NÚMERO 370

FAUSTO HERNÁNDEZ TRILLO AND RICARDO SMITH RAMÍREZ

Rating Sub-National Government Debt in LDCs: Does size matter?

NOVIEMBRE 2006

CIDE

www.cide.edu

Abstract

In this paper we study the determinants of both the decision to be rated and the ratings for sub-national governments in a prominent LDC, Mexico. One of the main findings is that entity size does matter; as a matter of fact, population size is one of the two rating determinants common to all the raters under analysis. In a country with a long bailing-out history, these results support our too-big-to-fail hypothesis. Namely, large entities select themselves to be rated (and so to obtain new debt) because they know they have political power; and secondly, raters know that the probability that federal government bail out large entities is high. Under these circumstances requiring the services of a rating firm has little sense since market may assess the risk of these entities as that of the sovereign instruments. If so, sub-national governments may save the cost of the grading. Besides, the assessment of sovereign debt risk is normally free of charge.

Methodologically, we extend and modify Moon and Stostsky (1993) seminal work in several ways. First, our model considers six latent dependent variables (instead of four). Second, we formulate a Monte Carlo Expectation Maximization (MCEM) algorithm to circumvent the estimation of multidimensional integrals in lieu of using the probability simulator of Borsch-Supan and Hajivassiliou (1993). Finally, our discussion is based on marginal effects rather on parameter estimates.

Resumen

En este trabajo se estudian los determinantes tanto de la decisión a someterse a una calificación como de la misma para gobiernos municipales en México. El principal factor que encontramos para ambos casos es el de tamaño del municipio; éste lo aproximamos con la población. Es interesante observar que es el único factor común a las tres calificadoras de riesgo. En general, este resultado es consistente con la hipótesis de muy-grande-para-quebrar, la que sugiere que en este caso cuando la entidad esté en problemas, el gobierno federal la rescata. En este sentido las entidades grandes se auto-seleccionan para ser calificadas. Esto puede ser interpretado, a su vez, como un elemento con contenido político, es decir, población en este sentido es sinónimo de voto electoral, por lo que es rentable rescatar a la entidad y esto se refleja en la calificación crediticia. Bajo esta circunstancia el requerimiento de la calificación puede ser redundante, sobre todo porque las agencias cobran por el servicio. En otras palabras, las entidades grandes pueden ahorrarse el costo de este producto, pues el riesgo debiera ser el soberano, mismo que ya tiene una calificación sin costo alguno para gobierno federal.

Metodológicamente extendemos y modificamos el trabajo de Moon and Stostsky (1993) de varias maneras. Primero, nuestro modelo cualitativo de variable dependiente considera seis variables latentes, en lugar de cuatro. Segundo, formulamos un algoritmo de maximización esperada de Monte Carlo para resolver la estimación de los integrales multidimensionales en lugar de usar el simulador de probabilidad de Borsch-Supan and Hajivassiliou (1993). Finalmente, nuestra discusión se basa en los efectos marginales en lugar de los parámetros estimados.

Introduction

Bond ratings have existed for nearly a century. Debt issued by firms, sovereign countries and sub national governments (SNGs)[1] are regularly rated in industrial countries (Cantor and Peckman, 1995). The rating history for less developed countries (LDCs) is shorter. International raters turned their attention to LDCs only in the 1980s, when agencies started rating LDCs sovereign bonds as a reaction to several international debt crises. As a result, literature on grading SNGs and sovereign bonds in industrial countries abound while for LDCs is scarce, but for sovereign entities.

Rating agencies have been questioned recently when grading LDCs. For example, the *Wall Street Journal* on January 5, 2004 reports that Credit Ratings in China can be mere guess working. In the case of sovereign credit ratings, there is a growing literature that has cast doubts on its role, especially after the Asian and Argentinean crises of 1997-1998 and 2001, respectively (e.g. Reinhart, 2001 and 2002). In this paper we attempt to assess the performance of the agencies and the adequacy of public oversight of the rating industry in the Mexican Sub National Governments (SNGs) bond market.

This case is interesting because Latin America's federal governments have a long tradition of bailing out sub-national governments.[2] This fact raises several issues: firstly, the adequacy of the rating process and, secondly, its usefulness, especially because SNGs, in contrast to sovereign entities, pay for this service. Surprisingly, one of the largest states in Mexico (the State of Mexico) has been *continuously* bailed out since 1995 (virtually a bankrupt SNG) and still has been assigned an investment grade rating.[3] Sanguinetti (2002) reports that one Argentinean provincial government —La Rioja— was bailed out several times before the 2001 crisis erupted in that country and still received investment grading.[4]

Hence it is important to determine how raters take bailouts into account when grading a SNG in a LDC. After all, the bond ratings are meant to indicate the likelihood of default (see Bhatia, 2002).[5] Thus, if SNGs are to be bailed out any time they face financial problems, their risk is passed on to federal

[1] A pioneering work for SNGs is Carleton and Lerner (1969).

[2] Bevilaqua, (2000) documents this phenomenon for Brasil; Sanguinetti et al. (2000) does it for Argentina; Serrano (1999) for Chile, and Díaz et al. (2002) for Mexico.

[3] Reported by *Bloomberg* on August 13, 2003 by Thomas Black. The grade assigned is BBB.

[4] This author, among others, argues that the Argentinean crisis was in part due to fiscal indiscipline of SNGs governments in that country. For this reason, raters were questioned in Argentina.

[5] It has been showed that these agencies specialize in gathering and processing financial information and are certified by screening agents, which in turn are able to diversify their risky payoffs. In this setting raters solve, at least in part, the informational asymmetry in capital markets, involving insiders possessing more accurate information about the true economic values of their firms (or governments) than outsiders. In turn, rating agencies gain from sharing their information (see Millon and Thakor, 1985).

government. Therefore, SNG rates ought to be similar to that of the sovereign debt. That seems to be happening in LDCs. If so, the purpose of the whole process is not clear. This characteristic makes this study interesting.

Besides, we claim that there are many differences between industrial and LDC countries.[6] Typically, developing countries have serious institutional and legal shortcomings (see IADB, 1997); they are very centralized and have just started a fiscal decentralization reform, which in many cases has responded more to a political pressure than to efficient-enhancing purposes (see Giugalle and Webb, 2001); they are more prone to financial crisis and market volatility is greater (see Bekaert and Campbell, 1997); law enforcement is deficient (Laporta and López de Silanes, 2002); among others. These features, we argue, are important when rating bonds in their local currencies (Mexican SNGs are not allowed to issue foreign currency denominated debt) and call for different rating technologies compared to those used to rate in industrial countries where many of these shortcomings are not present. However, according to Fitch, (2002) rating methodologies are the same.

In this article, we pursue the following. First, we analyze differences in grading to find out whether these are significant among both municipal entities and graders; second, we study the grade determinants by extending and modifying Moon and Stostsky, (1993) seminal methodology, and finally we attempt to find out what determines choosing one grading agency in particular. Our model differs from Moon and Stostky in that we consider six latent dependent variables (instead of four). In addition, we formulate a Monte Carlo Expectation Maximization (MCEM) algorithm to circumvent the estimation of multidimensional integrals in lieu of using the probability simulator of Borsch-Supan and Hajivassiliou, (1993) to solve the integrals. Our methodology allows us to identify factors that affect the propensity to be rated as well as those that raters take into account for risk assessment.

Our results suggest that rating agencies differ in how they weight relevant financial variables to asses the risk. It is noteworthy that one of the strongest common factors for the all three raters under study is population. We interpret this as a *too-big-to-fail* variable. In this sense, large entities are bailed out when facing financial problems and raters know this. In essence, raters take into account the bailout phenomenon based on the size of the municipality. This result is consistent with Hernández, et al (2002) and to our knowledge is novel in literature.[7]

In addition, we found that there is a self selection process in the propensity to be rated as mostly large municipalities, governed by the non-leftist party, choose to get a grade. Under these circumstances requiring the services of a rating firm has little sense since market may assess the risk of

[6] Laulajainen, (1999) argues that different institutional settings should matter when establishing rating principles.

[7] Population has been interpreted as political variable in the US system of federal transfers under the New Deal. For a discussion, see Wallis (1998, 2001) and Fleck (2001).

these entities as that of the sovereign instruments. If so, sub-national governments may save the cost of the grading.

The paper is organized as follows. Section 1 provides a brief on Mexican intergovernmental relations and reviews the SNGs debt environment in Mexico. Section 2 presents a discussion about the opacity of SNGs in the country. In section 3 we present the model, describe the variables and examine some descriptive statistics, while section 4 discusses the empirical results. The last section provides final remarks.

1. A brief on Mexico's intergovernmental relations and on SNG debt regulation

Mexico is a Federal Republic conformed by three levels of government: the central government, 32 local entities (which include 31 states and the federal district) and 2477 municipalities. The country, as many in the Latin American region, is characterized by strong regional and state disparities. While the Federal District and states of Mexico and Nuevo Leon produce about 40 per cent of total GDP, Chiapas, Guerrero, Hidalgo and Oaxaca reach only a subtotal of 6.8 per cent of total GDP; clearly the Southern part of Mexico is by far the poorest region in the country.

Mexico follows a *revenue sharing* system where the federal government collects the main taxes, namely corporate and personal income taxes, the value-added tax and most excise taxes. These constitute 95 per cent of total public sector tax revenue. Twenty per cent of this revenue is redistributed among the states and municipalities through formula. These net block transfers are known as *participaciones*. The main deficiencies of the system that have been identified come from the lack of tax independence from local governments and from the formula itself.[8] Recently, efforts of decentralization have been made. This decentralization, however, has not included the revenue side but concentrates only on expenditures. Moreover, the process has been anarchic and has responded to political pressures and not to efficiency aspects (Hernández, 1998).

