Addis Ababa Industrial Survey
Wave 1 - 1993

Background Information on Dataset

April 1999

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A.   Introduction

The objective of this paper is to provide potential users of this survey data set with some basic guidelines and explanations which will facilitate the use of the data for their own research or other purposes.

The relevant material is the first wave of a panel data set on a sample of firms within the Ethiopian manufacturing sector, all based in the Addis Ababa region. The first round of the survey was undertaken between September - December 1993. The questionnaire structure and types of data collected were designed to be consistent with other African manufacturing sector surveys carried out under the Regional Program on Enterprise Development (RPED) organised by the World Bank. A further wave of the survey was conducted in 1995 and this data is in the process of being prepared for future dissemination.

The survey covered 220 firms that were selected on a random basis from manufacturing establishments in the Addis Ababa region, of which 30 are public enterprises. The firms constitute a panel which was intended to be broadly representative of the size distribution of firms across the major sectors of Ethiopia's manufacturing industry. These sectors include food processing, textiles and garments, paper products and furniture, metal products and machinery.

Data on each firm was collected at two levels:

- firm level information - relating to the years 1992/1993;
- for each firm, information on a sub-sample of their workers & apprentices for 1993

The dataset is complete, apart from some additional data files relating to firms' financial structure and performance (Section 5 of Questionnaire) which are still in the process of compilation and will be added to this first release as soon as possible. Users should note that the data files are being made available by CSAE in the form in which they were received from the survey organisers, without any additional work having been undertaken to clean the data and check for consistency. Hence, it is suggested that potential users run their own basic consistency checks on the elements of the dataset in which they are interested before using the data in further analytical work.

The full dataset, a scanned copy of the questionnaire and accompanying documentation can be downloaded from the CSAE's website: http://users.ox.ac.uk/~csaeinfo/

CSAE wishes to acknowledge the cooperation of Dr. Taye Mengistae, who was responsible for the implementation of the Ethiopia firm survey, and can be contacted for further information by email at: tmengistae@worldbank.org. The survey was undertaken by a joint team from the Economics Department of Addis Ababa University and the Centre for Study of African Economies, University of Oxford and was funded by the Dutch government.

B.   Description of Questionnaire

The dataset presented here has been extracted from a detailed questionnaire conducted with the owners/ senior managers and, for relevant sections, workers of the sampled manufacturing firms. The original questionnaire was designed by a team from the World Bank, as part of the Regional Program on Enterprise Development (RPED). A coded copy of the questionnaire is included as a downloadable file

The overall questionnaire has been divided into a number of sections, grouping questions related to different aspects of firm-level structure and performance and also a section of supplementary labour market information gathered from interviews with a sample of workers within each firm.

These sections are organised as follows in the Wave I questionnaire:

Survey Sections (Wave I) **

1.   Entrepreneurship Questionnaire
2.   General Firm Questionnaire
3.   Technology Questionnaire
4.   Labour Markets Questionnaire
5.   Financial Markets & Contractual Relations Questionnaire
6.   Dispute Resolution Questionnaire
7.   Infrastructure Questionnaire
8.   Regulation Questionnaire
9.   Business Support Services Questionnaire
10.   Entrepreneurial Strategies Questionnaire

11.   Appendix to Labour Markets Questionnaire:
      Survey for a Sub-Sample of Workers

** Please note that firm names and contact details have been excluded from the data released here in order to preserve the anonymity of the firms interviewed.

Variables within the data eg output, employment, exports can be identified and extracted by referring to the unique code for the data point which contains the relevant data entry for each of these variables, as shown in the coded questionnaire.

C. Organisation of the data files

For ease of reference, the following files are included in this release with a brief description of their contents. Please refer to the following sections for a more detailed description of the files, how they link together and how they can be used.

Raw Data Files

The raw data files are in SPSS portable file format with extension "filename.por". There are a total of 41 files which contain data on all sections of the questionnaire, apart from several pages of Section 5 on Financial Markets and Contractual Relations.

With one or two exceptions, each page of the questionnaire has been entered as a separate data file called 'RD1*****' where RD1 stands for "Round 1". The data file name is then based upon the respective section of the questionnaire and page number eg the data file RD12d20 contains data from section 2d page 20 of the questionnaire.

Section Data Files

In order to facilitate the use of the data, the individual page data files have also been grouped together into section files, relating to the relevant section of the questionnaire, using the SAS statistics programme. Please note that these files contain the same data as the SPSS raw data files mentioned above, just grouped by section of the questionnaire.

There are a total of 11 section files ('Sect1' - 'Sect10' plus a 'Workers' file) which are stored in SAS transport file format with the extension '*.dat'. These section files have been used in the genfirm.sas programme to identify and organise a number of the main firm level variables.

Please note that these files will first need to be converted from 'transport file' format in order to become usable. An example of how to convert SAS transport files into SAS data files (*.sd2) is included in the conversion programme 'convert.sas' described below.

