Mexican Master Panel Notes
main file: mastermx.xls

RESEARCH NOTES

This document details our methodology in capturing (and estimating) variables for this study. The first section explains the master panel, which we use as a source for all of our quantitative analysis. A final section concludes with a list of sources of census data, listed by year, consulted to create the master panel.

1. MASTER PANEL

A master panel was created as an Excel 4.0 document that could be read by the TSP statistical software (for subsequent regression analysis). Our data is arranged in the panel data (Times Series-Cross Section) format. Any given row, referred to as an observation, contains information about one particular firm at one particular year. As available, information for forty different variables, as listed below, was entered for each observation.

Year

Denotes census year (1837-1933) from which observation data was collected.

State

A number from 1 to 32 that denotes state at which firm is located. The classification is as follows:

Name	**Code**
Aguascalientes	1
Baja California	2
Baja California Sur	3
Campeche	4
Chiapas	5
Chihuahua	6
Coahuila de Zaragoza	7
Colima	8
Distrito Federal	9
Durango	10
Guanajuato	11
Guerrero	12
Hidalgo	13
Jalisco	14
Mexico	15
Michoacan de Ocampo	16
Morelos	17
Nayarit	18
Nuevo Leon	19
Oaxaca	20
Puebla	21
Queretaro	22
Quintana Roo	23
San Luis Potosi	24
Sinaloa	25
Sonora	26
Tabasco	27
Tamaulipas	28
Tlaxcala	29
Veracruz-Llave	30

Yucatan	31
Zacatecas	32

Statname

Name of state in text, as originally captured from census sheets.

County

Municipality where firm is located, as originally captured from census sheets.

City

City where firm conducts business.

Company

Company name as written in census.

Namekey

Abbreviated form of company name for sorting purposes only.

Owner

If listed in census, this column shows the name of company owner.

Ownkey

Abbreviated form of owner name for sorting purposes and to check on the ownerships of mills.

Millcode

A numerical code was assigned to each distinct mill as listed in censuses. The following criteria was used to assign mill codes for any given census (see the following comment on Time Series for additional steps in tracking firms over time). Since there were at occasions various spelling (and name) variations for one firm, some criteria was needed to distinguish among firms with similar names:

> ***Cross-Sections***
>
> Two mills with different names in the same year
>
> These two mills were considered to be different and were assigned different codes.
>
> Two mills with the exact same company name in same year
>
> If mills were located in two separate states, they were considered distinct mills and, therefore, assigned different mill codes. If mills were located in the same state, we verified that they were not a copy of each other. We went to the original census for cross-referencing and deleted a firm that either contained inaccurate or incomplete data or if it was a duplicate of the other observation.

Two mills with similar names in the same year

If mills were located in two separate states, they were considered distinct mills and were assigned different codes. If located in the same state, we cross-referenced key variables such as spindles, workers, and value to ascertain if they were the same mills. If either the variables or the addresses appeared to be different, we considered them two different mills. If we could not establish a difference, we went to the original census and kept the observation that corresponded exactly to our original source.

Time Series

We assigned mill codes to observations as we entered them. We started out with one census and assigned different codes to each one of the observations (see criteria for cross-sections above). Upon entering data from a second census, we searched for name matches. In the case of an exact name match, we checked for some key variables (state, owner, capital, financial information, fusos, workers, and value) to see if they were comparable (location remained the same; the capital stock remained fairly stable from one year to the next; fusos and workers, for instance, were a bit more variable but changes from one year to the next were not drastic). If we considered that an observation from the second census did not have a match in the previous one, we proceeded to assign it a new mill code. The process was repeated when entering subsequent census data. We would check the new observations versus our master panel (with previous census data and already assigned mill codes) and decide whether an observation corresponded to a new or existing firm.

The task of assigning mill codes was relatively straightforward when names (and other data) matched. It was made more difficult when there were spelling variations in the company names. Our basic steps were as follows.

First, we would perform a search on the whole master panel making use of every usable keyword in a company name.

In the case of name changes, ownership data was particularly important in helping us identify observations of the same firm over time.

Traded

Dummy(=1) for mill being traded in any stock market at any given period of time.

Satraded

Dummy(=1) for a “Sociedad Anónima” (S.A.) mill traded in at least one year during 1866-1934.

Defsa

Dummy(=1) if mill is “Satraded” as defined above if the label “S.A.” appears in company at least once during 1866-1934. This variable is used as a proxy for joint stock limited liability status.

This is the old definition of defsa.

Samaybe

Dummy(=1) for mill that could be traded because it has “Cia”, or “Compañía” in company name.

Saplus

Dummy(=1) if firm has been classified as either “Defsa” or “Samaybe.”

Vintage

Dummy for age. If firm was founded after 1905, Vintage equals 1 for a new firm. Vintage equals 0 otherwise.

Ciacode2

Numerical code for a company. Because not all mills reported both output and inputs, we had to consolidate mills into companies. Ownership changed with time so we assigned mills to a respective company in the following manner. Starting with the last period in our master panel, we gave each owner a company code. We followed the mills that they owned at this terminal time and went back in time, coding them with their last owner’s company code. The process was repeated for T, T-1, T-2, ..., until we reached 1837.

Note: the owner at any given time may not coincide with the company code. This is so because the company code tracks the mill over the longest period possible whereas the owner code only indicates the current owner.

Single-mill companies: range 5000-5999
Multi-mill companies: range 4000-4999

Regcode2

Same explanation as Ciacode2 but a different numerical code.

Single-mill: 5000-5999

Multi-mill: 6000-6999

Renumbering the Ciacode2 company codes was step to make the tsp routines more convenient.