Regulation of SNG debt is perhaps one of the most important elements to explain its behavior (Ter Minnasian, 1999). For this reason, we now explain the Mexican case in more detail.

Subnational government borrowing is regulated firstly by the National Constitution, which specifies that states can only borrow in pesos and solely for productive investment. The details for guaranteeing state credits are contained in the National Fiscal Coordination Law (NFCL), which stipulates that these entities can borrow from commercial and/or development banks

[8] For details see Hernández, 1998.

and from writing bonds to finance investment projects subject to the previous authorization of the State Congress.

Prior to the *tequila* crisis of 1994-1995, when the country was dominated by a unique political party, SNG debt was virtually decided by the federal government in a unilateral way through a control over state governments (Díaz, 2001). Later, as a consequence of the rapid democratization of the country, this control ended. The end of the control allowed states to take advantage of the federal government's concerns for both the banking system (which was nearly bankrupt as a result of the tequila crisis) and for the ability of states to continue delivering public services of their responsibility.[9]

Bailouts were common under these circumstances, though the largest in Mexican history was extended in 1995. As a consequence, virtually no commercial bank developed their institutional capacity to assess sub-national lending. When the tequila crisis erupted, most states had high debt ratios; thus federal bailout occurred.

To reverse the situation, Mexican federal government has faced the challenge to guarantee that bailouts will not occur in the future anymore. This would allegedly be solved by imposing ex ante market-based mechanism. So a new regulatory framework for debt management by local governments was introduced.[10]

States and creditors were induced to make their own trust arrangements for the collaterization of debt with the block transfers and assume the legal risks involved and recourse to the federal government. A link between the capital risk weighting of bank loans to SNGs and those governments' credit rating was established.

In particular, two current, published, global scale local currency credit ratings performed by international reputable agencies are used by bank regulators to assign capital risk weightings to loans given to state and municipalities. To control for agency shopping, two ratings are called for by regulation and, in case of large discrepancies, the capital weighting of the worst rate applies.

The main purpose of the regulation is to discipline SNG debt markets, especially in the new framework characterized by the absence of federal intervention. Financially weaker states and municipalities are likely to be priced or rationed out of the market while stronger ones would see interest rates on their loans fall.[11]

---

[9] Hernández, 1997.

[10] Firms (or governments) benefit from obtaining a good rating by lowering the cost of servicing the debt. Many studies for industrial countries have demonstrated empirically that this is generally the case, as they have gained greater acceptance in the market. Ratings have also been used in financial regulation because it simplifies the task of prudential regulation (Cantor y Peckman, 1995). Thus, regulators have adopted ratings-dependent rules as in the Mexican case.

[11] See, for details, Giugalle et al. (2001).

Another important element in the new regulation is the registration of SNG loans with the federal government.[12] Registration was made conditional upon the borrowing state or municipality being current on the publication of its debt and associated fiscal statistics from preceding year's final accounts, and on all of its debt service obligations towards the Government's development banks. At the same time, and to make that registration appealing, unregistered loans are automatically risk weighted by the regulators at 150 per cent.

Several elements need to be considered, however, to ensure the success of this type of regulation. They include: i) market credibility of the federal commitment about not bailing out defaulting SNGs; ii) quality of the enforcement of capital rules; and iii) quality and reliance of SNG fiscal information as well as homogeneity in accounting standards.[13]

As we pointed out in the introduction, the largest state in Mexico has been *continuously* bailed out as reported by Bloomberg.[14] Furthermore, states and municipalities as of today differ in their accounting standards and not all of them publish their financial statements (Aregional, 2004). These elements pose some doubts in the regulation.

2. Are Mexican SNGs opaque?

SNGs fiscal information is like a black box in Mexico, mainly due to a lack of an adequate institutional and legal framework and a lack of accounting standards.[15] In general, rule of law in Mexico is poor (La Porta and López de Silanes, 2001); this problem is larger at state and municipal levels, where transparency is non-existent as their governments are not required to make public their financial statements (Ugalde, 2002).

All above issues should be taken into account when rating SNG bonds. Were SNGs transparent we would not need a lender of last resort since fully transparent states could borrow at market rates that fairly reflected their risk. However, SNGs transparency —and thus financial soundness— is more a matter of faith than of fact in Mexico. To discuss this point we use Morgan (2002) definition of relative opacity.

This is defined in terms of disagreement between the major bond rating agencies (Fitch, S&P and Moody's) when grading an entity and is used as a proxy for uncertainty. The argument is: if SNG risk is harder to observe, the raters in the business of judging risk should disagree more over SNG bond

[12] In the past, all loans had to be registered with federal government.

[13] Mexican SNGs have had a tradition of opacity when reporting financial statements. For this reason, accounting standards are heterogeneous. This is a point that should be taken care of.

[14] Reported by *Bloomberg* on August 13, 2003 by Thomas Black.

[15] For example, for some municipalities the service of paving roads is registered in current expenditures, whereas for others it is an investment, see Hernández, (1998).

issues than over other entities. As Table 1 shows they do in the SNG Mexican case. This table presents Kappa statistics,[16] which are used as a measure of disagreement in biometrics (Cohen, 1968). Kappa essentially locates raters along a spectrum between complete disagreement (kappa=0) and complete agreement (kappa=1).

Kappa is 0.13 for the whole set of SNGs (states and municipalities) rated by the three agencies, which suggests a strong disagreement. This figure worsens to 0.05 if only state governments are included. Some SNGs have applied only for two ratings. In this case, when the agencies are Fitch and S&P, the kappa is 0.24; if Fitch and Moody's, the figure is 0.17, and finally Moody's and S & P have a 0.04 kappa indicator. These figures suggest that SNGs are opaque in the Morgan (2002) sense.[17]

The Kappa analysis suggests that raters disagree to some extent when grading single SNGs in Mexico. Ederington et al (1987) suggests that rating may differ due to three reasons. First, agencies may agree on creditworthiness of a bond but apply different standards for a particular rating. Second, they may differ systematically in the factors they consider or the weights attached to each factor. And third, due to the inherent subjectivity in the process, they may give different ratings for random reasons. Complementarily, Morgan (2002) suggests that the kappa analysis may also indicate some opacity of the SNG.

For this reason the study of the determinants of those ratings may provide some light on how agencies develop their ratings for entities in LDCs.

3. Empirical Model and Estimation

A selectivity problem arises in the analysis of the determinants of SNG bond rating. It follows from the fact that ratings are observed only for those municipalities that have chosen to be rated rather than for all entities with outstanding debt in the sample.

As in Moon and Stotsky, (1993) we treat this self-selection problem by developing a model in which we analyze jointly the determinants of the bond rating and the determinants of the decision to obtain a rating. By accounting for tri-variate self-selection (Moody's, S&P and Fitch ratings) we are able to consider in the analysis not only SNGs with three ratings but also those with only one or two ratings and SNGs with no rating but with outstanding debt.[18]

[16] Kappa= {po-pe}/{100-pe}, where *po* is the observed percentage of graded bonds equally; and *pe* is the expected percentage, given the current distribution of grades.

[17] US SNGs rated by Moody's and Fitch have a Kappa 0.61, which suggests that these entities are not relatively opaque in this country.

[18] Remember that an entity needs at least two ratings in order to issue a bond registered in the treasury department in Mexico.

We also examine jointly the determinants of the bond rating for the three rating agencies. This is appropriate particularly in that we are estimating three measures of credit risk (the three agencies) for one entity (state or municipality). One of these entities may have incentives to obtain more than one rating if by doing so they lower the cost of debt. The literature shows evidence that not only ratings themselves but also their number influence the cost of debt (Edderington et al, 1987). Hence a multivariate framework applies. This allows studying the interrelationships between the different ratings equations and the propensity-to-obtain-a-rating equations, which cannot be achieved utilizing discriminant or univariate probit analysis.

3.1 The model

Following the discussion above, the equation system to solve is:

$$
\begin{array}{ll}
y_s^* = X_s\beta_s + \varepsilon_s & \text{propensity to obtain S\&P's rating} \\
w_s^* = Z_s\gamma_s + \eta_s & S\&P's \text{ perceived riskiness} \\
y_f^* = X_f\beta_f + \varepsilon_f & \text{propensity to obtain Fitch's rating} \\
w_f^* = Z_f\gamma_f + \eta_f & Fitch's \text{ perceived riskiness} \\
y_m^* = X_m\beta_m + \varepsilon_m & \text{propensity to obtain Moody's rating} \\
w_m^* = Z_m\gamma_m + \eta_m & Moody's \text{ perceived riskiness}
\end{array}
\qquad (1)
$$

where index $k = s, f, m$ refers to Moody's, Standard and Poor's, and Fitch, respectively; matrices X_k and Z_k are matrices of explicatory variables; and β_k and γ_k are vectors of parameters to be estimated. The disturbance vector is assumed to be *iid* over entities according to the following six-dimensional normal distribution:

