Demand and Supply in Romanian Commercial Courts: Generating Information for Institutional Reform

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Abstract.

Assembling a supply-demand model for commercial court services suggests methodological problems in existing empirical studies. Estimates for Romania show the simultaneous relation between congestion and caseload and the exogenous effects of resources, legal culture, options for appeal, and economic environment. Using an inappropriate statistical methodology would lead to erroneous conclusions pertinent to institutional design. Coincidentally, the paper was being written as Romania implemented a reform for which the results had pertinence. The reform foreclosed options that the paper identifies as valuable to businesses. Perhaps some failures of institutional reform are due to lack of empirical input into institutional design.

*Journal of Economic Literature* Classification Numbers: K4, P2, K1, D7

Key words: Romania, courts, institutional reform, transition, resources, caseload, delay.
1. Introduction

Over the last few years increasing attention has been paid to the role of institutions, particularly legal systems, in the process of economic development. This is especially the case for the transition countries of Eastern Europe and the former Soviet Union. Within legal systems everywhere, well functioning courts are of central importance, but courts could potentially play a crucial role in transition countries, where convulsive change has led to an epidemic of broken contracts and where new property rights need to be defended. Yet, despite the perceived importance of legal institutions in development and transition, the fact remains that court reform has evidenced only very limited success.¹

Court reforms in developing and transition countries most often proceed on the basis of abstract legal theory or simple common sense rather than from empirical understanding.² It is difficult to find examples of reforms embodying the results of detailed empirical analyses, where such analyses identify the systemic factors that affect the supply of court services or the behavioral ingredients of the demand for the courts.³ Perhaps this is simply due to the fact that there is a small stock of existing empirical work upon which reformers could lean.⁴ Analysis of the functioning of court systems is relatively less advanced than many other areas of empirical social science.⁵

The paper pursues these issues in three ways. First, it assembles a simple model of demand and supply in a court system, showing methodological problems in existing studies. Second, the model is

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¹ Messick (2000) comments that: "While the donor community can point to a number of successes with these initial forays into civil justice reform, too many of its programs have failed to deliver results."

² For a useful contrast, reflect on how much scientific knowledge and data goes into the construction of an automobile factory (Fujimoto 1999). Is supplying justice so much simpler than building cars?

³ Messick (2000) remarks that: "[O]ne reason why many donor-inspired civil justice reforms have failed is that they have been constructed on a weak empirical base. We know little about who uses the courts in developing countries and why they use them."

⁴ Jensen (2000) states that: "Historically legal and judicial reform programs have suffered from an extraordinarily weak empirical basis for pursuing articulated policy prescriptions”. Very recently, Djankov et al. (2001) provides an example of the possibilities for empirical contributions in this area.

⁵ For example, on two issues that are central in this paper, Bumiller (1981) identifies a lack of work on benefits of choice of jurisdiction and Priest (1989) cites methodological problems that might have led to problems in detecting the effect of resources on litigation delay.
estimated for Romania and some standard hypotheses in the literature are subjected to empirical tests.

Third, the results provide an example of empirical work that is directly pertinent to ongoing reforms in Romania.

Analysis of the demand for and supply of commercial justice is pertinent to the design of reforms because it reveals insights about what businesses value in the court system, whether the court system supplies what businesses value, and which systemic factors affect supply. That businesses value efficient supply (often operationalized as the inverse of delay or congestion) is the assumption of much court reform and analysis (Bumiller, 1981; Buscaglia and Ulen, 1997; Dakolias 1999). This assumption can be tested by estimating a demand equation in which delay (a measure of supply) is a determinant of demand. But since delay is a proxy for supply and caseload is the measure of demand, it is clear that demand is a determinant of supply. Thus empirical analysis must use a systemic view of the courts, in which supply and demand are simultaneously determined.6

This insight informs the application to cross-regional Romanian data for 1999, leading to tests of some standard propositions on the determinants of court efficiency and the factors affecting the demand for the courts. The results for cross-regional Romanian data show that it is imperative to use a statistical methodology that is appropriate to the simultaneous determination of supply and demand. For example, this paper offers the prosaic conclusion that larger caseloads cause longer delays, but use of a less appropriate methodology would have led to the conclusion that greater caseloads reduce delays, the surprising result that is common in the literature.

The results also show that businesses use the courts in ways not consistent with the theory underlying the court system's structure. In response to varying levels of delays, businesses choose where to litigate, often avoiding constraints supposedly established by procedural rules. Thus, reformers could risk making institutions worse by simply following the theory of a system's structure rather than by using

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empirical analysis to understand how actors innovate around a system's constraints. Indeed, as the paper shows, that could have been the case recently in Romania. The results directly bear on the decisions made in a court reform that was recently enacted.

Just as institutional reforms can benefit from the results of empirical analysis, so econometric modeling must reflect details of the institutional environment. Therefore the analysis begins in the next section with some pertinent facts about Romania and its commercial court system. Section 3 sets up the general model of supply and demand and uses this model to generate insights into the methodologies employed in the existing empirical literature. Section 4 specifies the details needed to apply the model to Romania, defining variables and their measurement. Section 5 presents the results and their interpretation. Section 6 returns to the matter of reforms, commenting on the direct relevance of the paper's results to deliberations on institutional design. The specific example of court reform in Romania underpins these comments.

2. Romania and its Commercial Court System

Romanian economic and legal reforms have not distinguished themselves by their quality. Macroeconomic performance now lags behind that of fellow applicants to the European Union. Romania certainly won the prize for the most obtuse and ineffective privatization program in the first years of transition, in a field crowded with many worthy challengers (Earle and Telegdy 1998). Corruption is worse than in the rest of Central and Eastern Europe (Transparency International, 2001). Within this record, legal reforms do not stand out in any way. The EBRD (2000) rates Romania as one of many transition countries to have reached a fairly advanced stage in the production of formal laws. Cross country surveys focusing on economic issues place the quality of the legal system in Romania in roughly the middle of the transition countries.\(^7\) In sum, Romanian reforms match its geography: Bucharest is equidistant from Kiev and Bratislava.

