

Croatia Enterprise Surveys Data Set

1. Introduction

1. This document provides additional information on the data collected in Croatia during calendar years 2008/2009 as part of the fourth round of the Business Environment and Enterprise Performance Survey (BEEPS IV), a joint initiative of the World Bank Group (“WB”) and the European Bank for Reconstruction and Development (“EBRD”). It is an enterprise survey whose objective is to gain an understanding of firms’ perception of the environment in which they operate. The survey was until now administered three times at three years interval. This has added an important element of dynamics in the study of business environment in transition countries.

The 2008 survey was restructured to improve cross-country comparability and to make it compatible with the Enterprise Surveys the Enterprise Analysis Unit of the World Bank has been implementing in the past two years in other regions of the world.

The objective of the survey is to obtain feedback from enterprises in client countries on the state of the private sector as well as to help in building a panel of enterprise data that will make it possible to track changes in the business environment over time, thus allowing, for example, impact assessments of reforms.

Through interviews with firms in the manufacturing and services sectors, the survey will assess the constraints to private sector growth and create statistically significant business environment indicators that are comparable across countries.

The report outlines and describes the sampling design of the data, the data set structure as well as additional information that may be useful when using the data, such as information on non-response cases and the appropriate use of the weights.

2. Sampling Structure

2. The sample for the Croatia was selected using stratified random sampling, following the methodology explained in the Sampling Manual¹. Stratified random sampling² was preferred over simple random sampling for several reasons³:

a. To obtain unbiased estimates for different subdivisions of the population with some known level of precision.

b. 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 according to the group classification of ISIC Revision 3.1: (group D), construction sector (group F), services sector (groups G and H), and transport, storage, and communications sector (group I). Note that this definition excludes the following sectors: financial intermediation (group J), real estate and renting activities (group K,

¹ The complete text can be found at http://www.enterprisesurveys.org/documents/Implementation_note.pdf

² A stratified random sample is one obtained by separating the population elements into non-overlapping groups, called strata, and then selecting a simple random sample from each stratum. (Richard L. Scheaffer; Mendenhall, W.; Lyman, R., “Elementary Survey Sampling”, Fifth Edition).

³ Cochran, W., 1977, pp. 89; Lohr, Sharon, 1999, pp. 95

except sub-sector 72, IT, which was added to the population under study), and all public or utilities-sectors.

c. To make sure that the final total sample includes establishments from all different sectors and that it is not concentrated in one or two of industries/sizes/regions.

d. 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.)

e. Stratification may produce a smaller bound on the error of estimation than would be produced by a simple random sample of the same size. This result is particularly true if measurements within strata are homogeneous.

f. The cost per observation in the survey may be reduced by stratification of the population elements into convenient groupings.

3. Three levels of stratification were used in this country: industry, establishment size, and oblast (region). The original sample designs with specific information of the industries and regions chosen are included in the attached Excel file (Sampling Report.xls.)

4. Industry stratification was designed in the way that follows: the universe was stratified into manufacturing industries, services industries, and one residual (core) sector as defined in the sampling manual. Each industry had a target of 90 interviews. For the manufacturing industries and residual sample sizes were deflated by about 22%. For the service industries, sample sizes were deflated by about 67% to account for under sampling in firms in service industries.

5. Size stratification was defined following the standardized definition for the rollout: small (5 to 19 employees), medium (20 to 99 employees), and large (more than 99 employees)⁴. For stratification purposes, the number of employees was defined on the basis of reported permanent full-time workers. This seems to be an appropriate definition of the labor force since seasonal/casual/part-time employment is not a common practice, except in the sectors of construction and agriculture.

6. Regional stratification was defined in 7 regions. These regions are Zagreb, North Croatia, Slavonia, Lika & Banovina, Hrvatsko primorje i Istra, and Dalmatia.

7. The Croatia sample contains panel data. The wave panels “Investment Climate Private Enterprise Survey implemented in Croatia” consisted of 236 establishments interviewed in 2005, and 633 establishments interviewed in 2007. A total of 106 establishments have been re-interviewed in the 2008 Business Environment and Enterprise Performance Survey (with 50 establishments in 2005 and 56 establishments in 2007).

3. Sampling implementation

⁴ The panel firms from BEEPS 2005 with less than 5 employees are included in the 5 to 19 strata.

8. Given the stratified design, sample frames containing a complete and updated list of establishments for the selected regions were required. Great efforts were made to obtain the best source for these listings. However, the quality of the sample frames was not optimal and, therefore, some adjustments were needed to correct for the presence of ineligible units. These adjustments are reflected in the weights computation (see below.)

9. For most countries covered in BEEPS IV two sample frames were used. The first source of the sample frame was Statistical Office of the Croatia - 2007- Organization database. A copy of that frame was sent to the statistical team in London to select the establishments for interview. The second frame, supplied by the World Bank/EBRD, consisted of enterprises interviewed in BEEPS 2005. The clients required that the attempts should be made to re-interview establishments responding to the BEEPS 2005 survey where they were within the selected geographical regions and met eligibility criteria. That sample is referred to as the Panel.

10. The quality of the frame was assessed at the onset of the project. Due to survey fatigue and relatively small universe size in Croatia it was agreed that the numbers could be augmented by re-interviews with establishments interviewed for the Enterprise Survey 2007. It should be noted that in 2008 survey 55 firms have only answered the questions that are new (never asked in 2007). Consequently, the data base for these 55 firms is based on a combination of the new questions from the 2008 survey and copy of the answers provided in 2007 for the questions common to both years. Overall, the frame proved to be useful though it showed positive rates of non-eligibility, repetition, non-existent units, etc. These problems are typical of establishment surveys, but given the impact these inaccuracies may have on the results, adjustments were needed when computing the appropriate weights for individual observations. The percentage of confirmed non-eligible units as a proportion of the total number of contacts to complete the survey was 35.2% (412 out of 1171 establishments).