Sareal

We changed the definition of Defsa to be valid only for years after incorporation became an administrative procedure. Also, this code applies to companies not mills.

Traded3

We changed the definition of Traded to be valid only for companies that were actually traded.

Deflator

Deflator for current year, base year 1890=100. Deflator series were constructed using methodology described in paper 1 on Mexican productivity. The index includes tariff rate. The spreadsheet that estimates it is located at: c:\textiles\mexico\panels\tariff.xls. This spreadsheet includes sources.

Totvalue

Nominal value of production (in current pesos).

If Reported, this is the value that we include here. If not, we estimate it (in this order of priority):

1) Quota*20 (excise tax was 5 % of output)
2) Output value (multiplying their output times prevailing prices)

Val1890

Deflated value of production using 'Deflator' and 'Totvalue' measures. Base year 1890=100.

Val1890

Deflated value of production using 'Deflator' and 'Totvalue' measures and a normalization coefficient to transform base year from 1890 to 1900.

Spindles

Reported number of spindles.

Workers

Reported number of workers.

Labor

Adjustd number of workers to reflect reductions in work week hours. *This is the variable we use for our calculations as a proxy for labor.*

Hilaza

Yarn Output.

Cloth Output

Yarn Output.

Meters

Output measured in meters of cloth.

Hilaval

Value of Yarn Output. Yarn Output*yarn price (or average price if mill does not report it).

Mantaval

Value of Cloth Output. Cloth Output*cloth price (or average price if mill does not report it).

Quota

Industry tax taken from excise tax records.

2. TABLES

See methods section for papers 1 and 2.

3. REGRESSIONS

See methods section for papers 1 and 2.

4. SOURCES

Observations for the master panel were extracted from the following sources:

The sources are as follows: 1837-1839 and 1841-1843 data were obtained from Secretaría de Hacienda y Crédito Público (SHCP), *Documentos para el Estudio de la Industrialización de México, 1837-1845* (Mexico City, 1977), p. 81-82; data for 1840 were partially retrieved from L. Barjau Martinez et al., 'Estadísticas Económicas del Siglo XIX', *Cuadernos de Trabajo del Departamento de Investigaciones Históricas, INAH*, no. 14 (Mexico City, July 1976), Table 13, and from SHCP, "Industrialización en México", p. 82; the 1844 census was compiled from Barjau Martinez, 'Estadísticas Económicas', Tables 17-19; data for 1845 were obtained from Tables 20-21 of Barjau Martinez, 'Estadísticas Económicas'; 1850 data were retrieved from Secretaría de Fomento, Colonización e Industria, *Memoria que la Dirección De Colonización e Industria presentó al Ministerio De Relaciones en 17 de Enero de 1852, sobre el estado de estos Ramos en el Año Anterior* (Mexico, 1852); 1854 data were obtained from Gobierno del Estado de México, *Estadística del Departamento de México* (Mexico, 1980), Table 2; 1857 data were obtained from Secretaría del Estado, *Memoria de la Secretaría del Estado y del Despacho de Fomento, Colonización, Industria y Comercio de la República Mexicana*, (Mexico, 1857); 1862 data were obtained from J.M. Pérez Hernandez, *Estadística de la República Mexicana*, (Guadalajara, 1862); 1865 data were obtained from Ministerio de Fomento, *Memoria 1865* (Mexico, 1866); 1878 data were taken from Secretaría de Hacienda, *Estadísticas de la República Mexicana*, (Mexico City, 1880); 1883 data were taken from A. Garcia Cubas, *Cuadro Geográfico, Estadístico, Descriptivo é Histórico de los Estados Unidos Mexicanos*, (Mexico City, 1884-1885); 1888 data were taken from Secretaría de Fomento, *Boletin Semestral de la República Mexicana*, (Mexico City, 1890); 1891 data were taken A. Garcia Cubas, *Mexico: Its Trade, Industries and Resources*, (Mexico City, 1893); 1893 data were taken from Dirección General de Estadística, *Anuario Estadístico de la República Mexicana 1893-94*, (Mexico, 1894); 1895 data were taken from Secretaría de Hacienda, *Memoria de la Secretaría de Hacienda*, (Mexico, 1896); 1896 data were taken from Secretaría de Hacienda, *Estadística de la República Mexicana*, (Mexico, 1896); 1898-1913 excise tax data were taken from the Ministry of Finance's periodical reports in the financial weekly *Semana Mercantil* published in Mexico City; 1912 data were taken from 'Extracto de las Manifestaciones presentadas por los fabricantes de hilados y tejidos de algodón para el semestre de enero a junio de 1912', located at the Archivo General de la Nación (AGN), Caja 5, Exp. 4, (Mexico, n.d.); 1913 data were also located in the same archives within 'Extracto de las Manifestaciones presentadas por los fabricantes de hilados y tejidos de algodón para el semestre de enero a junio de 1913', AGN, Caja 31, Exp. 2, (Mexico, n.d.); 1914 data were taken from the July 4 1914 issue of Mexico City's *El Economista Mexicano*. 1915-1932 data were taken from periodical reports of excise tax data found in Secretaría de Hacienda y Crédito Público, *Boletín de la Secretaría de Hacienda y Crédito Público*, (Mexico City, 1917-1932); 1924-1933 statewide data was obtained from typewritten reports of the Secretaría de Hacienda y Crédito Público--Departamento de Estadística, "Estadísticas del Ramo de Hilados y Tejidos de Algodón y de Lana", located at the Library of the Banco de

México; finally, national data for 1898-1924 was taken from Dirección General de Estadística, *Anuario Estadístico 1923-1924*, Vol. II, (Mexico City, 1926).