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As in other East European countries, the Romanian legal environment is a product of three distinct eras, the formative years before communism, neglect during communism, and intensive reform after communism. The basic laws pertinent to this paper, the Civil Code, the Commercial Code, and the Civil Procedure Code, were first passed in the nineteenth century based on French and Italian models. These fell largely into disuse in the communist period, but were available for immediate application once the old socialist enterprises were freed from central planners and new private businesses were sanctioned. In the 1990s, a succession of new laws modernized important elements of these codes. Through all of these changes the French substructure has remained, indicating the tenacity of legal origins (Glaeser and Shleifer, 2001). Consistent with the French origins, Romania has a greater intensity of regulation of dispute resolution than most other transition countries (Djankov et al. 2001).

During the communist era, the courts were relatively neglected and in commercial matters played only a minor role, largely as an appendage of the central planning system. This neglect left a court system with small numbers of employees who were inadequately trained for the tasks that market capitalism would present. Over the 1990's, the number of judges expanded at about the same rate as the number of cases, increasing by roughly 200%, but many of the new judges were raw recruits from law schools. Although pay has risen in relative terms, the remuneration of judges has not kept pace with what private lawyers can now earn in the market economy. The support staff in court administration (which includes the execution of judgements) is very weak. Physical facilities are always cramped and often decrepit. It is not surprising therefore to hear many observers comment on the poor quality and the inefficiency of the Romanian courts. But comments such as these can be heard universally and cross-country comparisons suggest that the Romanian courts are typical among transition countries rather than egregious. Moreover, the fact remains that businesses do use the courts quite heavily.

As much else in Romania, justice is centralized. The court system is under the Ministry of Justice, which is in effective control of all basic decisions. The territorial organization of the courts corresponds to that of Romania's government. The basic units are the 42 județe (counties). Each județ contains several Judecătorii and one Tribunal, the first instance courts. The Judecătorii are general purpose courts, dealing with criminal, civil, and commercial cases, while the Tribunale have separate sections, one handling only commercial cases. The Judecătorii handle commercial suits only when they are "patrimonial" (that is, the plaintiff seeks a definite amount of money) and when they are for less than 10 million Romanian lei ($400-$500 during the late 1990's). Patrimonial cases with a higher valuation or non-patrimonial cases must be filed in a Tribunal. A typical patrimonial suit would concern non-payment, whereas suits relating to company organization, mergers, spin-offs, liquidations, and bankruptcy would be non-patrimonial.

First appeals from the Judecătorii are filed in the Tribunale. Courts of Appeal (Curți de Apel - 15 in total) handle second level appeals from the Judecătorii and first level appeals from the Tribunale. The Supreme Court of Justice (Curtea Supremă de Justiție) handles selected second level appeals from Tribunal cases. The grounds for filing a first appeal are broad, tantamount to dissatisfaction with the original decision.

This paper will focus on the demand for and the supply of commercial justice at the level of the Tribunale. These courts dominate in terms of amount of activity. In 1999, they took 72% of first instance commercial cases. Moreover, the Tribunale handle both patrimonial and non-patrimonial cases, which the Judecătorii do not (at least in theory). The difference in the procedural rules for these two types of

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9. The Law on Judicial Organization (Law 92 of August 1992) sets the basis for the present structure of the court system. The description here applies up to the end of 2000. The conclusion discusses the changes brought about by the institutional reforms referred to in introduction.

10. This counts the capital, Bucharest, as a separate județ. A recent reorganization established this separation from the surrounding countryside (Ilfov județ). But this division is not followed in several statistical sources. Therefore, our data analysis always aggregates Bucharest and Ilfov and uses 41 județe.
cases affords an opportunity to estimate the model in two distinctive situations in which the results could be expected to differ. The first is for patrimonial cases, for which the Judecatori and the Tribunale might compete. The second is for non-patrimonial cases, for which they cannot.

3. A Simple Model, Compared to Existing Analyses of Supply and Demand

This section has two objectives, to set up a model that can be applied to Romania and to compare this model to those used in previous empirical studies. Pertinent previous studies fall into two categories. One set examines the court-related features of individual cases. A second set examines outcomes at the level of courts or jurisdictions, using aggregate statistics on cases falling into the jurisdiction. The present study falls in the second category and the following model is phrased in such terms. But the general conclusions on methodology apply when the individual case is the unit of observation.

The first equation focuses on the supply-side, where the term supply is used as a catch-all phrase to indicate the production side of the court system. The equation matches, *mutatis mutandis*, the set-up of the supply-side equation in existing empirical studies of court systems:

\[
S_i = \beta_1 D_i + \beta_2 X_i + \beta_3 Z_i + \epsilon_i
\]

where \(S_i\) ("supply") is a measure of the production or the productivity of the court system. Here, as in many studies, simplicity of presentation entails using a measure for \(S_i\) that is the inverse of productivity, for example time for completion of cases, which can be alternatively viewed as congestion. \(^{11}\) \(D_i\) ("demand") is the caseload of the pertinent court, which is included in the equation on the supposition that changes in caseload affect case processing time (Marvell and Moody, 1988). \(X_i\) is a set of exogenous observed variables that capture pertinent properties of the court system and of the society in which it is embedded. \(Z_i\) is a set of unobserved variables and \(\epsilon_i\) is an error term. In this paper's

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\(^{11}\) Existing studies often use the terms delay, congestion, and case-processing time interchangeably, as does this paper (Priest 1989, p. 527; Luskin and Luskin 1987 p. 190).
application, the unit of observation, i, is a court in a particular locality and the data set comprises observations on all localities in Romania. (In individual-level studies, i indexes individual cases.)

The demand side is less frequently examined in the literature, often simply lying in the background when (1) is estimated.\textsuperscript{12} Perhaps this reflects the emphasis on studying individual cases sampled from those already in court, where examination of the determinants of demand for the courts is much more difficult. Perhaps also it reflects a focus on the determinants of the productivity of the court system. But one should note that this focus draws attention away from analysis of what businesses really value in the system, which could give important information. This will point will be prominent when examining the results for Romania for the following demand equation:

\[ D_i = \alpha_1 + \alpha_2 S_i + \alpha_3 W_i + \alpha_4 Z_i + \eta_i \]  

\( S_i \) belongs in this equation on the supposition that speedy or efficient courts are more desirable, \textit{ceteris paribus}. \( W_i \) is a set of exogenous observed variables capturing pertinent properties of the court system and of the more general society in which it is embedded. \( \eta_i \) is the error term. \( W_i \) and \( X_i \) can have some elements in common, but estimation will require each of these sets of variables to include at least one element that is not in the other.