SAS Programme Files

(a) genfirm.sas

This SAS programme identifies a number of the key firm-level variables in the dataset and organises these into a format from which it is possible to run a production function. In doing this it has been necessary to take into account various differences in reporting conventions between firms in the sample – for example, firm's reporting their production and sales data for different time periods ie weeks, months, years. The programme creates annualised values for these variables. The programme also creates a number of dummy variables relating to firm size, industrial sector, ownership, legal status and other key firm characteristics.

In order to be able to run this programme on the data in SAS, it will first be necessary to modify the library names assigned at the top of the programme which reference the path of the directory in which the respective data files are stored. At the moment the reference is to a directory path 'd:\ethiopia\sasdata\sectfiles'.

(b) convert.sas

This SAS programme enables the conversion of the SAS files containing the section data from transport format (*.dat) into data file format (*.sd2). This will be necessary in order to be able to run the genfirm.sas programme on the data. As above, in order to run this conversion programme, it will be necessary to modify the library names contained within the programme in order to reference the correct directory path on the user's computer system.

Coded Questionnaire

A scanned copy of the coded questionnaire has been included in downloadable *.pdf format. This can be used to identify the variable labels that have been used in entering the data into the data files. The relevant sections and subsections of the questionnaire, around which the data files have been organised, are shown at the top of each page.

Variable Labels & Names

The principle used for labeling variables in the raw data files and section files is that each label begins with the letter "R" for "record" followed by the section number, followed by the subsection letter, followed by the question number. Thus, variable "R2b42" is the response to question number 42 of subsection b of section 2 of the questionnaire.

Some of the main firm-level variables have also been identified by names allocated to them in the genfirm.sas file. A listing of these variables is included in Table 1 below showing the variable name, description and the coded question reference in the questionnaire to which it relates.

D. Main Variables - Definitions

The attached Table 1 contains a listing of the main variables contained in the programme file 'genfirm.sas'. Details include the variable name, a brief description and the relevant question reference within the questionnaire. These additional notes provide further information on the definition and derivation of some of the more important variables:

Capital Stock (CAP)   This is the replacement value of the firm's total capital stock, which is the measure used in all derived variables using capital. Another variable CAPSALE measures the capital stock's estimated resale value.

Capacity Utilisation (CAPACT)
                           Measured as actual output/ potential output * 100. Potential output was determined by asking firms how much additional output they could produce with no additional investment in plant and equipment.

Intermediate Costs (INT)   Firm's raw material costs plus indirect costs, including rent, utilities and other overheads.

Sales Value (SALES)   Reported value of firm's total sales of manufactured goods in the previous year, for firms which keep annual accounts. For firms without annual accounts, another variable (SALECALC) aggregates the sale values of the firm's five most important products in the previous period. Where SALES is missing, SALES = SALECALC.

Output (OUTPUT)   Value of firm's total production during previous year. Note that where there is a missing observation, output is set as the value of firm's total sales in the previous year (= SALES).

Firm's Profits (PROFIT)   Calculated by taking firm's output less wages less intermediate inputs and indirect costs. There is no allowance for depreciation. This is a measure of gross profits before tax and other charges.

Profit Rate (PRATE)   Measured as the firm's profits as a proportion of the capital stock (replacement value) ie the return on capital employed.

Value Added (VAD)   Calculated by taking firm output less intermediate inputs and indirect costs. This is main variable used in calculating various measures of firm productivity.

Capital Share (CAPSH)   The % contribution of capital to the firm's value added. Calculated as the ratio between the return to capital (CAP*PRATE) and total factor costs (CAP*PRATE+EMP*WRATE).

Labour Share (LABSH)   The % contribution of labour to the firm's value added.
                              Calculated as the ratio between the return to labour
                              (EMP*WRATE) and total factor costs
                              (CAP*PRATE+EMP*WRATE).

Sector dummies:

These have been constructed using the sector codes allocated to firms by the Ethiopian
Ministry of Industry, using their own 4 digit classification system (see SECTOR variable).

FOODS	Dummy = 1 for food and beverages sector
BAKERY	Dummy = 1 for bakeries subsector
GARMENT	Dummy = 1 for garment sector
FOOTWEAR	Dummy = 1 for footwear sector
TEXTILE	Dummy = 1 for textile sector
PAPER	Dummy = 1 for paper and printing sector
FURN	Dummy = 1 for furniture sector
METAL	Dummy = 1 for metal products sector
MACHINES	Dummy = 1 for machinery sector
OTHER	Dummy = 1 for firms in other sectors

Size dummies:

MICRO	Dummy = 1 for microenterprises (classified as firms with between 1 – 5 employees inclusive)
SMALL	Dummy = 1 for small firms (6 – 29 employees inclusive)
MEDIUM	Dummy = 1 for medium-sized firms (30 – 99 employees incl.)
LARGE	Dummy = 1 for large firms (100 or more employees)

Table 1: Ethiopia Dataset Variables Created in SAS program file - genfirm.sas

Variable Name	Description	Question Reference Coding (Wave 1)
FIRM	Firm identification number in survey	ENTERP