$$
\begin{pmatrix} \varepsilon_{s,i} \\ \eta_{s,i} \\ \varepsilon_{f,i} \\ \eta_{f,i} \\ \varepsilon_{m,i} \\ \eta_{m,i} \end{pmatrix}
\sim \mathrm{N}_6 \left(\begin{bmatrix} 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \end{bmatrix},
\begin{bmatrix}
1 & \rho_{\varepsilon_s\eta_s} & \rho_{\varepsilon_s\varepsilon_f} & \rho_{\varepsilon_s\eta_f} & \rho_{\varepsilon_s\varepsilon_m} & \rho_{\varepsilon_s\eta_m} \\
\rho_{\varepsilon_s\eta_s} & 1 & \rho_{\eta_s\varepsilon_f} & \rho_{\eta_s\eta_f} & \rho_{\eta_s\varepsilon_m} & \rho_{\eta_s\eta_m} \\
\rho_{\varepsilon_s\varepsilon_f} & \rho_{\eta_s\varepsilon_f} & 1 & \rho_{\varepsilon_f\eta_f} & \rho_{\varepsilon_f\varepsilon_m} & \rho_{\varepsilon_f\eta_m} \\
\rho_{\varepsilon_s\eta_f} & \rho_{\eta_s\eta_f} & \rho_{\varepsilon_f\eta_f} & 1 & \rho_{\eta_f\varepsilon_m} & \rho_{\eta_f\eta_m} \\
\rho_{\varepsilon_s\varepsilon_m} & \rho_{\eta_s\varepsilon_m} & \rho_{\varepsilon_f\varepsilon_m} & \rho_{\eta_f\varepsilon_m} & 1 & \rho_{\varepsilon_m\eta_m} \\
\rho_{\varepsilon_s\eta_m} & \rho_{\eta_s\eta_m} & \rho_{\varepsilon_f\eta_m} & \rho_{\eta_f\eta_m} & \rho_{\varepsilon_m\eta_m} & 1
\end{bmatrix} \right)
\qquad (2)
$$

where $i = 1, \dots, N$ and N is the sample size. Note that all observations contribute to the estimation of the correlation terms $\rho_{\varepsilon_j \varepsilon_k}$ $j, k = s, f, m$. However, due to self selection, only those SNGs that have received ratings from the respective agencies contribute to the estimation of terms $\rho_{\varepsilon_j \eta_k}$. Variable $y^*_{k,i}$ is not observable but rather a binary counterpart, $y_{k,i}$, which takes the value of 1 if $y^*_{k,i} > 0$ and 0 otherwise. The observable counterpart of $w^*_{k,i}$ is categorical ordered so that:

$$w_{k,i} = \begin{cases} l_{k,1} & \alpha_{k,1} < w^*_{k,i} \le \alpha_{k,2} \\ l_{k,2} \quad \text{if} & \alpha_{k,2} < w^*_{k,i} \le \alpha_{k,3} \\ \vdots & \vdots \\ l_{k,r} & \alpha_{k,r} < w^*_{k,i} \le \alpha_{k,r+1} \end{cases} \qquad \textbf{(3)}$$

where $l_{k,1} < l_{k,2} \cdots < l_{k,r}$ are consecutive integer values, $\alpha_{k,1} = -\infty$, $\alpha_{k,r+1} = \infty$, and thresholds $\alpha_{k,2} < \alpha_{k,3} < \dots < \alpha_{k,r}$ are extra parameters to estimate. In our analysis, we have six categories for all agencies, i.e. $r = 6$ with $l_{k,1} = 0$ and $l_{k,6} = 5 \quad \forall\, k$ (see Table 3). If $y_{k,i} = 0$, then $w_{k,i}$ does not exist, in accordance with the self selection mechanism discussed before. Given the binary and categorical ordered nature of the observed counterparts of the dependent variables, parameter identification requires normalization of the diagonal elements in the disturbance covariance matrix as it is presented in (2). Additionally, identification of the coefficients γ_k in the perceived riskiness equations requires either to fix one of the thresholds in (3) for each equation or setting the intercept parameter in these equations equal to zero. We chose to set $\alpha_{k,2} = 0, \;\; k = s, f, m$.

3.2 Model specification, data and description of variables

In theory an entity decides to obtain a credit rating because it expects to save enough interest costs to outweigh the agency fee. Thus, level of outstanding debt may be a good determinant of the propensity to be rated since the higher the debt the greater the savings in interest cost.

Likewise, we include the *per capita* income of the entity, as it may represent a good proxy for local income tax base. One would expect that the higher the *per capita* income the more incentives to ask for a rate.

If large municipalities know they will be bailed out then they have strong incentives to be rated and obtain debt. We use population as a proxy for size since Hernández, Díaz and Gamboa (2002) have shown that more populated entities have being bailed out in a more favorable way than unpopulated ones in the past. This variable has also been discussed for the US case. Wallis (1999, 2001) and Fleck (2001), maintain a debate about the political motive of using population on New Deal transfers to states.

Finally, we control for political party. We hypothesize that the left wing party has either less financial culture or dismisses market based approaches with respect to obtaining debt. Thus, dummies for the main political parties were included in the propensity equation.

Regarding to the risk assessment equations the major categories considered include: i) some indicators of their financial soundness including contingent liabilities; ii) indicators of debt such as level, maturity, structure, and legal framework; and iii) economic indicators like gross state product and its composition. Next we describe the variables we include in our analysis.

Mexico presents strong regional disparities. The participation of the seven southern states[19] in Mexican GDP was only about 11 per cent in 2002, whereas this figure reached more than 30 per cent only for the Federal District (Mexico City). In addition, poverty is concentrated in the southern region,[20] which has the highest level of illiteracy in Mexico. For this reason, the Foster-Greer-Thorbecky index[21] is used as determinant of the rating. This variable has not been included in previous studies.

Again, the size of the municipality is a variable that may affect rating behavior. In essence it may affect in two ways. First, as said the political decision making varies with the size of population. Hernández, Díaz and Gamboa (2002), have shown that this variable is a good proxy for the *too-big-to-fail* hypothesis when bailing out a state. In this sense, the larger the entity the higher is the number of political votes. Second, population is important as a measure of tax base in Mexico. This may be different in advanced economies where smaller municipalities would tend to be mostly residential while larger municipalities would tend to have a more substantial industrial base and a more diverse population. In contrast, in LDCs, and Mexico is no exception, small municipalities tend to be more *rural* and thus less subject to be taxed.

For financial soundness we choose several variables. First, the ratio of own revenues to total income reflects the flexibility an entity has to absorb a shock. Second, the federal transfer to total expenditures reflects how compromised the transfer is beforehand. With respect to debt, we use debt to income ratio. In Mexico law requires that all new debt must be used in public investment. Thus one would expect that higher levels of fiscal responsibility

[19] Puebla, Oaxaca, Campeche, Guerrero, Chiapas, Tabasco and Veracruz.

[20] See Levy et al., (2001).

[21] This is a generally accepted index of poverty as it is one the very few that fulfills all properties. This is based on income and, as opposed to all others, can tell the deepness of poverty. See Foster, Greer and Thorbecky, (1984).

imply larger amounts of investment; for this reason we also include the investment to total expenditure ratio.

The data set contains information from 149 urban municipalities for year 2001, 148 municipalities for year 2002, and 147 municipalities for year 2003. Descriptive statistics of the data are presented in Table 2. To allow for non-linearities we use the $\log_{10}$ form of all the continuous regressors excepting the Foster-Greer-Thorbecky (FGT) index. We obtain the financial and political variables from INEGI (the National Institute of Statistics, Municipal Information System, 2003). The FGT Index was calculated by the authors using INEGI information.

3.3 Estimation approach

It is well known that the main problem in estimating equation systems involving latent variables is the presence of high dimensional integrals in the likelihood function, the highest possible order of integration being equal to the number of latent variables in the system. Differently from Moon and Stotsky (1993), who used the probability simulator of Borsch-Supan and Hajivassiliou (1993), we formulate a Monte Carlo Expectation Maximization (MCEM) algorithm to circumvent the multidimensional integration issue. It has been shown that a MCEM algorithm performs better than probability simulators as the order of the integrals in the likelihood function increases. The main advantages of the MCEM approach are its robustness both to the selection of starting values and to fragile identification (Natarajan et al., 2000; Smith Ramírez, 2005).

As an introduction to how the MCEM method works consider the following many-to-one mapping $\boldsymbol{z} \in Z \rightarrow \boldsymbol{y} = y(z) \in Y$. In words, $\boldsymbol{z}$ is only know to lie in $Z(y)$, the subset of Z determined by the equation $\boldsymbol{y} = y(\boldsymbol{z})$, where $\boldsymbol{y}$ is the observed data (variables y_k and w_k in our case) and $\boldsymbol{z}$ is the unobserved information (our y_k^* and w_k^* variables). Thus, the complete data is $\boldsymbol{x} = (\boldsymbol{y}, \boldsymbol{z})$ and the log-likelihood of the observed information is:

$$\ell(\theta \mid \boldsymbol{y}) = \ln L(\theta \mid \boldsymbol{y}) = \ln \int_{Z(y)} L(\theta \mid \boldsymbol{x}) \, d\boldsymbol{z} \qquad \textbf{(4)}$$

Thus, the multidimensional integration problem appears when we try to integrate out the unobserved information. Instead of trying to solve (4) directly, the EM algorithm focuses on the complete-information log-likelihood $\ell^c(\theta \mid \boldsymbol{x})$ and maximizes $E\left[\ell^c(\theta \mid \boldsymbol{x})\right]$ by executing two steps iteratively (Dempster et al., 1977). The first one is the so-called Expectation step (E-step), which computes $Q\left(\theta \mid \theta^{(m)}, \boldsymbol{y}\right) = E\left[\ell^c(\theta \mid \boldsymbol{x})\right]$ at iteration *m*+1. The term

$E\left[\ell^{c}\left(\theta \mid \boldsymbol{x}\right)\right]$ is the expectation of the complete-information log-likelihood conditional on the observed information and provided that the conditional density $f\left(\boldsymbol{x} \mid \boldsymbol{y}, \theta^{(m)}\right)$ is known. The E-step is followed by the Maximization step (M-step), which maximizes $Q\left(\theta \mid \theta^{(m)}, \boldsymbol{y}\right)$ to find $\theta^{(m+1)}$. Then the procedure is repeated until convergence is attained.