To understand the generality of the following methodological comments, it must be emphasized that (2) lies in the background in studies of the supply relationship even when the unit of observation is the individual and no demand-side equation is explicitly considered. Suppose that in a study of a single court the trial judge varies across cases (e.g., Luskin and Luskin 1987), then (2) would capture the process by which different judges garner different size caseloads. Suppose that the study samples many cases from a few courts (Buscaglia and Ulen, 1997), then (2) would capture how the different courts came to have different caseloads. In both cases, the researcher would only possess a few distinct

\textsuperscript{12} Priest (1989 p. 530): “Virtually all previous studies of the congestion problem have ignored the role of litigants...”.
observations on (2). Luskin and Luskin (1987) have a sample of over 2000 cases, but the number of judges was 20. Buscaglia and Ulen (1997) have a sample of 190 individuals in 19 different courts, which would give them only 19 observations for estimating (2).

Ordinary least squares (OLS), which is in almost universal use in the pertinent studies, is inappropriate if either $\alpha_2 \beta_2 \neq 0$ or $\alpha_4 \beta_4 \neq 0$. The above paragraphs have already offered simple reasons why one can expect both $\alpha_2$ and $\beta_2$ to be non-zero. It is easy to see why an unobservable $Z_i$ might be present in both equations, making $\alpha_4$ and $\beta_4$ non-zero. For example, suppose, as interviews in Romania have suggested, that the character of the president of the local court is very important in the functioning of the court. A high quality president might raise both integrity and efficiency. The president's character is unmeasurable but will directly affect efficiency in (1) and caseload in (2).

If OLS is used to estimate equations (1) and (2), then biased estimates of $\alpha_2$ and $\beta_2$ will result. Although it is difficult to make general statements on the nature of the biases, it is reasonable to assume that both of the resultant estimates will reflect both $\alpha_2$ and $\beta_2$, rather than one alone. Since it is natural to assume that $\alpha_2 < 0$ and $\beta_2 > 0$, it is quite possible that one could obtain estimates with the wrong sign.

The study by Luskin and Luskin (1987) possibly provides an example. They find that the caseload of individual judges has a negative effect on case processing time (the estimate of $\beta_2$ being negative), an effect that they attribute to incentives within the system. An alternative interpretation is that their estimate of $\beta_2$ is contaminated by $\alpha_2$, which would have a negative sign if judges facing more congestion are given fewer cases to handle. Similar problems could be present in Goerdt's (1989, p. 28) finding that filings per judge are positively related to speed of case disposition, in Dakolias' (1999) observation that the number of filed cases is not related to the clearance rate in a cross-country study, and in Levin's (1977, p. 235) cross-city finding that the influence of caseload on delay is modest. Goerdt (1989, p. 49)

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13 Mahoney et al. (1985, p. 31) emphasizes the importance of court leadership in an empirical study of US courts.

14 In a study in a similar vein, Buscaglia and Ulen (1997) find a positive coefficient.
even uses such a result to criticize practitioners in the US for erroneously emphasizing the importance of resources in reducing delays.

Are these observations simply another example of academic pedantry? The answer is decidedly no. Estimates of (1) have been one important ingredient in the debate on what has worked in court reform. One focus has been on effect of resources devoted to the judicial system.\textsuperscript{15} For example, Buscaglia and Ulen (1997, p. 291), although clearly recognizing the feedback implicit in (1) and (2), suggest on the basis of such an analysis that "Put dramatically, 'throwing money' at the problem of judicial inefficiency in Latin America is not likely to work." But a downward bias in the estimate of the pertinent coefficient is highly plausible, suggesting that the effect of throwing money is underestimated.\textsuperscript{16}

Can one identify cases where perceptions change when attempts to reduce bias are used? It is too early in the paper for the presentation of the results for Romania, but a foretaste is pertinent here. A reasonable summary of one aspect of the results is that OLS leads one to conclude that increased caseloads lead to fewer delays, while the application of more appropriate statistical techniques leads to the opposite conclusion.

4. The Model Applied to Romanian Commercial Justice

The paper now turns to the details of the specifications of (1) and (2) that are necessary when applying the model to Romanian cross-regional data. Table 1 lists the variables used in this paper, together with some basic statistics. Unless otherwise noted, all data are for 1999.

\textsuperscript{15} Messick (2000): "The World Bank has launched a major study of the impact of adding courts and judges...So far, the study’s authors have been unable to find any court where the addition of more courts or judges has had a significant impact on case processing times or backlogs." See also Buscaglia and Ulen (1997, p. 282) for a similar conclusion. Marvell and Moody (1988) perhaps is an exception to this observation.

\textsuperscript{16} At the level of generality of the system (1) and (2) it is difficult to make exact predictions on the bias of the coefficients, but consider a simple case: $S_i = \beta_3 D_i + \beta_2 X_i + \epsilon_i$ and $D_i = \alpha_1 S_i + \eta_i$. Now suppose that someone estimates the reduced form equation $S_i = \beta_3 X_i + \eta_i$, and interprets it as a structural equation. Then the expected value of the estimated coefficient is $\beta_3 / (1 - \alpha_1 \beta_3)$, which is less than $\beta_3$. Such a downward bias implies too large a degree of skepticism about the effect of resources.

The statistical analysis uses a standard measure for $S_i$, the Cappelletti-Clark index (Clark and Merryman, 1976), which is calculated in the following way:

$$\frac{\text{stock of cases at beginning} + \text{new cases filed}}{\text{number of cases disposed}} - 1$$

All elements of data used to calculate a specific value of the index refer to cases in one specific category. Three different categories of cases are examined, patrimonial and non-patrimonial cases separately, and also the aggregate of these two. Hence, this paper presents results for three separate analyses.

