

ANNEX I: SAMPLING METHODOLOGY

The Uruguay Investment Climate Survey sample included 621 firms in Montevideo and the department of Canelones. With the exception of a small change in firm size definitions, the survey followed the sampling methodology for the global roll-out of Investment Climate Surveys. The sample consists of a range of small, medium, and large firms in the food, clothing, chemical, and retail sectors, as well as a residual category for other types of firms (Table A.1.1). The survey is based on the standard Investment Climate Survey questionnaire to ensure international comparability. The data has been collected by face-to-face interviews of company management, performed by trained enumerators during the period March to August 2006. Data collection was overseen by the Enterprise Analysis Unit of the World Bank's Investment Climate Department.

Table A.1.1: Investment Climate Survey Sample Breakdown

	Food	Clothing	Chemical	Retail	Residual	Total
Montevideo						
Small (1-19)	34	59	53	42	30	218
Medium (19<100)	33	41	57	25	37	193
Large (100=<)	16	9	7	14	36	82
Subtotal	83	109	117	81	103	493
Canelones						
Small (1-19)	20	6	3	27	20	76
Medium (19<100)	12	2	2	14	9	39
Large (100=<)	3	0	0	2	4	9
Subtotal	35	8	5	43	33	124
Total	118	117	122	124	136	617

Note: The total sample size was 621. However, 4 firms are not categorized because they did not answer the industry or city questions; hence, the above total is only 617 firms.

Sampling structure. The sample was selected using stratified random sampling based on three levels of stratification: industry, establishment size, and region. Stratified random sampling was preferred over simple random sampling for several reasons:

- To obtain unbiased estimates for different subdivisions of the population with some known level of precision.
- To obtain unbiased estimates for the whole population. The whole population, or universe of the study, is the non-agricultural economy. It comprises: all manufacturing sectors (group D), construction (group F), services (groups G and H), and transport, storage, and communications (group I). Groups are defined following ISIC revision 3.1. Note that this definition excludes the following sectors: financial intermediation (group J), real estate and renting activities (group K, excluding sub-sector 72, IT, which was added to the population under study), and all public or utilities-sectors.
- To make sure that the final total sample includes establishments from all different sectors and that it is not concentrated in one or two industries.
- To exploit the benefits of stratified sampling where population estimates, in most cases, will be more precise than using a simple random sampling method (i.e., lower standard errors, other things being equal.)

Sampling implementation and questionnaires. Given the stratified design, a sample frame containing a complete and updated list of establishments was required. For Uruguay, the National Statistics Institute's (INE) Permanent Register of Economic Activities for 2004 was used. A secondary source for company statistics was the sample frame of Economic Entities from the 1997 National Economic Census. To correct for the presence of ineligible units—which comprised about 10 percent of the sample frame—adjustments were made to the computation of weights (see below).

The survey was implemented following a two-stage procedure. In the first stage, a screener questionnaire was applied over the phone to determine eligibility and to make appointments; in the second stage, a face-to-face interview took place with the Manager/Owner/Director of each establishment. Three different versions of the questionnaire were used. The Core Questionnaire included all common questions asked to all establishments. The Manufacturing Questionnaire added some specific questions relevant to the sector, and the Services Questionnaire added questions relevant to either retail or IT.

Weights. Since the sampling design was stratified and employed differential sampling, individual observations were weighted to make inferences about the population. Under stratified random sampling, unweighted estimates are biased unless sample sizes are proportional to the size of each stratum. With stratification, the probability of selection of each unit is, in general, not the same. Consequently, individual observations must be weighted by the inverse of their probability of selection.¹ Special care was given to the correct computation of the weights. Totals within each region/industry/size stratum were adjusted to account for the presence of ineligible units (non-existing units, public establishments, and non-business units). The information required for the adjustment was collected in the first stage of the implementation (the screening process). Using this information, each stratum cell of the universe was scaled down by the observed proportion of ineligible units within the cell. Once an accurate estimate of the universe cell (projections) was available, weights were computed using the number of completed interviews.

Non-response. Survey non-response must be differentiated from item non-response. The former refers to refusals to participate in the survey altogether whereas the latter refers to the refusals to answer some specific questions. Survey non-response was addressed by maximizing efforts to contact establishments that were first selected in the sample and by trying to keep a tight control over the process of substitutions. Item non-response was addressed by two strategies: a) for sensitive questions that could generate negative reactions from the respondent, such as corruption or tax evasion, enumerators were instructed to collect the refusal to respond as a different option from “do not know”; and b) for information that establishments may consider too private to share, such as financial information, sample sizes were inflated by 25 percent to account for a margin of non-response.

¹ This is equivalent to the weighted average of the estimates for each stratum, with weights equal to the population shares of each stratum.

ANNEX 2A: PRODUCTIVITY ANALYSIS

This section examines in detail the effects of the investment climate on productivity in Uruguay. A subset of questions that capture the quality of the investment climate is selected from the Enterprise Survey according to two criteria: first, questions should (as much as possible) reflect objective measures, rather than perceptions. Subjective (perception) indicators (e.g., whether crime is a major obstacle to business) are difficult to compare across regions or countries since it is possible that individuals' standards differ due to cultural, geographic, or other reasons. On the other hand, objective measures (e.g., losses from theft) offer more precise assessments of investment climate quality that one can easily relate to performance indicators.

Second, the interpretation of these questions with respect to their effect on productivity should be unambiguous. For example, the use of courts to solve payment disputes could reflect a well-functioning legal system, but it could also be the case that, because the legal system works well, firms have sufficient alternative means to settle their disputes outside courts, and thus avoid costly and lengthy legal procedures. In the latter case, we should observe a low proportion of disputes settled in court, but it would be wrong to conclude that the legal system does not function well.

Further, variables are selected that have emerged in previous analyses of the Uruguayan economy as relevant investment climate aspects, as well as those where Uruguay seems to fare poorly when compared to its peer group countries.² This selection still leaves a large number of potential variables to include in the analysis. In order to isolate a small group of variables that actually have an effect on productivity, the concept of Escribano and Guasch (2005) is applied moving from a general specification with many variables to a more parsimonious one by narrowing the selected variables to keep those that affect productivity significantly.

However, the methodology applied in this study departs from Escribano and Guasch (2005) in several respects. The first estimations are conducted with fewer variables because of limits in the Uruguayan sample size and because priors are used about the relevant investment climate variables for Uruguay. In addition, we conduct the regression analysis for Uruguay data alone as well as for Uruguay data pooled with data from its peer countries.³ The latter may yield more efficient estimates because if investment climate conditions affect all the firms in a country in a similar fashion, then it is likely that individual analysis will not be able to capture the relevance of particular investment climate factors. Pooling the data also allows simulation exercises to estimate the productivity gains that Uruguayan firms could attain if investment climate conditions were to improve to a certain benchmark within the pool of countries. Two specifications are estimated.

To investigate the impact of investment climate attributes on the labor productivity, the following is estimated

$$\log(Y_i / L_i) = \sum_j \beta_{1j} IC_{ij} + \sum_j \delta_{1j} C_{ij} + v_{1i} \quad (1)$$

² For example, as noted in previous Chapters, the majority of firms see competition from the informal sector and access to finance as major obstacles to their operations.

³ The list of peer countries includes Argentina, Brazil, Chile, Costa Rica, Ireland, Latvia, Lithuania, Mauritius, Mexico, and Slovakia. Thailand is excluded from the analysis in this Chapter due to lack of governance questions.

where Y is output measured as firm sales or value added and L is labor; IC refers to investment climate variables; C to other firm control variables that are not directly related to the investment climate but that can affect enterprise performance, and v is a random error term. The following are included as control variables: sector, region, and country effects. These are variables that can capture unobservable firm characteristics not directly related to the investment climate but that can affect firm performance. Also, the estimations control for the (log) age of the firm, a size dummy, a dummy for (partly or fully) foreign-owned firms, and a dummy for exporting firms. The sample is limited to the manufacturing sector, so as not to impose an identical functional form for the production function for manufacturing, services, and construction.

To analyze the impact of the investment climate on wages, a variation of equation (1) is estimated where the dependent variable is substituted by the average wage per worker paid by the firm.⁴

$$\log(Wage_i / L_i) = \sum_j \beta_{3j} IC_{ij} + \sum_j \delta_{3j} C_{ij} + v_{3i} \quad (2)$$

The dependent variables are in turn, (log) sales per worker, (log) value added per worker, or labor productivity (equation 1); and (log) average monthly wage (equation 2). We are interested in both how the investment climate affects firms' productivity and the impact on workers' wages.

The selected explanatory variables cover four investment climate areas: 'Governance and Regulations,' 'Access to Finance,' 'Technology Use,' and 'Human Capital Accumulation.' Table A.2.1 presents the sample size and mean of each variable for the total sample, and the mean value for each peer group country. As mentioned previously, these variables were selected after performing several regression exercises using a large number of indicators. Other indicators used included *inter alia*: senior management's time for regulations, number of tax inspections, power outages' losses, wait time for telephone connection, transport losses dummy, time for clearing customs (imports), use of trade credit for investment (and working capital) dummy, use of financial institutions for investment (working capital) dummy, quality certification dummy, and share of skilled production workers. The fact that this second set of variables was not significant does not imply that the IC conditions that they are supposed to capture are not relevant. It is possible that the corresponding IC conditions are not well reflected, partly because the enterprise survey questions related to governance and regulation are more extensive and detailed relative to questions in the skills, technology, and finance areas.