Sample Frame Croatia

Source: Financial Agency of Croatia [FINA], 2006

Region	Employees	Sector			
		Manufacturing	52	Residual	Grand Total
Zagreb	5-19	1,169	781	3,809	5,759
	20-99	310	83	717	1,110
	100+	124	27	153	304
Zagreb Total		1,603	891	4,679	7,173
North Croatia	5-19	463	369	1,107	1,939
	20-99	236	37	211	484
	100+	136	12	30	178
North Croatia Total		835	418	1,348	2,601
Slavonia	5-19	324	274	901	1,499
	20-99	123	52	191	366
	100+	74	7	45	126
Slavonia Total		521	333	1,137	1,991
Lika & Banovina	5-19	171	177	389	737
	20-99	77	25	69	171
	100+	35	4	16	55
Lika & Banovina Total		283	206	474	963
Hrvatsko primorje i Istra	5-19	432	410	1,617	2,459
	20-99	169	59	231	459
	100+	57	10	50	117
Hrvatsko primorje i Istra		658	479	1,898	3,035
Dalmatia	5-19	429	632	1,711	2,772
	20-99	113	76	311	500
	100+	64	16	89	169
Dalmatia Total		606	724	2,111	3,441
Grand Total		4,506	3,051	11,647	19,204

Sectors included in the Sample:

Original Sectors	Manufactures: 15,16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37 Services: 52 Residual: 45,50, 51, 55, 60, 61, 62, 63, 64, 72
Added (top up) Sectors	<i>None</i>

4. Data Base Structure:

11. The structure of the data base reflects the fact that 3 different versions of the questionnaire were used. The basic questionnaire, the Core Module, includes all common questions asked to all establishments from all sectors (manufacturing, services and IT). The second expanded variation, the Manufacturing Questionnaire, is built upon the Core Module and adds some specific questions relevant to the sector. The third expanded variation, the Services Questionnaire, is also built upon the Core Module and adds to the core specific questions relevant to either retail or IT. Each variation of the questionnaire is identified by the index variable, *a0*.

12. All variables are named using, first, the letter of each section and, second, the number of the variable within the section, i.e. *a1* denotes section *A*, question *1*. Variable names preceded by a prefix “*ECA*” indicate questions used in the previous rollout (2005) and, therefore, they may not be found in the implementation of the rollout in other countries. All other suffixed variables are global and are present in all country surveys over the world. All variables are numeric with the exception of those variables with an “*x*” at the end of their names. The suffix “*x*” denotes that the variable is alpha-numeric.

13. There are two establishment identifiers, *idstd*, *id*. The first is a global unique identifier. The second is a country unique identifier. The variables *a2* (sampling region), *a6a* (sampling establishment’s size), and *a4a* (sampling sector) contain the establishment’s classification into the strata chosen for each country using information from the sample frame. The strata were defined according to the guidelines described above.

14. As noted above, there are 3 levels of stratification: industry, size and region. Different combinations of these variables generate the strata cells for each industry/region/size combination. A distinction should be made between the variable *a4a* and *d1a2* (*industry expressed as ISIC rev. 3.1 code*). The former gives the establishment’s classification into one of the chosen industry-strata, whereas the latter gives the actual establishment’s industry classification in the sample frame.

15. All of the following variables contain information from the sampling frame and were defined with the sampling design. They may not coincide with the reality of individual establishments as sample frames may contain inaccurate information. The variables containing the sample frame information are included in the data set for researchers who may want to further investigate statistical features of the survey and the effect of the survey design on their results.

-*a2* is the variable describing sampling regions (oblasts)

-*a6a*: coded using the same standard for small, medium, and large establishments as defined above.

-*a4a*: coded using ISIC codes for the chosen industries for stratification. These codes include most manufacturing industries (15 to 36), and retail, and IT for services (52, and 72 respectively). All establishments within the residual stratum were coded with *a4a*=2.

-*id2005*: The variable contains the firm ids of the panel firms

- *id2007*: The variable contains the firm ids of the panel firms interviewed in 2007 (Bulgaria, Croatia and Albania only).

16. The surveys were implemented following a 2 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. The variables *a4b* and *a6b* contain the industry and size of the establishment from the screener questionnaire. Variables *a8* to *a11* contain additional information and were also collected in the screening phase.

17. Note that there are additional variables for location (*a3x*), industry (*d1a2*), and size (*l1*, *l6* and *l8*) that reflect more accurately the reality of each establishment. Advance users are advised to use these variables for analytical purposes.

18. Variable *a3x* indicates the actual location of the establishment. There may be divergences between the location in the sampling frame and the actual location, as establishments may be listed in one place but the actual physical location is in another place.

19. Variable *d1a2* indicates the actual ISIC code of the main output of the establishment as answered by the interviewee. This is probably the most accurate variable to classify establishments by activity.

20. Variables *l1*, *l6* and *l8* were designed to obtain a more accurate measure of employment accounting for permanent and temporary employment. Special efforts were made to make sure that this information was not missing for most establishments.

5. Universe Estimates

21. Universe estimates for the number of establishments in each cell in Croatia were produced for the strict, weak and median eligibility definitions. The estimates were the multiple of the relative eligible proportions.

22. Appendix C shows the overall estimates of the numbers of establishments based on the strict, weak and median relative estimates.

6. Weights

23. Since the sampling design was stratified and employed differential sampling individual observations should be properly weighted when making 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 (probability weights or *pa* in Stata.)⁵

24. Special care was given to the correct computation of the weights. Considering the varying quality of the sample frames, it was imperative to accurately adjust the totals within each region/industry/size stratum to account for the presence of ineligible units (the firm discontinued businesses or was unattainable, education or government establishments, establishments with less than 5 employees, no reply after having called in different days of the week and in different business hours, out of order, no tone in the phone line, answering machine, fax line, wrong address or moved away and could not get the new references) 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. Please, note that panel firms with less than 5 employees were also included in the eligible sample and special coded zero was used in a6a and a6b (sample and screener size) to reflect those cases.