The Monte Carlo version of the EM algorithm avoids troublesome computations in the E-step by imputing the unobserved information by Gibbs sampling (Casella and George, 1992) conditional on what is observed and on distribution assumptions. In this approach the term $Q\left(\theta \mid \theta^{(m)}, \boldsymbol{y}\right)$ is approximated by the mean $\frac{1}{K}\sum_{k=1}^{K} Q\left(\theta, \boldsymbol{z}^{(k)} \mid \boldsymbol{y}\right)$, where the $\boldsymbol{z}^{(k)}$ are random samples from $f\left(\boldsymbol{x} \mid \theta^{(m)}, \boldsymbol{y}\right)$. The formulation of a MCEM algorithm for estimating the equation system (1) is presented in Appendix 1.

4. Discussion of empirical results

4.1 Determinants of the rating propensity

Estimation results for the whole set of parameters in the model are given in tables 4a and 4b. We dropped the dummy representing the left-wing political party, PRD, out of the regression in order to compare the impact of political orientation on the propensity to be rated. Tables 5 and 6 provide marginal effects of the explanatory variables on propensity-to-be-rated and rating equations respectively. As it is well known, direct discussion of parameter estimates can be misleading in nonlinear models since they measure the impact of the regressors on latent dependent variables, which might have an intuitive meaning but not a definite one (Greene, 2000). Therefore, we focus our discussion on marginal effects, which estimates the effect of regressors on the observed counterparts of the dependent variables. For the particular case of the propensity-to-be-rated equation, the marginal effect provides the change in the probability an entity requests to be rated as result of a change in the respective regressor. Marginal effects were calculated for each observation; sample averages and standard errors calculated by the delta method are reported.

It turns out that political orientation, that is, political party holding government is important. As it can be observed, the propensity to request a rate increases as we move from the left to the right wing preferences. Thus, it is the PAN, the rightist party, the one showing the highest propensity. According to Table 5, ceteris paribus, a municipality ruled by PAN shows a probability to be rated by S&P 21 percentage points (**pp** hereafter) higher than one ruled by the PRD, the leftist party. This figure is approximately 20 for Fitch and decreases to 11 points for Moody's.

This result indicates that entities governed by the PAN are the one most willing to obtain a grade. This makes sense in the Mexican case since the PAN is associated to local entrepreneurs, expectedly a group with more financial culture (Cabrero, 2004).

The other significant variable that explains propensity to be rated is municipality size measured in population terms (see Table 4a y 4b). According to Table 5, if municipalities have an average 10 per cent increase in population, then the average probability of soliciting the ranking services of S&P would be 1.6 pp higher.[22] The respective figures for Fitch and Moody's are 0.9 and 0.5 pp, all of them significant at any usual level of significance. As suggested by these results, Moody's is the least preferred choice.

As it can be noted, aside from political preferences, population is the most important variable in explaining the decision to be rated. This suggests the (*ex ante*) existence of a self selection mechanism, where smaller municipalities select themselves out from the rating process.

4.2 Determinants of the Rating

Overall the signs of the estimates support the argument presented in the motivation of this paper. Namely, population and the ratio of own to total revenues influence the grade positively (the sign is negative because we assign a lower risk to higher grades; see Table 3), while the ratio of debt to revenue impacts it in the opposite way. To interpret this result better, consider Table 6 which presents the marginal effects of regressors on the probabilities to receive a given grade (0 to 5 as described in Table 3) conditional on the SNG has requested to be rated.

Remarkably, FGT index, a variable highly correlated with *per capita* income, does not influences ratings from any of the firms under study. The only regressors that provide statistically significant marginal effects in the S&P rating equation are: population, own to total revenue ratio and debt to total revenue ratio. Marginal effects for population indicate that a rise in population size shifts the probability distribution from lower to higher grades. In particular, a 10 per cent average rise in population brings a 1.8 pp average increase in the probability to receive an A^+ grade from S&P, with simultaneous reductions of 0.9 and 0.7 pp in the probabilities to be rated with A^- or BB, respectively.

The impact of an improvement in the own to total revenue ratio is of the same magnitude as the one from population. Thus, a 10 per cent rise in this ratio leads to an increase of 2.3 pp in the probability to get an A^+ from S&P,

[22] To get this figure just multiply the corresponding marginal effect by $\log_{10}(1.1) \approx 0.041$

with parallel reductions of 1.1 and 0.9 pp in the probabilities to receive an A^- or BB.

In turn, the effect of a 10 per cent rise in the ratio of debt to total revenues decreases in 0.3 pp the probability to receive an A^+ for S&P, while increasing the probability to receive an A^- or a BB by 0.15 and 0.13 pp respectively. Clearly, this impact, although significant, is relatively small.

Results for Fitch and Moody's are analogous excepting: i) the only marginal effects that are statistically significant in Fitch and Moody's are those from population and own-to-total-revenue ratio variables, and ii) the marginal effects of these two variables are weaker for Fitch (when compared against S&P) and even weaker for Moody's (although still significant).

4.3 Comments on empirical results

In section 1 we argue that bond raters have been under scrutiny, especially after the crises in the nineties. Also we argue that within LDC countries this market has not been subject to study despite the fact that some doubts about its performance have been expressed (like the Chinese example we provided). Our results suggest that in presence of a high bailout probability, one of the factors that matters the most in explaining the grade assigned is not purely financial but one with a big political weight, namely: (population) size.

We prove that size does matter at the moment to decide whether to request a grade or not. Additionally, we provide evidence that size is one of the most important determinants in the grading process. Hence, when the probability of federal bailing out is high, raters integrate the political weight of the entities into their rating functions (the *too-big-to-fail* hypothesis). This may pose the question of the purpose of the process for large entities. That is, market can assess the risk of these entities as that of the sovereign instruments. If so, these entities may save the cost of the grading. Besides, the assessment of sovereign debt risk is normally free of charge.

4.4 Opacity

If sub-national governments are opaque for rating firms then raters should differ in the way they generate their ratings. In order to detect differences in the grading technology across raters, we compare the marginal effects of the three rating firms. Comparing marginal effects is more adequate than comparing just the parameter estimates from the rating equations, especially in presence of self-selection mechanisms. As conditional marginal effects compensate for the selection bias, grading technologies can be compared on a similar basis (Greene, 2000: 929). Three Wald test comparing the marginal effects of the rating agencies by pairs showed high statistical differences ($p<0.01$), which indicates that raters weight the factors in their rating functions differently.

We also implemented several Wald test to compare the risk thresholds $\alpha_{k,t}\ \left(k=s,f,m;\ t=1,...,r\right)$ at which rating firms change from one qualitative rate to another. It turns out that the set of S&P thresholds is statistically different (p<0.05) from those from Fitch and Moody's, while those from Fitch and Moody's are closer (p<0.10). This is consistent with the kappa analysis presented above.

Conclusions

In this paper we have studied both the determinants of the decision to be rated and the ratings for sub-national governments in a prominent LDC, Mexico. One of the main findings is that entity size does matter; as a matter of fact, population size is one of the two rating determinants common to all the raters under analysis. In a country with a long bailing-out history, these results support our *too-big-to-fail* hypothesis. Namely, large entities select themselves to be rated (and so to obtain new debt) because they know they have political power; and secondly, raters know that the probability that federal government bail out large entities is high. Under these circumstances, requiring the services of a rating firm has little sense since market may assess the risk of these entities as that of the sovereign instruments. If so, sub-national governments may save the cost of the grading. Besides, the assessment of sovereign debt risk is normally free of charge.

Methodologically, we extend and modify Moon and Stostsky (1993) seminal work in several ways. First, our model considers six latent dependent variables (instead of four). Second, we formulate a Monte Carlo Expectation Maximization (MCEM) algorithm to circumvent the estimation of multidimensional integrals in lieu of using the probability simulator of Borsch-Supan and Hajivassiliou (1993). Finally, our discussion is based on marginal effects rather on parameter estimates.

References

Albert, James and Chib, Siddhartha, (1993). "Bayesian analysis of binary and polychotomous response data", J. of the Am. Stat. Assoc., 88(42): 669-679

Aregional (2004). *Transparencia en estados y Municipios*. México DF.

Bhatia Ashok-Vir (2002) "Sovereign Credit Ratings Methodology: An Evaluation" International Monetary Fund, IMF Working Papers: 02/170 2002.

Börsch-Supan, A. and V. Hajivassiliou, (1993). "Smooth unbiased multivariate probability simulators for maximum likelihood estimation of limited dependent variable models". J. of Econometrics 58: 347-368.

Cabrero, Enrique (2004). *Innovaciones Locales en México*. Editorial Miguel Angel Porrúa, Mexico DF.

Cantor, R. and F. Packer, (1995). "The Credit Rating Industry" *The Journal of Fixed Income*. Vol 5 No. 3

Cantor, R. and F. Packer, (1996). "Multiple Ratings and Credit Standards: Differences of Opinion in the Credit Rating Industry" *Federal Reserve Bank of New York Staff Reports*. No. 12, New York.

Carleton W.D. and Lerner, E. M., (1969). "Statistical credit Scoring of Municipal bonds". In *Journal of Money Credit and Banking*. Vol. 1 No. 4.

Casella, G. and George, E., (1992). "Explaining the Gibbs Sampler". The American Statistician. 46(3): 167-174.

Cohen, J., (1968). "Weighed Kappa: Nominal Scale Agreement with Provision for Scaled Disagreement or Partial Credit". *Psycological Bulletin*. Vol. 70, No. 4.

Dávila, E. G Kessel and S. Levy, (2001). "El sur también existe". *Economía Mexicana, Nueva Época*, México DF.

Dempster, A.P., Laird, N.M. and Rubin, D.B., (1977). "Maximum Likelihood Estimation from incomplete observations". J. Roy. Statist. Soc. B 39:1-38.

Ederington, LH, Yawitz J. B., B. E Roberts, (1987) "The Information Content of Bond Ratings" In *Journal of Financial Research* Vol. 10 No. 3.