As is thoroughly recognized in the literature, the Cappelletti-Clark index is not an ideal measure but rather one that serves a pragmatic purpose when data are limited. The index is an estimate of the number of years that it will take to adjudicate a newly filed case. It is often interpreted as a measure of congestion in the courts. Thus, $S_i$ is a suitable indicator of court output for equation (1) and an appropriate explanatory variable in equation (2). This paper refers to $S_i$ as either congestion or delay or case-processing time, as appropriate, realizing that it is a crude indicator of them all.

**Demand in relation to resources.** $D_i$ is simply the number of new cases filed. The theory that places $D_i$ in (1) is transparent, but the evidence on this issue is surprisingly sparse, perhaps for the methodological reasons adumbrated in the previous section.

Availability of data constrains the choice of variables to appear in $X_i$. The determinants of supply fall into two categories, resources and socio-political environment. An emphasis on resources reflects the issues posed in the classic study by Zeisel et al. (1959). The only measure of resources available for

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17 Some weighting of cases by degree of complexity (see for example Gillespie 1976) would have been advisable in the estimation of (1), but that was not possible given data limitations.

18 A third set of issues, the organization and management of the courts, does not lend itself to study within this cross-regional framework. These issues have been extremely important in the literature (Goerdt 1989).
this study is the number of judges in the *Tribunal*, including those assigned to non-commercial cases.\textsuperscript{19} The workload of these judges can be split into two categories, those cases that fall into $D_i$ and all others under consideration in the same court, which compete for the same court resources. Given the varying definition of $D_i$ in the three different models, the exact definition of the “competing cases” variable also varies across the three analyses.

**Local legal culture.** A second set of hypotheses follows and broadens the *Church et al.* (1978) critique of *Zeisel’s* focus on resources and management. This critique emphasized local legal culture (Priest, 1989), which might be defined as the norms, expectations, and work habits of judges and lawyers in the particular jurisdiction. But as *Grossman et al.* (1981, pp. 92-3) and Priest (1989, p. 528) remark, invoking local legal culture as a determinant of court performance comes close to a tautology. It is necessary to find some measurable correlates of local legal culture. *Levin* (1977, p. 192, 206, 237, 245) suggests that political and moral elements are important determinants of local legal culture. *Gibson* (1980) argues that delay reflects the sociopolitical environment.

Even in the data-rich US, it has proven difficult to implement this general set of ideas satisfactorily. Thus, this paper necessarily adopts a rudimentary approach. Three variables seem appropriate for Romania. The first focuses directly on local legal culture while the second and third capture aspects of the broader socio-economic environment. First, one can use information on a court's performance outside its commercial section as a proxy for local legal culture. If the norms and practices of the local legal community are important then presumably there is a similarity between how they affect commercial court operations and how they affect criminal court operations. Thus, equation (1) uses the criminal-court measure that is analogous to $S_i$.\textsuperscript{20}

\textsuperscript{19} Dakolias (1999, p. 18) observes that lack of judges has been historically cited as a main reason for delay. But there is a large literature disagreeing with this proposition, see *Church et al.* (1978), *Mahoney* (1985), *Goerd* (1989), and *Messick* (2000).

\textsuperscript{20} Goerd (1989, p. 100) finds support for the existence of local legal culture in the fact that civil and criminal case processing times are correlated across jurisdictions. *Grossman et al.* (1981, p. 112) similarly use measures in different courts to examine the effect of local legal culture, remarking on the strong interdependence between the pace of civil and criminal cases in
Socioeconomic environment. The biggest divide in the political environment is that between the party led by Ion Iliescu, the Party of Social Democracy, which is a direct descendant of the old communist party, and all other parties. One measure capturing this split is the percentage of the vote in each judet for Iliescu in the 1996 presidential election. Since the administration of justice in Romania is a national issue and the officials of the court system are responsible to the Ministry of Justice, there has to be skepticism that local politics could be a determinant of court behavior. However, in the communist era, administration of the courts was under the local authorities and therefore this 'votes for Iliescu' variable might capture continuity with the communist past.

A last variable reflects Romanian history. Transylvania labored for long under the Austro-Hungarian empire, while the Turkish empire was the most important external influence in the rest of the country. It has become a standard fixture of popular analysis to emphasize the effects of these two heritages. Ionita and Fartusnic (2000) conclude that institutional innovation varies across the historical regions of Romania, with Transylvanian areas exhibiting most innovation. To examine this notion, the paper uses a dummy variable capturing whether a judet is in Transylvania.\textsuperscript{21}

4(b). The Demand Equation.

Congestion. Turning now to the specification of the variables in equation (2), the determinants of the demand for court services, the guidance from the literature is somewhat more sparse. Certainly, the focus on delay in studies of court productivity implies that plaintiffs care about levels of \(S_i\). If delays are too long, there is always the option of settling informally or simply ignoring the dispute. Moreover, competition between courts in different localities is possible. For example, breach of contract suits can

\textsuperscript{21} These socioeconomic variables are also plausible candidates to affect demand. However, early empirical investigations suggested that this was not the case.
be filed in either the defendant's judet or the judet where the obligation was to be performed.\textsuperscript{22} Non-payment claims can be filed where the obligation was created, where payment was due to be made, or where the defendant is located. All of these rules suggest enough flexibility that demand for a particular court can respond to levels of congestion.\textsuperscript{23}

Despite procedural rules that seem to aim at the contrary, there can even be competition between different courts within the same locality.\textsuperscript{24} Potential plaintiffs might be able to choose between a Tribunal and a Judecatoria by appropriate packaging of non-payment claims, since claims above 10 million lei (approximately $500) enter the former, while smaller claims are filed in the latter. Moreover, non-payment claims would be filed in different courts depending on whether they resulted from a promissory note or a different type of obligation.\textsuperscript{25} Thus, either at contract formation or after breach, enterprises can make decisions that affect which of the two levels of courts has jurisdiction. Additionally, some enterprises succeed in disregarding the law on jurisdiction. In the data used for this study, there are instances of non-patrimonial claims filed in Judecatoria courts, which the law does not countenance. Evidently, there is even competition between local courts that is inconsistent with the law. In view of the foregoing considerations, equation (2) should include a measure of Judecatoria congestion. This measure would be exactly analogous to the $S_1$ calculated for the Tribunal.\textsuperscript{26}

