enterprise level survey can provide information on some aspects of these accession requirements. The objective of the survey was to answer three questions: (i) How far have both privatized and state-owned firms have moved in the direction of the general characteristics of firms in a market economy? How closely do new private firms – those established ab initio – resemble those in a market economy? (ii) How well do enterprises currently meet a set of key administrative requirements for accession (aspects of the *acquis*)? We sought to discover the extent of existing compliance, the estimated costs associated with attaining current compliance levels and plans for improving compliance. (iii) How do the performance and characteristics of enterprises compare with those of firms in an EU member state? There is no direct measure of the 'ability of enterprises to withstand competitive pressures'. But we can look at the relationship between performance and the observable characteristics of corporate governance and competitive environment in the accession countries and compare them with the benchmark country.

At the outset of transition, the Eastern European countries were characterized by a pattern of trade dominated by sales within the former-CMEA area; the dominance of state ownership and absence of both private and foreign ownership; the absence of product market competition as a determinant of resource allocation, x-efficiency and enterprise survival; and the virtual absence of small and medium-sized firms. The enterprises in the region produced products of poor quality using equipment that was frequently technologically obsolete and that did not meet modern environmental standards. Overmanning was also rife. Major changes along all these dimensions toward convergence with the characteristics of market economies have been recorded over the course of transition. Many enterprise level surveys have been conducted over the past seven or eight years with the objective of describing the pattern of change and identifying the proximate causes of changes in performance. A problem with these surveys has been the absence of a direct benchmark by which convergence towards a market economy can be assessed. Therefore we have included an EU comparator country in this study both as a contribution to the transition debate and in order to be able to provide new information for the accession debate.

The transition literature suggests that market-oriented adjustment was characteristic of firms of all ownership types in the first phase of 'reactive' or 'cost-oriented' restructuring in the presence of the opening of competition in product markets and the withdrawal of ex post financial support to loss-making firms. Theoretical considerations suggested that 'deep' or 'strategic' restructuring would require profit-

orientation most likely delivered by private ownership with effective corporate governance. Some empirical evidence has emerged to support this contention.¹

The rapidity with which firms in Eastern Europe reoriented their sales from former CMEA to European Union markets has been one of the most remarkable features of the transition. One indicator of how well integrated East European firms are in the European market is the degree of similarity between the exporting activity of Eastern European firms and their EU counterparts. Are they similarly export oriented, do they perceive similar levels of import competition, is the quality profile of export as compared with domestic sales similar to that of EU firms? This entails a comparison between Spanish firms and those in Poland and Romania. To the extent that differences persist, it is interesting to know whether they are related to standard transition indicators. The transition literature suggests that ab initio firms will perform much like firms in market economies, while state-owned enterprises will continue to perform poorly across a wide range of indicators. An important indicator of progress in transition is the extent to which former state-owned firms, now privatized, also display the characteristics of market economy private firms.

It is also possible that country differences will overwhelm such effects. Poland entered the transition at a higher level of development than did Romania, had a pre-existing ab initio private sector in manufacturing, began the transition earlier, emerged from the 'transition-recession' after the elapse of fewer transition years and has experienced many more years of growth than has been the case for Romania. Such country differences would be expected to be reflected in performance and integration.

A major objective of the European Single Market programme ('1992 Programme') was to create a borderless market within the EU in the sense that the conditions of 'export' sales from an EU member to another would be indistinguishable from sales within the home country. By including Spain in the survey, it is possible to establish an EU-benchmark for the 'gap' between firms exporting to the EU and those confined to the home market. Are Spanish firms that only sell in the domestic market very different from those that export to the EU? As the single market becomes a reality, one would expect such differences to diminish. Given that the Polish and Romanian firms do not belong to this 'single market', we could form the hypothesis that there will be more substantial differences between those firms oriented to selling into the EU market and those selling at home within each of the East European countries. The conditions of competition, for example, might well be different. If it were the case that the characteristics of firms in the transition economies that were selling successfully in the EU market were indistinguishable from those of firms selling only at home, one would be less concerned about the capability of the latter to survive under single market conditions.

Readiness for accession includes compliance with specific EU directives and regulations. The survey instrument was designed to uncover the extent of compliance of firms in Poland and Romania – and also in Spain. The directives addressed were those relating to working time, equal pay, safety and health at work, emissions monitoring and product certification. We were interested in uncovering whether compliance levels in these different spheres in the East European countries were a

¹ See, e.g., EBRD, *Transition Report 1997*, for an extended survey and discussion.

legacy from the communist period or were related to transition indicators such as privatization and integration with the EU through exporting or foreign ownership. An effort was made to ascertain the cost of adjustment – if any – that had been needed to achieve compliance, the kinds of costs incurred (e.g. fixed investment, training) and the extent to which assistance had been provided by government or foreign partners in attaining compliance.

In the first section of the paper, a brief summary of the survey design and sample selection criteria is provided. Section two turns to the results of the survey and in particular to the question of the structural and performance characteristics of enterprises in the three countries. The objectives of this section are to find out the extent to which there are differences between the enterprises in the transition countries and Spain, between the two transition countries, and what those differences are. For example, do Polish and Romanian firms look more like each or more like Spanish ones in terms of their output and employment growth, or in terms of their ownership structure – state-owned, privatized, or ab initio private? Are firms in the transition economies rather similar in terms of their exporting activities or are there country or ownership differences? We organize the analysis of similarities and differences by looking in turn at performance, international integration, governance structure and competitive environment. Section three addresses the compliance issues. It begins by describing the levels of compliance achieved in each of the three countries, explores the possibility that there might be directives for which compliance is ‘legacy-based’ rather than ‘transition-based’ and investigates the link between the different transition indicators and compliance. In section 4, attention is focused on what can be learned from this survey about the determinants of ‘readiness’ for accession and the perceptions of firms about how accession might affect them. We present a comparison between the benefits and costs expected by the firms in pre-accession countries from membership of the EU with the retrospective evaluation of benefits and costs by the Spanish firms. Section 5 concludes with a summary of the major findings from the survey highlighting both expected and puzzling results.

1. Survey design

The survey covered 645 manufacturing firms in total: 215 from Spain, 223 from Poland and 207 from Romania. Firms in each country were selected randomly² but within certain restrictions:

- Manufacturing firms were selected from the following sectors only: mechanical engineering and transport, wood products and furniture, food processing, clothing and footwear, chemicals products, and electrical machinery. Furthermore, firms from the following sectors were explicitly excluded: building and construction materials; manufacture of basic metals; shipbuilding; newspapers and other printing. There were no sectoral quotas; firms were selected randomly from the pool of allowable manufacturing sectors.
- Firms were selected from two locations in each country: Madrid and Barcelona in Spain, Warsaw and Katowice in Poland, Bucharest and Brasov in Romania.

² From the databases maintained by the statistical offices in the cases of Poland and Romania, and from a large commercial database in the case of Spain.

- In each country, the size distribution of firms was to be divided into three comparably-sized groups: small firms, employing 50-150 people; medium-sized firms, employing 150 to 500 people; and large firms, employing 500 to 5000 people. Firms employing fewer than 50 persons or more than 5000 were excluded from the survey.
- In Poland and Romania only, the ownership distribution of the firms included in the survey was to be divided into three groups: majority or 100% state-owned firms; privatized (previously state-owned) firms; and ab initio private firms. The small firm category in each of these countries was to be divided between ab initio firms (approximately 50%) and privatized or state-owned firms (approximately 50%). The medium-sized firm category was to be divided as with small firms. The large firm category was to be divided roughly equally between privatized firms and state-owned firms.

This last feature of the sampling strategy was motivated in large part by the limited numbers of firms to be surveyed in each country. To take two examples, without such stratification the Polish “small firm” group would have been likely to be composed mostly of ab initio private firms, reflecting the strong growth of this sector in Poland in the transition period; and the “large firm” group in Romania would have been likely to be composed mostly of state-owned firms, reflecting the slow pace of privatization there. Ab initio firms were excluded a priori from the “large” category because of the small numbers of such firms in both Poland and Romania economy. We note here that export activity was not a criteria for selection, and hence the observed distribution of export activity is driven by the characteristics of the population of firms and not by the sampling procedure.

The survey was conducted by the company MEMRB in June-September 1998. The main survey was preceded by a pilot survey of 20-odd firms in each country in March-April, after which revisions to the survey questionnaire were made in light of the pilot results. Information was collected by interview, typically with one or more members of the top management of the firm.

Table A1 in the Appendix presents the basic descriptive data for the firms surveyed. The table also presents average and median employment by ownership category – state, privatized, ab initio – for each country. As one would expect, both a priori and from the sampling design, there is a clear correlation between ownership and size: state-owned firms tend to be the largest, followed by privatized firms, with new private firms the smallest. For this reason, when we test statistically the observed differences across ownership categories, we attempt to control for size (see the Appendix for further details). This is to try to avoid, for example, confusing the characteristics of ab initio firms that are the result of their smaller size with those that are genuinely related to their ownership status.

2. Structure and performance of firms: are transition firms different?

2.1 Performance

The debate about how to measure firm performance under conditions of transition is unresolved. Rather than focusing on a single measure, we present several. The first problem we face in our cross-country comparisons of performance is that Romania experienced a significant setback in 1997, with industrial output declining by 6% after two years of strong growth, and with inflation at about 150% for the year. We therefore compare the 1996 performance of the Romanian firms in the survey with the 1997 performance for the Polish and Spanish firms.

