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## Legal Blueprint for Strengthening Property Rights: Efficient Financial Markets Issues in the Indicators for Secured Transactions

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### **What is financial market efficiency?**

An efficient financial system is one where all mutually beneficial financial exchanges are made. Entities with surplus funds use claims on current goods and services to buy claims on future goods and services, and deficit entities sell future claims for claims on current goods and services.

### **What is the role of the price of financial instruments or the interest rate?**

The price or interest rate (or vector of interest rates) is determined by supply and demand for financial claims. In the efficient equilibrium, all who value current goods less relative to future goods, as compared to the interest rate, buy financial claims. Those who value present goods more relative to future goods sell financial claims.

### **What prevents financial market efficiency; what causes financial market failure?**

Following Coase, transactions costs inhibit mutually beneficial exchanges of financial claims. Transactions costs arise from different features of financial markets, including government regulations, negotiating costs, and the environment for contract enforcement. The modern literature on financial markets emphasizes the role of

costly and, especially, asymmetric information in causing financial market failure.

### **How do information problems cause financial market failure?**

Financial theory focuses on adverse selection and moral hazard in financial markets. Adverse selection, an ex ante problem, arises when increases in interest rates bias the pool of potential borrowers toward higher risk borrowers. Moral hazard, an ex post problem, arises when borrower behavior changes after the loan is granted. Adverse selection and moral hazard result in credit rationing, a ubiquitous feature of financial markets. Lenders do not raise interest rates sufficiently to clear markets because higher rates reduce expected profits by adversely selecting borrowers and altering the incentives of borrowers to take excessive risk. Higher rates will mean less to borrowers who are most risky, are least likely to repay principle and interest, and higher rates will increase the incentives of borrowers to take on riskier projects.

### **How do financial market actors address information problems?**

Lenders have several options for addressing information problems. They can invest heavily in collecting information on potential borrowers and monitor actual borrowers to limit their risk taking. In addition, lenders can use collateral to address

remaining information problems. The legal structure creating security interests in collateral substitutes in part for inadequate information about the borrower.

### **How can we estimate the gains from financial market efficiency?**

One way of estimating the gains from trade in financial claims is to use supply and demand curves and estimate the size of ‘Harberger Triangles’ (and rectangles). This approach has the virtue of practicality and the well known vice of being based on partial equilibrium analysis. Given the caveats, rough measures of the potential gains at an annual rate as a fraction of GDP can be obtained from information on the level and change in transactions costs and quantities exchanged. The change in the quantities can be derived from estimates of supply and demand elasticities (slopes of supply and demand curves). Elasticity estimates are perhaps best guessed by looking at quantities across countries differing mainly in their financial market efficiency.

### **How should we analyze monopoly suppliers of credit?**

Some suppliers of credit are monopolists, as in the example of the fertilizer dealer in the Theme Paper. This notwithstanding, the same analysis is useful. The Harberger analysis looks at one market distortion in isolation. Monopoly adds another distortion. In monopolistic markets compared to competitive markets, cost reductions will often have less impact in raising quantities and reducing interest rates. Moreover, the monopolist will get a greater share of any cost reduction. This can all be analyzed in the framework of Harberger triangles. Note, though, that reductions in transactions costs may be sufficient to make previously monopolistic markets competitive. In such

cases, the welfare gain from that transition should be included in the gain. .

### **What about costs?**

The above will give an estimate of the potential benefits. To get net benefits, costs of improving the financial market structure must be subtracted, where the costs are measured at an annual rate (up front costs need to be annualized).

### **Do transactions costs represent expenditures of real goods and services?**

How one treats transactions costs will be reflected in how the rectangles are treated. (The rectangles in a excise tax analysis represent the tax revenue). If ‘transactions costs’ just limit exchange, but do not give rise to any expenditures of real resources then the rectangles (transactions costs times quantities) do not represent the expenditure of real resources. If transactions costs reflect the expenditure of real resources, then the reduction in transactions costs is included in the gains.

Here we assume that the base case should be that financial market actors expend real resources to overcome transactions costs caused by information problems.