\textbf{Appeals.} When enterprise officials discuss the courts, three complaints constantly surface. One is the amount of time that cases take. A second is the lack of experience of many judges in commercial

\begin{itemize}
\item \textsuperscript{22} Romanian Civil Procedure Code, Arts. 5, 10-12.
\item \textsuperscript{23} These points also imply that enterprises can structure their contracts in a manner that can widen the choice of forum should a dispute occur.
\item \textsuperscript{24} Analogously, Bumiller (1981, p. 751, 762) and Grossman et al. (1981, pp. 104) suggest that the election of diversity jurisdiction in the US reflects levels of congestion.
\item \textsuperscript{25} Law No.58 of 1934 regulates the claims related to promissory notes and states that they have to be settled by the Judecatoria.
\item \textsuperscript{26} In every judet, there are several Judecatorii. The paper uses data that aggregates the results for all the Judecatorii in each judet.
\end{itemize}
matters. A third is the possibility of corruption. The implications of the first for the empirical analysis have already been discussed. How can one test whether the second and third affect the demand for court services?

Enterprise officials themselves provided one answer: lower court decisions are often reversed on appeal and the enterprises believe that the appeal courts are more reliable than the lower courts. Appeals court judges have had more experience than lower court judges and appeals are heard by panels of judges, making corruption more difficult. Enterprises are thus more likely to file suit in a particular locality if the relevant appeals court evidences a willingness to reverse lower court decisions. Hence, the demand equation includes a variable that measures the percentage of appeals that are successful in the pertinent appeals court. Since appeals from several Tribunale feed into one Curte de Apel (there are 15 Curti de Apel and 41 Tribunale), this variable is much more likely to reflect the characteristics of a Curte de Apel than of a specific Tribunal. Therefore, the variable will reflect the propensities of the Curte de Apel that are pertinent for enterprises considering filing suit in the Tribunal rather than the quality of the decisions of the particular Tribunal.

**Level and Character of Economic Activity.** The dependent variable in the demand equation is the total number of commercial cases, so that the equation should include explanatory variables defining the amount and the character of commercial activity in a locality. In measuring the economic base, this study is as highly constrained by data availability as it is in measuring the characteristics of the courts. One simple economic variable is the number of enterprises in the judet. Given that these enterprises vary greatly in size, it seems prudent also to include a variable that captures some element of size distribution: the equation includes the percentage share of large and medium enterprises in the total. On similar grounds, the size of the regional economy might be relevant. The best data available to this study are the total revenues of all small and medium enterprises in the jurisdiction.
Finally, the demand equation uses variables that capture the character of economic activity. Urbanization is a convenient measure of level of development and is inversely related to the importance of agriculture in the region. Given levels of urbanization, percentage employment in industry will most likely capture the split between industrial and service production.

5. The Results

Tables 2, 3, and 4 provide estimates of (1) and (2) for the Tribunale in Romania, for all commercial cases together (model 1) and then separately for patrimonial cases (model 2) and non-patrimonial cases (model 3). Estimation is by three stage least squares (3SLS) in view of the endogeneity of demand and supply variables. 3SLS also offers the advantage that the model's estimates fully absorb the information that the error terms of the two equations could be correlated (because both equations include $Z_i$). When considering the results, the reader should bear in mind that there are few observations in the regressions due to the paucity of data. The results can only be considered suggestive of what might be found when the relaxation of data constraints can lead to higher precision. Indeed, these data constraints are one symptom of the problem that this study addresses: the lack of information that is brought to bear on study of court processes.

5(a). The Supply Equation.

Demand in relation to resources. Perhaps one of the most obvious hypotheses, that increased demand for court services will lead to a slowdown in the processing of cases, is weakly supported by the evidence, with statistical significance for one of the coefficients, that in patrimonial cases. Nevertheless, even this amount of evidence for the hypothesis contrasts with much of the existing literature (Luskin and Luskin 1987, Buscaglia and Ulen 1997; Goerdt, 1989).

Resources do make a difference as is seen quite clearly in the results on number of judges. This conclusion might be absorbed with a yawn were it not absent from most of the existing literature (Messick, 2000). Consistently, the number of cases competing for judges' time leads to higher levels of
congestion. This suggests a spillover effect between demand in the commercial and other sections of the Tribunal (including criminal sections), despite the fact that these sections are nominally separate from each other. Competition for resources appears where the formal structure of the court system apparently rules it out.

**Local legal culture.** The criminal court congestion variable has the strongest results, from the point of view of statistical significance, of all variables in this paper. If one assumes, heroically, that the variables discussed in the previous paragraph sufficiently capture the resources devoted to the court and the demands placed on the court, then the results on criminal court congestion reflect the influence of local legal culture. But because this assumption is very strong, it seems appropriate not to place undue emphasis on this result.

**Socioeconomic environment.** The positive sign and the significance of the variable measuring local support for Ilișescu begs interpretation. This comment applies equally well to the dummy variable capturing whether the județ is in Transylvania. Nevertheless, the inclusion of such variables is justified, following standard assumptions in the literature that socioeconomic environment is important.

5(b). The Demand Equation.

**Congestion.** Enterprises do react to levels of congestion in the courts. In model 1, both of the court congestion statistics are statistically significant. This suggests that not only do enterprises take into account how long they will be delayed in the Tribunal, but that the Judecatorii and the Tribunale are in competition, in ways not envisaged in the procedural rules of the legal system. There is competition between the two courts where the formal theory of the system does not acknowledge it. The effect of Judecatoria congestion is concentrated in patrimonial (model 2) cases, which is consistent with expectations since non-patrimonial cases enter the Judecatorii in violation of the civil procedure rules. This result is fundamental to deliberations on institutional reform. It shows how competition within a
court system can improve the effectiveness of the system as a whole, even when that competition is not
countenanced by the prevailing legal theory.

Appeals. Enterprises react to the probability of success in the appeals court, but the variable is only
statistically significant for non-patrimonial cases (model 3). Perhaps, non-payment cases are clearer and
offer less opportunity for lower court decisions to be erroneous, either by design or by incompetence.
Whatever the reason, the result has importance for deliberations on institutional reform. The appeals
process, although subject to much criticism for delaying outcomes, seems to play an important role in
determining whether enterprises use the courts.