A measure of profitability is sometimes used as a synthetic index of performance but suffers from well-known reporting and measurement problems. When inflation is high, the interpretation of the profit to sales ratio is especially difficult because of the upward bias introduced by historical cost accounting;³ this is a particular problem for Romania, whose PPI inflation was 50% in 1996, compared to 1997 PPI inflation rates of 9% for Poland and 1% for Spain. We have attempted to correct the data for the effects of inflation⁴ but the comparisons between Romanian and other firms should still be treated with caution. Profitability (gross operating surplus⁵ as a proportion of sales revenue) is higher for the Polish *ab initio* firms than for Spanish firms but otherwise Polish firms are similar to Spanish ones (see Table 1). Romanian private firms, both privatized and *ab initio* private, also appear more profitable than their Spanish counterparts, but as just noted this is not a firm finding. The interpretation of the profit to sales ratio is also muddled by the fact that it will reflect the conditions of product market competition.

Considerable theoretical and empirical evidence has accumulated that adjustment to a market economy takes place in stages. Initially managers react to the introduction of market forces and the hardening of their budget constraints by cutting costs. One indicator of this is labour-shedding. We first look at the extent to which firms in the sample identify the existence of labour hoarding and then at the changes in employment that are reported. Another component of early adjustment is to find markets for the output of the firm. Whilst macroeconomic conditions exert a strong influence over the growth of output in the country, it is instructive to look at the pattern of growth of sales where firms are distinguished by ownership type. A second stage of restructuring has been characterized in terms of the emergence of a strategic orientation of firms. Observable indicators of deep restructuring are usually taken to be investment in fixed capital or human capital or in R&D.

In the early stage of transition, excess labour in the state sector, exacerbated by the economy-wide recession experienced by all transition economies, is typically reflected in labour shedding by state and former state firms as managers act to contain costs in

³ Profit is calculated using costs in historical or purchase prices. When inflation is high, costs are understated relative to sales revenue because of the general increase in the price level between the date inputs are purchased and the date the output embodying these inputs is sold.

⁴ Profit is re-estimated using material costs that are inflated by an average of two month's inflation to compensate for changes in the general price level during the production process. The official PPI is used for Spain and Poland; for Romania, the implicit industrial price deflator (calculated from nominal industrial output and the official real output index) is used.

⁵ Earnings before interest, tax and depreciation.

the face of increasing competition and declining state support. As transition proceeds, one would expect employment shedding to disappear from the privatized firms with an eventual transition to privatized firms sharing in growth with the *ab initio* sector. Somewhat surprisingly, in the survey data for 1997, the latter pattern does not yet appear to have emerged in Poland (see Table 2). Growth of employment in *ab initio* firms is rapid and indistinguishable from that of Spanish firms whilst privatized firms as well as SOEs continue to contract. The pattern is the same in Romania.

The explanation for why we do not yet find most privatized Polish firms expanding their employment may, however, be specific to Poland and relates to the existence of excess labour. A peculiarity of the Polish transition still appears to be present here. In spite of progress on the dimensions discussed above, Polish state *and* privatized firms stand out from their Romanian counterparts in their propensity to hoard labour (see Table 3). In Romania there is still some labour hoarding in the state sector, as measured by comparison with Spanish firms, but not elsewhere.

There is some support from the survey for the predicted pattern in sales growth. The set-back to transition in Romania in 1997 highlights the role of macroeconomic factors and should be kept in mind when interpreting Table 4. Against the Spanish benchmark, a ranking of Polish firms emerges: the growth of Polish *ab initio* firms is as rapid as that of Spanish firms, with Polish privatized firms growing more slowly and SOEs' output actually shrinking (see Table 4). The relative performance of the different types of Romanian firms is similar to that in Poland, with new private firms expanding sales faster than privatized ones and with the sales of SOEs virtually stagnant.

The recovery of investment activity is frequently referred to in the transition literature as an indicator of 'deep' restructuring and of progress in transition. It is thought to require managers who are oriented toward the future profitability and strategic development of the firm, as compared with the initial transition task of surviving the marketization shock. It would be expected that privatization in the presence of effective corporate governance would be associated with higher investment. From the survey it appears that both privatized and *ab initio* private firms in Poland have substantially higher investment shares than is the case in Spain, in line with the expected pattern as transition proceeds (see Table 5). Although *ab initio* Romanian firms are investing more than Spanish ones, the situation in Romanian privatized ones looks poor with investment well below that in the Polish privatized ones and no different from the levels in Romanian state firms.

In both training and R&D activity, Polish and Spanish firms are alike with levels significantly higher than Romanian ones. There is also some evidence that Polish privatized and *ab initio* private firms have a significantly higher share of marketing staff in total employment (at Spanish levels) than do state firms in Poland or all firms in Romania.

The difference between the Polish and Romanian privatized firms appears to be that the former are engaging in 'deep' restructuring (as evidenced by, e.g., their investment rates) even though their workers have often been able to exert enough influence to

protect jobs, whereas the latter are still in the earlier phase of 'reactive' low-investment restructuring.

2.2 International integration

There are two very striking differences between the pattern of exporting behaviour of Spanish, Polish⁶ and Romanian firms. These are best understood by looking at histograms showing the distribution of exports as a percentage of sales across firms (see Figure 1). A glance at the histogram shows that the Spanish distribution is quite different from that of the Eastern European countries. The great majority of Spanish firms are involved in some sales abroad. By contrast in both the Eastern European countries there is a very marked spike at the left-hand side with between 30 and 60% of firms (depending on country and ownership type) exporting less than 10% of sales. Many firms do not export at all. The other notable result is that in Romania there is a second concentration of privatized and ab initio firms exporting at least 80% of their output. The widespread participation of Spanish firms in exports highlights the greater extent of its integration in international trade and in the European market. Polish privatized firms come closest to the Spanish pattern. By contrast, Romanian private firms (and especially new private firms) display a separation between non-exporters, an intermediate group and specialist exporters.

As would have been expected, Spanish firms export to the EU to a greater extent than is the case for the Eastern European firms, irrespective of ownership type. In neither Poland nor Romania does it appear that the exporting activity of state firms is dominated by a legacy of trade links with former CMEA countries. Indeed in Poland, it is ab initio firms that have the strongest trade links with former CMEA countries. This probably reflects the seizure of market opportunities by Polish entrepreneurs – for example, in successfully identifying profitable market niches in the Russian economy in the wake of liberalization. The parallel in Romania to this group of Polish start-ups is a dozen ab initio firms that are specialist exporters selling at least three-quarters of their output to the EU – all are clothing firms, smaller than average and doing better than average.

If Spanish firms are operating in a single European market, one would expect that there would be less difference between the price-quality characteristics of goods exported and those sold at home than would be the case for firms in a market segmented from the EU. Firms in Eastern Europe, for example, may have a domestic market that is protected from pan-European competition and in which different conditions of sale (e.g. product standards) apply whereas exports must sell in 'head-to-head' competition under the same conditions with the products of EU countries. Respondents to the survey were asked to identify the main product that was exported. They were then asked if the same product was sold at home. For firms that sold the same product at home and abroad, we then asked whether the exported good was of lower, higher or the same quality. Virtually all Spanish firms did sell the same good at home and abroad and it was of the same quality (see Table 6). Many fewer Polish firms sold the same good at home and abroad and even fewer Romanian ones did so.

⁶ In Poland, 24 of the 41 firms that export more than one-quarter of their sales to the EU are sub-contractors for 100% of their output. (In Romania, the corresponding number of firms is five out of 46.) We tested fairly extensively for an effect of sub-contracting on performance and compliance outcomes but were unable to uncover any significant effects.

In an interesting reflection of the closer convergence of Poland to Spain, Polish *private* firms, both privatized and ab initio private, tended to sell the same quality of good – just like the Spanish firms. By contrast, Polish state-owned firms looked like Romanian firms (of all types) with a greater tendency to sell higher quality goods for export than for the home market.

2.3 Governance structure

One solution to the agency problem that arises when ownership and control in a firm are separated is concentrated ownership. The presence of a shareholder with a substantial stake helps to overcome the standard free rider problem in control. For this to be a solution requires in turn that the large shareholder is motivated by the objective of value maximization and that the private benefits that are derived from ownership do not conflict with this. In short, for concentrated ownership to be effective, the owner needs not just to have the capability of monitoring management but also the incentive to do so in the pursuit of efficiency rather than private gain (for example through asset expropriation). The understanding of the precise determinants of ‘effective’ corporate governance is far from complete even in a market economy. Our aim here is to highlight the similarities and differences between ownership concentration in the Spanish economy and the private sector of the transition countries.

We find that in terms of concentration, Spain looks different from the transition countries (Table 7). Ownership is significantly more likely to be concentrated in Spain and there is no significant difference between Poland and Romania. It is the privatized Eastern European firms that look very different from the Spanish ones. There is less concentrated ownership in Poland and Romania in privatized firms suggesting the possibility of more serious monitoring problems.

It has frequently been suggested in the debates about transition that foreign ownership represented an attractive method of privatization bringing an owner with profit orientation and with access to finance for investment, to management expertise and to markets in the West. It is interesting to note that foreign ownership is much more prevalent amongst the Spanish firms than amongst either privatized or ab initio private firms in Poland or Romania (see Table 8). The high foreign ownership of Spanish firms reflects changes in Spain as a consequence of EU accession and of the single market measures providing a pointer to what might be expected for the Eastern European countries after accession. The tendency for Polish firms to be foreign owned to a greater extent than Romanian ones is not quite statistically significant overall although Polish ab initio firms are more likely to be foreign owned than Romanian privatized ones. The role of foreign ownership in Polish start-ups is interesting. One of the debates about the consequences of the design of privatization programmes in transition is whether privatization to insiders could lead to the entrenchment of incumbent managers who become owners. The question of whether ‘insider-privatization’ has inhibited the transfer of ownership both in terms of concentration and foreign ownership for Polish privatized firms (which look different from Spanish ones on both counts) is one that deserves closer investigation.

