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Item No. 5 on the agenda: International Interests in Mobile Equipment **–**

(c) Preparation of other Protocols to the Cape Town Convention, in particular on matters specific to agricultural, mining and construction equipment

(Memorandum prepared by the Secretariat)

ECONOMIC ANALYSIS OF PROPOSED 4TH PROTOCOL - UPDATE

1. As noted in paragraph 10 of C.D. (91) 4(c), the Secretariat has been consulting with the Center for the Economic Analysis of Law (CEAL) in relation to the Center undertaking an economic analysis of the proposed 4th Protocol. In late March, the Secretariat reached agreement for CEAL to prepare an economic analysis of the proposed 4th Protocol, and to submit the analysis to UNIDROIT by September 2012. On 30 April 2012, CEAL provided a draft of the framework of the economic analysis (**Attachment 1** – available in English only), so as to provide an opportunity for the Governing Council members to be informed of the structure and methodology of the analysis. The draft CEAL paper will be used by CEAL in its ongoing consultations with industry, governments and academic experts in the course of finalising the economic analysis.

2. The draft CEAL paper notes that the economic impact of the proposed 4th Protocol is potentially greater than any other Cape Town Convention Protocol to date, with an estimated $US 2 trillion of mining, agricultural and construction ("MAC") equipment potentially being covered by the Protocol. The paper also notes that the potential benefits of the proposed 4th Protocol would include providing new sources of funding by opening opportunities for MAC equipment to be used as collateral for loans, as well as improved terms for credit (lower interest rates, larger loan amounts and/or longer repayment periods) with the potential to boost demand for MAC equipment by $US 600 billion.

3. The draft CEAL paper lists a number of existing barriers to MAC equipment being used as collateral for loans, especially in developing and transition economies. These barriers range from problems in creating security interests in MAC equipment (for example, limitations on the categories of persons who may be parties), inadequate protections for a creditor's priority interests, inefficient documentary procedures, and difficulties in enforcing creditors' rights. In some jurisdictions, real estate is the only widely-accepted form of collateral, making it difficult for businesses without real estate to finance acquisitions of MAC equipment.

4. The paper concludes with an overview of how the proposed 4th Protocol could address those barriers to facilitate secured financing of MAC equipment: for example, by providing a system for registration of priorities, and enabling improved enforcement of creditor's rights.

Center for the Economic Analysis of Law
WASHINGTON, DC

UNIDROIT's Cape Town Convention: Proposed Fourth Protocol on Mining, Agricultural, and Construction Equipment: Issues for Discussion[1]

Heywood Fleisig[2]***, CEAL***
May 2012

Discussion/Comment Draft -- Please do not cite or quote without consent of the author

I. Potential economic impact of the proposed Fourth Protocol

Covering $US 400 billion of the US stock of productive capital and perhaps as much as $US 2 trillion of the world's capital stock, the proposed Fourth Protocol on mining, agricultural and construction (MAC) equipment could have a greater economic impact than earlier Cape Town Convention Protocols (see Appendix I).

This economic impact arises entirely from the improved credit terms that a successful reform would offer purchasers of MAC equipment -- lower interest rates, larger loans, and longer repayment periods.

Existing national legal regimes for lending secured by movable property, other than the systems of a few developed countries, make it difficult or impossible to use movable property such as MAC equipment as the sole collateral for loans. These legal failures arise from problems in the creation, priority, publicity, and enforcement of security interests against such property.[3] A full resolution of these problems in the legal framework for secured lending would, in CEAL's rough estimate, increase the world market for MAC equipment by $US 600 billion in three to five years. Compared to present US annual exports of $US 21 billion (Table 5) in MAC equipment, this is an enormous increase.

This expansion of the world market for MAC equipment would provide great economic benefit to purchasing countries. There, additional MAC equipment would support increased production, incomes, and consumption per person. For countries selling MAC equipment, additional gains would arise from the profits and expanded employment opportunities created by building this equipment and exporting it.

The exact economic impact of the Fourth Protocol, however, will depend on how closely it can approach a full legal reform in providing remedies for the legal defects in present legal systems for lending secured by movable property and, thereby, improving credit terms for the financing of that MAC equipment.