In the area of 'Governance and Regulations', two variables are selected. The first one, *crimeloss*, captures the country's rule of law by measuring the costs of security and crime as a percentage of sales. It adds security expenses and sales lost due to theft, robbery, or arson. The average cost of crime is 1.48% of sales for the entire sample with 1.15% for Uruguay. These averages can be interpreted as an approximation of the impact of crime at the firm level, but they do not reflect the incidence of crime for the society as a whole. The second variable, *reported*, measures regulatory compliance and equals the percentage of sales a 'typical firm' reports to the tax authorities. For the entire sample, on average, firms report 77.6% of total sales for tax purposes. Firms in Uruguay report on average 85.7%. Chile stands at the top of the sample with a 97.2% reporting rate.

In 'Access to Finance', the variable *not credit constrained* is constructed. This is a dummy variable that equals one if the firm has a loan, a credit line, or an overdraft facility, or if has not requested any loan because it does not need credit. Hence it is a measure of whether firms' credit needs are being

⁴Average monthly wage is calculated as monthly labor costs (including compensations and benefits) divided by total employees.

met in the financial system. In the full sample, 79.8% of firms claim to be *not credit constrained*. Uruguay is slightly below the average. The country with the highest percentage of non-constrained firms is Ireland with 97.4%. Less than half of all firms in Uruguay have a loan or credit line, and less than 65% have any form of credit (overdraft, loan, or credit line), which implies that a relatively large share of firms claim that they do not need credit. Perhaps firms have become more risk averse in the wake of the economic crisis or firms have low growth prospects since they continue to perceive macroeconomic instability as one of the most important investment climate constraints (Figure 2.2).

The selected ‘Technology Use’ variable, *website*, is equal to one if the firm uses its own website to communicate with clients and suppliers. For the full sample, 49% of firms have their own website, but there is a large variance across countries. In Slovakia, 94.7% of firms report having a website, while only 31% of Mexican and Uruguayan firms report having one.

Finally, for ‘Human Capital Accumulation’, we select *training*, which is equal to one if the firm has established training programs for its permanent workers. On average 43.5% of firms in the entire sample provide training for their permanent workers versus only 24.5% of firms in Uruguay. At the other end, 92% of Slovakian firms offer training.

In the estimations, we need to address the potential problems caused by a low response rate, which reduces the sample size considerably. For instance, Table A.2.1 shows that out of a total of 396 firms in manufacturing in Uruguay, only 225 firms have observations for *reported*. This represents a non-response rate of 43%. To avoid losing as much as 50% of the sample in some cases, we substitute missing observations in each country with the mean for the corresponding region, industry, and size category. We establish a threshold of 10 observations as a minimum for the mean to be representative of the population. If the region-industry-size category has less than 10 firms (observations) in it, we use the region-industry mean, provided that the minimum number of observations is reached. If not, we use the industry, or region mean, depending on the number of observations in each. If none of these categories contains at least 10 observations, we do not substitute the missing value.

The right-hand-side panel of Table A.2.1 provides summary statistics for the sample of IC measures after substitution. The number of observations increases dramatically after substitution, especially in Uruguay and Ireland for most variables, and in several countries for the variable *training*. Broadly, the average values are very similar to the averages before substitution, except for *training*, for which it decreases by about 5 percentage points, mostly due to the increase in the number of observations for the Uruguayan and Mexican samples, which have low averages for *training*. In Uruguay, however, the means before and after substitution are almost identical. Table A.2.2 reports summary statistics for the other control variables. These variables generally have a much higher response rate, so we do not substitute their missing values. The exception is capital stock, which has a non-response rate of 62.3%. However, we do not substitute capital stock numbers because the distribution of capital stock per worker in the Uruguayan sample has an extremely large variance, even within narrowly defined categories. It should also be noted that the response rate for materials is lower than the average; hence the number of observations for value added is considerably lower than for sales.

Table A.2.3 provides pair-wise correlations between the dependent variables, the investment climate indicators, and the control variables. Most correlation coefficients are significant at the 10% level, but the correlation is generally low, well below 0.5, especially for the investment climate variables.⁵

⁵ The highest correlations between IC variables is 0.25 between using a website and providing training (in the Uruguay sample). In addition we computed the correlation between the percentage of sales reported for taxes and

We then proceed to run regressions for equations (1)-(2) above both for the Uruguayan sample alone and for the pooled sample including all 11 countries. Thailand is excluded from the regressions as it does not have any data on regulatory compliance. We use ordinary least squares (OLS) to estimate the effect of each investment climate attribute. While we cannot determine the direction of causality from this exercise, we can already observe which investment climate attributes are associated with better firm performance. Reverse causality issues are further discussed below.

Table A.2.4 reports regression results for the OLS estimations. All reported standard errors are robust to the presence of heteroskedasticity. For labor productivity (column 3), we find that *crimeloss*, *reported (regulatory compliance)*, and *website* have the expected sign and are significant at least at the 10% level for the Uruguay sample. The variable *nonconstrained* has a positive but not significant coefficient. Interestingly, for the IC variables most coefficients (except for *training*) are not statistically different between the regressions with only Uruguayan firms and the regressions with the pooled data. This confirms to a large extent our assumption that, after controlling for the industry, size composition of the sample and other unobservable aspects, the effects of the investment climate on an ‘average’ firm’s productivity is the same across the countries in the sample.

Finally, for average wage we find that *crimeloss* and *training* affect wages significantly both in the Uruguay sample and in the pooled sample (where only *website* is not statistically significant). However, here we find that only two variables are within the same confidence interval for the Uruguay and the pooled regressions, which suggests that we cannot assume that the effects on wages are similar in Uruguay and the rest of the sample; specifically, effects in Uruguay appear to be larger in magnitude.

Potential Gains from Improvements in Investment Climate Conditions

We proceed to calculate the potential gains in productivity for Uruguayan firms were the IC conditions to improve up to a certain (admittedly arbitrary) benchmark level.⁶ We perform this simulation exercise for labor productivity, using the results from the value added regression reported in column (4) of Table A.2.4.

For each one of our investment climate variables, we choose three benchmark levels: (i) the highest 75th percentile of the entire sample (25th percentile in the case of costs of crime) within the same industry and size; (ii) the average in Chile; and (iii) the average in Ireland.⁷ We then take the difference between the benchmark value and the country’s industry-size average for each variable.

Specifically, we calculate:

$$\text{potential productivity gain}_{U,i,s} = (\overline{IC}_{B,i,s} - \overline{IC}_{U,i,s}) * \text{coef}IC \quad (4)$$

where $(\overline{IC}_{B,i,s} - \overline{IC}_{U,i,s})$ is the difference between the ‘best practice’ (meaning, the best 75th percentile within the same industry and size, the average for Chile, or the average for Ireland) and the average by industry and size in Uruguay. We multiply this difference by the regression coefficients from the OLS estimations reported in column (4) of Table A.2.4 for the pooled sample.

the percentage of workers reported for taxes, as an alternative measure of regulatory compliance. This correlation is 0.47.

⁶ This exercise is similar to Loayza, Fajnzylber and Calderón (2005), and Loayza, Oviedo and Servén (2004).

⁷ Due to differences in the industries covered in each country’s survey, in (ii) and (iii) we only use the overall country average as a benchmark, instead of taking averages by industry and size.

We use the pooled OLS regressions as they provide coefficients that we can attribute to all countries, and even if we cannot infer causality from them, we can establish the increases in productivity associated with a better investment climate. Finally, we average out all industry-size gains to obtain one number by country. Figure A.2.1 reports the results for Uruguay and its peer countries.

The first striking result from these simulations is that Uruguay is systematically among the three countries that would gain the most in all performance indicators from improving their investment climate, together with Mexico and Brazil. Not surprisingly, Chile and Ireland are among the countries with the smallest potential gains, when comparing each country to the top 75th percentile. For example, if Uruguay reached the top 75th percentile of all six indicators its firms would enjoy a 22 percent higher productivity. The largest gains would be achieved by improving in the area of technology use where reaching the 75th percentile is associated with about 6.5% higher productivity. Labor productivity is also higher with increased training (4.2%) and regulatory compliance (5.8%). Our results indicate that small firms have considerably larger potential gains than medium and large firms.

In addition to comparing the performance of Uruguayan enterprises to a hypothetical best practice, we compare them to Chile and Ireland which depict the best investment climate in the sample. The aggregate potential gains for Uruguay are high when compared to Chile (21%) and even higher with respect to Ireland (30%). (See Figure A.2.1.)

Are Exporters Different?

One important question for Uruguay is whether firms that enter the global markets perform better than domestically-oriented firms. A priori, it is reasonable to expect that firms that reach to larger markets are able to exploit economies of scale and scope that allow them to raise their productivity. At the same time, global markets are much more competitive and only the best performers survive. Indeed, the literature usually finds significant exporter premia for several measures of performance in most countries. However, there are different views as to what makes exporters more productive. On the one hand, the ‘learning by exporting’ hypothesis states that exporters start out with the same productivity as non-exporters, and that exposure to foreign (more competitive) markets puts pressure on firms to become more productive or be selected out. An alternative view is that exporters are more productive before they begin to export and that being more productive is what encourages them to enter the export market.

In this study, we perform two simple exercises, the first aimed at testing whether there is an exporter premium in Uruguay, and the second to examine whether investment climate conditions affect exporters differently than non-exporters.⁸ Unfortunately, due to the lack of time-series data and the limited size of the sample, we could not test the ‘self-selection’ versus ‘learning by exporting’ hypotheses.⁹ First, we find that exporters in Uruguay perform better than domestically-oriented firms. Table A.2.5 reports exporter premium regressions, which resemble those from Table A.2.4 but without the investment climate variables. We find that exporters depict 47% higher sales per

⁸ Here we include all sectors: manufacturing, services, and construction.