2.4 Competitive environment

The inclusion of Spain in the survey allowed for the identification of a benchmark against which the pressure of competition felt by Eastern European firms could be

measured. Firms were asked if in the market for their main product, they faced zero competitors, between one and five competitors or more than five. There was no significant difference in the judgements of Spanish and Polish firms as to their competitive environment (see Table 9). It is interesting – if slightly puzzling – that Polish SOEs are very similar to Romanian privatized and ab initio private firms in being more likely to face more competitors. On the other hand, Romanian SOEs are less likely to face more competitors. One possible interpretation is that Romanian state firms are at the very early stage of transition with limited perception of competitive pressure. By contrast, Romanian privatized and especially ab initio private firms (leading the Romanian transition) and Polish state firms (lagging the Polish transition) are very aware of competition. Finally, the transition firms best adapted to the market economy are in more settled markets and face a pattern of competition similar to that of market-economy firms.

The findings for the importance attached to competition from imports are also interesting in this regard. There is a clear split between the Eastern European firms and the Spanish ones. Import competition is *more* frequently viewed as important by the transition than the market economy firms (see Table 10). Perhaps the Spanish firms have become less sensitive to the origin of competing products as the EU market has become more borderless. There are no discernible differences between Polish and Romanian firms on this measure.

2.5 Summary

Looking across the four dimensions of structure and performance, we find that there are a number of respects in which there is a significant gap between Spanish firms on the one hand and Eastern European ones – both Polish and Romanian – on the other. This is by no means the case across the board. The differences emerge in some aspects of governance, international engagement and competition. Spanish firms are more likely to have a single majority owner and they are more likely to be foreign owned. This suggests the presence of more effective corporate governance of Spanish than of transition firms. The perception of import competition is substantially higher in the Eastern European economies than in Spain. As noted above, this apparently counter-intuitive result may simply reflect the progress that has been made in the single European market, with Spanish firms ceasing to think in terms of ‘import’ and ‘domestic’ competition. This interpretation is supported by the finding that hardly any Spanish firms are not engaged in sales to other EU countries. The share of exports to the EU by Spanish firms is significantly higher than for transition firms confirming that Spanish firms are more integrated in the EU than those from Poland and Romania.

The results in this section suggest that in a number of respects Polish ab initio private firms, and to a lesser extent Polish privatized firms and Romanian ab initio firms, are rather similar to Spanish firms and different from Romanian state-owned and privatized ones. One would expect to observe this pattern as transition proceeds, with private sector firms – whether their origins were in the state-owned sector or as start-ups – coming to look more like firms in long-established market economies. Clear convergence of Poland toward Spain is revealed by the distribution of exporting activity across firms. As vividly depicted in the histograms (Figure 1), Romania is characterized by a set of specialist exporting firms. Such firms are absent from the

Spanish sample and relatively rare in the Polish sample.

Two other results emerge that capture differences within Eastern Europe. First, Polish private firms have higher investment ratios than do Spanish ones. This reflects the exploitation of Poland's scope for catch-up to countries with higher productivity levels. By contrast, investment is especially low in privatized Romanian firms indicating that the conditions for effective catch-up have yet to be established for former SOEs. Secondly, the well-documented phenomenon of excess labour continues to characterize Polish firms. Whereas in Romania, labour hoarding is characteristic only of SOEs, in Poland privatized firms that on many other counts are well on the way to convergence with Spanish ones are still bearing this legacy from the 1980s. The excess labour represents unutilized potential for improved competitiveness of these Polish firms – their gross profit margins (operating surplus as a proportion of sales) are similar to Spanish firms.

3. Compliance with EU directives and regulations

The survey instrument was designed both to identify objective measures of compliance and to gauge the perception of respondents as to their degree of compliance. There was a close correspondence between the results from the objective measures (e.g. what proportion of your workforce works for more than x hours per week?) and the subjective assessment of whether they would have satisfied an EU inspector making an unannounced visit to check compliance.⁷ The questions about compliance were set up so that the respondent was led through the various components of the directive before being asked to evaluate the firm's level of compliance with the directive as a whole (see the Appendix where an edited extract from the section of the questionnaire dealing with the compliance questions is presented). From a policy perspective it is useful to know whether levels of compliance were inherited from the pre-transition period and whether there is any relationship between ownership type or other transition indicators in the extent of compliance in Eastern Europe.

3.1 Equal pay directive

Compliance levels with the equal pay directive were uniformly high across all three countries (see Table 11). There were no size or ownership effects in the compliance achieved by the time of the survey. Firms in the Eastern European countries reported that compliance levels had been as required by the Directive for at least five years or since start-up. Somewhat surprisingly, current compliance levels had been achieved relatively recently amongst the state firms with just over one-half of SOEs in Poland and only one-quarter of those in Romania meeting directive levels in 1989 or earlier.

3.2 Working time directive

Although compliance with the working time directive is high in the Eastern European countries – with over three-quarters of firms reporting high compliance, Spain is still ahead of Poland and Poland ahead of Romania (see Table 12). It appears that Polish ab initio firms are still behind other Polish firms in compliance and suggests that any government effort in raising compliance levels would need to be directed toward start-

⁷ As the assessment of compliance is that of the interviewee, we have more confidence in the rankings of compliance across directives than in absolute levels of compliance for any particular directive.

up firms in Poland. In Romania, compliance levels are uniform across ownership types at a lower level than for Poland.

3.3 Occupational safety directive

In meeting the occupational safety directive, Polish firms report the same level of compliance as Spanish ones.⁸ This applies across the board irrespective of ownership type (see Table 13). Only one-third of the Polish state firms had current levels of compliance in 1989, which indicates that adjustment has taken place during transition. Most privatized and ab initio firms report that current levels were achieved from privatization or start-up or earlier. Romanian firms are well behind the others in compliance. Interestingly, it is new start-ups in Romania that show higher compliance levels – at least as compared with SOEs. Start-up firms in both Poland and Romania indicated that substantial changes were required in order to meet the compliance levels specified in the directive. In neither case was outside help a significant factor in making the necessary changes.

3.4 Product certification requirements for exports to the EU; ISO certification

For firms outside the EU any exports to the EU must comply with product certification procedures. Polish firms were more aware of these requirements than were Romanian firms (see Table 14). The second question that we wanted to pursue was whether there was any difference in their awareness of these requirements according to whether a firm was engaged in selling goods in the EU market. In section 2 above, it emerged that Polish firms appeared to be more integrated into the EU market whereas in Romania a group of specialist exporting firms existed. Another indicator of integration would be an awareness of certification requirements for exports even amongst firms that did not currently export. The survey results suggest that there is a distinction between Polish and Romanian firms along these lines. Polish firms seem to be equally aware of the certification requirements for exports to the EU even when they are not selling into that market. By contrast, whilst Romanian exporters were just as conscious of the requirements as Polish firms, the level of awareness amongst non-exporters was much lower.

Familiarity with export certification requirements does not vary according to the type of ownership of the firm or whether or not ownership is concentrated - it seems to be a country effect. Firms that claimed to be familiar with the export certification requirements were also asked how much of their output meets these requirements. The share of output meeting this standard is highest in Polish privatized and ab initio private firms and Romanian privatized ones. Romanian start-ups and state firms were significantly lower. This highlights the greater depth of convergence to EU standards across the Polish private sector and underlines the specialization of Romanian privatized firms in exporting activity. To pursue this question further, we were interested in finding out the cross-country differences in ISO quality standards certification as another proxy for EU product standards in the internal market.

Spanish firms were significantly more likely to have ISO9000 certification with nearly two-thirds of firms (controlling for size of firm) complying (Table 15). By contrast

⁸ The caveat above about absolute levels of compliance is particularly important here. The interviewee's judgement of whether the firm has satisfied the occupational safety directive could be influenced by the average quality of safety equipment in that country; e.g., what is seen as a satisfactory standard of equipment in Romania may not be acceptable in Spain.

less than one-quarter of firms in Poland and Romania had ISO certification. There was no difference between Polish and Romanian firms, no ownership differences and no tendency for exporting firms to have certification more often than non-exporting firms. However, one intriguing pattern does emerge. In both Poland and Romania, there is a tendency for firms that dominate their market (i.e. that identify no competitors for their main product) to be more likely to have ISO-certification. In Romania, for example, of the 28 firms that say they dominate the market, over half have ISO certification. An appealing hypothesis is that these firms are subcontractors with the foreign purchasing firm assisting with ISO certification. This hypothesis is refuted by the data – over the half the firms are state-owned and only one-quarter do any sub-contracting at all.

Polish firms that achieved current compliance levels for export certification in 1995 or later indicated that the changes required in order to do so involved fixed investment, training and changes in the production process in equal measure. The corresponding Romanian firms less frequently mentioned training. Most Polish and Romanian firms received no outside help in achieving compliance: a handful of firms in each country mentioned that they had had some foreign help. There was a somewhat higher level of outside help reported for the achievement of ISO certification with about one half of Polish firms reporting outside assistance, most often from a foreign customer, partner or owner. There was sparse mention of government help. The Polish firms with ISO virtually all mentioned the need for increased training with about one-half noting the need for new investment and changes in the production process. Romanian firms with ISO appear to have done so without outside assistance as would be expected from their characteristics noted above.

3.5 Emissions monitoring

In a wide-ranging survey of firms from a variety of manufacturing sectors, there was limited scope for investigating environmental aspects of the *acquis* in any detail. Our approach was to focus on the capability of firms to measure emissions from their production facilities. We sought to divide firms into those with emissions monitoring equipment, those without it but aware that they should have it, and the final group that saw no requirement to have monitoring equipment. There was a clear split between Spanish firms and Eastern European ones (see Table 16 where size-corrected distributions are presented). Just under half of the Spanish firms have monitoring equipment with the rest stating they are not required to do so. No Spanish firms said that they should but do not have equipment.