A. Effect of secured transactions reform on lending terms

The Fourth Protocol can produce benefits only insofar as it removes legal constraints that now worsen the lending terms facing those seeking to purchase MAC equipment on credit. For borrowers in the United States and other countries that possess well-developed legal frameworks for lending secured by movable property, better collateral means better access to credit.

These gains arise mainly because, for any borrower, lenders see secured loans as less risky than unsecured loans: secured loans have a higher priority than unsecured loans; priority ensures that loans taken out by the borrower subsequent to the secured loan do not dilute the assets required to cover the secured loan; the collection system for secured loans typically executes more rapidly than the repayment system for unsecured loans; and the recovery value of the specified collateral is more determinable when the loan is made than is the likely future asset pool of a defaulting unsecured borrower.[4]

Consequently, borrowers in countries with better legal frameworks for secured lending often face terms like the ones shown in Table 1. In that example, drawn from the United States, a borrower can pay 8.5% interest on an unsecured loan and take 4 years to repay; the amount of the loan is limited to a size whose debt service does not exceed 35% of salary or business cash flow. The very same borrower, however, could pay 5.0% on a loan secured by a vehicle and take 7 years to repay, with the same credit cap of loan service not exceeding 35% of salary or cash flow (***next steps***[a]***)***.

Table 1

Impact of a Modern Framework for Secured Lending on Terms of Credit, example

	interest rate	maturity of loan in years	DS/cash flow
Unsecured	**8.5%**	**4**	**35%**
Secured by a vehicle	**5.0%**	**7**	**35%**

Source: Wright Patman Congressional Federal Credit Union, available at http://www.congressionalfcu.org/visa/ and http://www.congressionalfcu.org/auto/

These different credit terms produce large differences in access to credit. Compare, for example, two credit options for a prospective borrower with $500,000 in cash flow (Table 2). Given the lender's limit of 35% in the ratio of debt service-to-cash flow, this borrower can devote no more than $175,000 per year to debt service. At the terms the lender offers for the unsecured

[a] Next steps: CEAL to present some Federal Reserve data on the terms for equipment lending and such private source data as are available on the web; at one point, GE capital posted some very useful loan terms for business borrowers. Invaluable here, though, would be trade association or manufacturer data at the dealer level comparing credit terms in the United States with credit terms offered by their dealers in foreign countries. These could be masked by whatever confidentiality needs the supplier has: e.g. "two South American countries". CEAL can adjust for interest rate differences arising from national monetary conditions by looking at spreads over government rates. Do Trade Associations/manufacturers have such data on production and exports?

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loan, the borrower can get a loan of $573,229 payable over a 4 year period. However, at the terms the lender offers for the secured loan, the borrower can get a loan of $1,012,982.

That is, the secured loan permits access to 75% more credit than does the unsecured loan for the same borrower. In addition to easing the quantitative credit restraint or "rationing" of the unsecured borrower, the lender also charges a lower interest rate. At the lower interest rate, more equipment investment will be profitable and borrower demand for equipment will be greater. With the interest rates and credit terms shown in this example, an improved legal framework for secured lending should increase access to credit for such equipment by about 75%, permitting businesses to purchase considerably more machinery on credit.

Table 2

Impact of a Modern Framework for Secured Lending on Amount of Credit, example continued

	Cash Flow	Maximum permitted debt service payments	interest rate	maturity of loan in years	Maximum debt possible	DS/cash flow
Unsecured	$ 500,000	$ 175,000	8.5%	4	$ 573,229	35%
Secured by a vehicle	$ 500,000	$ 175,000	5.0%	7	$ 1,012,982	35%
Access to credit secured/unsecured					177%	
Access to credit secured/unsecured with $35,000 cap on unsecured					-2894%	

Source: Wright Patman Congressional Federal Credit Union; author's calculations

This estimate, moreover, probably understates the expansion in credit that full reform of the legal framework for secured transactions would produce. The lender offering the terms cited in Table 1 also places an absolute cap of $35,000 on unsecured loans. Most lenders set some cap on unsecured loans, even when borrowers have cash flow that would support larger unsecured loans at the interest rate and repayment period set by the lender. In the example here, recognizing the cap means the access to credit of the dealer would actually increase from $35,000 to over $1 million, many times greater than the 75% increase shown without the cap.