25. For some units it was impossible to determine eligibility because the contact was not successfully completed. Consequently, different assumptions as to their eligibility result in different universe cells' adjustments and in different sampling weights. Three sets of assumptions were considered:

a- Strict assumption: eligible establishments are only those for which it was possible to directly determine eligibility. The resulting weights are included in the variable *w_strict*.

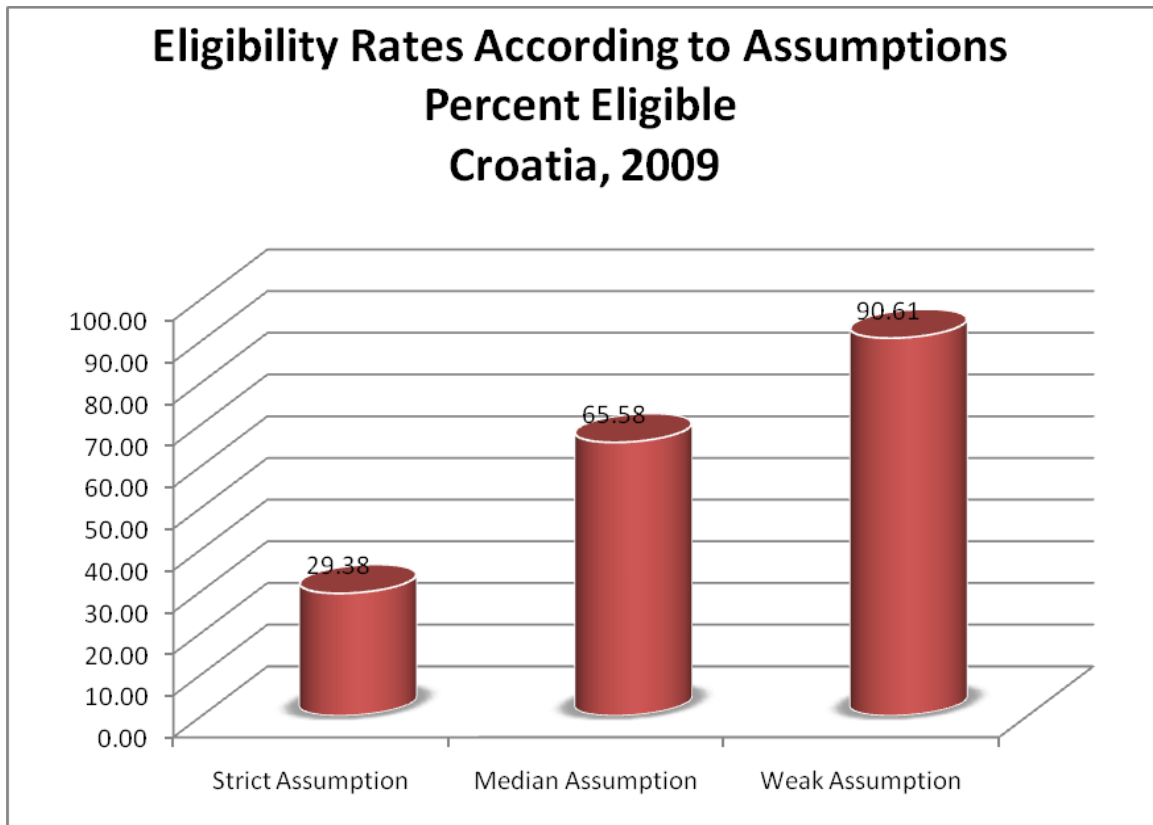
b- Median assumption: eligible establishments are those for which it was possible to directly determine eligibility and those that rejected the screener questionnaire or an answering machine or fax was the only response. The resulting weights are included in the variable *w_median*.

c- Weak assumption: in addition to the establishments included in points a and b, all establishments for which it was not possible to finalize a contact are assumed eligible.

⁵ This is equivalent to the weighted average of the estimates for each stratum, with weights equal to the population shares of each stratum.

This includes establishments with dead or out of service phone lines, establishments that never answered the phone, and establishments with incorrect addresses for which it was impossible to find a new address. The resulting weights are included in the variable *w_weak*. Note that under the weak assumption only observed non-eligible units are excluded from universe projections.

The following graph exhibits the different eligibility rates under each set of assumptions.



26. Within each of these assumptions regarding eligibility a pair of weight sets was calculated. The first set of estimates calculated proportions using the raw sample count for each cell. However, the achieved sample numbers in many cells were small. Hence, those eligibility rates, and the adjusted universe cells projections, are subject to relatively large sampling variations. Therefore a second set of more robust estimates (collapsed weights) was also produced. These estimates made use of the multiples of the relative eligibility rates for each industry, size, and region. Those relative rates were based on much larger samples than the individual cells and thus produced values with smaller sampling variations. The data sets include only these robust weights.

Please note that for the purpose of the weights computations all panel firms were considered to be part of the current universe, although technically they are not randomly selected.

7. Appropriate use of the weights

27. As discussed above, under stratified random sampling weights should be used when making inferences about the population. Any estimate or indicator that aims at describing some feature of the population should take into account that individual observations may not represent equal shares of the population.

28. However, there is some discussion as to the use of weights in regressions (see Deaton, 1997, pp.67; Lohr, 1999, chapter 11, Cochran, 1953, pp.150). There is not strong large sample econometric argument in favor of using weighted estimation for a common population coefficient if the underlying model varies per stratum (stratum-specific coefficient): both simple OLS and weighted OLS are inconsistent under regular conditions. However, weighted OLS has the advantage of providing an estimate that is independent of the sample design. This latter point may be quite relevant for the Enterprise Surveys as in most cases the objective is not only to obtain model-unbiased estimates but also design-unbiased estimates (see also Cochran, 1977, pp 200 who favors the used of weighted OLS for a common population coefficient.)⁶

29. From a more general approach, if the regressions are descriptive of the population then weights should be used. The estimated model can be thought of as the relationship that would be expected if the whole population were observed⁷. If the models are developed as structural relationships or behavioral models that may vary for different parts of the population, then, there is no reason to use weights.

8. Non-response

30. 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. Enterprise Surveys suffer from both problems and different strategies were used to address these issues.