⁹ Casacuberta and Gandelman (2007) perform a detailed study of exporter premia in Uruguay using firm census data. They find that allowing factor elasticities to vary between exporters and non-exporters provides a much more accurate measure of productivity for each group, and they find a significant output gap between both groups. In addition, they find that differences in factor use explain most of the output gap differences, while differences in TFP explain roughly one-third of the difference but only for firms that export less than 50 percent of their sales.

worker and 45% higher average wage than non-exporters. This is true after controlling for several firm characteristics as in columns (2) and (4).

Second, we examine exporter premium by firm size. We divide the sample into small (less than 20 employees), medium (20-99 employees), and large (100 or more employees), and we estimate regressions similar to Table A.2.5 (second column of each performance measure). Table A.2.6 reports the results from these regressions. A caveat, however, is necessary. Dividing the sample by size implies that for each regression the number of observations falls substantially, which could possibly make our results less robust in this exercise. Interestingly, we find that the exporter premium is more significant for small firms than for medium and large firms. One possible explanation for this finding is that productivity differences between exporters arise from economies of scale and scope, and these are mainly related to size. For small firms, only those that are highly productive relative to their peers are able to compete in export markets.

Finally, in Table A.2.7, we report OLS regression results similar to those of Tables A.2.4 but restricting the sample to exporting firms only. The purpose of this exercise is to examine whether exporters suffer from investment climate conditions more or less than non-exporters. We find that all coefficients for the exporter-only regressions are not statistically different to the regressions with all firms (except for audited in the labor productivity regression). However, there is a smaller number of significant coefficients which is probably due to the much smaller sample (140-167 observations).

Table A.2.1: Summary Statistics of Regression Variables

	No substitutions					With substitutions				
	<i>crimeloss</i>	<i>reported</i>	<i>noconstr</i>	<i>website</i>	<i>training</i>	<i>crimeloss</i>	<i>reported</i>	<i>noconstr</i>	<i>website</i>	<i>training</i>
Uruguay										
Mean	1.151	85.665	0.816	0.312	0.245	1.151	86.294	0.816	0.312	0.238
Observations	395	225	394	396	360	396	396	396	396	396
Argentina										
Mean	1.875	82.805	0.833	0.741	0.521	1.873	82.65	0.833	0.743	0.506
Observations	743	662	742	739	650	746	746	746	746	746
Brazil										
Mean	2.219	67.351	0.85	0.731	0.671	2.221	67.42	0.85	0.731	0.671
Observations	1626	1513	1634	1641	1638	1641	1641	1641	1641	1641
Chile										
Mean	0.858	97.241	0.946	0.738	0.707	0.854	97.203	0.946	0.737	0.706
Observations	661	650	684	637	685	688	688	688	688	688
Mexico										
Mean	1.255	72.514	0.748	0.313	0.246	1.258	72.403	0.749	0.314	0.248
Observations	1156	1023	1119	1141	1118	1161	1161	1161	1161	1160
Costa Rica										
Mean	1.755	71.631	0.848	0.769	0.464	1.726	71.464	0.848	0.768	0.464
Observations	289	287	342	143	343	343	343	343	343	343
Mauritius										
Mean	1.399	87.887	0.933	0.447	0.626	1.379	88.019	0.933	0.449	0.627
Observations	149	155	179	179	179	184	184	184	184	184
Ireland										
Mean	0.504	96.573	0.974	0.902	0.781	0.433	96.929	0.974	0.89	0.78
Observations	167	171	265	173	301	304	305	310	305	311
Latvia										
Mean	1.385	93.3	0.853	0.735	0.656	1.385	93.294	0.853	0.735	0.655
Observations	34	30	34	34	32	34	34	34	34	34
Lithuania										
Mean	0.356	91.028	0.867	0.889	0.45	0.356	90.889	0.867	0.889	0.443
Observations	45	36	45	45	40	45	44	45	45	45
Slovakia										
Mean	1.867	98	0.946	0.947	0.919	1.852	97.582	0.944	0.947	0.919
Observations	36	31	37	38	37	38	38	38	38	3
Total										
Mean	1.48	77.597	0.798	0.49	0.435	1.478	77.576	0.798	0.493	0.379
Observations	7244	5334	7404	7135	7352	7549	6164	7555	7550	7555

Table A.2.2. Summary Statistics of Firms' Characteristics used as Control Variables

	<i>SME</i>	<i>age</i>	<i>foreign</i>	<i>exporter</i>	<i>audit</i>
Uruguay					
Mean	0.673	2.991	0.082	0.394	0.212
Observations	395	394	396	395	391
Argentina					
Mean	0.43	3.117	0.121	0.524	0.64
Observations	743	746	746	746	741
Brazil					
Mean	0.182	2.855	0.054	0.308	0.191
Observations	1635	1641	1641	1635	1635
Chile					
Mean	0.266	3.263	0.157	0.43	0.601
Observations	688	688	688	688	670
Mexico					
Mean	0.607	2.464	0.032	0.066	0.191
Observations	1161	1092	1161	1161	1126
Costa Rica					
Mean	0.63	2.819	0.09	0.389	0.56
Observations	343	341	343	342	343
Mauritius					
Mean	0.205	2.981	0.103	0.68	0.869
Observations	166	181	184	181	183
Ireland					
Mean	0.543	3.042	0.1	0.57	0.942
Observations	311	172	311	307	172
Latvia					
Mean	0.441	2.605	0.353	0.588	0.636
Observations	34	34	34	34	33
Lithuania					
Mean	0.4	2.388	0.356	0.644	0.556
Observations	45	45	45	45	45
Slovakia					
Mean	0.316	2.742	0.211	0.737	0.784
Observations	38	38	38	38	37
Total					
Mean	0.512	2.786	0.077	0.285	0.391
Observations	7519	7340	7556	7538	7337

Table A.2.3: Partial Correlations between Performance and Investment Climate variables (Uruguay and Full Sample, Manufacturing)

	Log sales per worker	Log value added per worker	Log wage	Losses from sec. & crime	Regulation compliance	Access to credit	External audit	Web use	Training	SME	Log age	Foreign-owned	Exporter
Uruguay													
Log sales per worker	1												
Log value added per worker	0.9073*	1											
Log wage	0.6557*	0.6899*	1										
Losses from sec. & crime	-0.2646*	-0.2276*	-0.2178	1									
Regulation compliance	0.2305*	0.2517*	0.1987*	0.0196	1								
Access to credit	0.2644*	0.2910*	0.2649*	-0.0868*	0.0961*	1							
External audit	0.3038*	0.3317*	0.2997*	-0.0672	0.1325*	0.1491*	1						
Web use	0.2655*	0.3320*	0.3178*	-0.0437	0.1320*	0.2168*	0.1865*	1					
Training	0.2596*	0.3153*	0.3426*	-0.0043	0.1332*	0.0793	0.2562*	0.2451*	1				
SME	-0.2449*	-0.2387*	-0.2473	-0.0002	-0.1317*	-0.1435*	-0.2168*	-0.2835*	-0.2432*	1			
Log age	0.2356*	0.3216*	0.2989*	-0.1069*	0.0762	0.2375*	0.0966*	0.2198*	0.1056*	-0.1604*	1		
Foreign-owned	0.2669*	0.2527*	0.2662*	-0.0465	0.0574	0.1232*	0.3141*	0.0749	0.1626*	-0.1534*	0.0564	1	
Exporter	0.2643*	0.2713*	0.3253*	0.0453	0.1712*	0.0825	0.2357*	0.3074*	0.2804*	-0.4038*	0.0766	0.0811	1
Full sample													
Log sales per worker	1												
Log value added per worker	0.9319*	1											
Log wage	0.7043*	0.7362*	1										
Losses from sec. & crime	-0.1626*	-0.1242*	-0.0834*	1									
Regulation compliance	0.2898*	0.2785*	0.2470*	-0.0497*	1								
Access to credit	0.1364*	0.1135*	0.0860*	-0.0632*	0.0827*	1							
External audit	0.2202*	0.1591*	0.0699*	-0.0768*	0.2349*	0.1622*	1						
Web use	0.2191*	0.2115*	0.2180*	0.0305*	0.0918*	0.1037*	0.0481*	1					
Training	0.1599*	0.1318*	0.0692*	0.0189	0.1066*	0.1343*	0.2614*	0.2382*	1				
SME	-0.0594*	-0.0144	0.0824*	-0.0037	-0.0517*	-0.1486*	-0.2417*	-0.1677*	-0.3326*	1			
Log age	0.2057*	0.1984*	0.2174*	-0.0246*	0.1259*	0.1160*	0.0864*	0.1607*	0.0811*	-0.1446*	1		
Foreign-owned	0.2077*	0.1734*	0.0950*	-0.0272*	0.1402*	0.0664*	0.2405*	0.0750*	0.1749*	-0.1935*	-0.0072	1	
Exporter	0.2493*	0.2210*	0.1320*	-0.0474*	0.1736*	0.1433*	0.3268*	0.2081*	0.2987*	-0.3329*	0.1317*	0.2982*	1