B. Effect of improved private lending terms on the amount of equipment purchased

How much additional MAC equipment would such improved credit terms support?[5] The calculations set out in this section draw on some general economic precepts. The assumptions and calculations on which they rest are stated explicitly, to promote discussion among those considering the Fourth Protocol. We hope to sharpen up the reasoning and analysis as we receive comment from the industry participants in the discussions.

We know from numerous studies that the ratio of capital to GDP for most countries falls between 2 and 3[6]. If that holds as well for MAC capital, then other countries will hold MAC

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capital in the about the same proportion to their GDP as does the United States (for which we have actual MAC data. With a GDP of $15 trillion in 2011, the United States held about $424 billion of MAC capital (Table 3)). Under those circumstances, other countries holdings of MAC capital will be as shown in Table 3, for a worldwide total of $1,968 billion in MAC equipment in 2010.

Table 3

Estimated world impact of full secured transactions reform on demand for MAC equipment

[$ US billions, 2011 data and estimates]

		MAC equipment			
Region	GDP	Pre-reform stock	Credit impact of reform	Post-reform stock	Increase in stock
World	70,012	1968		2572	604
Advanced economies	44,912	1262		1325	62
United States	15,094	424	0	424	0
Advanced econmies In need of reform	5,790	163	+ 38%	225	62
Other advanced economies not in need of r	24,028	675	0	675	0
Emerging and developing economies	25,100	706	+ 75%	1247	541

Source: CEAL estimates and IMF. World GDP data from International Monetary Fund, ***World Economic Outlook*** , available at http://www.imf.org/external/pubs/ft/weo/2011/02/weodata/download.aspx. Credit impact of reform based on discussion of Tables 2 and 3, this paper. Other derivation as discussed in text.

1. Countries where the use of movable collateral is common or where legal gaps seem offset by other laws and institutions

The estimate shown in Table 3 divides the countries of the world into four groups. One group comprises countries with advanced legal frameworks for secured lending. There, credit terms will not particularly improve because of the proposed UNIDROIT Fourth Protocol. These countries include Canada, New Zealand and the United States. Consequently, we estimate in these markets that the Protocol will not increase the domestic demand for equipment.

A second group of countries includes those that have problems in their legal frameworks for secured lending. The UK, for example, has a system that excludes non-corporate borrowers. In Japan, Germany, and Switzerland, the legal systems do not envision movable equipment serving as collateral for a loan. Nonetheless, these countries, as witnessed by their high per capita incomes, seem to have devised alternative systems for financing movable property that seem to work.[7] It will be interesting to see what is the view of manufacturers and exporters on the likely impact of improved credit terms on sales in these markets. For the purpose of this estimate, however, we have also set at zero the estimated impact of the proposed Fourth Protocol on domestic demand for MAC equipment in these countries.

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2. Countries where the use of movable collateral is limited

A third group of countries comprises those with per capita incomes lying between those of the highest per capita income countries and those of developing countries. These countries also have legal systems that present major problems in accepting movable property as collateral. They have not reformed their legal systems and, judging by their per capita incomes, they appear not to have developed other laws and institutions to compensate for the defects of their legal frameworks for secured lending.

Those facts are consistent with the possibility that the inability to finance such equipment may be retarding economic growth. In this group, we include Korea, Spain, Greece, Italy and Taiwan. The estimate (Table 3) arbitrarily estimates that complete reform of the legal framework for secured lending as it affects MAC equipment would gives them half of the maximum increase in the stock of MAC equipment that we would expect with countries with a lower per capita incomes. As before, the views of manufacturers and exporters on whether these markets would respond to the better private credit terms possible with a good legal framework for secured lending will be interesting and will be incorporated into later estimates.

3. Countries where the use of movable collateral is close to zero

Finally, the rest of the developing countries and economies in transition[8] face serious legal problems in their frameworks for lending secured by movable property; their low per capita incomes are consistent with the hypothesis that they have not developed any functioning legal or institutional alternative to a modern system of secured finance. We would expect a full reform of those legal frameworks, therefore, to increase the demand for credit to buy such machines by 75%, as explained above in the discussion of Table 2.