Fitch, (2002). "Ratings SNGs in México: Methodology." (www.fitchmexico.com/espanol/Metodologias)

Fleck, Robert K., (2001). "Comment: Population, Land, Economic Conditions, and the Allocation of New Deal Spending." *Explorations in Economic History* 38:296-304 (April).

Foster, J. J. Greer and E. Thorbecke, (1984) A Class of Decomposable Poverty Measures. *Econometrica-.* May 1984; 52(3).

Giugalle, M. A. Korobow and S. Webb, (2001). A new Model for Mrket-Based Regulation of Subnational Borrowing: The Mexican Approach" Mimeo, The World Bank. Washington DC.

Greene, William H., (2000). "Econometric Analysis", Fourth ed. Prentice Hall, 1004 pp.

Hernández, F., (1998) "Federalismo fiscal en México: ¿Cómo vamos?" *Revista Internacional de Finanzas Públicas*, La Plata, Argentina.

Hernández, F. A. Díaz and R.Gamboa, (2002). "Bailing out States in Mexico: Causes and Determinants" *Eastern Economic Journal*. Vol. 28, No. 3.

IADB, (1997). Latin America After a Decade of Reforms. Research Department InterAmerican Development Bank. Washington DC.

Ibrahim, J.G., Chen, M., and Lipsitz, S.R., (2001). "Missing Responses in Generalized Linear Mixed Models when the Missing Data Mechanism is Nonignorable". Biometrika, 88(2): 551-564.

Keane, Michael P., (1992). "A Note on Identification in the Multinomial Probit Model". Journal of Business and Economic Statistics 10: 193-200.

Laporta, R, and F. López-de-Silanes, (2001).

Laulajainen, R., (1999). "Subnational Credit Ratings –Penetrating the Cultural Haze" *GeoJournal*. Vol. 47 No. 2.

Louis, T.A., (1982). "Finding the Observed Information Matrix when using the EM Algorithm". J. Roy. Statist. Soc. B 44:226-233.

Meng, X. And Rubin, D., (1993). "Maximum likelihood estimation via the ECM algorithm: a general framework. Biometrika, 80 267-278.

Millon, M. and A. Thakor, (1985). "Moral Hazard and Information Sharing: a Model of Financial Information Gathering Agencies. The Journal of Finance. Vol. XL, No. 5.

Moon, C. G. and Stostky G., (1993). "Testing the Differences Between the Determinants of Moody's and Standard and Poor's Ratings: An Application of Smooth Simulated Maximum Likelihood Estimation" *Journal of Applied Econometrics*, Vol. 8 No. 1.

Morgan, D., (2002). "The Opacity of Banks" *American Economic Review*.

Natarajan, Ranjini; McCulloch, Charles E. and Nicholas Kiefer., (2000). "A Monte Carlo EM Method for estimating Multinomial Probit Models." Computational Statistics and Data Analysis 34: 33-50.

Reinhart, Carmen (2001) " Sovereign Credit Ratings Before and After Financial Crises" Mimeo, New York University-University of Maryland Project The Role of Credit Rating Agencies in the International Economy. College Park, MD.

Reinhart, Carmen (2002). "Default, Currency Crises and Sovereign Credit Ratings" Mimeo, IMF. Washington D.C.

Smith Ramírez, R. (2005). "On The Evaluation Of Conservation Cost-Sharing Programs. An Application Of A Monte Carlo EM Algorithm", PhD Dissertation, University of Maryland , College Park.

Ter-Minnasian, T. (1999). *Fiscal Federalism.* The World Bank Press, Washington DC.

Ugalde, L.C. (2003). „ "Descentralización y corrupción en gobiernos locales: ¿una correlación relevante?" In Descentralización, federalismo y planeación Regional en México. Tamayo, R. y Hernández, F (eds.), Porrúa Publishin Co. México, DF.

Wallis John Joseph (1998) "The Political Economy of New Deal Spending, Revisited, With and Without Nevada" *Explorations in Economic History*, 35, 140-170.

Wallis, John Joseph (2001). "The Political Economy of New Deal Spending, Yet Again: A Reply to Fleck" *Explorations in Economic History,* 38, 2, 305-314.

Wei, C. and Tanner, M. (1990). “A Monte Carlo implementation of the EM algorithm and the Poor Man’s Data Augmentation Algorithms”. J. Am. Statist. Assoc., 85(411) 699-704.

Appendix 1

Let $\boldsymbol{y}$ be a matrix containing all the observed information. The complete information log-likelihood function for the equation system (1) is standard and can be written as the sum of the contributions from eight different regimes. The regimes are represented by: the subsample receiving no gradings, the potential three subsamples being graded by a single agency $k = s, f, \text{ or } m$, the potential three subsamples being graded by two agencies, and the subsample receiving grades from the all three agencies. The corresponding contributions from the $j = 1,...,8$ regimes to the likelihood are

- regime: $j = 1$: $y_{m,i} = y_{s,i} = y_{f,i} = 0$

$$\ell_j^c\left(\theta_j, \Omega_j \mid \boldsymbol{y}\right) = -\frac{3n_j}{2}\ln\left(2\pi\right) - \frac{n_j}{2}\ln\left|\Omega_j\right| - \frac{1}{2}\text{tr}\left(\Omega_j^{-1}\sum_i \boldsymbol{\varepsilon}_{ji}\boldsymbol{\varepsilon}_{ji}^{'}\right)$$

- regimes $j = 2$: $y_{m,i} = 1$; $y_{s,i} = y_{f,i} = 0$; $j = 3$: $y_{s,i} = 1$; $y_{m,i} = y_{f,i} = 0$; and $j = 4$: $y_{f,i} = 1$; $y_{m,i} = y_{s,i} = 0$

$$\ell_j^c\left(\theta_j, \Omega_j \mid \boldsymbol{y}\right) = -2n_j\ln\left(2\pi\right) - \frac{n_j}{2}\ln\left|\Omega_j\right| - \frac{1}{2}\text{tr}\left(\Omega_j^{-1}\sum_i \boldsymbol{\varepsilon}_{ji}\boldsymbol{\varepsilon}_{ji}^{'}\right) \quad j = 2,3,4$$

- regimes $j = 5$: $y_{m,i} = y_{s,i} = 1$; $y_{f,i} = 0$; $j = 6$: $y_{m,i} = y_{f,i} = 1$; $y_{s,i} = 0$; ; and $j = 7$: $y_{f,i} = y_{s,i} = 1$; $y_{m,i} = 0$

$$\ell_j^c\left(\theta_j, \Omega_j \mid \boldsymbol{y}\right) = -\frac{5n_j}{2}\ln\left(2\pi\right) - \frac{n_j}{2}\ln\left|\Omega_j\right| - \frac{1}{2}\text{tr}\left(\Omega_j^{-1}\sum_i \boldsymbol{\varepsilon}_{ji}\boldsymbol{\varepsilon}_{ji}^{'}\right) \quad j = 5,6,7$$

- regime $j = 8$: $y_{m,i} = y_{s,i} = y_{f,i} = 1$

$$\ell_j^c\left(\theta_j, \Omega_j \mid \boldsymbol{y}\right) = -3n_j\ln\left(2\pi\right) - \frac{n_j}{2}\ln\left|\Omega_j\right| - \frac{1}{2}\text{tr}\left(\Omega_j^{-1}\sum_i \boldsymbol{\varepsilon}_{ji}\boldsymbol{\varepsilon}_{ji}^{'}\right) \quad j = 8$$

Thus,
$$\ell^c\left(\boldsymbol{\theta}, \Omega \mid \boldsymbol{y}\right) = \sum_{j=1}^{8}\ell_j^c\left(\boldsymbol{\theta}_j, \Omega_j \mid \boldsymbol{y}\right) \qquad \textbf{(5)}$$

where $\theta = \left(\beta_m \quad \gamma_m \quad \beta_s \quad \gamma_s \quad \beta_f \quad \gamma_f\right)^{'}$, θ_j contains the components of θ present in the equations solved for entities in regime j, Ω_j is the covariance matrix of the disturbance terms associated to those equations j, n_j is the number of observations in regime j, and $\sum_j n_j = N$, the sample size.

E-Step. The expectation of expression (5), conditional on observed information and distribution assumptions, can be written as:

$$E\left[\ell^c(\theta,\Omega \mid \boldsymbol{y})\right] = -\left[\frac{3}{2}n_1 + 2(n_2+n_3+n_4) + \frac{5}{2}(n_5+n_6+n_7) + 3n_8\right]\ln(2\pi) - \frac{1}{2}\sum_j n_j \ln\left|\Omega_j\right| - \frac{1}{2}\sum_j \operatorname{tr}\left(\Omega_j^{-1}\sum_i E\left[\varepsilon_{ji}\varepsilon_{ji}^{'}\right]\right)$$

The E-step at iteration $m+1$, requires the calculation of

$$Q_{ji}\left(\theta \mid \theta^{(m)},\Omega_j^{(m)},\boldsymbol{y}\right) = E\left[\varepsilon_{ji}\varepsilon_{ji}^{'} \mid \theta^{(m)},\Omega_j^{(m)},\boldsymbol{y}\right] == \sigma_{ji}^{2(m)} + \begin{pmatrix} \mu_{y_{m,i}^*}^{(m)} - X_{m,i}\beta_m \\ \mu_{w_{m,i}^*}^{(m)} - Z_{m,i}\gamma_m \\ \mu_{y_{s,i}^*}^{(m)} - X_{s,i}\beta_s \\ \mu_{w_{s,i}^*}^{(m)} - Z_{s,i}\gamma_s \\ \mu_{y_{f,i}^*}^{(m)} - X_{f,i}\beta_f \\ \mu_{w_{f,i}^*}^{(m)} - Z_{f,i}\gamma_f \end{pmatrix}\begin{pmatrix} \mu_{y_{m,i}^*}^{(m)} - X_{m,i}\beta_m \\ \mu_{w_{m,i}^*}^{(m)} - Z_{m,i}\gamma_m \\ \mu_{y_{s,i}^*}^{(m)} - X_{s,i}\beta_s \\ \mu_{w_{s,i}^*}^{(m)} - Z_{s,i}\gamma_s \\ \mu_{y_{f,i}^*}^{(m)} - X_{f,i}\beta_f \\ \mu_{w_{f,i}^*}^{(m)} - Z_{f,i}\gamma_f \end{pmatrix}^{'}$$

where $\sigma_{ji}^{2(m)} = \operatorname{Cov}\left(y_{m,i},\ldots,w_{f,i} \mid \theta_j^{(m)},\Omega_j^{(m)},\boldsymbol{y}\right)$, $\mu_{y_{k,i}^*}^{(m)} = E\left[y_{k,i}^* \mid \theta^{(m)},\Omega_k^{(m)},\boldsymbol{y}\right]$ $k=s,f,m$, $\mu_{w_{k,i}^*}^{(m)} = E\left[w_{k,i}^* \mid \theta^{(m)},\Omega_k^{(m)},\boldsymbol{y}\right]$ $k=s,f,m$. The elements in Q_{ji} associated to equations not solved by entities in regime j must be set equal to zero.