* significant at 10% level

Table A.2.4: Productivity Regressions

	Sales per worker		Value added per worker		Wage	
	Uruguay	Full Sample	Uruguay	Full Sample	Uruguay	Full Sample
Costs of security and theft	-5.204*** [0.823]	-4.473*** [0.705]	-3.231*** [0.820]	-3.381*** [0.706]	-2.724*** [0.540]	-1.906*** [0.590]
Tax compliance	0.737** [0.326]	0.466*** [0.070]	0.689* [0.407]	0.408*** [0.071]	0.114 [0.257]	0.196*** [0.059]
Access to credit	0.186 [0.166]	0.162*** [0.044]	0.114 [0.208]	0.169*** [0.048]	0.139 [0.123]	0.132*** [0.035]
Use of website	0.086 [0.114]	0.204*** [0.043]	0.247* [0.134]	0.205*** [0.045]	0.12 [0.100]	0.056 [0.038]
Training	0.124 [0.138]	0.134*** [0.038]	0.076 [0.170]	0.146*** [0.040]	0.249** [0.119]	0.100*** [0.034]
Log of firm's age	0.089 [0.064]	0.128*** [0.024]	0.202*** [0.077]	0.146*** [0.025]	0.123** [0.052]	0.152*** [0.020]
Audited	0.288* [0.164]	0.286*** [0.043]	0.385* [0.196]	0.246*** [0.046]	0.224** [0.107]	0.102*** [0.037]
Foreign owned	0.348* [0.180]	0.499*** [0.068]	0.314 [0.206]	0.401*** [0.072]	0.279** [0.123]	0.353*** [0.059]
Exporter	0.367*** [0.124]	0.317*** [0.043]	0.383*** [0.151]	0.391*** [0.047]	0.264** [0.108]	0.221*** [0.039]
Log capital per worker						
20-99 employees	0.067 [0.124]	0.021 [0.044]	-0.028 [0.150]	-0.05 [0.047]	0.01 [0.106]	-0.058 [0.036]
100+ employees	0.247 [0.203]	-0.007 [0.060]	-0.019 [0.300]	-0.025 [0.064]	0.169 [0.141]	-0.116** [0.052]
Garments	-0.845*** [0.215]	-0.595*** [0.064]	-0.689*** [0.243]	-0.452*** [0.068]	-0.242* [0.145]	-0.168*** [0.055]
Textile	-0.441 [0.271]	-0.105 [0.071]	-0.301 [0.243]	-0.014 [0.072]	0.007 [0.173]	0.166*** [0.058]
Metals & machinery	0.792*** [0.193]	-0.065 [0.069]		0.039 [0.072]	1.686*** [0.147]	0.258*** [0.062]
Chemicals	0.280* [0.151]	0.330*** [0.080]	0.376* [0.192]	0.412*** [0.086]	0.669*** [0.141]	0.395*** [0.070]
Electronics		-0.085 [0.109]		0.098 [0.105]		0.262*** [0.087]
Non metallic	-0.113 [0.160]	-0.229*** [0.086]	-0.299 [0.208]	-0.245*** [0.092]	0.11 [0.190]	-0.094 [0.074]
Other manufacturing	-0.103 [0.182]	-0.343*** [0.063]	-0.451 [0.356]	-0.265*** [0.070]	0.305* [0.162]	0.037 [0.055]
Argentina		-0.111 [0.129]		-0.012 [0.145]		0.196 [0.132]
Brazil		-0.436*** [0.098]		-0.587*** [0.105]		-0.474*** [0.097]
Chile		0.351** [0.142]		0.132 [0.148]		0.181 [0.126]
Mexico		-0.256** [0.116]		0.05 [0.128]		-0.266** [0.128]
Costa Rica		-0.472*** [0.105]		-0.544*** [0.112]		-0.371*** [0.085]
Mauritius		-0.972*** [0.140]		-0.294 [0.180]		-0.532*** [0.126]
Ireland		0.955*** [0.197]		1.233*** [0.293]		1.477*** [0.105]
Latvia		-0.045 [0.159]		-0.106 [0.201]		0.03 [0.165]
Lithuania		0.107 [0.158]		0.019 [0.250]		-0.1 [0.187]
Slovakia		-0.169 [0.243]		-0.154 [0.200]		0.188 [0.126]
Constant	8.868*** [0.319]	8.958*** [0.118]	8.029*** [0.407]	8.321*** [0.128]	4.836*** [0.254]	4.988*** [0.102]
Observations	322	4814	215	4308	273	4669
R-squared	0.379	0.309	0.421	0.284	0.461	0.224

Robust standard errors in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%. Within country region dummies included

Table A.2.5: Exporter Premium

	Dependent variable:			
	Sales per worker		Wages	
	(1)	(2)	(3)	(4)
Exporter	0.492*** [0.122]	0.471*** [0.115]	0.448*** [0.103]	0.450*** [0.095]
Log of firm's age		0.215*** [0.060]		0.180*** [0.046]
Foreign owned		0.712*** [0.134]		0.621*** [0.099]
SME (<100)	-0.205* [0.105]	-0.049 [0.109]	-0.216** [0.088]	-0.077 [0.087]
Services	0.658*** [0.117]	0.708*** [0.115]	0.056 [0.098]	0.092 [0.096]
Construction & Transport	0.371* [0.206]	0.304 [0.199]	0.645*** [0.152]	0.588*** [0.136]
Constant	10.028*** [0.100]	9.205*** [0.231]	5.843*** [0.085]	5.147*** [0.162]
Observations	506	505	456	456
R-squared	0.08	0.15	0.13	0.22

Robust standard errors in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Regional dummies
included

Table A.2. 6: Exporter Premium by Size

Sales per worker	Number of employees		
	< 20	[20-99]	100+
Log of firm's age	0.033 [0.088]	0.322*** [0.089]	0.314** [0.146]
Foreign owned	0.454 [0.306]	0.645*** [0.204]	0.995*** [0.207]
Exporter	0.769*** [0.210]	0.161 [0.170]	0.115 [0.219]
Services	1.058*** [0.162]	0.386** [0.188]	-0.045 [0.267]
Construction & Transport	0.373 [0.371]	0.407 [0.313]	-0.577* [0.294]
Constant	9.520*** [0.282]	9.094*** [0.326]	9.286*** [0.529]
Observations	215	210	80
R-squared	0.2	0.13	0.31
Wage			
Log of firm's age	-0.008 [0.074]	0.275*** [0.067]	0.333*** [0.096]
Foreign owned	0.411** [0.196]	0.487*** [0.143]	0.815*** [0.163]
Exporter	0.523*** [0.192]	0.374*** [0.140]	0.152 [0.214]
Services	0.164 [0.147]	-0.084 [0.158]	-0.102 [0.212]
Construction & Transport	0.537*** [0.193]	0.652*** [0.149]	0.131 [0.345]
Constant	5.556*** [0.224]	4.910*** [0.224]	4.937*** [0.389]
Observations	203	178	75
R-squared	0.08	0.25	0.41
Robust standard errors in brackets			
* significant at 10%; ** significant at 5%; *** significant at 1%			

Table A.2.7: Investment Climate Effects on Exporters' Productivity

	Dependent variable:	
	Sales per worker	Wages
	(1)	(2)
	-	-
	-	2.880**
Costs of security and theft	5.792***	*
	[-8.216 - -3.369]	[-3.741 - -2.020]
Tax compliance	1.071**	0.583
	[0.015 - 2.127]	[-0.267 - 1.434]
Access to credit	0.548*	0.24
	[-0.038 - 1.134]	[-0.198 - 0.678]
Audited	0.096	0.14
	[-0.310 - 0.502]	[-0.122 - 0.401]
Use of website	0.380**	0.185
	[0.025 - 0.736]	[-0.104 - 0.473]
Training	0.392**	0.588**
	[0.025 - 0.760]	* [0.294 - 0.883]
Log of firm's age	0.124	0.240**
	[-0.055 - 0.303]	* [0.072 - 0.408]
Foreign owned	0.648***	0.454**
	[0.201 - 1.095]	* [0.141 - 0.767]
SME (<100)	0.207	0.044
Of them on a timely manner, and lack a Vietnamese say the timing of the ISA to sell U.S. and how would I have enough money on the Services	[-0.184 - 0.598]	[-0.330 - 0.418]
	0.147	-0.339
	[-0.455 - 0.749]	[-0.838 - 0.160]
Construction & Transport	-0.27	0.666**
	[-0.721 - 0.182]	* [0.267 - 1.066]
Constant	8.156***	4.296**
	[6.984 - 9.328]	* [3.496 - 5.097]
Observations	167	140
R-squared	0.346	0.46

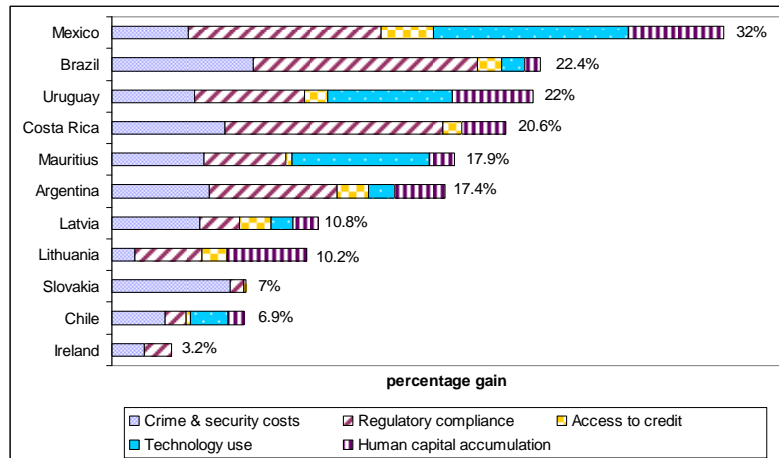
Robust 95% confidence intervals in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