4. Estimated impact

Applying these estimated increases in demand to the estimated current stocks of this equipment (Table 3) in each group of countries, we would expect a full reform of the legal framework for secured lending to increase the demand for MAC equipment by $US 600 billion. How fast countries would move from the pre-reform MAC equipment stock to the post-reform MAC equipment stock is an important question that will determine rates of investment, sales, and export growth. Based on a casual inspection of the results of the highly successful Romania reform, we estimate that the adjustment would take place in the three to five years following the full reform. That increase in equipment use by these countries would imply an economic benefit of $10 billion annually for the purchasing countries; it would imply an economic benefit to the equipment producing countries equal to the profit on the $600 billion in equipment.

If UNIDROIT's Fourth Protocol could do this, it would be a mighty achievement. From an economic point of view, these gains are enormous relative to the small amount of resources absorbed by UNIDROIT. Moreover, this is a pure gain to the world that results from reducing the risk associated with unsecured lending -- these gains to purchasers and producers come at no-one else's expense.

Whether UNIDROIT's Fourth Protocol actually does this, however, will depend on how closely the Fourth Protocol can mirror the full reform of legal systems for secured lending for MAC equipment in these countries.

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C. Effect of improved Export-Import Bank lending terms on the amount of equipment purchased

The Fourth Protocol might also increase funding for MAC equipment from the Export-Import Bank of the United States. The US Federal Credit Reform Act of 1990 specifies that the Export-Import Bank of the United States must record on the US federal budget the expected cost of default and of interest rate subsidies on its loans and guarantees. The more effective is the Fourth Protocol, the more loans and guarantees Export-Import Bank can issue for MAC exports for any given budget authority that Ex-Im gets from Congress. Ex-Im apparently lowered the expected cost of guarantees for aircraft financing to countries that signed the First Protocol. The Fourth Protocol could have the same effect on Ex-Im credit for MAC equipment.

It is less clear what effect the Fourth Protocol would have on official export credits from other official lenders. The United States has usually been the only OECD country budgeting its export credit banks on the basis of expected default and interest rate subsidy. Other OECD countries typically show guarantees on the national budget only when they are exercised or loans when they are in default. For those countries, the effect of the Fourth Protocol might only be felt with a lag, if at all.

II. Present situation in countries with unreformed legal frameworks for secured transactions (*next steps*[b])

Generally, aside from some OECD countries, movable property cannot serve as collateral for loans.[9] This limits economic development in these countries: businesses cannot buy equipment on credit even though the rate of return on that investment in equipment far exceeds the interest rate that businesses pay. This limit to access to credit, in turn, limits industrial country equipment exports to them.

A. Legal research

To summarize a lengthy literature[10], in developing and transitional economies (as well as many advanced ones) multiple legal problems exist in the creation, perfection, filing, and execution of security interests against movable property. To list them briefly[11]:

Creation: problems that exclude goods, agents, and transactions

- *Limits on who can be a party to a security agreement*
- *Limits on coverage of goods and transactions*
- *Limits on using a general description of collateral or a floating security interest*
- *Limits on creating a security interest in after-acquired collateral or after-created debt*

Priority: problems that undermine lenders' security

- *No priority rules for future advances*
- *Limits on the continuation in proceeds and products of a security interest*
- *Limits on creating security interests in fixtures*
- *Hidden tax liabilities and superpriority for the state, including loans and guarantees of state banks*

[b] Next steps: This section is central to justifying the need for intervention. It will be more effective insofar as it is recognizable as broadly correct (or rewritten to be so) by the MAC manufacturers and trade associations. That will best allow them to see how the convention will affect the situation as they understand it. We anticipate revising this discussion after getting the comments of sales and finance people from this sector.

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- *Divided registration systems that cause conflicts in priority rules*

Publicity: problems that hamper filing or retrieval of records of security interests

- *Restrictions on access to registry records*
- *Requirement for inspection of documents*
- *Requirement for filing documents rather than simply notices*
- *Multiple and unlinked registries*
- *Lack of advance filing and blocking*
- *High fees for filing*
- *No Internet-based systems for filing or information retrieval*
- *Uncompetitive supply of registry services*

Enforcement: problems that prevent rapid seizure and sale of collateral

- *Court-administered sales*
- *Homestead and exempt property provisions*
- *Delay caused by bankruptcy procedures*

B. First-hand investigations

CEAL has interviewed equipment dealers in more than thirty countries, including those representing most manufacturers in industrial exporting countries. Broadly, for private loans, neither dealers nor banks will accept movable property as collateral. The dealers do not accept the buyers' movable property as collateral; the dealers do not sell on credit taking the machine as collateral. The banks accept neither the buyers' nor the dealers' movable property as collateral. Real estate often is acceptable as collateral. Or, the personal guarantee of the business owner may be acceptable if the business owner has unencumbered real estate. But acceptable collateral always points ultimately back to real estate.