Level and Character of Economic Activity. The variables in this category are included in the model
primarily to capture the economic base that is pertinent for the determination of caseloads. In that sense,
they fulfill their function, since two or more of these variables are significant in each model. The number
of enterprises is highly significant and implies that the addition of a new enterprise with average
characteristics would add 0.3 new cases to the Tribunal caseload every year. As economic activity
increases the number of patrimonial cases falls, suggesting that demand for the courts is higher in regions
with deeper post-communist recession. Both of these results would be important for institutional
reforms, suggesting the ways in which decisions on the inter-regional and inter-temporal allocation of
resources could be improved by the types of estimates presented here.

Two results provide a consistent and potentially important observation: the effect of size distribution
of enterprises on the caseload is not significant in any of the equations, while the coefficient on industry
(where enterprise size is generally larger) is negative and significant in all three models. This suggests
that large firms impose much less burden per unit of economic activity on the court system than do small
firms.
5(c). The Effect of Reducing Biases in Estimates

This paper began by noting that existing empirical analyses of the supply and demand for courts have a number of methodological problems. Section 3 highlighted these problems in the context of the model advanced in this paper. Now, it is possible to see whether correcting these problems actually makes a difference. The relevant information is presented in Table 5, where the 3SLS estimates for the coefficients of the endogenous variables are contrasted with the analogous OLS estimates. Tables 2-4 are not repeated for OLS estimates, since these would be unreliable. Table 5 simply lists the most pertinent information that should be compared in order to assess the importance of taking endogeneity into account.

The reader should note from Table 5 that the percentage change in the coefficients between 3SLS and OLS is much greater than the percentage change in the standard errors. Thus, it can be fairly concluded that differences between these two sets of estimates are due to problems of endogeneity rather than due to some weakness in the specification of the whole system, which is much more critical for 3SLS than for OLS.

This table reveals that OLS misleads. The OLS estimates provide weak evidence that an increase in caseload decreases court congestion, the truly paradoxical result that has been found frequently in the literature. In contrast, the 3SLS results provide the expected conclusion (although with weak statistical significance) that an increase in caseload increases the degree of court congestion. Additionally, OLS seems to over-estimate the effect of congestion on the demand for court services.

Lastly, the 3SLS estimates provide information concerning what might be missing from the empirical analysis, that is what might be in Z_i. This information appears in the estimates of the cross-equation error correlations that are provided in Tables 2-4. These correlations suggest that a change in some unmeasured factor simultaneously reduces court congestion and increases demand for the courts. The hypothesis above was that one such factor could be the character of the president of the *Tribunal*
court. OLS cannot detect whether the existence of such a factor is even a possibility. A systems approach to estimation is necessary to identify whether such a factor might exist, as the estimates in Tables 2 and 4 indicate.

6. Reflections

Four different aspects of the results bear emphasis:

1. It is imperative to use a statistical methodology that is appropriate to the simultaneous determination of supply and demand. For example, the perceived direction of the effect of caseload on delay is reversed by a change in methodology. This paper offers the prosaic conclusion that larger caseloads cause longer delays. But a less appropriate methodology would have led to the conclusion that greater caseloads reduce delays, the surprising result that is quite common in the literature.

2. The formal theory of a legal system is sometimes a poor guide when understanding its behavior. Businesses apparently arrange their commercial relations so that suits can be filed in courts where delay is less. They choose even where procedural rules are thought to dictate. Thus, reformers risk making institutions worse if they simply follow the theory of the system's structure rather than using empirical analysis to understand how actors innovatively utilize adventitious elements of the system.

3. In choosing where to file a suit, businesses take into account expectations concerning the ease of obtaining a successful decision on appeal. This suggests that businesses attach an option value to an appeal, which varies with locality. In Romania, the presence of this option value is probably due to the perceived high rate of unpredictability of court decisions, with poorly trained judges and corruption the suspected culprits.

4. There are several other findings that bear on debates in the literature. Resources matter: additional resources do reduce delays. Local legal culture affects court productivity. Regions with better economic performance exhibit a smaller demand for court services, suggesting that one determinant of the overcrowding of commercial courts in transition countries could be the depth of recession. Smaller
firms use the courts relatively more frequently than larger firms. The service sector uses courts more intensively than the industrial and agricultural sectors.

Finally, the paper bears on the process of institutional reform in a more general way. By sheer serendipity, the results included in this paper were being produced at exactly the same time that a reform of commercial court procedures was finalized by the Romanian Ministry of Justice and promulgated by the Romanian government.27 The reforms seem to have been aimed at the laudable goals of reducing the burden of caseload on the commercial courts and at reducing delays. However, the results above suggest that certain features of the reforms remove elements of court procedures that enterprises revealed by their behavior to be valuable.

The Judecatorii will no longer try commercial cases as they did in previous years for patrimonial cases in which the amounts at stake were small. Now, suits in which the amount claimed is under 10 billion lei (approximately $370,000) must all be filed in Tribunale, while suits for larger amounts must be filed in the Curti de Apel. Given the size of the monetary claim that constitutes this dividing line, very few suits will be filed in the Curti de Apel. Thus, the reforms have removed an element of competition within the court system that was provided by the ability to choose (in some instances) between the Judecatorii and the Tribunale. The statistical results in this paper show that this choice was valued by enterprises in 1999.

The reforms considerably narrow the options for appeal. Under the old rules, decisions could be appealed if the losing party was dissatisfied for more or less any reason. Then the basis of the previous decision would be reviewed by a higher level court. Moreover, a second appeal was possible if the appellant could show certain procedural lapses in the first trial. The new rules now foreclose this first option for appeal, narrowing the options available for litigants. This reform will undoubtedly speed the

27 Bajan (2000). As is the nature of these things in Romania, the changes were made by decree in Emergency Government Ordinance 138 September 14, 2000, published in the Official Gazette no.479 October 2, 2000. Some of these reforms took effect on January 2nd 2001, others were delayed until later in 2001.
resolution of cases. However, there is no reason to believe that the reduction of delay will compensate for the loss of some options to appeal. The statistical results in this paper show that these options have been valued by enterprises in the past.