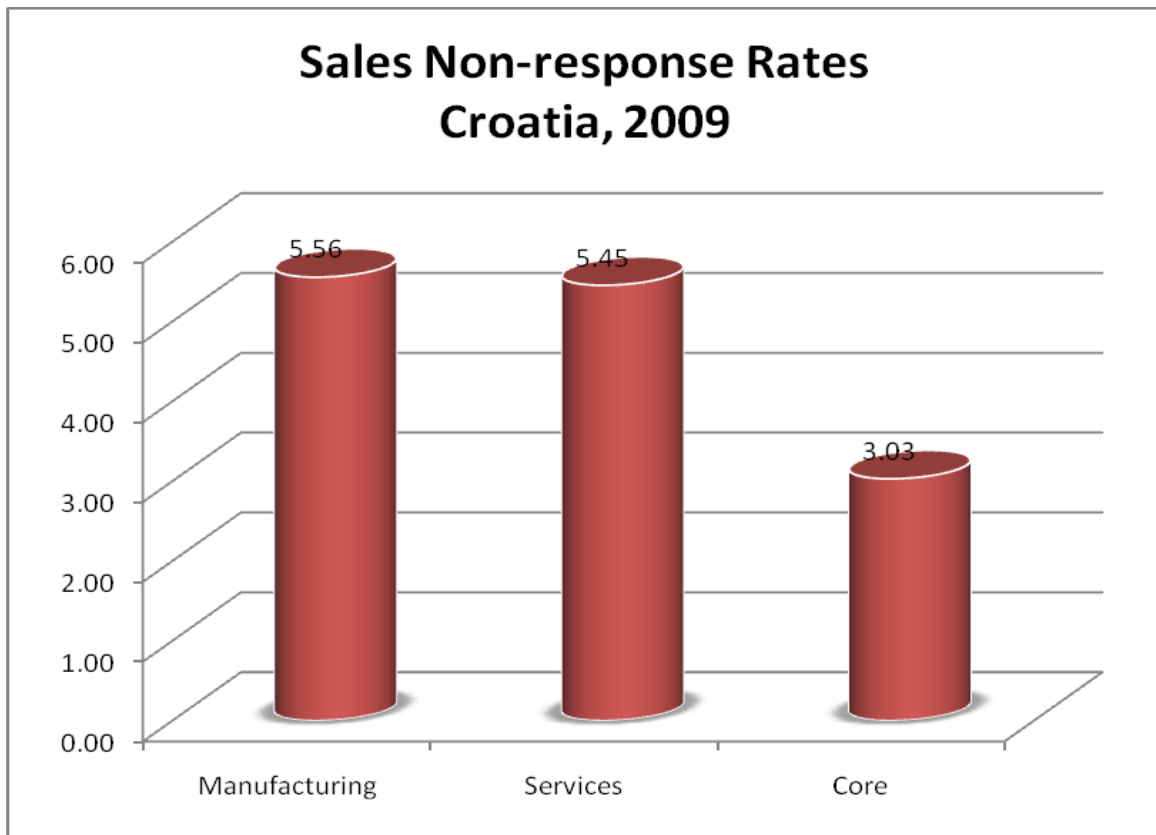
31. Item non-response was addressed by two strategies:

a- For sensitive questions that may generate negative reactions from the respondent, such as corruption or tax evasion, enumerators were instructed to collect the refusal to respond as (-8).

b- Establishments with incomplete information were re-contacted in order to complete this information, whenever necessary. However, there were clear cases of low response. The following graph shows non-response rates for the sales variable, *d2*, by type of questionnaire. Please, note that the coding utilized in this dataset does not allow us to differentiated between “Don’t know” and “refuse to answer”, thus the non-response in the table below reflects both categories (DKs and NAs).

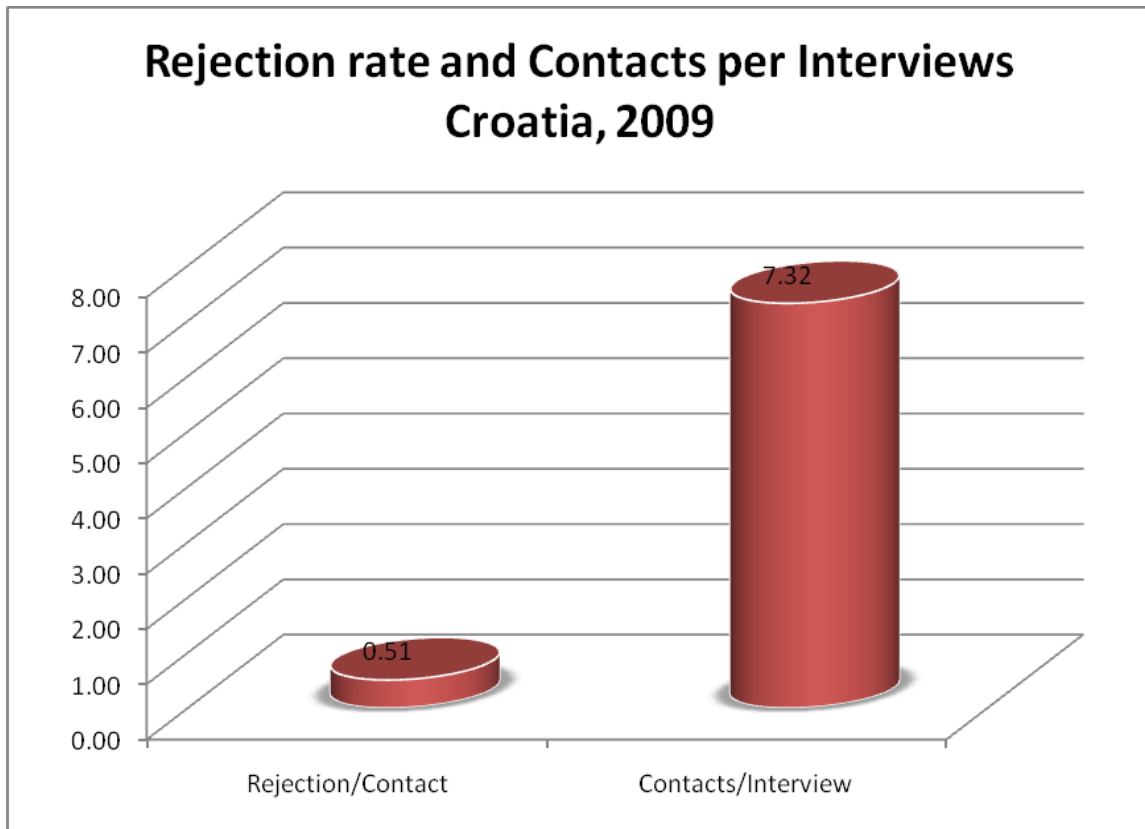
⁶ Note that weighted OLS in Stata using the command regress with the option of weights will estimate wrong standard errors. Using the Stata survey specific commands svy will provide appropriate standard errors.