The Gibbs sampler. Gibbs sampling (Casella and George, 1992) is necessary to simulate the non-observed information present in the matrices Q_{ji}. The sampler requires the distribution of each $y_{k,i}^*$ and $w_{k,i}^*$ conditional on the values of the rest of the dependent variables in the corresponding regime. It is well known that these distributions are univariate normal under the normality assumption in (2). Let the means and variances of these distributions at the $m+1$ iteration be $\mu_{y_{k,i}^*\mid\left(-y_{k,i}^*\right)}^{(m)}$, $\sigma_{y_k^*\mid\left(-y_k^*\right)}^{2(m)}$, $\mu_{w_{k,i}^*\mid\left(-w_{k,i}^*\right)}^{(m)}$, and $\sigma_{w_k^*\mid\left(-w_k^*\right)}^{2(m)}$, respectively, where $\mid\left(-y_{k,i}^*\right)$ indicates conditionality on the values of all the other dependent variables (apart from $y_{k,i}^*$) being present in the regime at which entity i belongs.

Simulations for $y_{k,i}^*$ must be done conditional on its corresponding observed information $y_{k,i}$. The observed counterpart of $y_{k,i}^*$ is dichotomous with $y^*_{k,i}$ being positive if $y_{k,i}$ equals one and non-positive if $y_{k,i}$ equals zero. Accordingly, we simulate $y^*_{k,i}$ from a normal distribution with mean $\mu^{(m)}_{y^*_{k,i}|\left(-y^*_{k,i}\right)}$ and variance $\sigma^{2(m)}_{y^*_k|\left(-y^*_k\right)}$ truncated below at zero if $y_{k,i}$ equals one and truncated above at zero if $y_{k,i}$ equals zero. The observed counterparts of variables $w^*_{k,i}$ are categorical ordered and defined by (3). Correspondingly, we simulate $w^*_{k,i}$ from a normal distribution with mean $\mu^{(m)}_{w^*_{k,i}|\left(-w^*_{k,i}\right)}$, and variance $\sigma^{2(m)}_{w^*_k|\left(-w^*_k\right)}$ truncated above at $\alpha_{k,t+1}$ and truncated below at $\alpha_{k,t}$ when $w_{k,i}$ equals $l_{k,t}$ ($k = s, f, m;\ t = 1,...,r$).

A complete set of starting values $y^{*(0)}_{k,i}$ and $w^{*(0)}_{k,i}$ is required to initiate the Gibbs sampler. We use $y^{*(0)}_{k,i} = 0\ \ \forall k,i$ and $w^{*(0)}_{k,i} = w_{k,i}$. The simulation was then repeated iteratively until completing sequences $y^{*(1)}_{k,i},..., y^{*(K(m))}_{k,i}$ and $w^{*(1)}_{k,i},..., w^{*(K(m))}_{k,i}$, where $K^{(m)}$ is a number large enough to ensure convergence. Wei and Tanner (1990) recommend starting with a small $K^{(1)}$ and progressively increasing $K^{(m)}$ as m increases. Then, eliminate a number k_{burn} of simulations from the beginning of the sequence. The remaining simulations in the sequence are used to estimate the terms $\sigma^{2(m)}_{ji}$, $\mu^{(m)}_{y^*_{k,i}}$, and $\mu^{(m)}_{w^*_{k,i}}$ in Q_{ji}.

M-Step. Following Meg and Rubin (1993), it is advisable to replace the M-step by two conditional M-steps. The first conditional M-step maximizes $E\left[\ell^c\left(\theta,\Omega \mid \mathbf{y}\right)\right]$ with respect to the elements in θ conditional on $\theta^{(m)}$ and $\Omega^{(m)}$. After a little of matrix calculus, it is easy to see that the maximizer in this first conditional maximization can be written as a generalized least square estimator:

$$\theta^{(m+1)} = \left[X^{'}_d\left[\sum_j\left(\tilde{\Omega}^{-1}_j \otimes I^j\right)\right]X_d\right]^{-1} X^{'}_d\left[\sum_j\left(\tilde{\Omega}^{-1}_j \otimes I^j\right)\right]\mu^{(m)}_{y^*}$$

where I^j is a $N \times N$ diagonal matrix with $I^j_{ii} = 1$ if entity i belongs to regime j and $I^j_{ii} = 0$ otherwise. The 6x6 matrix $\tilde{\Omega}^{-1}_j$ contains the elements of Ω^{-1}_j in the positions corresponding to the equations solved in regime j, while the remaining elements must be set equal to zero. The block-diagonal matrix X_d is defined as:

$X_d = \begin{bmatrix} X_m & 0 & \cdots & 0 \\ 0 & Z_m & \cdots & 0 \\ \vdots & \vdots & \ddots & 0 \\ 0 & 0 & \cdots & Z_f \end{bmatrix}$, where $Z_{k,i} = 0$ if $y_{k,i} = 0$; $\mu_{y^*}^{(m)} = \left(\mu_{y_m^*}^{(m)} \quad \mu_{z_m^*}^{(m)} \quad \cdots \quad \mu_{z_f^*}^{(m)} \right)^T$,

$\mu_{y_k^*}^{(m)} = \left(\mu_{y_{k,1}^*}^{(m)} \quad \cdots \quad \mu_{y_{k,i}^*}^{(m)} \quad \cdots \quad \mu_{y_{k,N}^*}^{(m)} \right)^T$, $\mu_{z_k^*}^{(m)} = \left(\mu_{z_{k,1}^*}^{(m)} \quad \cdots \quad \mu_{z_{k,i}^*}^{(m)} \quad \cdots \quad \mu_{z_{k,N}^*}^{(m)} \right)^T$ and $\mu_{z_{k,i}^*}^{(m)} = 0$ if $y_{k,i} = 0$

The second conditional M-step estimates $\Omega^{(m+1)}$ by maximizing $E\left[\ell^c\left(\theta, \Omega \mid \boldsymbol{y}\right)\right]$ with respect to the elements in Ω conditional on $\theta^{(m+1)}$ and $\Omega^{(m)}$. No closed form for $\Omega^{(m+1)}$ exists; thus, numerical optimization techniques must be used at this stage. Thresholds $\alpha_{k,3} < \ldots < \alpha_{k,r}$ are not present in the complete-information likelihood function; therefore, they cannot be obtained by first order condition or by numerical optimization. We proceed the following way to estimate $\alpha_{k,t}$: i) at every round of the Gibbs sampler at iteration m, keep the minimum value of every sequence obtained when simulating the observations $w_{k,i} = l_{k,t}$; this produces a set of $K^{(m)} - k_{burn}$ values; ii) keep the maximum value of every sequence obtained when simulating the observations $w_{k,i} = l_{k,t-1}$; iii) take the medians of the two sets obtained in (1) and (2); iv) take the average between the two medians, which produces a consistent estimator of $\alpha_{k,t}$. The E step and M-step are then repeated until convergence is attained.

Appendix 2. The Information matrix

Louis's identity (Louis, 1982) was used in this study to obtain a Monte Carlo estimation of the information matrix:

$$I\left(\theta; \boldsymbol{y}\right) = -H^c\left(\theta; \boldsymbol{x}\right) - E\left[S^c\left(\theta; \boldsymbol{x}\right) S^c\left(\theta; \boldsymbol{x}\right)'\right] + E\left[S^c\left(\theta; \boldsymbol{x}\right)\right] E\left[S^c\left(\theta; \boldsymbol{x}\right)'\right]$$

where $H^c\left(\theta; \boldsymbol{x}\right) = \dfrac{\partial^2 \ell^c\left(\theta; \boldsymbol{x}\right)}{\partial\theta\partial\theta'}$ and $S^c\left(\theta; \boldsymbol{x}\right) = \dfrac{\partial \ell^c\left(\theta; \boldsymbol{x}\right)}{\partial\theta}$ are the complete information Hessian and Score vector, respectively. All the expectations are estimated at the final MCEM estimators. Monte Carlo estimates of the complete information Hessian and score can be used to estimate the information matrix (Details can be found in Smith Ramírez, 2005, and Ibrahim et al., 2001).

Since thresholds $\alpha_{k,t}$ are not present in the complete-information maximum likelihood, their standard errors cannot be obtained from the information matrix presented above. Following Albert and Chib (1993), we consider that estimates of $\alpha_{k,t}$ are uniformly distributed between the two medians calculated in step (3) when estimating $\alpha_{k,t}$ in Appendix 1. Thus, standard error of our estimate for $\alpha_{k,t}$ was calculated as the square root of the variance of such a distribution.