The presence of monitoring equipment is much sparser in Eastern Europe – with no discernible difference between Poland and Romania and no influence of ownership type, corporate governance, pressure of competition or involvement in exporting. Less than one fifth of firms were able to monitor emissions and over seventy per cent stated that there was no requirement for them to do so. A small but significant number of firms in both countries stated that they should but did not have monitoring capability. This comparison suggests that compliance is higher in Spain, it is better enforced and that regulations are tougher.

3.6 Costs of compliance

It is extremely difficult to elicit reliable information from firms about the costs of compliance with regulations. In many cases, managers will not be able to separate out

that component of an investment project or of training expenditure or of costs of production that would have been saved had they not improved their level of compliance. We have some information from firms for which managers reported that some of their investment over the past three years had added to their standard of compliance and who made an estimate of the proportion of investment spending that would have been saved had they not sought to improve compliance. There are between 20 and 30 firms from each of Poland and Romania involved in each case. Estimates of the proportion of investment that would have been saved are 'large' and should not be taken too literally. For example, for each directive over half of the Romanian firms reporting on the proportion of their investment that would have been saved had they not improved compliance said that they would have saved more than ten per cent.

The results are quite consistent with the pattern of compliance outlined above. In general, there was a tendency for Romanian firms to indicate a heavier burden than Polish ones. Product certification appears to have been especially onerous for Romanian firms with 24 out of the 27 firms involved reporting a saving of more than 10 per cent of their investment outlays had they not complied. It is worth recalling that investment levels by Romanian firms were very low (especially amongst privatized firms). It is notable that Polish and Romanian firms with emissions monitoring equipment reported significantly higher levels of running costs than was true of the Spanish firms.

3.6 Summary

Spain stands out from the Eastern European countries in its compliance with the working time directive, its levels of ISO certification and emissions monitoring. Based on the judgements of managers, Polish firms are indistinguishable from Spanish firms and ahead of Romanian firms in occupational safety compliance. In terms of export product certification, Poland stands out from Romania reflecting a deeper level of 'integration awareness' that includes firms that do not currently export to the EU. On the harsher criterion of ISO certification, there is no discernible difference between the East European countries. This confirms the emerging picture of a group of 'top-flight' privatized firms in Romania that are comparable to Polish ones but a longer tail of firms for which the gap to EU standards is much more substantial. Only on equal pay, is there no clear gap between the firms in Eastern Europe and in Spain.

From the survey results, it seems that transition indicators (ownership type and corporate governance) and conditions of competition in the product market are not decisive in explaining levels of compliance. Country differences dominate the picture of compliance levels. A concern that at least some compliance levels may have been driven by legacies from the pre-transition period with the consequence that new start-ups would lag behind has not been confirmed by the survey results. Surprisingly the levels of compliance by 1989 were low for state firms with adjustment there occurring during transition. The only exception worthy of note is the lagging behind of Polish start-up firms in meeting the working time directive.

4. Competing in a single market: preparedness and perceptions of transition firms

In sections 2 and 3, a picture was built up of the characteristics of firms in Poland and Romania and they were compared with Spanish firms. On a number of dimensions of performance, structure and compliance with EU directives, a clear gap remains between Eastern European and Spanish firms. Yet there are dimensions on which Polish firms look very similar to Spanish ones and quite different from Romanian ones. In the compliance indicators, this is usually a country effect but in investment and integration, private ownership – both privatized and *ab initio* – is often a correlate of convergence with Spain. State-owned Polish firms, and all Romanian firms except new private firms, tend to be laggards in adjustment. These results are quite reassuring since progress in transition in the leading transition economy is producing measurable convergence.

The attempt to probe more deeply the determinants of enterprise adjustment is difficult. It has long been emphasized in the literature that selection issues in the privatization process make the untangling of the ownership-corporate governance-performance link very difficult. Using the survey data, we have not made much headway in testing more directly for corporate governance effects. For example, we were interested in whether there was any connection between firms in which there was a new outside general manager (i.e. a general manager coming from outside the firm but excluding cases where the general manager was present at the establishment of a start-up) and levels or changes in performance. There appear to be few discernible patterns. One exception was a weakly significant result for privatized Polish firms, for which we found that a new outside general manager was more likely in firms for which there was a single majority owner.

We also asked whether the present general manager had replaced a poorly performing one. The affirmative answer was significantly more common in both Poland and Romania than in Spain. This underlines the character of the transition process, even in the early stage in Romania, as one in which there is an unusually high degree of managerial turnover. Poor managerial performance can apparently be recognized and replacement brought about. The thought that changes in the majority-owner of firms might be the route through which effective corporate governance would be executed does not receive much support in the data. The proportion of firms experiencing a recent change in ownership was very similar in all three countries and there seemed to be no correlation between a change of ownership and the presence of a new outside general manager. However, it should be stressed that given the ‘noisiness’ of the data, there may simply be too few observations for hypotheses of this kind to be confirmed or refuted with confidence.

In addition to the specific dimensions of convergence in terms of performance, integration and compliance, we investigated the perceptions of firms about accession to the EU and asked them to identify the most important impediments to the implementation of their business plans. When asked for a subjective assessment of the likely costs of accession, firms in Poland and Romania produced remarkably similar responses. The first-ranked cost in both cases (identified by half the firms as the most important) was the cost of compliance with EU regulations. Competition from the EU ranked second (one-quarter of firms) and third was the fear of the loss of skilled

labour (about one in ten firms). Asked to assess the actual costs of accession, Spanish firms pointed to competition from EU countries (one half of firms), the cost of compliance to EU regulations (one-quarter) and competition from non-EU countries as the third (one-fifth).

The benefits identified by firms in Poland and Romania were much more diffuse than the assessment of costs and there was less concordance with the ex post views of the Spanish firms. Managers of Polish and Romanian firms felt that accession would help them to find a foreign partner, give them access to new technology, to cheap credit, to a large market and assist because of the abolition of tariffs. Managers of Spanish firms took the view that the main benefits were the abolition of customs formalities, the future benefits of a common currency and access to a large market.

Features of the economic environment that businesses identify as obstacles to the implementation of business plans can also provide useful information about the process of adjustment. Managers were invited to rate the importance of each factor separately before being asked to nominate the most important impediment. The factors they were asked to consider were: delays and difficulties getting planning permission; problems with legal permission or licenses to produce or operate; delays at customs for exports or imports; difficulties in obtaining short term, or long-term bank credit, late payment by domestic, or foreign customers; problems with inconsistent taxation, changes in tax regulations, too many different taxes; illegality and corruption; environmental regulation.

When asked to identify the most important obstacle, the Spanish firms in the sample spread themselves rather widely across the possible answers. There was no particular focus of discontent. By contrast, more than one-third of the Romanian and over 40% of the Polish firms pointed to the late payment by domestic customers as the main impediment to their business plans. The other focus for complaint in Eastern Europe was the inconsistent, complex and unpredictable nature of taxation. (The interviewer was specifically directed to emphasize that it was not the *level* of taxation that was at issue.) It is striking that it was only the privatized and ab initio firms that identified taxation as a serious problem for their firm. Problems with payments arrears may still reflect the adjustment of firms in Eastern Europe to the characteristics of a market economy rather than the existence of a much more serious problem in payment delays than in Spain. It is notable, however, that the Polish firms were no less likely to identify this as a major problem than the Romanian ones. The unpredictability of the tax environment has been identified as a particularly serious problem for the countries that are lagging in transition. The results here suggest that Polish private firms are very concerned with this issue. Very few firms in any of the three countries identified corruption as a major problem.

5. Conclusions

A major innovation of this study is to have used a market economy and member country of the EU – Spain – as a benchmark against which to measure progress in transition and ‘readiness’ for accession. As might have been expected, Spain is often ahead on the measures of performance, integration and compliance that have been examined but we have identified a number of dimensions on which Polish firms look similar to Spanish ones. On the measures of integration and investment, it is Polish ab

initio and privatized firms that look most similar to the Spanish. Polish state-owned firms often lag behind and look much more like Romanian firms than like either Polish privatized or ab initio private firms. The fact that the investment share of Polish privatized firms is higher than that of Spanish firms suggests that the ownership structure and economic environment of these former state firms is able to support a process of catch-up growth. We have also found evidence that there is a smaller gap in Poland between some characteristics of firms that are already competing in the EU market and firms that are only selling in the domestic market than is the case for Romania. This provides another measurable indicator of the depth of integration and hence of 'readiness' for accession since the presence of a large gap between these two groups of firms would indicate that considerable adjustment was still required for the firms operating only in the domestic market.

Taking a broad overview of compliance with EU directives, then Poland tends to lag behind Spain but lie significantly ahead of Romania. The Eastern European firms perceived a heavy cost burden associated with raising compliance especially in connection with emissions monitoring. A heavy burden was also identified by the Romanian firms in relation to export product certification. There were fewer problems with complying with equal pay, working time and – for the Polish firms – with occupational safety directives. Levels of awareness of and compliance with directives did not vary with ownership type amongst the Eastern European firms or with their involvement in exporting. The hypothesis that compliance was legacy-based and hence more likely to characterize state or formerly state-owned firms than start-ups was not confirmed. The data available from this study suggests that compliance levels are fairly uniform within a country. Progress in transition at the country level seems to be consistent with improvements in compliance. At least from this study, there is little sign of a conflict between the goals of transition toward a market economy and the improvement in compliance with the major components of the *acquis*.

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APPENDIX

- Table A1. Descriptive statistics for survey firms
 Questions on compliance: extracts from the questionnaire

TABLES AND FIGURES

How to read these tables:

Tables with statistical tests are based on regressions with the firm characteristic of interest as the dependent variable, and country/ownership dummy variables and log employment in 1997 as the independent variables. Country/ownership categories (7): Spain, Poland state-owned, Poland privatized, Poland ab initio private, Romania state-owned, Romania privatized, Romania ab initio private. Log employment was included as a simple control for the size of the firm.