⁷ The use weights in most model-assisted estimations using survey data is strongly recommended by the statisticians specialized on survey methodology of the JPSM of the University of Michigan and the University of Maryland.



32. Survey non-response was addressed by maximizing efforts to contact establishments that were initially selected for interview. Up to 4 attempts were made to contact the establishment for interview at different times/days of the week before a replacement establishment (with similar strata characteristics) was suggested for interview. Survey non-response did occur but substitutions were made in order to potentially achieve strata-specific goals. Further research is needed on survey non-response in the Enterprise Surveys regarding potential introduction of bias.

33. As the following graph shows, the number of contacted establishments per realized interview was 7.32. This number is the result of two factors: explicit refusals to participate in the survey, as reflected by the rate of rejection (which includes rejections of the screener and the main survey) and the quality of the sample frame, as represented by the presence of ineligible units. The relatively low ratio of contacted establishments per realized interview (7.32) suggests that the main source of error in estimates in the Croatia may be selection bias and not frame inaccuracy.



34. Details on rejections rates, eligibility rates, and item non-response are available at the level strata. This report summarizes these numbers to alert researchers of these issues when using the data and when making inferences. Item non-response, selection bias, and faulty sampling frames are not unique to the Croatia. All enterprise surveys suffer from these shortcomings but in very few cases they have been made explicit.

References

Cochran, William G., *Sampling Techniques*, 1977.

Deaton, Angus, *The Analysis of Household Surveys*, 1998.

Levy, Paul S. and Stanley Lemeshow, *Sampling of Populations: Methods and Applications*, 1999.

Lohr, Sharon L. *Sampling: Design and Techniques*, 1999.

Scheaffer, Richard L.; Mendenhall, W.; Lyman, R., *Elementary Survey Sampling*, Fifth Edition, 1996

Appendix A

Cell Weights

Croatia Strict

Region	Employees	Sector		
		Manufacturing	52	Residual
Zagreb	5-19	61	71	96
	20-99	21	18	96
	100+	7	3	9
North Croatia	5-19	109	71	96
	20-99	25		96
	100+	7		
Slavonia	5-19	75	71	96
	20-99	13		96
	100+	44	3	10
Lika & Banovina	5-19	44		
	20-99	20		96
	100+	20		8
Hrvatsko primorje i Istra	5-19	51	71	96
	20-99	45	28	96
	100+	26	2	7
Dalmatia	5-19	37	71	96
	20-99	14	33	96
	100+	29	7	12

Croatia Weak

Region	Employees	Sector		
		Manufacturing	52	Residual
Zagreb	5-19	127	139	220
	20-99	43	38	220
	100+	15	6	22
North Croatia	5-19	199	139	220
	20-99	46		220
	100+	14		
Slavonia	5-19	133	139	220
	20-99	23		220
	100+	72	3	22
Lika & Banovina	5-19	68		
	20-99	32		220
	100+	32		15
Hrvatsko primorje i Istra	5-19	87	139	220
	20-99	76	50	220
	100+	48	3	16
Dalmatia	5-19	71	139	220
	20-99	26	66	220
	100+	58	15	30

Croatia Median

Region	Employees	Sector		
		Manufacturing	52	Residual
Zagreb	5-19	115	121	202
	20-99	41	35	202
	100+	15	6	22
North Croatia	5-19	186	121	202
	20-99	45		202
	100+	13		
Slavonia	5-19	123	121	202
	20-99	22		202
	100+	70	3	22
Lika & Banovina	5-19	62		
	20-99	31		202
	100+	32		15
Hrvatsko primorje i Istra	5-19	75	121	202
	20-99	70	44	202
	100+	45	3	15
Dalmatia	5-19	63	121	202
	20-99	25	61	202
	100+	55	14	29

Appendix B

Eligibility Status – Summary Fieldwork Reports

TOTAL Status Codes

ELIGIBLES		
Eligible	1. Eligible establishment <i>(Correct name and address)</i>	285
	2. Eligible establishment <i>(Different name but same address - the new firm/establishment bought the original firm/establishment)</i>	3
	3. Eligible establishment <i>(Different name but same address - the firm/establishment changed its name)</i>	7
	4. Eligible establishment <i>(Wrong address - the firm/establishment has changed address and the address could be found)</i>	22
	16. Panel firm - now less than five employees	27
Ineligible	5. The establishment has less than 5 permanent full time employees	28
	6. The firm discontinued businesses	36
	7. Not a business: private household	28
	8. Ineligible activity: education, agriculture, finances, governments...	18
Unobtainable	91. No reply <i>(after having called in different days of the week and in different business hours)</i>	230
	92. Line out of order	31
	93. No tone	3
	10. Answering machine	4
	11. Fax line - data line	5
	12. Wrong address/ moved away and could not get the new references	29
	13. Refuses to answer the screener	415
	14. In process <i>(the establishment is being called/ is being contacted - previous to ask the screener)</i>	0
	151. Out of target - outside the covered regions, firm moved abroad	0
	152. Out of target - firm moved abroad	0
	Total	1,171