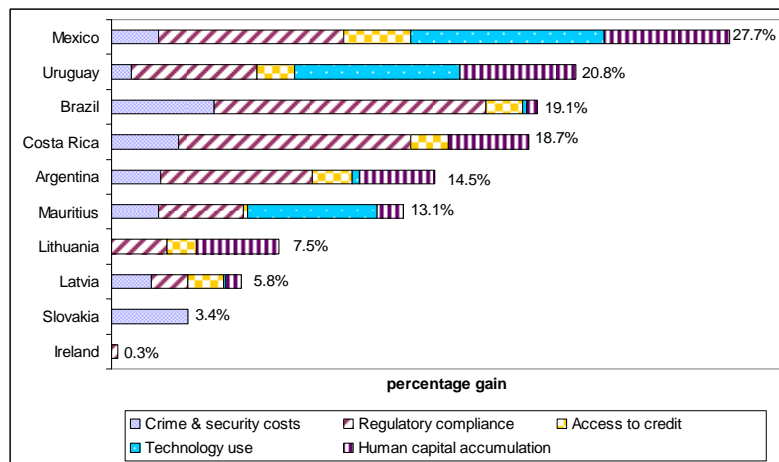
Region dummies included

Figure A.2.1: Differences in Value Added per Worker Associated with a Better Investment Climate

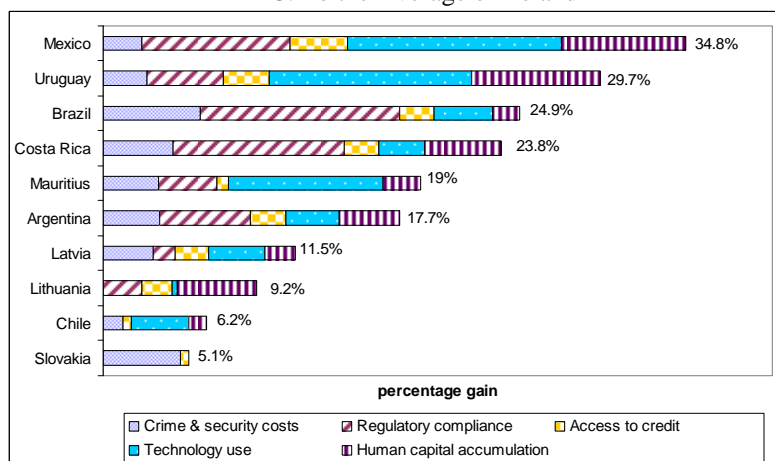
A. To the 75th Percentile of the Sample



B. To the Average of Chile



C. To the Average of Ireland



ANNEX 2B: DETERMINANTS OF BRIBE PAYMENTS IN URUGUAY

Table A2B.1: Determinants of Bribe Payments in Uruguay Regression Results					
Dependent variable: dummy=1 if firm reports payments when dealing with the government.					
	Uruguay	Full Sample	(continued)		Full Sample
Requested public services	0.083** [2.00]	0.067*** [4.71]	Argentina		0.416*** [5.46]
Trusts courts' enforcement power	0.005 [0.14]	-0.061*** [4.20]	Brazil		0.509*** [7.07]
Access to finance	-0.012 [0.22]	-0.039** [2.06]	Chile		-0.033 [-0.51]
Regulatory compliance	-0.198** [2.12]	-0.270*** [9.32]	Mexico		-0.064 [-0.95]
Log of firm's age	-0.023 [1.17]	-0.014 [1.48]	Costa Rica		0.077 [1.27]
Exporter	0.077* [1.66]	-0.017 [0.99]	Mauritius		-0.049 [-0.56]
Foreign ownership	-0.008 [0.17]	-0.036 [1.47]	South Africa		-0.162*** [-2.75]
Medium (20-99)	0.016 [0.33]	-0.003 [0.20]	Ireland		0.024 [0.25]
Large (100+)	-0.076 [1.61]	-0.050** [2.41]	Latvia		0.23** [1.99]
			Lithuania		0.359*** [4.5]
			Slovakia		0.505*** [6.52]
Observations	186				4903
Pseudo R2	0.11				0.35

Notes: the dependent variable is a dummy variable that takes the value 1 if the firm agrees that informal payments are necessary to obtain government contracts, or if the firm has had to make informal payments to obtain any of the following: electricity connection, telephone connection, construction permit, import license, operating license, or if it had to make an informal payment whenever inspected by tax officials. The variable is equal to zero if the firm answers "No" to all these questions.
Robust z statistics in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%.
Industry effects are included in both regressions.

ANNEX 2C: SELECTED INTERNATIONAL INDICATORS

Table A2C.1: Payroll Taxes for Pensions and All Social Insurance, Selected OECD and Latin American Countries

Country	<i>As % of Gross Wage:</i>			<i>As % of Labor Costs:</i>		
	Employer	Employee	Total Pensions Tax	All Social Insurance Taxes	Pension Tax	All Social Insurance Taxes
Austria	12.6	10.3	22.8	45.0	17.8	35.2
Belgium	8.9	7.5	16.4	38.9	13.0	30.9
Canada	3.0	3.0	6.0	15.2	4.9	13.9
France	10.0	7.0	16.0	51.0	12.0	38.0
Germany	10.2	10.2	20.3	42.0	17.0	34.0
Greece	13.3	6.7	20.0	34.5	16.1	27.9
Ireland	-	-	-	14.4	-	13.0
Italy	21.3	8.3	29.6	56.7	20.1	38.5
Japan	8.3	8.3	16.5	29.1	14.1	24.9
Netherlands	0.0	32.1	32.1	56.0	28.9	50.5
Portugal	23.8	11.0	34.8	37.8	27.4	29.8
Spain	23.6	4.7	28.3	38.3	21.4	29.0
United Kingdom-	-	-	-	13.9	-	13.0
United States	6.2	6.2	12.4	21.0	10.4	18.5
Argentina	16.0	11.0	27.0	46.0	21.0	35.0
Colombia	10.1	3.4	13.5	33.8	10.7	26.7
Costa Rica	4.8	2.5	7.3	27.0	6.1	22.7
Chile	0.0	13.0	13.0	21.0	12.9	20.7
Ecuador	2.4	7.0	9.4	18.6	8.6	17.0
Mexico	10.9	4.6	15.5	26.0	6.5	21.5
Panama	2.8	6.8	9.5	18.0	9.2	9.7
Peru	6.0	3.0	9.0	24.6	7.6	20.7
Brazil	20.0	11.0	31.0	31.0	24.1	25.0
Venezuela	10.0	4.0	14.0	25.5	12.0	21.8
Average OECD	11.7	9.6	21.3	35.3	16.9	28.4
Average LCR	7.7	6.8	14.6	28.1	11.7	22.8
Average All	9.9	8.3	18.2	32.3	14.5	26.1
<i>Uruguay</i>	<i>14.5</i>	<i>13.0</i>	<i>27.5</i>	<i>40.5</i>	<i>22.1</i>	<i>32.5</i>

Source: Palacios and Pallares-Miralles (2000), as cited in World Bank (2005a).

Table A2C.2 International Comparison for VAT rates

	Standard rate (percent)	Other positive rates (percent)
Argentina	21	10.5; 27
Australia	10	
Austria	20	10; 16
Belgium	21	6; 12
Brazil 1/	20.5	22
Bulgaria	20	
Canada	7	
Chile	19	
Colombia	16	7; 10; 20; 35
Costa Rica	13	5
Czech Republic	19	5
Denmark	25	
Estonia	18	5
Finland	22	8; 17
France	19.6	2.1; 5.5
Germany	16	7
Greece	18	4; 8
Hungary	25	5; 15
Iceland	24.5	14
Ireland	21	4.3; 13.5
Israel	17	9
Italy	20	4;10
Korea	10	
Latvia	18	5
Lithuania	18	5; 9
Mexico	15	10
Netherlands	19	6
New Zealand	12.5	
Norway	24	12
Peru	19	
Poland	22	3; 7
Portugal	19	5; 12
South Africa	14	
Spain	16	4; 7
Sweden	25	6; 12
Switzerland	7.6	2.4; 3.6
Turkey 2/	18	1.; 8
United Kingdom	17.5	5
Uruguay3/	22 (basic)	10 (minimum)

Sources: *International Bureau of Fiscal Documentation* (IBFD, 2004); and *Corporate Taxes 2003-2004, Worldwide Summaries* in Bird and Gendron (Forthcoming) (PricewaterhouseCoopers).

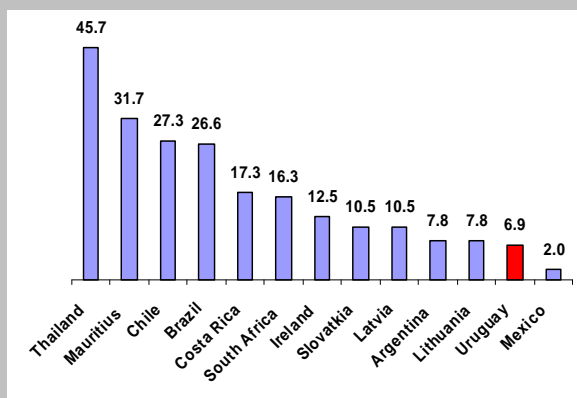
1/ Effective rates of 7.5 percent and 13.6 percent apply for interstate transaction between registered taxpayers.

2/ Rates of 26 percent and 40 percent rates apply to luxury goods.