The regression technique chosen follows from the type and nature of the dependent variable.

Two sets of statistical tests are usually presented:

(1) Country by country tests. These are pairwise tests of whether the two countries in question are “different”, in the sense of a joint test of all dummies for one country being significantly different from all dummies for the second country.⁹ These are shown in the country rows and columns.

(2) Country/ownership category tests. These are pairwise tests of whether the firms of one country-ownership combination (e.g., Polish state-owned) have a higher or lower value of the firms of the other country-ownership combination (e.g., Romanian privatized, or all Spanish).¹⁰ These are shown in the country-ownership rows and columns. A + sign means the firms of that row category have “on average” a larger value of the characteristic in question than the firms in the column category; a – means a lower value for the row category; zero means no statistical significance.

All tests are at the 5% significance level.

⁹ For example, the test of whether Poland is different from Spain is a joint test of whether the Polish state-owned, privatized and ab initio dummies are significantly different from the Spain dummy; the test of whether Romania is different from Poland is a joint test of whether the Polish and Romanian state-owned dummies are different, whether the two privatized dummies are different, and whether the two ab initio dummies are different.

¹⁰ For example, the test of whether Polish SOEs are different from Spanish firms is a test of whether the Polish state-owned dummy is different from the Spanish dummy.

Table 1. Profitability 1997 (Earnings before interest, tax and depreciation as a percentage of sales revenue)

	Means (Medians)	Means controlling for size	Spain	Poland	Poland SOE	Poland Privatized	Poland Ab Initio	Romania SOE	Romania Privatized
Spain	11.4 (10.9)	11.3	•						
Poland	11.6 (10.2)		Diff	•					
Romania (1996)	14.1 (12.9)		Diff	Diff					
Poland:									
SOE	10.1 (9.2)	10.4	0		•				
Privatized	9.6 (8.5)	9.7	0		0	•			
Ab Initio	15.6 (13.6)	15.4	+		+	+	•		
Romania: (1996)									
SOE	10.9 (11.5)	11.8	0		0	0	-	•	
Privatized	14.4 (12.7)	14.8	+		+	+	0	+	•
Ab Initio	15.5 (13.7)	14.8	+		+	+	0	0	0

Notes: Corrected for inflation effects (see text). Statistical tests use OLS. Means controlling for size are predicted values for a firm with 250 employees.

Table 2. Employment growth 1996-97, in percent

	Means (Medians)	Means controlling for size	Spain	Poland	Poland SOE	Poland Privatized	Poland Ab Initio	Romania SOE	Romania Privatized
Spain	4.8 (1.7)	4.7	•						
Poland	0.5 (-0.7)		Diff	•					
Romania (1995-96)	0.8 (-2.2)		Diff	No diff					
Poland:									
SOE	-5.2 (-3.5)	-4.7	-		•				
Privatized	-6.4 (-5.5)	-6.2	-		0	•			
Ab Initio	13.6 (9.3)	13.4	+		+	+	•		
Romania: (1995-96)									
SOE	-7.1 (-5.2)	-6.3	-		0	0	-	•	
Privatized	-7.7 (-4.8)	-7.3	-		0	0	-	0	•
Ab Initio	14.7 (7.3)	14.0	+		+	+	0	+	+

Note: Log growth rates. Statistical tests use OLS. Means controlling for size are predicted values for a firm with 250 employees.

Table 3. Labour hoarding (percentage of firms reporting excess labour)

	Percent of firms reporting excess L	Same, controlling for size	Spain	Poland	Poland SOE	Poland Privatized	Poland Ab Initio	Romania SOE	Romania Privatized
Spain	16.7	16.8	•						
Poland	44.8		Diff	•					
Romania	22.3		Diff	Diff					
Poland:									
SOE	65.9	62.9	+		•				
Privatized	51.4	50.5	+		0	•			
Ab Initio	24.0	24.6	0		-	-	•		
Romania:									
SOE	39.5	34.8	+		-	0	0	•	
Privatized	24.4	22.1	0		-	-	0	0	•
Ab Initio	11.1	12.8	0		-	-	0	-	0

Note: Statistical tests use logit with dependent variable = 1 if firm reported excess labour, 0 otherwise. Percentages controlling for size are predicted probabilities for a firm with 250 employees.

Table 4. Sales growth 1996-97, in percent

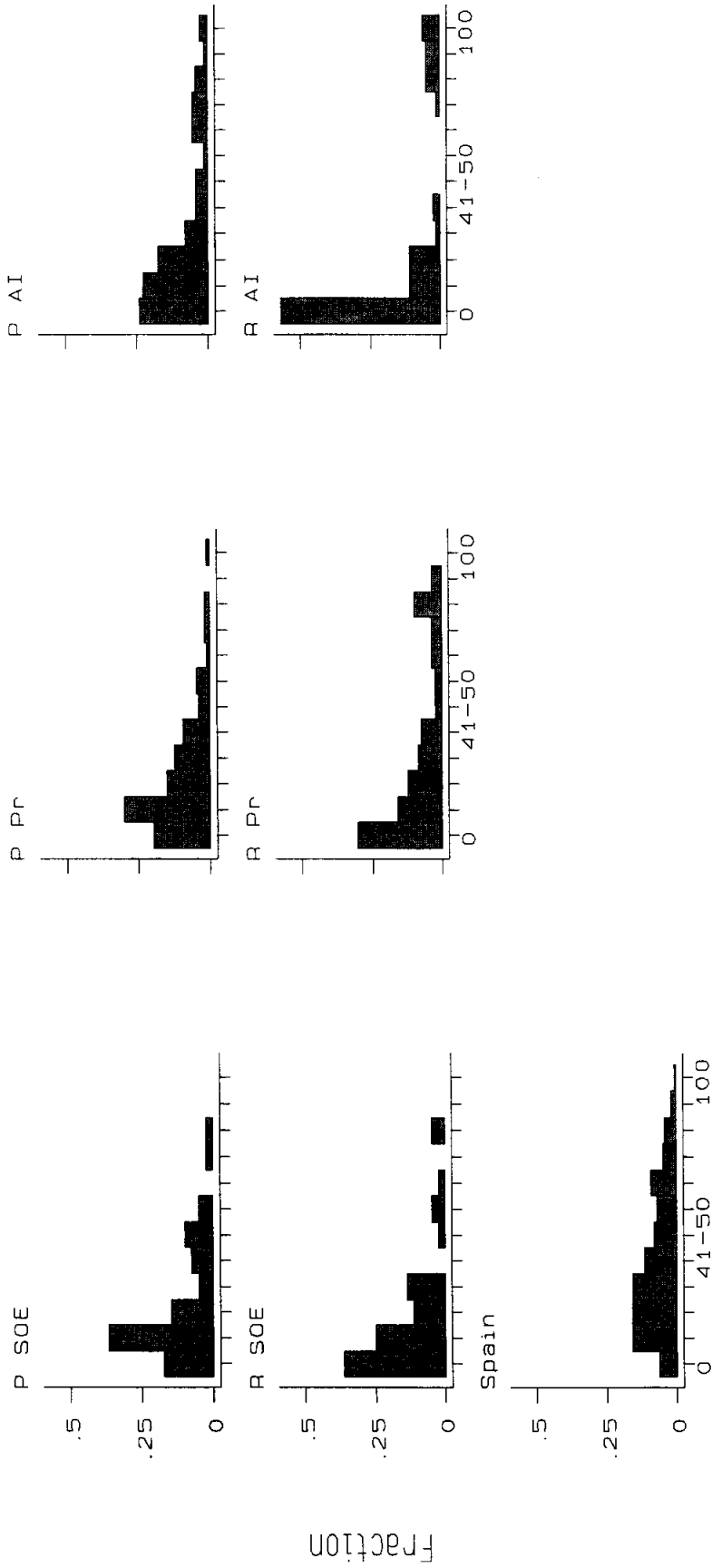
	Means (Medians)	Means controlling for size	Spain	Poland	Poland SOE	Poland Privatized	Poland Ab Initio	Romania SOE	Romania Privatized
Spain	9.5 (7.7)	9.3	•						
Poland	3.6 (2.1)		Diff	•					
Romania (1995-96)	8.4 (6.7)		Diff	No diff					
Poland:									
SOE	-2.8 (-2.7)	-2.0	-		•				
Privatized	1.2 (1.7)	1.6	-		0	•			
Ab Initio	11.2 (9.7)	10.9	0		+	+	•		
Romania: (1995-96)									
SOE	-0.4 (-3.8)	1.2	-		0	0	-	•	
Privatized	4.1 (5.2)	5.0	0		0	0	0	0	•
Ab Initio	18.2 (16.6)	16.9	+		+	+	0	+	+

Note: Log growth rates; sales deflated using official PPI (Poland, Spain) or implicit industrial deflator (Romania, see text for details). Statistical tests use OLS. Means controlling for size are predicted values for a firm with 250 employees.

Table 5. Investment share 1997 (ratio of investment to sales, in percent)

	Means (Medians)	(Medians controlling for size)	Spain	Poland	Poland SOE	Poland Privatized	Poland Ab Initio	Romania SOE	Romania Privatized
Spain	5.0 (2.0)	(2.0)	•						
Poland	9.5 (4.3)		Diff	•					
Romania (1996)	6.0 (4.0)		Diff	Diff					
Poland:									
SOE	5.1 (2.0)	(2.0)	0	•	•				
Privatized	11.2 (4.8)	(6.0)	+	+	+	•			
Ab Initio	9.4 (5.0)	(6.0)	+	+	+	0	•		
Romania: (1996)									
SOE	4.6 (4.0)	(4.0)	0	0	0	0	-	•	
Privatized	5.9 (2.4)	(4.0)	0	0	0	-	-	0	•
Ab Initio	6.9 (5.0)	(6.0)	+	+	+	0	0	0	+

Note: Statistical tests use ordered logit with dependent variable as investment/sales ratio=0%, 1%, 2%, Column controlling for size derives from predicted probabilities for each investment/sales category for a firm of 250 employees; value is predicted median category of investment/ratio.