Response Outcomes

Complete interviews <i>(Total)</i>	160
Incomplete interviews	5
Eligible in process	0
Refusals	179
Out of target	110
Impossible to contact	302
Ineligible - coop.	0
Refusal to the Screener	415
Total	1,171

Appendix C

Eligibility Rules

Status Code	Eligibility Criteria		
	Strict	Weak	Median
1. Eligible establishment (Correct name and address)	1	1	1
2. Eligible establishment (Different name but same address - the new firm/establishment bought the original firm/establishment)	1	1	1
3. Eligible establishment (Different name but same address - the firm/establishment changed its name)	1	1	1
4. Eligible establishment (Wrong address - the firm/establishment has changed address and the address could be found)	1	1	1
5. The establishment has less than 5 employees	0	0	0
6. The firm discontinued businesses/ unattainable	0	0	0
7. Not a business: Private	0	0	0
8. Not a business: Education or Government	0	0	0
9. No reply (after having called in different days of the week and in different business hours) out of order, no tone	0	0	1
10. Answering machine	0	1	1
11. Fax line	0	1	1
12. Wrong address/ moved away and could not get the new references	0	0	1
13. Refuses to answer the screener	0	1	1
14. In process (the establishment is being called/ is being contacted - previous to ask the screener)	0	0	0
15. Out of target - cooperative, outside the covered regions	0	0	0

Croatian Establishment Estimates

Cells	Strict	Weak	Median
Un-collapsed Cells	7,514	16,104	14,736
Collapsed Cells	7,763	16,553	15,146

Appendix D

Questionnaires:

Problems for the understanding of questions (write question number)	No problems found.
Problems found in the Navigability of – questionnaires (for example, skip patterns).	No problems here
Comments on questionnaires length:	The questionnaire was found to be too long for some respondents.
Suggestions or other Comments on the questionnaire:	A lot of information was asked which some respondents considered to be strictly confidential and didn't want to share.

Database

Comments on the data entry program	Data entry program chosen: CONFIRMIT Comments:
Comments on the data cleaning	None

Country situation

General aspects of economic, political or social situation of the country that could affect the results of the survey:	<p>The fieldwork period was certainly affected by the financial crisis. Also, this period was influenced by an increased level of crime in Croatia; many brutal fights between groups of young people with fatal consequences and two brutal murders in the centre of the capital city.</p> <p>One of those murdered was a famous Croatian journalist and the other was a daughter of a famous lawyer who represented General Zagorec in a case which generated a lot of media coverage. These murders were followed by new appointments in the government.</p> <p>Another important issue was also the fact that Slovenia blocked Croatian negotiations for EU membership.</p>
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Relevant country events occurred during fieldwork:	Negotiations on accession to the EU blocked as mentioned above. Two murders followed by changes in some government ministries as mentioned above. Men's World Handball Championship
Other aspects:	None

Appendix E
Original Sample Design

Region	Employees	Sector			Grand Total
		Manufacturing	52	Residual	
Zagreb	5-19	11	9	12	32
	20-99	10	9	12	31
	100+	8	9	12	29
Zagreb Total		29	27	36	92
North Croatia	5-19	5	4	4	13
	20-99	6	5	4	15
	100+	9		2	11
North Croatia Total		20	9	10	39
Slavonia	5-19	3	3	3	9
	20-99	4	7	3	14
	100+	4	5	4	13
Slavonia Total		11	15	10	36
Lika & Banovina	5-19	2	2	1	5
	20-99	2	3	1	6
	100+	2		1	3
Lika & Banovina Total		6	5	3	14
Hrvatsko primorje i Istra	5-19	4	5	5	14
	20-99	5	7	4	16
	100+	4	2	4	10
Hrvatsko primorje i Istra		13	14	13	40
Dalmatia	5-19	5	7	5	17
	20-99	3	10	6	19
	100+	3	3	7	13
Dalmatia Total		11	20	18	49
Grand Total		90	90	90	270

TARGET	Sector			
Employees	Manufacturing	52	Residual	Grand Total
5-19	30	30	30	90
20-99	30	41	30	101
100+	30	19	30	79
Grand Total	90	90	90	270

Appendix F.

Local Agency team involved in the study:

Local Agency	Name: Puls d.o.o. Country: Croatia Membership of international organization: ESOMAR, Gallup International Association Activities since: 1993
Enumerators involved:	Enumerators: 44 Recruiters: 28
Other staff involved:	Fieldwork Coordinators: 7 Editing: 3 Data Entry: 7 Data Processing: 1

Sample Frame:

Characteristic of sample frame used:	All enterprises that submitted their financial report for year 2006
Source:	Financial agency (FINA) base of enterprises
Year of publication:	2006
Comments on the quality of sample frame:	This is the best base that exists in Croatia as 'Financial agency' is an institution to which all active companies in Croatia are obliged to submit their financial reports.
Year and organization who conducted the last economic census	There is no such census in Croatia

Sample:

Comments/ problems on sectors and regions selected in the sample:	We had no problem regarding sectors or regions that were selected in the sample.
Comments on the response rate:	Response rate was in line with the usual range for this type of survey in Croatia.
Comments on the sample design:	The replacement rate for contacts was too low in terms of the number of contacts made available in certain regions and sectors to be able to reach the targets. In last two replacement batches, there were a lot of ineligible companies and companies which were unreachable .
Other comments:	None.

Fieldwork:

Date of Fieldwork	10.09.2008 – 18.03.2009
Country	Croatia
Interview number	Manufactures:72 Services: 55 Core: 33
Problems found during fieldwork:	Respondents weren't always willing to give answers to some of the hard data questions, especially important questions from the productivity section. Fieldwork was conducted during the holiday period and at the end of the year when companies have a lot of work which contributed to the high refusal rate.
Other observations:	None

Appendix H.**Survey Universe, Sample Population and Sampling Frames**

The following provides description of the general methodology used in BEEPS 2009.

The survey universe was defined as commercial, service or industrial business establishments with at least five full-time employees. Government departments including military, police, education, health and similar activities were excluded, as were those in primary industries including agriculture, mining, etc.