This paper began with the observation that court reform in developing and transition countries has not been generally regarded as successful. It is possible that this lack of success might be a consequence of the very process of court-reform, which rests largely on theoretical, non-empirical analyses of the mechanisms of commercial justice. In Romania, the options foreclosed by the reforms were never really a formal part of the system, and in some ways were antithetical to its philosophy, so it was natural that a theory-based reform did not consider them. In contrast, an empirical stance naturally brings these options to the fore.

The development of usable empirical analyses can only flow from a systematic attempt to build up the necessary databases, and then apply suitably adapted statistical methodologies. But, as this paper has argued with the Romanian example, reform processes do not even take advantage of standard methodologies applied to existing data. Perhaps, then, the failure of many institutional reforms in developing and transition countries is no mystery. They often rest on empirical information that is no better than that being used by engineers and doctors over a century ago.
References


Buscaglia, Edgardo and Maria Dakolias “Comparative International Study of Court Performance Indicators: A Descriptive and Analytical Account” (Washington: World Bank Legal and Judicial Reform Unit Series 1999)


<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
<th>Model in which variable appears</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply (S) for all cases</td>
<td>Cappelletti-Clark index for all cases in the Tribunal, in years</td>
<td>1</td>
<td>0.345</td>
<td>0.237</td>
<td>0.038</td>
<td>1.091</td>
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<tr>
<td>S for patrimonial cases</td>
<td>Cappelletti-Clark index for patrimonial cases in the Tribunal, in years</td>
<td>2</td>
<td>0.258</td>
<td>0.180</td>
<td>0.020</td>
<td>0.738</td>
</tr>
<tr>
<td>S for non-patrimonial cases</td>
<td>Cappelletti-Clark index for non-patrimonial cases in the Tribunal, in years</td>
<td>3</td>
<td>0.675</td>
<td>0.698</td>
<td>0.019</td>
<td>3.682</td>
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<td>Demand (D) for all cases</td>
<td>Number of commercial cases filed in the Tribunal in '00s</td>
<td>1</td>
<td>13.870</td>
<td>15.025</td>
<td>2.250</td>
<td>78.590</td>
</tr>
<tr>
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<td>Number of commercial patrimonial cases filed in the Tribunal in '00s</td>
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<td>6.918</td>
<td>7.283</td>
<td>1.290</td>
<td>49.100</td>
</tr>
<tr>
<td>Demand (D) for non-patrimonial cases</td>
<td>Number of non-patrimonial commercial cases filed in the Tribunal in '00s</td>
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<td>6.952</td>
<td>10.333</td>
<td>0.450</td>
<td>53.330</td>
</tr>
<tr>
<td>Judges</td>
<td>Number of judges assigned to the Tribunal court</td>
<td>all</td>
<td>21.439</td>
<td>13.180</td>
<td>8.000</td>
<td>94.000</td>
</tr>
<tr>
<td>Competing cases in the Tribunal court</td>
<td>Number of cases of all types in the Tribunal other than those included in the model's D, '00s</td>
<td>1</td>
<td>85.387</td>
<td>60.726</td>
<td>21.000</td>
<td>382.580</td>
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<td>Competing cases</td>
<td>as above</td>
<td>2</td>
<td>92.339</td>
<td>66.086</td>
<td>21.650</td>
<td>412.070</td>
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<td>Competing cases</td>
<td>as above</td>
<td>3</td>
<td>92.305</td>
<td>67.392</td>
<td>22.600</td>
<td>431.680</td>
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<tr>
<td>Criminal court congestion</td>
<td>Cappelletti-Clark index in the Tribunal criminal section, in years</td>
<td>all</td>
<td>0.227</td>
<td>0.155</td>
<td>0.044</td>
<td>0.641</td>
</tr>
<tr>
<td>Votes for Iliescu</td>
<td>Percentage of votes for the major left-of-center party in the 1996 presidential election</td>
<td>all</td>
<td>50.028</td>
<td>23.700</td>
<td>3.425</td>
<td>95.144</td>
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<tr>
<td>Transylvania</td>
<td>Dummy variable equal to one if the judet is in Transylvania</td>
<td>all</td>
<td>0.390</td>
<td>0.494</td>
<td>0.000</td>
<td>1.000</td>
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<tr>
<td>Judecatoria congestion</td>
<td>Cappelletti-Clark for all commercial cases in the Judecatoria</td>
<td>1</td>
<td>0.177</td>
<td>0.104</td>
<td>0.040</td>
<td>0.471</td>
</tr>
<tr>
<td>Judecatoria congestion</td>
<td>Cappelletti-Clark index for patrimonial cases in the Judecatoria</td>
<td>2</td>
<td>0.166</td>
<td>0.102</td>
<td>0.014</td>
<td>0.445</td>
</tr>
<tr>
<td>Judecatoria congestion</td>
<td>Cappelletti-Clark index for non-patrimonial cases in the Judecatoria</td>
<td>3</td>
<td>0.277</td>
<td>0.383</td>
<td>0.000</td>
<td>2.000</td>
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<tr>
<td>Appeal success rate</td>
<td>Percent of appeals that are successful in the appeal court pertinent to the particular Tribunal</td>
<td>all</td>
<td>41.849</td>
<td>8.306</td>
<td>28.614</td>
<td>58.689</td>
</tr>
<tr>
<td>Number of enterprises</td>
<td>Number of enterprises in the judet, 1998, '00s</td>
<td>all</td>
<td>9.665</td>
<td>11.775</td>
<td>3.101</td>
<td>79.364</td>
</tr>
<tr>
<td>% large and medium enterprises</td>
<td>Percentage of enterprises in the judet classified as large or medium, 1998</td>
<td>all</td>
<td>2.236</td>
<td>0.436</td>
<td>1.399</td>
<td>3.151</td>
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<tr>
<td>Level of economic activity</td>
<td>Total revenues of small and medium enterprises, 1998, trillion Romanian lei</td>
<td>all</td>
<td>6.972</td>
<td>13.554</td>
<td>1.562</td>
<td>89.808</td>
</tr>
<tr>
<td>Urbanization</td>
<td>Percentage of the population in urban areas, 1998</td>
<td>all</td>
<td>50.714</td>
<td>13.232</td>
<td>30.868</td>
<td>88.787</td>
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<tr>
<td>Industry</td>
<td>Percentage of the work force in industry, 1998</td>
<td>all</td>
<td>25.012</td>
<td>7.567</td>
<td>10.800</td>
<td>42.562</td>
</tr>
</tbody>
</table>