% of Sales Exported

Figure 1. Percentage of Sales Exported

P=Poland, R=Romania, SOE=State-owned enterprise, Pf=Privatized enterprise, AI = Ab initio private firm
 Export share categories are: 0%, 1-10%, 11-20%, ..., 90-99%, 100%.

Table 6. Quality of exported goods compared with those sold at home

NB: Table refers only to firms selling same product on export and domestic markets.

	Number of firms	Percentage of row category			Spain	Poland	Poland SOE	Poland Privatized	Poland Ab Initio	Romania SOE	Romania Privatized
		Export quality higher	Export quality same	Export quality lower							
Spain	197	0	99	1	•						
Poland	125	2	96	2	Diff	•					
Romania	95	16	84	0	Diff	Diff					
Poland:											
SOE	28	7	93	0	-		•				
Privatized	62	2	97	2	0		0	•			
Ab Initio	35	0	97	3	0		+	0	•		
Romania:											
SOE	22	27	73	0	-		0	-		•	
Privatized	51	14	86	0	-		0	-		0	•
Ab Initio	22	9	91	0	-		0	0		0	0

Note: statistical tests use ordered logit with dependent variable = 0 if export quality is higher than the same product sold domestically, = 1 if export quality is the same, = 2 if export quality is lower. A “-” entry indicates, e.g., that the shortfall in quality of goods sold domestically compared to export quality is greater in the row category than it is in the column category. Regression includes log employment as a control for size effects.

Table 7. Ownership concentration (distribution of firms according to whether they have a single owner with a majority stake, at least one owner with a 20-50% stake, or dispersed ownership)

nb: Private firms only

	Ownership concentration			Spain	Poland	Poland Privatized	Poland Ab Initio	Romania Privatized
	Dispersed	At least one owner with a 20-50% stake	Single owner with majority stake					
Spain	16%	25%	59%	•				
Poland	36%	31%	33%	Diff	•			
Romania	37%	28%	36%	Diff	No Diff			
Poland:								
Privatized	53%	22%	25%	-		•		
Ab Initio	11%	43%	44%	0		+	•	
Romania:								
Privatized	61%	18%	21%	-		0	-	•
Ab Initio	12%	37%	51%	0		+	0	+

NB: Statistical tests use ordered logit with dependent variable = 0 if dispersed ownership, 1 if at least one owner with 20-50% stake, 2 if firm has single private owner with majority stake. Regression includes log employment as a control for size effects.

Table 8. Foreign ownership (percentage of firms with a majority foreign owner)

	Domestic		Foreign		Total	
	Number (Percent)	Number (Percent)	Number (Percent)	Number (Percent)	Number (Percent)	Number (Percent)
Spain	125 (58%)	90 (42%)			215 (100%)	
Poland	194 (87%)	29 (13%)			223 (100%)	
of which:						
SOE	41 (100%)	0 (0%)			41 (100%)	
Privatized	92 (86%)	15 (14%)			107 (100%)	
Ab Initio	61 (81%)	14 (18.7%)			75 (100%)	
Romania	195 (94%)	12 (5.8%)			207 (100%)	
of which:						
SOE	44 (100%)	0 (0%)			44 (100%)	
Privatized	76 (93%)	6 (7%)			82 (100%)	
Ab Initio	75 (93%)	6 (7%)			81 (100%)	

Table 9. Number of competitors in market for main product (percentage of firms identifying none, between one and five, and more than five)

	Number of competitors			Spain	Poland	Poland SOE	Poland Privatized	Poland Ab Initio	Romania SOE	Romania Privatized
	None	1-5	> 5							
Spain	16	47	37	•						
Poland	23	30	47	No Diff	•					
Romania	14	27	60	Diff						
Poland:										
SOE	17	24	59	+		•				
Privatized	23	33	44	0		0	•			
Ab Initio	27	28	45	0		-	0	•		
Romania:										
SOE	34	30	36	0		-	0	0	•	
Privatized	11	35	54	+		0	+	+	+	•
Ab Initio	5	16	79	+		0	+	+	+	+

Note: statistical tests use ordered logit with dependent variable = 0 if firm "dominates market", 1 if firm reports 1-5 competitors, 2 if firm reports > 5 competitors. Regression includes log employment as a control for size effects.

Table 10. How important is import competition? (percentage of firms identifying imports as very important, average and not important as a source of competition)

	Import competition				Spain	Poland	Poland SOE	Poland Privatized	Poland Ab Initio	Romania SOE	Romania Privatized
	Not impt.	Avg.	Very impt.	Percentage of row category							
Spain	36	43	21		•						
Poland	28	35	37	Diff	•						
Romania	29	35	36	Diff	No Diff						
Poland:											
SOE	24	39	37	0	•						
Privatized	22	35	43	+	0	•					
Ab Initio	37	35	28	0	0	-		•			
Romania:											
SOE	34	34	32	0	0	0		0	•		
Privatized	24	44	32	+	0	0		0	0	•	
Ab Initio	31	27	42	+	0	0		0	0	0	

Note: statistical tests used ordered logit with dependent variable = 0 if not important, 1 if intermediate importance, 2 if very important. Regression includes log employment as a control for size effects.

Table 11. Compliance with equal pay directive

	Extent of Compliance 1=very low ... 7=high compliance			Spain	Poland	Poland SOE	Poland Privatized	Poland Ab Initio	Romania SOE	Romania Privatized
	5 or less	6	7							
Spain	3	3	94	•						
Poland	3	5	92	No Diff	•					
Romania	1	1	98	No Diff	No Diff					
Poland:										
SOE	5	10	85	0		•				
Privatized	5	3	92	0		0	•			
Ab Initio	1	4	95	0		0	0	•		
Romania:										
SOE	0	0	100	n.a.		n.a.	n.a.	n.a.	•	•
Privatized	2	2	96	0		+	0	0	n.a.	•
Ab Initio	1	0	99	0		+	0	0	n.a.	0

Note: Statistical tests use an ordered logit estimation with dependent variable = extent of compliance. Statistical tests not available for Romania SOEs because of 100% compliance. Regression includes log employment as a control for size effects.

Table 12. Compliance with Working Time Directive

	Extent of Compliance 1=very low ... 7=high compliance			Spain	Poland	Poland SOE	Poland Privatized	Poland Ab Initio	Romani a SOE	Romania Privatized
	5 or less	6	7							
Spain	<1	4	96	• Diff						
Poland	3	13	84	• Diff						
Romania	4	21	75	Diff						
Poland:										
SOE	2	10	88	-		• 0				
Privatized	2	10	88	-		0	• -			
Ab Initio	4	20	76	-		0	-	• -		
Romania:										
SOE	7	20	73	-		0	-	0	• 0	0
Privatized	2	22	76	-		0	-	0	0	• 0
Ab Initio	4	21	75	-		0	-	0	0	0

Note: Statistical tests are from an ordered logit estimation with dependent variable = extent of compliance. Regression includes log employment as a control for size effects. Difference between statistical test results in Poland SOE column and Poland privatized column derive from smaller standard errors for latter (resulting from larger number of Polish privatized firms in the sample).

Table 13. Compliance with occupational safety directive

	Extent of Compliance 1=very low ... 7=high compliance			Spain	Poland	Poland SOE	Poland Privatized	Poland Ab Initio	Romani a SOE	Romania Privatized
	5 or less	6	7							
Spain	4	12	84	•						
Poland	4	13	83	No Diff	•					
Romania	11	32	57	Diff	Diff					
Poland:										
SOE	5	12	83	0		•				
Privatized	4	16	80	0		0	•			
Ab Initio	5	8	87	0		0	0	•		
Romania:										
SOE	18	41	41	-		-	-	-	•	0
Privatized	10	33	57	-		-	-	-	0	•
Ab Initio	10	26	64	-		0	-	-	+	0

Note: Statistical tests are from an ordered logit estimation with dependent variable = extent of compliance. Regression includes log employment as a control for size effects.

Table 14. Product certification requirements for exports to EU

	Familiarity with Product Certification Requirements for Exports to EU		Poland	Poland			Romania		
	Percentage of firms in row category			Poland 0%	Poland 1-24%	Poland 25%+	Romania 0%	Romania 1-24%	Romania 25%+
	No knowledge	Some knowledge		Very familiar					
Poland	18	28	54						
Romania	39	20	41	Diff					
Poland:									
No EU exports	22	28	50	•					
1-24% of sales	13	33	54	0	•				
25% + of sales	19	17	64	0	0	•			
Romania:									
No EU exports	64	15	21	-	-	-	•		
1-24% of sales	12	27	62	0	0	0	+	•	
25% + of sales	9	26	65	0	0	0	+	0	

Note: Statistical tests are from an ordered logit estimation with dependent variable = familiarity with requirements. Regression includes log employment as a control for size effects.

Table 15. ISO9000 Certification

NB: Firms with ISO 9001, 9002 or 9003

	Percent of firms with ISO900	Same, controlling for size	Spain	Poland	Poland SOE	Poland Privatized	Poland Ab Initio	Romania SOE	Romania Privatized
Spain	61	64	•						
Poland	21		Diff	•					
Romania	20		Diff	No Diff					
Poland:									
SOE	20	13	-		•				
Privatized	26	22	-		0	•			
Ab Initio	15	14	-		0	0	•		
Romania:									
SOE	30	19	-		0	0	0	•	
Privatized	22	16	-		0	0	0	0	•
Ab Initio	14	18	-		0	0	0	0	0

Note: Statistical tests are from logit estimation with dependent variable = has some ISO certification. Column controlling for size is predicted percentages for a firm of 250 employees.