There are no up to date and reliable statistics relating to this universe in the countries being surveyed in BEEPS IV. Consequently the universe size and characteristics have to be directly

estimated from the survey results themselves. This requirement increases the emphasis that has to be placed on the quality of the sample frame, because the validity of the results is predominantly a function of coverage and age of the sampling frame. The criteria used to evaluate the available sampling frame in descending priority were those of:

- ✓ Coverage
- ✓ Up to datedness
- ✓ Availability of detailed stratification variables
- ✓ Location identifiers- address, phone number, email
- ✓ Electronic format availability
- ✓ Contact name(s)

The sample frames used for the surveys must consist of the lists of enterprises in each country that most optimally meet these requirements. The final selection was made by the TNS in collaboration with the World Bank and EBRD. For most countries covered in BEEPS IV two sample frames were used. The first frame was often an official frame of establishments supplied by the national statistical office of the country. The Enterprise Survey conducted for the World Bank in Albania in 2007/8 showed that a suitable frame did not exist for the country. Instead, the design returned to first principles, using a blocks enumeration methodology.

Appendix I. Variables taken from the ES 2007 survey for the firms interviewed in both 2007 and 2008/9 surveys.

The variables listed below have been taken from the 2007 ES survey in Croatia and Albania whenever the variable a14y (year of the survey) has a value of “2007”.

a7	Establishment is part of a larger firm
a8	Type of establishment
a9	Establishment financial statements prepared separately from HQ statements (M)
a10	Establishment financial statements prepared separately from other establishments of same firm (M)
a11	If HQ, financial statements independent from the rest of establishments (M)
a14d	Date face-to-face interview begins:
a14m	Date face-to-face interview begins:
a14y	Date face-to-face interview begins:
a14h	Time face-to-face interview begins:
a14min	Time face-to-face interview begins:
b1	What is this firm's current legal status?
b1x	Other (SPECIFY)
b3	What percent of this firm does the largest owner(s) own? (M)
b2a	What percent of this firm is owned by each of the following?: Private domestic individuals, companies or organizations. (M)
b2b	Private foreign individuals, companies or organizations?
b2c	Government\ State?
b2d	Other
b2dx	Other (SPECIFY)
b4	Are any of the principal owners female?

b5	In what year did this establishment begin operations? (M)
b6	How many full-time employees did this establishment employ when it started operations? Please, include all employees and managers. (Include respondent when appropriate)
b6a	Was this establishment formally registered when it began operations?
b6b	In what year was this establishment formally registered?
b7	How many years of experience working in this sector does the Top Manager have? (M)
b8	Does this establishment have an internationally-recognized quality certification?
c3	Over the last two years, did this establishment submit an application to obtain an electrical connection?
c4	In reference to that application for an electrical connection, approximately how many days did it take to obtain it from the day of the application to the day the service was received? (M)
c5	In reference to that application for an electrical connection, was an informal gift or payment expected or requested?
c6	Over fiscal year [INSERT LAST COMPLETE FISCAL YEAR], did this establishment experience power outages? (M)
c7	In a typical month, over fiscal year [INSERT LAST COMPLETE FISCAL YEAR], how many power outages did this establishment experience? (M)
c8	How long did these power outages last on average? (M)
c9a	Please estimate the losses that resulted from power outages either as a percent of total annual sales or as total annual losses. (M)
c9b	Total annual losses due to power outages:
c12	Over the last two years, did this establishment submit an application to obtain a water connection?
c13	In reference to that application for a water connection, approximately how many days did it take to obtain it from the day of the application to the day the service was received? (M)
c14	In reference to that application for a water connection, was an informal gift or payment expected or requested?
c19	Over the last two years, did this establishment submit an application to obtain a telephone connection?
c20	In reference to that application for a telephone connection, approximately how many days did it take to obtain it from the day of the application to the day the service was received? (M)
c21	In reference to that application for a telephone connection, was an informal gift or payment expected or requested?
c22a	E-mail to communicate with clients or suppliers (M)
c22b	Its own website

c30a	Is electricity No Obstacle, a Minor Obstacle, a Moderate Obstacle, a Major Obstacle, or a Very Severe Obstacle to the current operations of this establishment?
d2	In fiscal year [INSERT LAST COMPLETE FISCAL YEAR], what were this establishment's total annual sales? (M)
d3a	In fiscal year [INSERT LAST COMPLETE FISCAL YEAR], what percent of this establishment's sales were National sales: (M)
d3b	And Indirect exports [sold domestically to third party that exports products]?:
d3c	And Direct exports?:
d4	In fiscal year [INSERT LAST COMPLETE FISCAL YEAR], when this establishment exported goods directly, how many days did it take on average from the time this establishment's goods arrived at their main point of exit (e.g., port, airport) until the time these goods cleared customs? (M)
d8	In which year did this establishment first export directly or indirectly?
d30a	Transport
d30b	Customs and trade regulations
e11	Does this establishment compete against unregistered or informal firms?
e30	Practices of competitors in the informal sector
g2	More specifically, over the last two years, did this establishment submit an application to obtain a construction-related permit? (M)
g3	In reference to that application for a construction-related permit, approximately how many days did it take to obtain it from the day of the application to the day the permit was granted? (M)
g4	In reference to that application for a construction-related permit, was an informal gift or payment expected or requested?
g30a	Access to land
i1	In fiscal year [INSERT LAST COMPLETE FISCAL YEAR], did this establishment pay for security, for example equipment, personnel, or professional security services?
i2a	In fiscal year [INSERT LAST COMPLETE FISCAL YEAR], what percent of this establishment's total annual sales was paid for security, or what was the total annual cost of security? (M)
i2b	Total annual cost of security
i3	In fiscal year [INSERT LAST COMPLETE FISCAL YEAR], did this establishment experience losses as a result of theft, robbery, vandalism or arson? (M)
i4a	For fiscal year [INSERT LAST COMPLETE FISCAL YEAR], what were the estimated losses as a result of theft, robbery, vandalism or arson that occurred on this establishment's premises either as a percentage of total annual sales or as total annual losses? (M)