Private equipment dealers nibble at the edges of these restrictions. Sometimes they will sell a machine on credit to a buyer with a government contract; sometimes they repossess and sell outside the law; sometimes they finance loans out of their own capital to customers in whom they have enormous confidence.

But dealers themselves, like their clients, have limited access to credit. Parent company exporters typically limit the amount of machines on consignment to local dealers because of the same problems of collecting against movable property. Stocks of used machines, an essential element in the typical equipment cycle of "buy new"/"trade in old", are nearly always financed with the dealers' own capital with no outside support. When dealers cannot finance the trade-in, they cannot sell the new equipment.

Dealers in most countries report that their own lines of credit from local banks amount to little more than would the mortgage on their real estate. Appearances deceive. Often banks take all the dealer's property, fixed and movable, as well as accounts receivable as collateral. Banks then report that they take movable property as collateral; many dealers are under the same impression. However, in reality, banks lend only an amount that can be covered by the sale of the real estate offered as collateral. That is, movable property, even when taken nominally as collateral, adds nothing to dealer credit. It has no economic value as collateral -- it provides no additional financial support to the dealer's operation.

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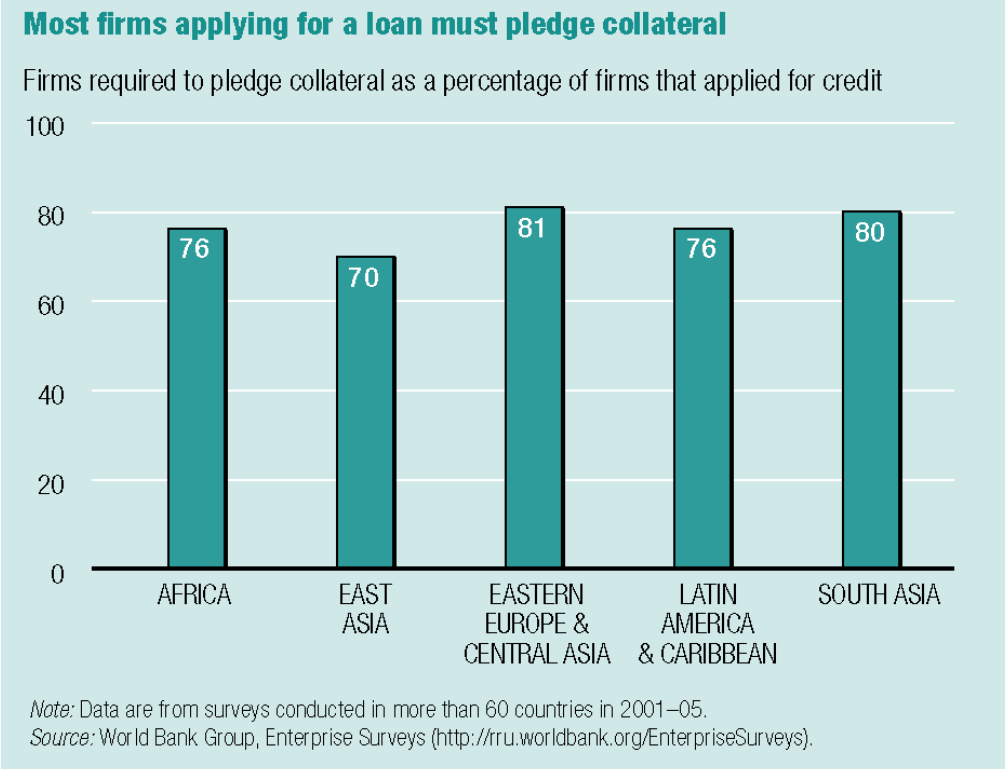
Nor can dealers in such countries use sales contracts they generate to refinance their operations with their affiliated international finance companies: the sales contracts secured by movable property are themselves too risky; moreover, the same legal limits on using movable property as collateral apply to security interests against the sales contracts of the dealers. This cuts off dealers and consumers in countries representing at least $22 trillion in GDP -- about 1/3 of world output -- from dealer finance companies, the cheapest and most expansive sources of private credit in the world.