3/ Effective July 2007

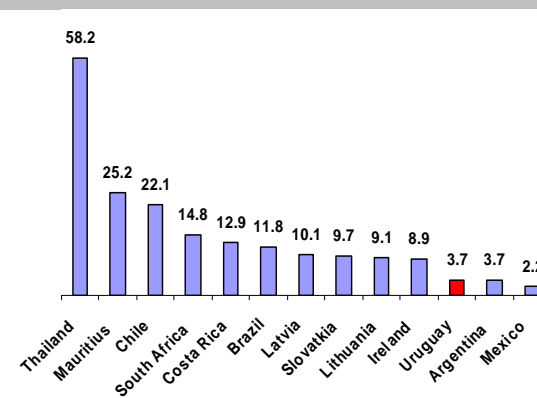
ANNEX 3: SELECTED INFORMATION ON URUGUAY'S FINANCIAL SECTOR AND INTERNATIONAL COMPARISONS

Figure A.3.1. Bank Financing of Working Capital
(as percent of total)



Source: World Bank Investment Climate Surveys

Figure A.3.2. Bank Financing of Fixed Assets
(as percent of total)



Source: World Bank Investment Climate Surveys

Table A.3.1. Financial Structure of the Financial System

Type of Institution	December 2001			December 2006		
	Number of Institutions	Assets in US millions	% of Total Assets	Number of Institutions	Assets in US	% of Total Assets
Commercial banks, of which	22	20608	88.2	16	14168	71.6
Public sector-owned banks	2	7456	31.9	3	8307	42.0
BROU	1	4788	20.5	1	5739	29.0
BHU	1	2668	11.4	1	1414	7.1
Nuevo Banco Comercial ^{1/}				1	1154	5.8
Domestic private banks	3	3172	13.6	0	0	0.0
Foreign banks ^{2/}	17	9980	42.7	13	5861	29.6
Nonbank intermediaries	25	1141	4.9	13	1917	9.7
Cooperatives	6	478	2.0	2	26	0.1
Finance Houses	7	540	2.3	6	142	0.7
External Financial Institutions	12	123	0.5	5	1732	8.8
Management Companies for Savings Society Funds	1	12	0.0	4	17	0.1
Currency Exchange Houses (as of 31-12-05)				77	115	0.6
Credit Providers				9	218	1.1
Pension Funds	4	1045	4.5	4	2635	13.3
Insurance companies	17	572	2.4	16	733	3.7
Total financial system	68	23366	100	135	19786	100

^{1/} NBC is a private bank. Public sector owns 40% of total shares.
^{2/} Includes both foreign branches and subsidiaries.
Source: Banco Central del Uruguay

**Table A.3.2. Estimating the Determinants of Demand and Access to Credit.
Regression Results**

	Full Sample			Uruguay		
	Demand for Credit	Access to Credit	Depth	Demand for Credit	Access to Credit	Depth
SME (<100)	-0.264*** [6.06]	-0.247*** [5.44]	-0.328*** [12.73]	-0.429*** [2.78]	-0.348* [1.84]	-0.351*** [4.57]
Exporter	0.159*** [3.63]	0.236*** [5.19]	0.199*** [8.18]	0.607*** [3.08]	0.263 [1.21]	0.285*** [3.26]
Audited	0.051 [1.13]	0.171*** [3.71]	0.158*** [6.09]	0.319* [1.72]	0.384* [1.81]	0.338*** [3.92]
Foreign owned	-0.234*** [4.10]	0.173** [2.51]	-0.174*** [5.30]	-0.334 [1.55]	0.21 [0.69]	-0.118 [1.17]
Log of firm's age	0.049** [2.01]	0.155*** [5.93]	0.028** [2.08]	0.277*** [4.08]	0.317*** [3.26]	0.117*** [3.42]
Incorporated	-0.078 [1.42]	0.093 [1.60]	0.032 [0.98]	-0.113 [0.49]	0.559** [2.31]	0.196 [1.61]
Training	0.272*** [6.71]			0.16 [0.73]		
Macroeconomic instability perception	0.135*** [3.42]			0.132 [0.81]		
Argentina	0.231*** [2.65]	-0.099 [1.18]	0.046 [1.03]			
Brazil	0.128 [1.49]	0.051 [0.62]	0.627*** [13.44]			
Chile	0.677*** [6.18]	0.431*** [4.26]	0.649*** [13.02]			
Mexico	-1.011*** [13.27]	-0.184** [1.99]	-0.537*** [13.00]			
Costa Rica	0.286** [2.35]	0.134 [1.21]	0.383*** [5.86]			
Mauritius	0.519** [2.58]	0.22 [1.31]	0.621*** [7.09]			
South Africa	-0.291*** [2.92]	0.252** [2.20]	0.211*** [3.48]			
Ireland	0.233* [1.76]	1.049*** [4.82]	0.271*** [3.78]			
Latvia	-0.507*** [4.24]	-0.258** [1.96]	0.425*** [4.46]			
Lithuania	-0.502*** [4.14]	-0.328** [2.53]	-0.132 [1.53]			
Slovakia	-0.755*** [6.31]	0.009 [0.07]	0.036 [0.41]			
Thailand	-0.05 [0.54]	0.481*** [4.95]	1.379*** [26.75]			
Constant	0.910*** [6.85]	0.429*** [3.24]	0.988*** [13.84]	0.249 [0.64]	-0.494 [0.97]	0.480*** [2.62]

Robust z statistics in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

**Table A.3.3. Estimating the Determinants of Investment.
Regression Results**

Determinants of investment		
Dependent variable: log of investment (in USD)^a		
	Uruguay	Full sample
Access to credit	1.847*	0.389**
	[1.005]	[0.177]
Audited	0.017	0.550***
	[0.453]	[0.142]
Foreign owned	0.346	1.056***
	[0.586]	[0.153]
Exporter	0.747	0.381***
	[0.611]	[0.123]
Incorporated	-0.186	-0.245*
	[0.474]	[0.149]
Log of firm's age	-0.579**	0.017
	[0.271]	[0.078]
20-99 employees	1.548***	0.962***
	[0.442]	[0.144]
100+ employees	2.830***	2.351***
	[0.578]	[0.172]
Argentina		1.054***
		[0.293]
Brazil		5.563***
		[0.494]
Chile		4.871***
		[0.579]
Mexico		-0.276
		[0.436]
Costa Rica		5.283***
		[0.578]
Mauritius		6.555***
		[0.558]
Ireland		1.007***
		[0.363]
Latvia		0.565
		[0.361]
Lithuania		0.798***
		[0.299]
Slovakia		0.606*
		[0.313]
Constant	7.441***	8.058***
	[0.726]	[0.375]
Observations	330	4379
R-squared	0.163	0.462

Note: 1/ The dependent variable is the sum of all expenditures in machinery, equipment, vehicles, land, and buildings, plus the expenditures in R&D in the past fiscal year.

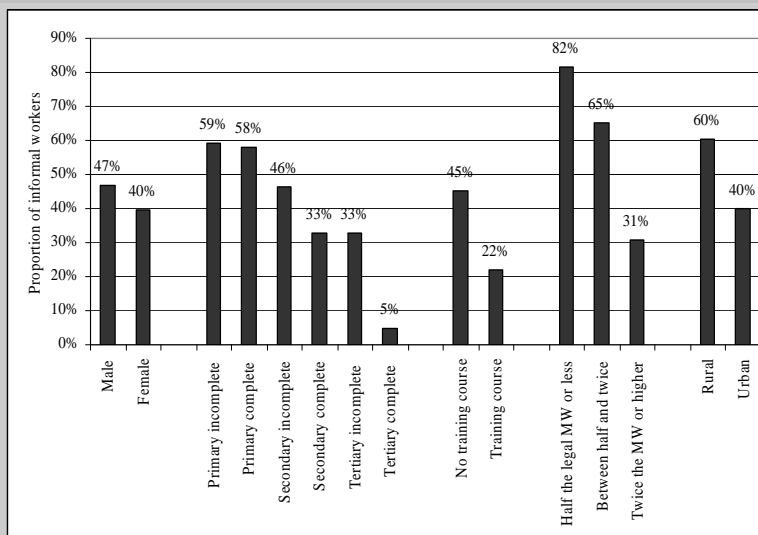
Within-country region dummies and sectoral dummies included in both regressions. Robust standard errors in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%

ANNEX 4: INDICATORS AND ECONOMETRIC ANALYSIS ON LABOR MARKETS AND SKILLS

Table A.4.1: Unemployment Duration (Average number of months)			
Worker characteristics	Unemployment duration	Worker characteristics	Unemployment Duration
Total	3.16	Age	
Women	3.35	14- 18	3.02
Men	2.91	19- 23	2.91
		24-28	2.83
		29-33	3.07
Educational level		34-38	3.09
Primary incomplete	3.03	39-43	3.23
Primary complete	3.18	44-48	3.90
High school incomplete	3.24	49-53	3.99
High school complete	2.97	54-58	4.38
College incomplete	3.13	59-65	2.95
College complete	2.90		

Source : Own estimations based on microdata from ENHA, 2006

Figure A.4.1: Share of Informality by Worker's Characteristics



Source: Own estimates based on microdata from ENHA, 2006

Box A.4.1: Methodology of Focus Groups with Workers and Entrepreneurs.

Focus groups are a qualitative and exploratory technique for information gathering, which consists of generating free and guided discussions about a specific subject among a previously selected group of people. Focus groups generate first hand information. The added value of a focus group comes from the group interaction. In this dynamic setting, a person's response can become a stimulus to another, generating an exchange of responses with richer results than if individuals from the group made independent contributions.