Given the above the expression, the economic gain from improving the legal structure to support security interests is:

$$G = Q_0 * dT + .5 * dT * dQ - C,$$

where G is the gain measured in money units, dollars, per time period, say years; Q<sub>0</sub> is the initial quantity of lending measured in money units, \* denotes multiplication; d denotes changes; T is the transactions cost per dollar of transactions; and C is the annualized total cost of the change .

To measure the gain as a fraction of GDP, just divide each term by Y, GDP per annum.

$$(G/Y) = (Q_0/Y)*dT + .5*dT*(dQ/Y) - (C/Y)$$

The first term on the right hand side, the prior quantity relative to GDP times the reduction in the spread, or transactions costs, measures the transactions cost savings on the prior quantity; and the second term, the transaction costs savings times the change in the quantity of lending relative to GDP, measures the gain in value to buyers and sellers of financial claims from the increase in quantity resulting from the improved legal system supporting security interests.

### What would the numbers look like?

If  $Q_0/Y = .1$ ,  $dT=.2$ ,  $dQ/Y=.1$ , and  $C/Y=.005$ , then

$$(G/Y) = .1*.2 + .5*.2*.1 - .005 = .02 + .01 - .005 = .03 - .005 = .025 = 2.5\% \text{ of GDP.}$$

The first term, the savings on the prior level of transactions, is 3% of GDP; the second term, the value in the new transactions, is 1% of GDP, and this gross gain at the cost of .5% of GDP, for a net gain per year of 2.5% of GDP.

This is a static measure of the efficiency gains. Certainly over time the gains would be compounded as income grows, though whether as a fraction of GDP would remain an open question.

### Conclusion

These numbers are just meant to be illustrative.<sup>1</sup> The advantage of this method

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<sup>1</sup> For examples of the application of this method see "Costo Económico de los Defectos en el Marco Legal Argentino para los Créditos con Garantía de Bienes Muebles," by Nuria de la Peña, Heywood W. Fleisig, Alejandro M. Garro, and Roberto Muguillo:

over conventional indicators lies in the way it combines quantitative indicators and price indicators to produce measures of economic gain that can be compared with each other and with alternative proposals. We are not sure that it is useful to try to break the gains down by the different aspects of reform of secured transactions laws. Rather, this reform is a joint product of different elements. All or most of these elements must need to be done to get significant gains.

Inadequate legal support for secured transactions could have two separate effects:

First, high transactions costs reduce exchanges between borrowers and lenders. The gap in the risk adjusted expected rate of return between savers and investors, reflecting the costs of exchange, reduces savings and investment rates. Second, informational difficulties in financial markets cause existing savings to be misallocated. Some high expected rate of return projects do not get funded while lower expected rate of return projects are funded.

Both of these effects are likely to be important. However, we do not know of a simple general measure of the second effect -- misallocation. But, we can measure the first, quantity effect, using standard analysis, if we assume away the second effect. That is, we can assume that projects are funded in the correct order, but that the high costs of determining the value of borrowers reduce financial market volume.

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PODER JUDICIAL, DESARROLLO ECONÓMICO Y COMPETITIVIDAD EN LA ARGENTINA, *Foro de Estudios para la Administración de Justicia (FORES)* and *Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET)*, Volumen II, Ed. Depalma, Argentina, March 2001; and "How Legal Restrictions on Collateral Limit Access to Credit in Bolivia," by Heywood W. Fleisig, Juan Carlos Aguilar, and Nuria de la Peña, THE WORLD BANK, Report No. 138373-BO (December 1994).

Under this assumption, the analysis suggested above seems to be appropriate. In this case, reducing transactions costs in financial markets will have a measurable economic efficiency gain in two different ways.

First, lower transactions costs will reduce the cost of financing the prior volume of investment, with an economic gain equal to the reduced transactions costs per dollar unit times the volume of transactions measured in dollars. Second, lower transactions costs will increase the volume of funding with an additional gain resulting from the gap between the value of current funds to borrowers and lenders. This will surely be an underestimate of the gain from improving the legal structure in that funds would also be reallocated to higher value borrowers.

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