Table 1: Kappa Index

USA: Morgan (2002, AER)	Mexico:
Banks = 0.30 Other Sectors = 0.45	Banks = 0.27 Other sectors = 0.36 States and Municipalities = 0.13

Table 2. Descriptive statistics of dependent and explanatory variables

Binary dependent variables		Sum	
S&P	The entity was rated by S&P's in the period (yes=1)	96	
Fitch	The entity was rated by Fitch in the period (yes=1)	74	
Moody	The entity was rated by Moody's in the period (yes=1)	40	
Dummy explanatory variables		Sum	
PRD	The entity is administered by the PRD party	45	
PRI	The entity is administered by the PRI party	148	
COA	The entity is administered by a COALITION party	60	
PAN	The entity is administered by the PAN party	191	
Continuous explanatory variables[1]		Mean	Std. dev
Pop	2000 Population ($x10^5$)	3.3	3.1
FGT	Foster-Greer-Thorbecky index	0.7	0.1
P_I	Per capita annual income ($US\$x10^3$)	7.3	3.8
O_T	Own to total revenue ratio	0.2	0.1
D_I	Debt to revenue ratio	0.1	0.2
Debt	Total debt ($US\$x10^6$)	20.8	44.8
P_D	Per capita debt ($US\$x10^3$)	0.58	0.90
I_G	Investment to total expenditure ratio	0.2	0.1

[1] Excepting the FGT index, the $\log_{10}$ form of the continuous explanatory variables was used in the estimation.

Table 3. Equivalence between ordinal and qualitative rates

	Rating Institution		
Ordinal rate	S&P's	Fitch	Moody's
0	AA+, AA	AA	Aa2
1	AA-	AA-	Aa3
2	A+	A+	A1
3	A,mA	A	A2
4	A-	A-,A3	A3
5	BB+,BB-	BBB+,BBB	Baa1,Bba1

Table 4a. Determinants of propensity to be rated and grading

		S&P		Fitch		Moody's	
Equation	Variable[b]	Estimate	Std. error	Estimate	Std. error	Estimate	Std. error
Propensity to be rated	constant	-2.5778[c]	0.3968	-1.7507[c]	0.5160	-3.8161[a]	2.1038
	Pri	0.5184[b]	0.2300	0.5610	0.3638	2.4857	1.9930
	Coalition	0.8306[c]	0.2621	0.4651	0.4032	2.7496	1.9941
	Pan	1.1586[c]	0.2227	1.1876[c]	0.3495	2.8676	1.9853
	POP	2.0236[c]	0.2143	1.2859[c]	0.2588	1.1683[c]	0.3488
	P_I	0.1491	0.2324	-0.3557	0.2821	0.0992	0.3701
	D_I	0.0790	0.1703	0.2755	0.2113	0.5466[a]	0.3275
	Debt	-0.0226	0.0817	0.0046	0.1024	-0.0946	0.1620
Rating	constant	-0.3876	1.1102	0.2774	1.0866	-2.3449	1.5116
	FGT	0.9016	1.0046	-0.0801	1.0284	2.9218	2.1264
	Pop	-1.4798[c]	0.3587	-1.2343[c]	0.3762	-0.6508[c]	0.4838
	O_T	-2.3484[c]	0.7389	-2.5342[c]	0.6761	-1.9938[b]	0.7872
	D_I	0.3339[c]	0.1250	0.1962	0.1467	0.3818[a]	0.2077
	I_G	-0.8051[a]	0.4400	-0.9251[a]	0.4446	-1.1473[b]	0.5646

[a] significant at 10% significance; [b] significant at 5% significance; [c] significant at 1% significance.
[b] As defined in Table 2.

Table 4b. Thresholds and covariance matrix

	S&P		Fitch		Moody's	
Thresholds	Estimate	Std. error	Estimate	Std. error	Estimate	Std. error
$\alpha_{k,3}$	0.4809 [c]	0.1464	0.7984 [c]	0.1849	1.6797 [c]	0.2532
$\alpha_{k,4}$	1.3365 [c]	0.1458	1.7788 [c]	0.1305	1.9178 [c]	0.1818
$\alpha_{k,5}$	1.9861 [c]	0.1448	2.3438 [c]	0.1623	2.4884 [c]	0.1980
$\alpha_{k,6}$	2.8289 [c]	0.2722	3.3126 [c]	0.2777	2.9618 [c]	0.2493

		Estimate	Std. error
Covariance matrix	$\rho_{\varepsilon_s \eta_s}$	0.2367 [c]	0.0537
	$\rho_{\varepsilon_s \varepsilon_f}$	0.6646 [c]	0.0159
	$\rho_{\varepsilon_s \eta_f}$	0.0789	0.0592
	$\rho_{\varepsilon_s \varepsilon_m}$	0.2733 [c]	0.0301
	$\rho_{\varepsilon_s \eta_m}$	0.1787 [c]	0.0656
	$\rho_{\eta_s \varepsilon_f}$	0.3301 [c]	0.0500
	$\rho_{\eta_s \eta_f}$	0.7242 [c]	0.0354
	$\rho_{\eta_s \varepsilon_m}$	0.1363 [c]	0.0523
	$\rho_{\eta_s \eta_m}$	0.6594 [c]	0.1128
	$\rho_{\varepsilon_f \eta_f}$	0.3220 [c]	0.0517
	$\rho_{\varepsilon_f \varepsilon_m}$	0.0306	0.0319
	$\rho_{\varepsilon_f \eta_m}$	0.0339	0.0676
	$\rho_{\eta_f \varepsilon_m}$	-0.1025 [a]	0.0592
	$\rho_{\eta_f \eta_m}$	0.5229 [c]	0.0625
	$\rho_{\varepsilon_m \eta_m}$	0.6630 [c]	0.0350

[a] significant at 10% significance; [b] significant at 5% significance; [c] significant at 1% significance.

■

Table 5. Marginal effects for the propensity-to-be-rated equations

	S&P		Fitch		Moody's	
Variable[b]	Estimate	Std. error	Estimate	Std. error	Estimate	Std. error
Pri	0.0700 [b]	0.0277	0.064 [a]	0.0338	0.0622 [c]	0.0197
Coalition	0.1315 [c]	0.0419	0.0499	0.0404	0.0958 [c]	0.0333
Pan	0.2117 [c]	0.0329	0.1954 [c]	0.0369	0.1141 [c]	0.0205
POP	0.3841 [c]	0.0374	0.2189 [c]	0.0408	0.1242 [c]	0.0350
I_P	0.0285	0.0440	-0.0604	0.0483	0.0104	0.0394
D_I	0.0151	0.0318	0.0467	0.0347	0.0581 [a]	0.0343
Debt	-0.0043	0.0154	0.0008	0.0175	-0.0101	0.0170

[a] significant at 10% significance; [b] significant at 5% significance; [c] significant at 1% significance.

Table 6. Marginal effects for the rating equations

Variable	Rate	S&P		Fitch		Moody's	
		Estimate	Std. error	Estimate	Std. error	Estimate	Std. error
FGT Index	0	-0.2134	0.2373	0.0084	0.1114	-0.1411	0.1143
	1	-0.0451	0.0525	0.0098	0.1295	-0.7088	0.5768
	2	-0.0027	0.0210	0.0072	0.0951	-0.0318	0.0715
	3	0.0677	0.0791	-0.0027	0.0358	0.0602	0.1551
	4	0.1072	0.1244	-0.0112	0.1472	0.1379	0.1686
	5	0.0862	0.1016	-0.0116	0.1530	0.6836	0.4948
log pop	0	0.4232 [c]	0.0837	0.1672 [c]	0.0539	0.0627	0.0423
	1	0.0912 [c]	0.0249	0.1937 [c]	0.0571	0.3071 [c]	0.1071
	2	0.0095	0.0420	0.1421 [b]	0.0604	0.0139	0.0321
	3	-0.1333 [c]	0.0489	-0.0535	0.0353	0.0467	0.1430
	4	-0.2152 [c]	0.0772	-0.2200 [c]	0.0811	-0.1130	0.4436
	5	-0.1753 [b]	0.0749	-0.2295 [b]	0.0911	-0.4717	0.3263
log Own/ Total Rev	0	0.5548 [c]	0.1829	0.2741 [c]	0.0896	0.0966	0.0696
	1	0.1172 [b]	0.0465	0.3191 [c]	0.1154	0.4851 [c]	0.1751
	2	0.0069	0.0535	0.2341 [b]	0.1077	0.0218	0.0491
	3	-0.1760 [b]	0.0812	-0.0882	0.0641	-0.0412	0.0891
	4	-0.2788 [b]	0.1224	-0.3626 [b]	0.1444	-0.0944	0.0772
	5	-0.2241 [b]	0.1100	-0.3765 [b]	0.1488	-0.4679 [a]	0.2499
Log Deuda/ Ingreso	0	-0.0762 [c]	0.0265	-0.0140	0.0176	-0.0039	0.0137
	1	-0.0160 [b]	0.0067	-0.0166	0.0192	-0.0230	0.0727
	2	-0.0008	0.0075	-0.0122	0.0138	-0.0010	0.0041
	3	0.0242 [b]	0.0109	0.0046	0.0060	0.0360	0.0634
	4	0.0382 [b]	0.0187	0.0188	0.0219	-0.0205	0.1920
	5	0.0306 [a]	0.0170	0.0193	0.0233	-0.0600	0.2195
log Inv/ Gto Total	0	0.1901	0.1056	0.0999 [b]	0.0501	0.0556	0.0440
	1	0.0402	0.0246	0.1164 [a]	0.0609	0.2790 [b]	0.1217
	2	0.0024	0.0184	0.0854	0.0550	0.0125	0.0288
	3	-0.0603	0.0390	-0.0322	0.0242	-0.0237	0.0500
	4	-0.0955	0.0611	-0.1322 [a]	0.0752	-0.0543	0.0452
	5	-0.0768	0.0509	-0.1373 [a]	0.0802	-0.2691	0.1688