For our study, the focus groups were conducted by the *Foro Consultivo Económico Social del MERCOSUR* and comprised three groups with unionized workers and three groups with entrepreneurs from different economic sectors. No focus group was organized with not unionized workers since these workers interests have been and are still are represented by the *Central Unica de Trabajadores*. Focus groups with workers included participants from industry, commerce, service, and the energy sectors. Focus groups with entrepreneurs included participants from the following sectors: textile (2), wood (2), forestry (1), education (2), subcontracting (2), industry (3), fishing (1), rural association (1), agro-industry (3), and chambers of industry (3).

Focus group structure

- ***Introduction:*** Project presentation, definition of work session objectives, and methodology description.
- ***Debate:*** Using the findings of the Uruguay Investment Climate Survey as a starting point, people participated in the group by sharing knowledge and experiences. The group analyzed different opinions offered by individuals through a participative debate.
- ***Main discussion elements:*** Besides an open discussion on the key investment climate obstacles in Uruguay, the main elements of discussion were labor relations and skills development. In addition, the following issues were raised to clarify the responses of the investment climate survey: competition with the informal economy, crime and violence, and taxes.

Table A.4.2: Determinants of Informality in Uruguay. Probit Results
Dependent Variable: =1 if informal worker, =0 if formal worker

	Model											
	[I]			[II]			[III]			[IV]		
Men (=1 if men)	-0.113	[-98.00]	***	-0.110	[-95.1]	***	-0.074	[-62.4]	***	-0.074	[-61.7]	***
Age (in years)	-0.013	[-52.0]	***	-0.013	[-49.5]	***	-0.005	[-18.3]	***	-0.005	[-18.1]	***
Age ²	0.000	[64.6]	***	0.000	[62.5]	***	0.000	[34.3]	***	0.000	[34.3]	***
Years of education	-0.018	[-134.2]	***	-0.017	[-130.4]	***	-0.014	[-100.3]	***	-0.014	[-100.2]	***
Race (=1 if White)	-0.019	[-11.5]	***	-0.018	[-10.5]	***	-0.008	[-4.8]	***	-0.009	[-5.0]	***
Took non-transferable training course (=1 if took training)	-0.029	[-11.0]	***	-0.026	[-10.1]	***	-0.004	[-1.5]	***	-0.005	[-2.0]	***
Took transferable training course (=1 if took training)	-0.142	[-64.1]	***	-0.137	[-61.7]	***	-0.117	[-51.3]	***	-0.118	[-51.5]	***
Job Tenure (in years)	-0.004	[-59.7]	***	-0.003	[-54.1]	***	-0.002	[-37.7]	***	-0.003	[-39.3]	***
Underemployed (=1 if underemployed)	0.174	[141.0]	***	0.173	[140.1]	***	0.156	[123.8]	***	0.155	[122.5]	***
Urban areas (=1 if urban areas)	-0.118	[-65.0]	***	-0.116	[-64.2]	***	-0.117	[-62.8]	***	-0.116	[-62.3]	***
Montevideo	-0.068	[-61.2]	***	-0.065	[-58.7]	***	-0.046	[-40.7]	***	-0.047	[-41.1]	***
Fishing ^a	0.044	[3.8]	***	0.039	[3.4]	***	-0.016	[-1.4]	***	-0.017	[-1.5]	***
Mining	-0.151	[-14.4]	***	-0.151	[-14.4]	***	-0.133	[-11.9]	***	-0.134	[-12.1]	***
Manufacture	-0.160	[-82.0]	***	-0.162	[-82.8]	***	-0.154	[-76.6]	***	-0.173	[-74.9]	***
Electricity, gas, water	-0.372	[-73.5]	***	-0.371	[-73.5]	***	-0.369	[-68.3]	***	-0.370	[-69.1]	***
Construction	0.082	[31.9]	***	0.079	[30.8]	***	0.088	[33.3]	***	0.030	[9.9]	***
Commerce, vehicle/home appliance repairs	0.052	[25.2]	***	0.050	[24.3]	***	0.051	[24.5]	***	0.040	[16.6]	***
Hotel and restaurants	-0.179	[-58.7]	***	-0.180	[-59.0]	***	-0.161	[-50.9]	***	-0.144	[-36.9]	***
Transport, storage, communication	-0.114	[-46.2]	***	-0.112	[-45.4]	***	-0.083	[-32.2]	***	-0.106	[-37.4]	***
Financial services	-0.314	[-82.5]	***	-0.309	[-79.9]	***	-0.291	[-71.4]	***	-0.294	[-72.5]	***
Real state activities	0.011	[4.1]	***	0.017	[6.3]	***	0.043	[15.5]	***	0.038	[13.7]	***
Pub. adm and defense, soc. sec. plan.	-0.450	[-139.0]	***	-0.450	[-139.2]	***	-0.448	[-131.4]	***	-0.448	[-132.1]	***
Teaching	-0.350	[-157.7]	***	-0.349	[-156.9]	***	-0.330	[-137.3]	***	-0.332	[-138.8]	***
Social and health services	-0.320	[-151.4]	***	-0.318	[-149.9]	***	-0.300	[-132.6]	***	-0.302	[-133.6]	***
Other comm., soc., activ./services	-0.073	[-27.6]	***	-0.069	[-26.0]	***	-0.045	[16.4]	***	-0.046	[-17.0]	***
Domestic services	0.475	[157.0]	***	0.476	[157.0]	***	0.511	[169.6]	***	0.521	[150.9]	***
Earnings to minimum wage ratio				-0.003	[-47.3]	***						
Earns less than half minimum ^b							0.423	[172.0]	***	0.429	[108.1]	***
Earns half to twice minimum							0.237	[191.0]	***	0.197	[95.1]	***
Earns less than half minimum * manufacture										-0.018	[-2.5]	***
Earns less than half minimum * construction										-0.093	[-10.8]	***
Earns less than half minimum * commerce										0.044	[6.8]	***
Earns less than half minimum * hotel/restaurant										-0.135	[-10.8]	***
Earns less than half minimum * transport										0.029	[1.8]	***
Earns less than half minimum * domestic service										-0.128	[-5.3]	***
Earns half to twice minimum * manufacture										0.071	[20.7]	***
Earns half to twice minimum * construction										0.219	[43.8]	***
Earns half to twice minimum * commerce										0.030	[10.0]	***
Earns half to twice minimum * hotel/restaurant										-0.044	[-6.6]	***
Earns half to twice minimum * transport										0.103	[18.4]	***
Earns half to twice minimum * domestic service										-0.055	[-9.6]	***
Number of observations	1210315			1210315			1210315			1210315		
Pseudo R2	0.281			0.282			0.316			0.318		
Log likelihood	-594328			-593103			-565136			-563491		
Naive probability	0.427			0.427			0.427			0.427		
Estimated probability	0.376			0.376			0.378			0.379		

Notes: Marginal effects and absolute value of z statistics (in brackets) are reported

* significant at 10%; ** significant at 5%; *** significant at 1%

^a Omitted category Agriculture

^b Omitted category more than twice MW

Population: currently employed individuals 15-65 yrs

Source: Own estimations based on microdata from ENHA, 2006, Weighted Sample

Table A.4.3: Determinants of Training Provision by Firms

Variables	Model					
	(I)	(II)	(III)	(IV)	(V)	(VI)
Firm manager's experience		-0.023 [9.03]***	-0.011 [11.33]***	-0.012 [13.46]***	-0.018 [14.21]***	-0.027 [9.93]***
<i>Workforce education</i>						
Primary complete	0.065 [0.97]		-0.249 [2.80]***			
High school incomplete	0.095 [1.45]		-0.194 [2.02]**			0.123 [2.31]**
High school complete	0.193 [2.45]**		-0.082 [0.91]			-0.076 [0.92]
Superior incomplete	0.351 [1.62]		0.022 [0.11]			
New technology in production process	0.014 [0.90]	0.218 [3.95]***	0.133 [6.26]***	0.114 [5.47]***	0.063 [2.41]**	0.173 [3.06]***
Firm years in business	0.003 [6.86]***	-0.002 [1.51]	0.003 [6.79]***	0.003 [6.11]***	0.002 [4.44]***	-0.003 [2.61]***
Foreing capital	0.241 [5.59]***	0.221 [1.56]	0.293 [5.14]***	0.427 [8.09]***	0.271 [3.98]***	0.057 [0.38]
Percentage of non-production employess				0.141 [2.70]***	0.368 [4.88]***	0.741 [4.68]***
Percentage of unionized workforce	0.003 [8.19]***	-0.003 [3.66]***	0.002 [4.78]***	0.002 [5.07]***	0.002 [3.56]***	-0.003 [3.55]***
Percentage of female in the labor force	-0.149 [4.29]***	0.923 [6.73]***	-0.339 [7.05]***	-0.226 [5.14]***	-0.464 [8.05]***	0.642 [4.53]***
Large firm	0.132 [5.26]***	-0.006 [0.10]	0.15 [5.12]***	0.194 [6.42]***	0.12 [3.16]***	0.128 [1.90]*
Garments	0.198 [5.65]***	-0.357 [6.86]***	0.327 [6.75]***	0.317 [6.71]***	0.387 [6.30]***	-0.287 [6.13]***
Textiles	0.11 [3.89]***		0.267 [7.19]***	0.34 [8.96]***	0.435 [7.66]***	
Chemicals & Pharmaceuticals	-0.033 [1.46]	-0.098 [1.54]	-0.064 [2.24]**	-0.014 [0.51]	-0.018 [0.51]	0.108 [1.64]
Other Manufactures	-0.121 [4.73]***	-0.155 [1.85]*	0.02 [0.52]	0.075 [1.79]*	0.133 [2.36]**	0.03 [0.31]
Log total expenditure in R & D		0.13 [7.12]***				0.117 [6.57]***
The firm have web site						0.166 [3.17]***
Access to credit			0.073 [3.26]***	0.1 [4.66]***	0.065 [2.37]**	
Log last 3 fiscal year sales per worker					0.016 [1.28]	
Log last fiscal year sales per worker			0.004 [0.47]	0.017 [1.82]*		
Observations	3195	644	2299	2449	1699	629
Pseudo R2	0.1121	0.3497	0.2217	0.2398	0.2758	0.4208
Log Likelihood	-1535	-271	-1030	-1086	-738	-232
Naïve	0.232	0.349	0.263	0.270	0.287	0.334
Predicted P.	0.213	0.303	0.213	0.224	0.233	0.243
Absolute value of z statistics in brackets						
* significant at 10%; ** significant at 5%; *** significant at 1%						