Table 16. Emissions monitoring equipment

	Does the firm have emissions monitoring equipment?		
	Percentage of row category (Percentage, size-corrected)		
	Yes	Should have but doesn't	No requirement to have equipment
Spain	44 (45)	0 (0)	56 (55)
Poland	14	5	81
Romania	19	10	71
Poland:			
SOE	20 (13)	2 (2)	78 (85)
Privatized	16 (13)	7 (7)	77 (80)
Ab Initio	8 (8)	3 (3)	89 (90)
Romania:			
SOE	30 (20)	16 (14)	55 (65)
Privatized	21 (15)	9 (8)	71 (77)
Ab Initio	12 (16)	7 (9)	80 (75)

Note: statistical tests (not reported above) used multinomial logit with dependent variable = yes, should, no requirement. Size-corrected percentages are predicted probabilities from the regression.

APPENDIX

Table A1: Basic Data on Surveyed Firms

	Spain	Poland	Romania
Number of firms	215	223	207
Size distribution (% of total)			
50 to 150 employees	42	32	36
151 to 500 employees	38	36	33
501 to 5000 employees	20	32	31
Sectoral distribution (% of total)			
Mechanical engineering and transport	12	15	14
Wood	4	4	13
Food processing	7	14	15
Clothing and textiles	11	12	21
Chemicals	19	11	5
Electrical machinery	12	14	6
Miscellaneous/combination of above	35	30	26
Ownership (% of total)			
State-owned	n.a.	18	21
Privatized (previously state-owned)	n.a.	48	40
Ab initio (new private firm)	n.a.	34	39
Mean (median) 1997 employment by ownership			
All	463 (181)	464 (283)	490 (230)
State-owned	n.a.	637 (475)	799 (597)
Privatized (previously state-owned)	n.a.	479 (305)	620 (393)
Ab initio (new private firm)	n.a.	347 (190)	191 (110)

Selected extracts from the survey instrument

Question block relevant to compliance with EU directives: Equal Pay, Working Time, Occupational Safety, Export Product Certification, ISO 9000 certification, Emissions Monitoring.

Notation: **EE implies - Poland and Romania**

Notation: **EU implies – Spain**

ASK EE & EU

9. EU Equal Pay Directive

- (87) Provision 1: Council Directive 75/117/EEC of 10 February 1975 on the approximation of the laws of the Member States relating to the application of the principle of equal pay for men and women. This principle entails, for the same work or for work to which equal value is attributed, the elimination of all discrimination on grounds of sex with regard to all aspects and conditions of remuneration. Where a job classification system is used for determining pay, it must be based on the same criteria for both men and women. How well does your firm meets this provision (1= Very far from meeting provision , 7= Would definitely obtain certification by an EU inspector for compliance with this provision) 8=Not applicable)
- (88) Provision 3 (EQUAL PAY PRINCIPLE): Are the provisions appearing in collective agreements, wage scales, wage agreements or individual contracts of employment at your firm consistent with the equal pay principle? (1= Very far from consistent, 7= Would definitely obtain certification by an EU inspector for compliance with this provision) , 8=Not applicable

(89) Considering all of these provisions of the EU Equal Pay Directive that I have read to you, how well does your firm meet these now? (1=Very far from meeting provisions, 7= Would definitely obtain certification by an EU inspector for compliance with this provision) , 8=Not applicable at present

(90) What percentage of your full time female employees is earning the same pay as your male employees doing comparable work?

_____ (% of full time female employees)

(91) How important are the following reasons for being so far from meeting the provisions of this directive? (Score each on a scale of 1-7, 1=Unimportant reason, 7=Very important reason)

1117 -18									
01	Too difficult or expensive to implement	1	2	3	4	5	6	7	1113
02	Provisions not implemented by competitors	1	2	3	4	5	6	7	1114
03	Other (Specify)	1	2	3	4	5	6	7	1115

(91a) Which is the most important reason? Interviewer: circle the most important reason.

QUESTIONS SIMILAR TO THOSE FROM HERE TO THE END OF 'EQUAL PAY' FOLLOWED EACH SUBSEQUENT BLOCK IN THE SURVEY QUESTIONNAIRE AND ARE NOT REPRODUCED IN THIS APPENDIX

(92) How well will you meet the provisions of the EU equal pay directive 2 years from now? (1=Very far from meeting provisions, 7= Would definitely obtain certification by an EU inspector for compliance with this

directive)

- (93) How well will you meet the provisions of the EU equal pay directive 5 years from now? (1=Very far from meeting provisions, 7= Would definitely obtain certification by an EU inspector for compliance with this directive)
- (94) Since which year have you been operating at your current level of compliance with these directives?
- (95) How would you rate the changes in your firm since 1995 that were required in order to achieve your current compliance with the EU equal pay directive? (1=No changes required, 7=Major changes required)
- (96) What changes did you implement since 1995 in order to meet this specific standard? **(answer all applicable)**

Invested in new machinery and technologies	1	1124
Altered working hours (e.g. flexible working time; organisational changes)	2	1125
Changed job classification system	3	1126
Changed pay scales	4	1127
No Changes	9	1128
Other (Specify)	6	1129

- (96c) Did you obtain help in meeting this standard? **(CIRCLE ALL APPLICABLE)**

Technical help from foreign partner	1	1132
Financial help from foreign partner	2	1133
Technical help from a government organisation (Specify)	3	1134
Financial help from a government organisation (Specify)	4	1135
No help	9	1136
Other (Specify)	5	1137

- (97) What are your plans to MAINTAIN OR improve compliance with the provisions of this directive in the next 2 years?

Invest in new machinery and technologies	1	1144
Alter working hours (e.g. flexible working time; organisational changes)	2	1145
Change job classification system	3	1146
Change pay scales	4	1147
No Plans	9	1148
Other (Specify)	6	1149

8 EU Working Time Directive

Key provisions of working time directive

(72) Provision 1: The *maximum* weekly working time is 48 hours (incl. overtime). However, member states may delay applying the 48-hr maximum working week for 7 years (2003), though they must provide certain guarantees in the meantime (such as preventing employers from *requiring* employees to work more than 48-hrs per week). How well does your firm meet this provision (1=Very far from meeting provision, 7= Would definitely obtain certification by an EU inspector for compliance with this directive)

(72a) What percentage of your full-time employees works more than 48 hours per week including overtime?

_____ (% of full time employees) (845-847)

(73) Provision 2: The minimum period of paid leave is 4 weeks per annum. How well does your firm meet this provision (1=Very far from meeting provision, 7= Would definitely obtain certification by an EU inspector for compliance with this directive)

(73a) What percentage of your full-time employees receives paid leave of 4 weeks per annum or more?

_____ (% of full time employees) (849-851)

(74) Provision 3: The minimum rest period per 24 hours is 11 consecutive hours. How well does your firm meet this provision (1=Very far from meeting provision, 7= Would definitely obtain certification by an EU inspector for compliance with this directive)

(74a) What percentage of your full time employees gets a rest period of 11 consecutive hours or more per 24 hours?

_____ (% of full time employees) (853-855)

(75) Provision 4: The minimum uninterrupted rest per week is 35 hours (or minimum uninterrupted rest of 24-hr per week if objective technical or work organisation conditions justify this). How well does your firm meet this provision (1=Very far from meeting provision, 7= Would definitely obtain certification by an EU inspector for compliance with this directive)

(75a) What percentage of your full time employees gets a minimum uninterrupted rest of 35 hours per week?

_____ (% of full time employees) (857-859)

(76) Provision 5: All workers whose working day is longer than 6-hrs are entitled to a rest break. How well does your firm meet this provision (1=Very far from meeting provision, 7= Would definitely obtain certification by an EU inspector for compliance with this directive)

(76a) What percentage of your full time employees whose working day is longer than 6 hours receives a rest break?

_____ (% of full time employees) (861-63)

(77) Provision 6: A normal maximum working time of 8 hours in any 24 for night workers and an actual maximum working time of 8 hours in any 24 for night workers whose work entails special hazards, heavy physical or mental strain. How well does your firm meet this provision (1=Very far from meeting provision, 7= Would definitely obtain certification by an EU inspector for compliance with this directive)
allow choice of N/A if no night workers code: 8

(77a) What percentage of your full time employees who work night shift night has a maximum working time of 8 hours in any 24 ?

_____ (% of full time employees) (865-867)

(78) Considering all of these provisions of the EU working time directive that I have read to you, how would you rate your firm's overall compliance with these now? (1=Very far from meeting provisions, 7= Would definitely obtain certification by an EU inspector for compliance with this directive), 8=Not applicable at present.

(79) How important are the following reasons for being so far from meeting the provisions of this directive? (Score each on a scale of 1-7, 1=Unimportant reason, 7=Very important reason)

912									
-13									
01	Too difficult or expensive to implement	1	2	3	4	5	6	7	907
02	Provisions not implemented by competitors	1	2	3	4	5	6	7	908
03	Other (Specify)	1	2	3	4	5	6	7	909

(79a) Which is the most important reason? Interviewer: circle the most important reason.

----- QUESTIONS OMITTED FROM THIS EXTRACT FROM THE QUESTIONNAIRE -----

(84a)

1. You earlier gave me the total investment spending undertaken over the past 3 years. What percentage of this expenditure would you have saved if you had not decided to obtain and maintain compliance with the EU working time directive?