Novedades

División de Administración Pública

Rivera Urrutia, Eugenio, *La construcción del gobierno electrónico como problema de innovación institucional: la experiencia mexicana*, DTAP-174

Bravo Pérez, Héctor Manuel, *et al., Evaluación económica del convenio de distribución de aguas superficiales del lago de Chapala y su efecto en el bienestar social,* DTAP-175

Bravo Pérez, Héctor Manuel, Juan Carlos Castro Ramírez, *Construcción de una matriz de contabilidad social con agua…* DTAP-176

Bracho González, Teresa y Giulianna Mendieta, *El proceso de focalización y las estrategias estatales de selección de beneficiarios: El caso del Programa Escuelas de Calidad*, DTAP-177

Arellano, David y Walter Lepore, *Publicness y Nueva Gestión Pública: hacia una recuperación de los valores de lo público,* DTAP-178

López Ayllón, Sergio y Alí Bernardo Haddou Ruiz, *Rendición de cuentas en los órganos reguladores autónomos: algunas consideraciones sobre el diseño institucional de las autoridades reguladoras en México,* DTAP-179

Sour, Laura, *Pluralidad y transparencia en el proceso de aprobación presupuestal al interior de la Cámara de Diputados*, DTAP-180

Cabrero, Enrique, *Los retos institucionales de la descentralización fiscal en América Latina,* DTAP-181

Merino, Mauricio, *La profesionalización municipal en México,* DTAP-182

Arellano, David, *¿Reforma organizacional de gobierno por diseño genérico? El Nuevo Institucionalismo Económico en acción…* DTAP-183

División de Economía

Torres Rojo, Juan M., *et al., Índice de peligro de incendios forestales* de largo plazo, DTE-358

J. M. Torres *et al*., *Bequest Motive for Conservation in Forest Production Communities,* DTE-359

Hernández, Fausto y Brenda Jarillo Rabling, *Is Local Beautiful? Decentralization in Mexico in the Presence of Elite Capture,* DTE-360

Unger, Kurt, *El desarrollo económico y la migración mexicana: el TLCAN e impactos en las regiones,* DTE-361

Gómez Galvarriato, Aurora, Rafael Dobado and Jeffrey Williamson, *Globalization, De-Industrialization and Mexican Exceptionalism, 1750-1879,* DTE-362

Gómez Galvarriato, Aurora and Aldo Musacchio, *Larger Menus and Entrepreneurial Appetite: An Empirical Investigation of Organization Choice in Mexico,* DTE-363

Mayer, David y Carlos Bazdresch, *Hacia un consenso para el crecimiento económico en México…* DTE-364

Mayer, David y Ma. Fernanda López Olivo, *Transmisión intergeneracional de habilidades cognitivas por niveles socioeconómicos…,* DTE-365

Mayer, David, *Dinámica geográfica de productividad e innovación en la manufactura mexicana*, DTE-366

Scott, John, *Seguro Popular: Incidence Analysis*, DTE-367

DIVISIÓN DE ESTUDIOS INTERNACIONALES

González González, Guadalupe, *México ante América Latina: Mirando de reojo a Estados Unidos*, DTEI-132

Ortiz Mena L.N., Antonio Ortiz y Ricardo Sennes, *Brasil y México en la economía política internacional,* DTEI-133

Minushkin, Susan y Matthew Adam Kocher, *Trade and Investment Policy Preferences and Public Opinion in Mexico,* DTEI-134

Ortiz Mena L.N., Antonio, *México ante el sistema monetario y comercial internacional: lecciones de Bretton Woods a la actualidad*, DTEI-135

Meseguer Covadonga *et al., The Diffusion of Regulatory Reforms in Pension Systems: Latin America in Comparative Perspective,* DTEI-136

Schiavon, Jorge A., *La relación especial México-Estados Unidos: Cambios y continuidades en la Guerra y Pos-Guerra Fría,* DTEI-137

Ortiz Mena, Antonio, *The Domestic Determinants of Mexico's Trade Strategy,* DTEI-138

Kocher, Matthew Adam and Stathis N. Kalyvas, *How free is "Free Riding" in Civil Wars? Violence, Insurgency, and the Collective Action Problem,* DTEI-139

Chabat, Jorge, *Mexico: The Security Challenge,* DTEI-140

Kydd, Andrew, *The Ball is in your Court: Mediation and Blamecasting*, DTEI-141

DIVISIÓN DE ESTUDIOS JURÍDICOS

Posadas, Alejandro, *Canada Trade Law & Policy after NAFTA and the…*, DTEJ-8

Hernández, Roberto, *Alcances del "juicio oral" frente a la Reforma Integral a la Justicia Penal propuesta por presidencia*, DTEJ-9

Magaloni, Ana Laura, *El impacto en el debate sobre la reforma judicial de los estudios empíricos del sistema de justicia: el caso del estudio del Banco Mundial sobre le Juicio Ejecutivo Mercantil,* DTEJ-10

Bergman, Marcelo, *Do Audits Enhance Compliance? An Empirical Assessment of VAT Enforcement,* DTEJ-11

Pazos, María Inés*, Sobre la semántica de la derrotabilidad de conceptos jurídicos,* DTEJ-12

Elizondo Carlos, Luis Manuel Pérez de Acha, *Separación de poderes y garantías individuales: La Suprema Corte y los derechos de los contribuyentes,* DTEJ-13

Fondevila Gustavo, *Estudio de percepción de usuarios del servicio de administración de justicia familiar en el Distrito Federal,* DTEJ-14

Pazos, Ma. Inés, *Consecuencia lógica derrotable: análisis de un concepto de consecuencia falible,* DTEJ-15

Posadas, Alejandro y Hugo E. Flores, *Análisis del derecho de contar con un juicio justo en México*, DTEJ-16

Posadas, Alejandro, *La Responsabilidad Civil del Estado /Análisis de un caso hipotético*, DTEJ-17

López, Sergio y Posadas Alejandro, *Las pruebas de daño e interés público en materia de acceso a la información. Una perspectiva comparada,* DTEJ-18

DIVISIÓN DE ESTUDIOS POLÍTICOS

Cermeño Rodolfo, Sirenia Vázquez, *What is Vote Buying? The Limits of the Market Model,* DTEP-179

Schedler Andreas*, Electoral Authoritarianism Concept, Measurement, and Theory,* DTEP-180

Negretto L. Gabriel, *Confronting Pluralism: Constitutional Reform in Mexico After Fox,* DTEP-181

Beltrán Ulises, *Contextual Effects on the Individual Rationality: Economic Conditions and retrospective Vote,* DTEP-182

Nacif Benito, *¿Qué hay de malo con la parálisis? Democracia y gobierno dividido en México,* DTEP-183

Langston Joy, *Congressional Campaigning in Mexico,* DTEP-184

Nacif Benito, *The Fall of the Dominant Presidency: Lawmaking Under Divided Government in Mexico,* DTEP-185

Lehoucq, Fabrice E., *Constitutional Design and Democratic Performance in Latin America,* DTEP-186

Martínez Gallardo, Cecilia and John D. Huber, *Cabinet Turnover and Talent Searches,* DTEP-187

Lehoucq, Fabrice E., *Structural Reform, Democratic Governance and Institutional Design in Latin America*, DTEP-188

DIVISIÓN DE HISTORIA

Pani, Erika, *Saving the Nation through Exclusion: The Alien and Sedition Acts and Mexico´s Expulsion of Spaniards,* DTH-32

Pipitone, Ugo, *El ambiente amenazado (*Tercer capítulo de *El temblor…*), DTH-33

Pipitone, Ugo, *Aperturas chinas (1889, 1919, 1978),* DTH-34

Meyer, Jean, *El conflicto religioso en Oaxaca*, DTH-35

García Ayluardo Clara, *El privilegio de pertenecer. Las comunidades de fieles y la crisis de la monarquía católica*, DTH-36

Meyer, Jean, *El cirujano de hierro (2000-2005),* DTH-37

Sauter, Michael, *Clock Watchers and Stargazers: On Time Discipline in Early-Modern Berlin,* DTH-38

Sauter, Michael, *The Enlightenment on Trial…,* DTH-39

Pipitone, Ugo, *Oaxaca prehispánica*, DTH-40

Medina Peña, Luis, *Los años de Salinas: crisis electoral y reformas*, DTH-41

Ventas

El **Centro de Investigación y Docencia Económicas / CIDE,** es una institución de educación superior especializada particularmente en las disciplinas de Economía, Administración Pública, Estudios Internacionales, Estudios Políticos, Historia y Estudios Jurídicos. **El CIDE publica**, como producto del ejercicio intelectual de sus investigadores, **libros, documentos de trabajo, y cuatro revistas especializadas:** *Gestión y Política Pública***,** *Política y Gobierno***,** *Economía Mexicana Nueva Época* e *Istor***.**

Para adquirir alguna de estas publicaciones, le ofrecemos las siguientes opciones:

VENTAS DIRECTAS:

Tel. Directo: 5081-4003
Tel: 5727-9800 Ext. 6094 y 6091
Fax: 5727 9800 Ext. 6314

Av. Constituyentes 1046, 1er piso, Col. Lomas Altas, Del. Álvaro Obregón, 11950, México, D.F.

VENTAS EN LÍNEA:

Librería virtual: **www.e-cide.com**

Dudas y comentarios:
publicaciones@cide.edu

¡Nuevo!

Adquiera el **CD de las colecciones completas** de los documentos de trabajo de la **División de Historia** y de la **División de Estudios Jurídicos.**

¡Próximamente! los CD de las colecciones completas de las Divisiones de Economía, Administración Pública, Estudios Internacionales y Estudios Políticos.