There are 41 observations for each variable. Data are for 1999, unless otherwise stated.
Table 2. Demand and Supply in Romanian Courts: 3SLS Estimates for all Commercial Cases

<table>
<thead>
<tr>
<th>Demand equation</th>
<th>Supply equation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Demand equation</strong></td>
<td><strong>Supply equation</strong></td>
</tr>
<tr>
<td>Dependent variable: Number of cases</td>
<td>Dependent variable: Index of Congestion</td>
</tr>
<tr>
<td>Variable</td>
<td>Coefficient (t-statistic)</td>
</tr>
<tr>
<td>-----------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>Constant</td>
<td>-5.376 (-0.41)</td>
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<tr>
<td>Tribunal congestion</td>
<td>-14.295** (-2.01)</td>
</tr>
<tr>
<td>Judecatoria congestion</td>
<td>33.800*** (2.45)</td>
</tr>
<tr>
<td>Appeal success rate</td>
<td>0.101 (0.60)</td>
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<tr>
<td>Number of enterprises</td>
<td>3.140**** (3.52)</td>
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<tr>
<td>Level of economic activity</td>
<td>-1.880*** (-2.51)</td>
</tr>
<tr>
<td>% large and medium enterprises</td>
<td>1.498* (0.41)</td>
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<td>Urbanization</td>
<td>0.108 (0.78)</td>
</tr>
<tr>
<td>Industry</td>
<td>-0.485*** (-2.27)</td>
</tr>
</tbody>
</table>

Cross equation error correlation = -0.201 (t-statistic = 1.19)

**** significant at the 1% level in a 2-sided test
*** significant at the 5% level in a 2-sided test
**  significant at the 10% level in a 2-sided test
*   significant at the 20% level in a 2-sided test
Table 3. Demand and Supply in Romanian Courts: 3SLS Estimates for Patrimonial Commercial Cases

<table>
<thead>
<tr>
<th>Demand equation</th>
<th>Supply equation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent variable:</strong> Number of cases</td>
<td><strong>Dependent variable:</strong> Index of Congestion</td>
</tr>
<tr>
<td>Variable</td>
<td>Coefficient (t-statistic)</td>
</tr>
<tr>
<td>Constant</td>
<td>1.381 (0.48)</td>
</tr>
<tr>
<td><em>Tribunal congestion</em></td>
<td>-1.773 (-0.83)</td>
</tr>
<tr>
<td><em>Judecatoria congestion</em></td>
<td>5.631** (1.76)</td>
</tr>
<tr>
<td>Appeal success rate</td>
<td>0.030 (0.84)</td>
</tr>
<tr>
<td>Number of enterprises</td>
<td>0.425*** (2.23)</td>
</tr>
<tr>
<td>Level of economic activity</td>
<td>0.146 (0.92)</td>
</tr>
<tr>
<td>% large and medium enterprises</td>
<td>-0.290 (-0.37)</td>
</tr>
<tr>
<td>Urbanization</td>
<td>0.049* (1.60)</td>
</tr>
<tr>
<td>Industry</td>
<td>-0.126*** (-2.88)</td>
</tr>
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</table>

Cross equation error correlation = -0.000 (t-statistic = 0.00)

**** significant at the 1% level in a 2-sided test
*** significant at the 5% level in a 2-sided test
** significant at the 10% level in a 2-sided test
* significant at the 20% level in a 2-sided test
Table 4. Demand and Supply in Romanian Courts: 3SLS Estimates for Non-Patrimonial Commercial Cases

<table>
<thead>
<tr>
<th>Demand equation</th>
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<tr>
<td>Dependent variable: Number of cases</td>
<td>Dependent variable: Index of Congestion</td>
</tr>
<tr>
<td>Variable</td>
<td>Coefficient (t-statistic)</td>
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<td>Judecatoria congestion</td>
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<td>Appeal success rate</td>
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<td>Number of enterprises</td>
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<td>Level of economic activity</td>
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<td>% large and medium enterprises</td>
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<td>Urbanization</td>
<td>0.159 (1.28)</td>
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<td>Industry</td>
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</table>

Cross equation error correlation = -0.459**** (t-statistic = 3.01)

**** significant at the 1% level in a 2-sided test
***  significant at the 5% level in a 2-sided test
**   significant at the 10% level in a 2-sided test
*    significant at the 20% level in a 2-sided test
Table 5. Differences between 3SLS and OLS estimates for the Coefficients of the Endogenous Variables

<table>
<thead>
<tr>
<th></th>
<th>Model 1: All cases</th>
<th>Model 2: Patrimonial cases</th>
<th>Model 3: Non-patrimonial Cases</th>
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<tr>
<td></td>
<td>Coefficient</td>
<td>Standard Error</td>
<td>(2-sided) probability level for t-statistic</td>
</tr>
<tr>
<td><strong>Demand Equation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3SLS estimates for the coefficient of congestion in the demand equation</td>
<td>-14.295</td>
<td>7.099</td>
<td>0.05</td>
</tr>
<tr>
<td>OLS estimates for the coefficient of congestion in the demand equation</td>
<td>-19.531</td>
<td>5.755</td>
<td>0.00</td>
</tr>
<tr>
<td>% change from 3SLS to OLS</td>
<td>-37</td>
<td>-19</td>
<td></td>
</tr>
<tr>
<td><strong>Supply Equation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3SLS estimates for the coefficient of caseload in the supply equation</td>
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<td>0.004</td>
<td>0.83</td>
</tr>
<tr>
<td>OLS estimates for the coefficient of caseload in the supply equation</td>
<td>-0.005</td>
<td>0.003</td>
<td>0.05</td>
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<td>% change from 3SLS to OLS</td>
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<td>-42</td>
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</table>