	925-26
0%	01
Greater than 0% but less or equal to 1%	02
More than 1% but less or equal to 10%	03
More than 10% but less or equal to 20%	04
Over 20% but less or equal to 30%	05
Over 30% but less or equal to 40%	06
Over 40% but less or equal to 50%	07
Over 50% but less or equal to 60%	08
Over 60% but less or equal to 70%	09
Over 70% but less or equal to 80%	10
Over 80% (Please specify).....	11

(85) Did you obtain help in meeting this standard? (CIRCLE ALL APPLICABLE)

Technical help from foreign partner	1	960
Financial help from foreign partner	2	961
Technical help from a government organisation (Specify)	3	962
Financial help from a government organisation (Specify)	4	963
No help	9	964
Other (Specify)	5	965

(86) What are your plans to MAINTAIN OR improve compliance with the provisions of this directive in the next 2 years?

Invest in new machinery and technologies	1	1007
Alter working hours (e.g. flexible working time; organisational changes)	2	1008
Alter production process	3	1009
Introduce sub-contracting to other firms	4	1010
No Plans	9	1011
Other Specify).....	6	1012

----- QUESTIONS OMITTED FROM THIS EXTRACT FROM THE QUESTIONNAIRE -----

ASK EE & EU

10 EU OCCUPATIONAL SAFETY DIRECTIVE

Framework Directive (FD)(89/391/EEC) 1989, "on the introduction of measures to encourage improvements in safety and health of workers at work". The FD covers all sectors of activity, both public and private. The only workers excluded are the self-employed and domestic workers. The FD lays down minimum requirements in respect of Occupational Health & Safety which the member States had to satisfy by Dec. 1992.

KEY ELEMENTS OF THE FRAMEWORK DIRECTIVE:

(98) How well does your firm comply with the following duties on employers to: (1=Very far from meeting provision, 7= Would definitely obtain certification by an EU inspector for compliance with this provision) 8=Not applicable

	1	2	3	4	5	6	7	NA	
1. Ensure health and safety (h&s) of workers in every aspect related to work								8	1160
2. Develop an overall h&s policy	1	2	3	4	5	6	7	8	1161
3. Assess risks, update assessments with changing circumstances, and take preventative measures	1	2	3	4	5	6	7	8	1162
4. Record risks and accidents	1	2	3	4	5	6	7	8	1163
5. Inform workers and/or their representatives of risks and preventative measures taken	1	2	3	4	5	6	7	8	1164
6. Consult workers and/or their representatives on al h&s matters	1	2	3	4	5	6	7	8	1165
7. Provide job-specific h&s training	1	2	3	4	5	6	7	8	1166
8. Designate workers to carry out activities related to the prevention of occupational risks	1	2	3	4	5	6	7	8	1167
9. Carry out health surveillance of workers	1	2	3	4	5	6	7	8	1168

(99) How well does your firm comply with the following rights and responsibilities and duties of workers to (1=Very far from meeting provision, 7=Would definitely obtain certification by an EU inspector for compliance with this provision), 8=Not applicable

	1	2	3	4	5	6	7	NA	
1. Make proposals relating to h&s								8	1207
2. Appeal to a competent authority	1	2	3	4	5	6	7	8	1208
3. Stop work if in danger	1	2	3	4	5	6	7	8	1209

4. Follow employers instructions regarding h&s	1	2	3	4	5	6	7	8	1210
5. Report potential dangers	1	2	3	4	5	6	7	8	1211

(100) Regarding requirements for use of workers personal protective equipment (council directive 89/656 EEC Nov. 1989), how well does your firm meet the following provisions: (1=Very far from meeting provision, 7= Would definitely obtain certification by an EU inspector for compliance with this provision), 8=Not applicable

A the conditions of use of personal protective equipment, in particular the period for which it is worn, are determined on the basis of the seriousness of risk, frequency of exposure to risk and performance of protective equipment.

B The personal protective equipment must in principle be provided free of charge by the employer, who must also ensure its good working order and satisfactory hygienic condition by means of the necessary maintenance, repair and replacements.

(101) Considering all the provisions of the EU occupational safety directive that I had read to you, how would you rate your firm's overall compliance with these provisions now ? (1=Very far from meeting provisions, 7=Would definitely obtain certification by an EU inspector for compliance with this provision), 8=Not applicable at present.	NA	
--	----	--

----- QUESTIONS OMITTED FROM THIS EXTRACT FROM THE QUESTIONNAIRE -----

(107) What changes did you implement since 1995 in order to meet this specific standard? (answer all applicable)

Invested in new machinery and technologies	1	1227
Altered production processes	2	1228
Introduced new health and safety procedures	3	1229
Training of personnel	4	1230
Introduced new protective equipment	5	1231
No Changes	9	1232
Other (Specify)	7	1233

ASK [EE] ONLY

11. PRODUCT CERTIFICATION FOR EXPORTS TO THE EU

(109) Provision 1: A firm which proposes to manufacture a product which is to be supplied or taken into service in the EU must apply for and obtain for the product an EU certificate of adequacy; or an EU product-examination certification from an approved body of an EU member-state. How familiar is your company with this provision? (1= never heard of it, 7= very familiar)

(110) Provision 2: Application is made in writing by the manufacturer or his authorised representative to one of the approved bodies and obtaining safety clearance will generally be more straightforward for products manufactured to the above standards. How familiar is your company with this provision? (1= never heard of it, 7= very familiar)

(111) Considering the provisions of the Product Certification For Exports to the EU, that I have read to you, could you please estimate as a percentage of your total turnover in 1998 (until today) the value of sales of those products that meet this certification.

----- (1409-1411) (% of turnover in 1998 until today)

(112) How important are the following reasons for being so far from meeting the provisions of this directive? (Score each on a scale of 1-7, 1=Unimportant reason, 7=Very important reason)

1418 -19										NA	
01	Too difficult or expensive to implement	1	2	3	4	5	6	7	8	1412	
02	Applies to a small range of my products	1	2	3	4	5	6	7	8	1413	
03	EU export market small or irrelevant	1	2	3	4	5	6	7	8	1414	
04	Other (Specify)	1	2	3	4	5	6	7	8	1415	

----- QUESTIONS OMITTED FROM THIS EXTRACT FROM THE QUESTIONNAIRE -----

ASK [EE & EU]

12 INTERNATIONAL QUALITY ACCREDITATION (ISO 9000)

(122) ISO 9000 is a series of international standards on quality management and assurance. How familiar is your company with this standard? (1= Never heard of it, 7= Very familiar)

(123) 9001 incorporates all 20 quality elements and it is used by companies to certify their quality systems throughout the product development cycle from design to service - critical for companies having to produce 'error-free' products. How well does your firm meet ISO9001 now? (1=Very far from ISO standard, 7=Have official accreditation of ISO9001) 8= Not Applic	NA	
---	----	--

INTERVIEWER: IF ANSWER IS 7 THEN GO TO Q130 ELSE GO TO Q124

(124) 9002 incorporate 18 quality elements and it is used by companies for which the focus is on production and installation - i.e. focus on maintaining and improving quality systems instead of developing quality systems for a new product. How well does your firm meet ISO9002 now? (1=Very far from ISO standard, 7=Have official accreditation of ISO9002) 8= Not Appl	NA	
--	----	--

INTERVIEWER: IF ANSWER IS 7 GO TO Q127 ELSE GO TO Q125

(125) 9003 incorporates 12 elements and it is used by companies in which comprehensive quality systems may not be important - e.g. commodity suppliers. In such cases, final product inspection and testing would be sufficient. How well does your firm meet ISO9003 now? (1=Very far from ISO standard, 7=Have official accreditation of ISO9003) 8= Not Appl	NA	
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INTERVIEWER: IF ANSWER IS 7 GO TO Q127 ELSE GO TO Q126

(126) How important are the following reasons for not having official accreditation to any of the ISO standards? (Score each on a scale of 1-7, 1=Unimportant reason, 7=Very important reason)

1620 -21										NA	
01	Too difficult or expensive to implement	1	2	3	4	5	6	7	8	1611	
02	Applies to a small range of my products	1	2	3	4	5	6	7	8	1612	
03	Not widely used by competitors	1	2	3	4	5	6	7	8	1613	
04	Have other quality accreditation	1	2	3	4	5	6	7	8	1614	
05	Not required by my clients	1	2	3	4	5	6	7	8	1615	
06	Never considered obtaining accreditation	1	2	3	4	5	6	7	8	1616	
07	Other (Specify)	1	2	3	4	5	6	7	8	1617	

(126a) Which is the most important reason? Interviewer: circle the most important reason?

----- QUESTIONS OMITTED FROM THIS EXTRACT FROM THE QUESTIONNAIRE -----

4 PROCUREMENT AND PRODUCTION

(40) Do you have equipment which enables you and/or the relevant authorities (e.g. environmental inspectors, local government) to keep records of gaseous and solid emissions

	460
Yes	1
My firm should have but we do not have	2
No requirement for my firm	3

(41) Did you purchase this equipment in the last 3 years?

	461
Yes	1
No	2

(42) How much did this equipment cost to purchase and install?(Please exclude possible interest costs)

.....(Zloty/Leu/Pes) (462-471)

(43) In which years did you incur most or all of the cost?

..... (507-512)

(44) Which of the following emission analysers do you have ? (circle all applicable)

1. Smoke	1	513
2. Particulate	2	514
3. Nitric Oxides (Nox)	3	515
4. Carbon Dioxide (Co2)	4	516
5. Carbon Monoxide (CO)	5	517
6. Hydrocarbon (HC)	6	518
7. Sulphide oxides (SOx)	7	519
8. Other (Specify)	8	520

(45) What percentage of your turnover in 1997 were the annual running costs of this equipment in 1997 (including maintenance)?

.....(% of turnover of 1997)

(46) How much would it cost to purchase and install this equipment? (please exclude possible interest costs)

.....(Zloty/Leu/Pes) **(533-542)**

(47) What would the annual running costs of this equipment be?

.....(Zloty/Leu/Pes) **(543-552)**



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