Box A.4.2: Classification Training Courses

Overall training courses could be grouped in computer application usage; administration and secretarial; technical in agriculture; technical in manufacturing/construction (wood work, textiles, pottery, electricity); technical in health/nurse/psychology; food/restaurant industry; tourism and languages; arts and education; and cosmetology.

Training courses were classified as transferable and non-transferable, based on the type of skills the course could provide to the participant. In general, transferable training courses are those that provide skills that could be utilized in various occupations, hence not specific to one type of job or activity. Transferable training courses include classes such as accounting, computer usage, or marketing. Non-transferable training courses are, on the contrary, those that provide very specific skills for particular jobs/activities, such as bar tender to work in the hotel/restaurant industry, or artificial insemination for animals.

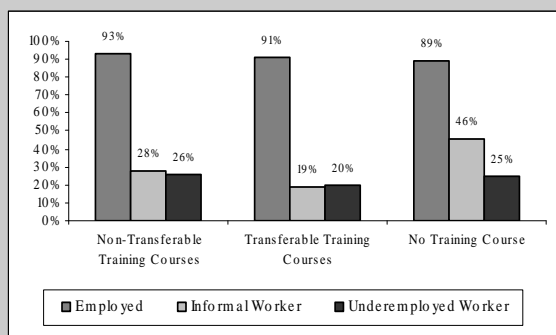
A third group, among those who reported having taken a training course, was excluded from this classification. This group of individuals reported having taken training courses for personal reasons or did not derive any benefits from it. In many cases these individuals reported having taken courses such as cooking classes, shiatsu, or yoga, which are clearly non-job related.

Distribution of Demographic and Experience Characteristics Across Training Course Types.

	Non-transferable training courses	Transferable training courses	No training course	Total
Demographic characteristics				
Male population	46.3%	51.5%	55.6%	54.9%
Average age	37.46	36.55	39.04	38.82
Average years of education	12.18	12.57	9.74	10.02
Race (white)	88.5%	91.6%	88.7%	88.8%
Tenure and Technology usage				
Job tenure	9.69	10.42	8.89	9.02
Experience (first job 22 years or younger)	82.1%	85.0%	85.8%	85.6%
Use of technology	67.1%	90.6%	38.4%	42.8%

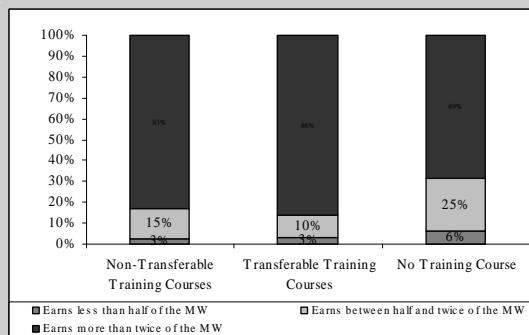
Source: Authors' estimates based on ENHA, 2006, Weighted sample.

Figure A.4.2: Distribution of Employment Characteristics across Training Courses



Source: Own estimations based on microdata from ENHA, 2006, Weighted Sample

Figure A.4.3: Distribution of Earnings to Minimum Wage ratio across Training Courses



Source: Authors' estimates based on ENHA, 2006, weighted sample

Table A.4.4: Characteristics of Employed and Unemployed

	Distribution across Employment Status		Distribution across Individual Characteristics	
	Employed	Unemployed	Employed	Unemployed
Total	89.0%	11.0%	100%	100%
Gender				
Women	86.0%	14.0%	43.6%	57.6%
Men	91.5%	8.5%	56.5%	42.4%
Age				
14- 18	64.1%	35.9%	3.2%	14.4%
19- 23	74.0%	26.0%	8.7%	24.7%
24-28	85.9%	14.1%	11.1%	14.7%
29-33	91.6%	8.4%	12.5%	9.4%
34-38	91.8%	8.2%	11.8%	8.5%
39-43	93.2%	6.8%	12.3%	7.3%
44-48	93.9%	6.1%	12.4%	6.5%
49-53	93.9%	6.1%	11.3%	6.0%
54-58	94.5%	5.6%	8.9%	4.2%
59-65	93.8%	6.2%	8.0%	4.3%
Educational level				
Primary incomplete	91.0%	9.0%	8.7%	7.0%
Primary complete	88.5%	11.5%	21.0%	22.2%
High school incomplete	86.5%	13.5%	32.6%	41.3%
High school complete	90.8%	9.3%	9.1%	7.5%
Superior incomplete	90.2%	9.8%	21.7%	19.2%
Superior complete	95.2%	4.8%	6.9%	2.8%

Source: Own estimations based on microdata from ENHA, 2006

Table A.4.5: Marginal Effects of Employability Probit Models
Dependent Variable: =1 if currently employed, =0 if currently unemployed

	Model					
	[I]		[II]		[III]	
Men (=1 if men)	0.050 [101.9]	***	0.051 [102.5]	***	0.051 [102.8]	***
Age (in years)	0.017 [157.3]	***	0.017 [156.7]	***	0.017 [156.8]	***
Age ²	0.000 [-118.9]	***	0.000 [-118.3]	***	0.000 [-118.3]	***
Years of education	0.004 [57.5]	***	0.004 [55.1]	***	0.004 [55.0]	***
Race (=1 white, 0=others)	0.012 [16.7]	***	0.013 [16.9]	***	0.013 [17.1]	***
Took training course (=1 if took training)			0.026 [34.1]	***		
Took non-transferable training course (=1 if took training)					0.041 [37.7]	***
Took transferable training course (=1 if took training)					0.014 [14.1]	***
Job experience (=1 if first job at 22 or younger)	0.122 [154.6]	***	0.121 [154.6]	***	0.122 [155.0]	***
Use of technology (=1 if used PC past 6 months)	0.024 [44.6]	***	0.021 [37.9]	***	0.022 [39.4]	***
Urban areas (=1 if urban areas)	-0.039 [-55.9]	***	-0.039 [-56.0]	***	-0.039 [-56.0]	***
Montevideo	0.001 [1.3]		0.000 [1.0]		0.000 [0.9]	
Number of observations	1394888		1394888		1394888	
Pseudo R2	0.127		0.128		0.128	
Log likelihood	-415367		-414766		-414530	
Naïve probability	0.893		0.893		0.893	
Estimated probability	0.916		0.917		0.917	
Notes: Marginal effects and absolute value of z statistics (in brackets) are reported						
* significant at 10%; ** significant at 5%; *** significant at 1%						
^a Omitted category agriculture						
^b Omitted category 'more than twice the MW'						
Population: currently employed individuals 15-65 yrs						
Source: Author's estimates based on ENHA, 2006, Weighted sample.						

Table A.4.6: Mincer Wage Equations
Dependent Variable: Logarithm of wage/earnings

	Model			
	[I]		[II]	
Men (=1 if men)	0.058 [4.6]	***	0.056 [4.5]	***
Age (in years)	0.040 [12.0]	***	0.039 [12.0]	***
Age ²	0.000 [-9.8]	***	0.000 [-9.7]	***
Years of education	0.041 [23.1]	***	0.041 [23.2]	***
Race (=1 white, 0=others)	0.116 [6.3]	***	0.115 [6.3]	***
Took training course (=1 if took training)	0.228 [11.2]	***		
Took non-transferable training course (=1 if took training)			0.169 [5.6]	***
Took transferable training course (=1 if took training)			0.270 [10.7]	***
Informality (=1 if worker informal)	-0.370 [-28.3]	***	-0.369 [-28.2]	***
Job Tenure (in years)	0.016 [18.8]	***	0.016 [18.7]	***
Urban areas (=1 if urban areas)	-0.019 [-1.4]	***	-0.019 [-1.4]	***
Montevideo	0.223 [16.9]	***	0.222 [16.9]	***
Constant	2.206 [29.7]	***	2.211 [29.9]	***
Number of observations	28262		28262	
Wald X ²	4997		5029	
Log likelihood	-1791891		-1791595	
Rho	-0.327		-0.331	
Sigma	0.735		0.736	
Lambda	-0.240		-0.244	
Notes: Marginal effects and absolute value of z statistics (in brackets) are reported				
* significant at 10%; ** significant at 5%; *** significant at 1%				
^a Omitted category Agriculture				
^b Omitted category more than twice MW				
Population: currently employed individuals 15-65 yrs				
Source: Authors estimates based on ENHA, 2006, Weighted sample				

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