i4b	As the total annual value of the losses?
i30	Crime, theft and disorder (M)
k2a	In fiscal year [INSERT LAST COMPLETE FISCAL YEAR], what percent of this establishment's total annual sales of its goods or services were: (M)
k2b	And what percent were: Paid for on delivery?
k2c	And what percent were: Paid for after delivery?
k4	In fiscal year [INSERT LAST COMPLETE FISCAL YEAR], did this establishment purchase any fixed assets, such as machinery, vehicles, equipment, land, buildings? (M)
n5a	In fiscal year [INSERT LAST COMPLETE FISCAL YEAR], how much did this establishment spend on purchases of:....? Machinery, vehicles and equipment (new or used) (M)
n5b	Land and buildings?
k5a	Over fiscal year [INSERT LAST COMPLETE FISCAL YEAR], please estimate the proportion of this establishment's total purchase of fixed assets that was financed from each of the following sources? (M)
k5i	Owners' contribution or issued new equity shares
k5f	Purchases on credit from suppliers and advances from customers
k6	Now let's talk about the establishment's current situation. At this time, does this establishment have a checking or savings account?
k7	At this time, does this establishment have an overdraft facility?
k8	At this time, does this establishment have a line of credit or a loan from a financial institution? (M)
k9	Referring to the most recent line of credit or loan, what type of financial institution granted this loan? (M)
k11	Referring only to this most recent loan or line of credit, what was its value at the time of approval? (M)
k13	Referring only to this most recent loan or line of credit, did the financing require collateral? (M)
k14a	Land, buildings under ownership of the establishment (M)
k14b	Machinery and equipment including movables
k14c	Accounts receivable and inventories
k14d	Personal assets of owner (house, etc.)
k14e	Other forms of collateral not included in the categories above

k15	Referring only to this most recent line of credit or loan, what was the approximate value of the collateral required as a percentage of the loan value or the value of the line of credit?
k16	Going back to the last fiscal year [INSERT LAST COMPLETE FISCAL YEAR], did this establishment apply for any loans or lines of credit? (M)
k17	What was the main reason why this establishment did not apply for any line of credit or loan in fiscal year [INSERT LAST COMPLETE FISCAL YEAR]? (M)
k21	In fiscal year [INSERT LAST COMPLETE FISCAL YEAR], did this establishment have its annual financial statements checked and certified by an external auditor?
k30	Access to financing
h7a	The court system is fair, impartial and uncorrupted.
j2	In a typical week over the last year, what percentage of total senior management's time was spent on dealing with requirements imposed by government regulations?
j3	Over the last year, was this establishment visited or inspected by tax officials? (M)
j4	Over the last year, how many times was this establishment either inspected by tax officials or required to meet with them? (M)
j5	In any of these inspections or meetings was a gift or informal payment expected or requested?
j6a	Over the last year, has this establishment secured or attempted to secure a government contract? (M)
j6	When establishments like this one do business with the government, what percent of the contract value would be typically paid in informal payments or gifts to secure the contract?
j7a	It is said that establishments are sometimes required to make gifts or informal payments to public officials to “get things done” with regard to customs, taxes, licenses, regulations, services etc. On average, what percent of total annual sales, or estimated total annual value, do establishments like this one pay in informal payments or gifts to public officials for this purpose? (M)
j7b	As total annual sales or estimated total annual value
j10	Over the last two years, did this establishment submit an application to obtain an import license?
j11	Approximately how many days did it take to obtain this import license from the day of the application to the day it was granted? (M)
j12	In reference to that application for an import license, was an informal gift or payment expected or requested?
j13	Over the last two years, did this establishment submit an application to obtain an operating license?
j14	Approximately how many days did it take to obtain this operating license from the day of the application to the day it was granted? (M)
j15	When you applied for an operating license was an informal gift requested?
j30a	Tax rates

j30b	Tax administration
j30c	Business licensing and permits
j30e	Political instability
j30f	Corruption
h30	Courts
11	At the end of fiscal year [INSERT LAST COMPLETE FISCAL YEAR], how many permanent, full-time employees did this establishment employ? Please include all employees and managers (INTERVIEWER: include interviewee if applicable). (M)
12	Three fiscal years ago, at the end of fiscal year [INSERT THREE COMPLETE FISCAL YEARS AGO], how many permanent, full-time employees did this establishment employ? Please include all employees and managers (INTERVIEWER: include interviewee if applicable).
16	How many full-time temporary employees did this establishment employ in fiscal year [INSERT LAST COMPLETE FISCAL YEAR]?
18	What was the average length of employment of all full-time temporary employees in fiscal year [INSERT LAST COMPLETE FISCAL YEAR]? (M)
l30a	Labor regulations
l30b	Inadequately educated workforce
m1a	Which of the following elements of the business environment, if any, currently represents the biggest obstacle faced by this establishment.
m1d	Rotation order
n2a	For fiscal year [INSERT LAST COMPLETE FISCAL YEAR], please provide the following information about this establishment: First total annual cost of labor (including wages, salaries, bonuses, social payments)
n2b	Total annual costs of electricity
n2c	Total annual costs of communications services
n3	In fiscal year [INSERT THREE COMPLETE FISCAL YEARS AGO], three fiscal years ago, what were total annual sales for this establishment? (M)
a15m	Time face-to-face interview ends:
a15d	Time face-to-face interview ends:
a15h	Time face-to-face interview ends:
a15min	Time face-to-face interview ends:

a15a1a	Main respondent's position in the firm
a15a2a	Main respondent years working in the firm:
a15a3a	Main respondent gender:
a15a1b	Second respondent position in the firm:
a15a2b	Second respondent years working in the firm
a15a3b	Second respondent gender
a17b	INTERVIEWER COMMENTS:
a18	This questionnaire was completed in:
a19h	If option 2 or 3 in A.18, estimate duration of the whole interview
a19min	If option 2 or 3 in A.18, estimate duration of the whole interview