C. Impact on access to credit and its consequences for developing countries and MAC producers

For developing countries, the effects on access to credit are crippling. The World Bank's "Doing Business" survey found that most firms in developing countries must pledge collateral to get loans (Figure 1).. Since the only collateral that is acceptable is real estate, only those with real estate -- typically the most wealthy -- have access to credit. This restrictive access to credit has two effects on developing countries. First, it perpetuates very unequal distributions of income. Second, because the credit needs of efficient enterprise are not related directly to real estate, profitable firms that are supporting country growth by investing in movable equipment have more limited access to credit and grow more slowly. At the same time, firms not making large contributions to growth but possessing real estate can get credit and grow faster. Consequently, credit and resources are not allocated to the uses that produce the greatest economic growth in the country.

Figure 1



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D. Other solutions?

Governments, understanding generally that something is wrong in these markets, intervene with directed loans, state guarantees, and state bank credits. But these public credits and guarantees cannot be collected any better than can private credits in the existing legal framework. So these state programs become, over the long-term, money-losing programs for the government. Because they lose money, they are small relative to the potential market; and because they are politically-directed, they are often directed to political insiders or used to promote sales of domestic manufacturers.

Even industrial country exporters face these limits. For example, for the $US 142 billion in US equipment exports covered by existing and proposed UNIDROIT protocols (Annex I, Table 5) -- there is available only about $US 30 billion in US Ex-Im Bank financing. Since about $US 17 billion of that is aircraft finance, only $US 13 billion remains available to cover all other machinery exports, of which the $US 70 billion or so covered by the proposed UNIDROIT protocol represent only part. Given present US political opposition to the rechartering -- not to mention the expansion -- of Ex-Im, it is clear that anything like a doubling in demand for equipment from transitional and developing economies will have to be financed by the private sector. These governments struggle to manage a problem that the private sector has shown it can manage very well when the legal framework permits it.

III. How much secured transactions reform can the Fourth Protocol practically achieve *(next steps[c])*?

Reforming the legal frameworks for secured lending in most LDC and transitional markets could increase the stock of MAC equipment in those countries by about 75% in a 3-5 year period. That $600 billion increase in capital would produce an increase in GDP of $200 - $300 billion annually. It would sharply increase MAC exports from many industrialized countries now facing high rates of unemployment; thereby, alleviating unemployment and improving economic well being there as well.

However, the Fourth Protocol is not a full reform of the regime of secured lending in these countries. Subsequent drafts of this note will discuss these issues in more detail. Assessing the economic impact will require understanding how "deeply" the Fourth Protocol will penetrate the legal systems of its signatories.

A. Priority and filing

In one key step forward, the proposed Protocol would establish a clear first-to-file priority system and an international filing archive to establish the time of filing. This would sidestep key local legal and institutional issues. First, the local laws are typically murky and sometimes logically inconsistent on the setting of priority. Second, the local filing archives are in very bad condition and typically, at the same time, dominated by small interest groups that are very reluctant to reform. Given the decentralization of the MAC producers, UNIDROIT itself might consider itself hosting the filing archive. If it does, CEAL offers to provide UNIDROIT, at

[c] CEAL hopes that comments by readers and the proceedings will clarify what is possible. For its part, CEAL will attempt to track the economic consequences of different drafting options.

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no initial cost, with the software licenses and installation of the same online filing system that CEAL designed for Romania and Nigeria. However, whoever supplies filing services, concerns about the technology or institutional arrangements for supplying a filing system should be dismissed as a reservation about the Fourth Protocol.

B. Enforcement

A second key step forward would augment or replace the present systems of enforcement. In our experience, this is typically the most contentious element of the reform. In future versions of this note we hope to suggest components of enforcement that might be "uploaded" into the protocol.

C. If that fails?

If only some of these things is done very deeply, then the Fourth Protocol may be mainly useful for maintaining security interests while MAC equipment is in transit. That will be a worthy objective, but of much considerably less economic significance that a more ample reform. If that is a likely outcome, CEAL will estimate the likely benefit from that element alone.

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Annex I: Value of equipment covered by the Cape Town Convention

I. Capital stock

The Fourth Protocol would cover about $425 billion of the US capital stock (Table 1), somewhat more than aircraft ($322 billion) and substantially more than rail equipment and space assets.