Common Firm Characteristics, Size, Sector, Ownership

BAKERY	Dummy variable: bakery subsector	SECTOR
FOODS	Dummy variable: food & beverage subsector	
FURN	Dummy variable: furniture subsector	
FOOTWEAR	Dummy variable: footwear subsector	
GARMENT	Dummy variable: garment subsector	
MACHINES	Dummy variable: machinery subsector	
METAL	Dummy variable: metal products subsector	
TEXTILE	Dummy variable: textile subsector	
PAPER	Dummy variable: wood products subsector	
SIZEDUM	Dummy variable for size of firm (4 way classification)	R4PA1
MICRO	Dummy variable: microenterprises (1-5 employees)	
SMALL	Dummy variable: small firms (6-29 employees)	
MEDIUM	Dummy variable: medium firms (30-100 employees)	
LARGE	Dummy variable: large firms (>100 employees)	
LEGAL	Dummy variable for legal status of firm	R1A2
SOLO	Dummy: sole trader	
PARTNER	Dummy: partnership	
LLE	Dummy: limited liability enterprise	
STATCORP	Dummy: state-owned corporation	
COOP	Dummy: Cooperative	

Table 1:	Ethiopia Dataset Variables (continued)	
Variable Name	**Description**	**Question Reference**
SUBDOM	Dummy: subsidiary of domestic firm	
SUBFOR	Dummy: subsidiary of multinational corporation	
AFRICAN	Dummy: African owner(s)	R1A4
EUROPEAN	Dummy: European owner(s)	
ASIAN	Dummy: Asian owner(s)	
MIDEAST	Dummy: Middle Eastern owner(s)	
OTHER	Dummy: Owner(s) of other ethnic origin	
PRIVDOM	Dummy: Private Domestic firms ie Ethiopian owners only	R1A3
PRIVFOR	Dummy: Private Foreign firms ie foreign owners only	
PRIVDF	Dummy: Private Mixed firms ie Ethiopian & foreign owners	
SPRIVDOM	Dummy: Mixed State & Private: Ethiopian only	
SPRIVFOR	Dummy: Mixed State & Private: Foreign private only	
SPRIVDF	Dummy: Mixed State & Private with both Ethiopian & Foreign private owners	
STATE	Dummy: 100% state-owned enterprise	
PCFOR	Percentage of foreign ownership of firm	R1A5
STARTYR	Year in which firm was founded	R1A1
FMAGE	Age of firm (in years)	
EMP00	Employment level when firm was founded	R1B6
SALES00	Annual sales when firm started operations	R1B6A
EDUCENT	Education level of entrepreneur (total years)	R1C7
EDLEVEL	Highest level of education reached by entrepreneur	R1C8
GENDER	Gender of entrepreneur	R1C1
AGE	Age of entrepreneur	R1C2

Table 1:	Ethiopia Dataset Variables (continued)	
Variable Name	Description	Question Reference

Main Firm Level Variables

Variable Name	Description	Question Reference
ACCOUNTS	Dummy: does firm keep annual accounts?	R2A1
PERIOD	Dummy: easiest time period for firm to report production data	R2A2
SALES	Firm's total annualised sales value (in birr)	R2A9
SALECALC	Total annual sales value of firm's main products	R2A5A-E
OUTPUT	Total value of firm's output/annum	R2A10
RAWMAT	Total cost of raw material inputs/ annum	R2A11
MISC	Total indirect costs of firm/annum (includes rent, utilities & other overheads)	R2A20A-F, R2A22
WAGES	Total firm wage bill (excluding allowances)/annum	R2A14
EXPDUM	Dummy : exporting firm (takes value = 1 if firm exports)	R2A28
PCEXP	Percentage of production exported	R2A28
EMP	Total employment level of firm (includes both full-time & part-time salaried employees)	R4PA1A1+A2+B1+B2
EMPFT	Number of full-time employees	R4PA1A1+A2
EMPPT	Number of part-time employees	R4PA1B1+B2
PIMPINP	% of total firm raw materials that are imported	R2A12
VAD	Value added (= OUTPUT-RAWMAT-MISC)	
PROFIT	Firm's gross profits (= VAD-WAGES)	
CAPSALE	Resale value of firm's capital stock (plant & equipment)	R2A18C
CAP	Replacement value of firm's capital stock (plant & equipment)	R2A19C
CAPLB	Replacement value of firm's land & buildings	R2A19A+B
LABSH	Labour's share of value added (see note)	
CAPSH	Capital's share of value added (see note)	

Table 1:	Ethiopia Dataset Variables (continued)	
Variable Name	**Description**	**Question Reference**

Variable Name	Description	Question Reference
PREMP	Gross profits/employee	
VADEMP	Value added/ employee	
OUTEMP	Value of output/employee	
INT	Intermediate Costs (=RAWMAT+MISC)	
CAPACT	Level of capacity utilisation (see note)	R2A27
INV92	Investment in plant & equipment 1992 (exc. Maintenance)	R2A23
INV93	Investment in plant & equipment in 1993 to date	R2A24
PRATE	Profit rate or return on capital employed (=PROFIT/CAP)	
WRATE	Firm's average wage rate (total wages/ employment)	
KLR	Firm's capital/ labour ratio (=CAP/EMP)	
VADCAP	Value added as proportion of firm's capital stock	
CAPVAD	Capital stock as proportion of firm's value added	