Later work will examine data for the rest of the world (***next steps***[d]). As a reference point, world GDP in 2010 was about 4.3 times US GDP. Numerous studies have found national ratios of capital to GDP ranging between 2 and 3[12] . Therefore, as a very rough and preliminary guess, we would place world capital stocks of equipment covered by Cape Town Convention at about 4 times the US figures -- notionally at $3 trillion.

Table 4

UNIDROIT Cape Town Convention		
Movable equipment in different protocols US data,		
[Billions of dollars; 2010 year end estimates		
First Protocol		
Aircraft		**322.1**
Second Protocol		
Railroad equipment		**122.0**
Third Protocol		
Space Assets		**#N/A**
Fourth Protocol (proposed)		
Agricultural machinery	*170.8*	
Construction machinery	*184.0*	
Mining and oilfield machine	*69.5*	
		424.3
Total, all protocols		**868.4**

Source: U.S. Department of Commerce, Bureau of Economic Analysis, Table 3. Current-Cost Net Stock of Private Fixed Assets, Equipment and Software, and Structures by Type
Data published August 24, 2011. Available at http://bea.gov/national/FA2004/DownSS2.asp?3Place=N#XLS

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[d] Next steps: CEAL to check if trade associations or manufacturers have such data on global production and exports. If not, CEAL to look at other sources of national data, including OECD and EU.

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II. Exports

The Fourth Protocol would cover about $34 billion in US equipment exports, This represents about half the value of aircraft exports covered by the First Protocol but more than US exports of rail or space equipment covered in other UNIDROIT protocols.

Because export advantages differ more widely among countries than do capital/GDP ratios, US equipment export data may be less representative of world equipment exports. However, actual data are available and we will show these in the final study (***next steps***[e]). Just as a reference point, US exports of goods and services were $1.8 trillion in 2010[13] while world exports of goods and services were 18.8 trillion.[14]

Table 5

UNIDROIT Cape Town Convention			
US exports covered by difference Protocols			
[Millions of US dollars; 2010 data]			
First Protocol (total)		**53.1**	
Civilian aircraft	*29.6*		
Engines-civilian aircraft	*23.5*		
Second Protocol (total)		**2.8**	
Railway transportation equipment	*2.8*		
Third Protocol (total)		**0.031**	
Spacecraft, excluding military			
Fourth Protocol -- proposed (total)		**21.1**	
Agricultural machinery, equipment	*6.8*		
Nonfarm tractors and parts	*2.4*		
Specialized mining	*1.4*		
Drilling & oilfield equipment	*10.5*		
All Protocols		**77.0**	
Source: U.S. Department of Commerce, ***U.S. Census Bureau and U.S. Bureau of Economic Analysis, U.S. International Trade in Goods and Services, Annual Revision for 2010*** , FT-900, "Table 6. Exports of Goods by End-Use Category and Commodity". Available at http://www.bea.gov/newsreleases/international/trade/tradannnewsrelease.htm			
Located at: C:\Users\RICARDO_USER\Desktop\Shortcuts\ProjectFolder\UNIDROITShortNote\BEATradeData\[Annual 2010 trade data trad1311.xls]6 (4)			

[e] Next steps: See if trade associations/manufacturers have such data on production and exports. CEAL to present other data on world trade in this equipment.

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[1] The author thanks for their helpful comments John Atwood (UNIDROIT), Nuria de la Peña (CEAL), Katrin Frauchiger (Caterpillar Finance), Alejandro Garro (Columbia University, CEAL), and Peter Winship (Southern Methodist University, CEAL). The author, an economist, emphasizes that, for lack of time, legal reviewers were not given an opportunity to fully review the paper's assertions about law. He hopes that they, and other readers trained in law, will be forbearing and patient with any legal solecisms contained herein and, certainly, hold all reviewers harmless.

[2] Director of Research at the Center for the Economic Analysis of Law. Heywood Fleisig received his BA in economics from Swarthmore College and his Ph.D. in economics from Yale University. He taught at Cornell University. He worked as a commodity, macroeconomic, and sovereign debt modeler and forecaster for Merrill Lynch, the Board of Governors of the Federal Reserve, US Congressional Budget Office, and the World Bank. At the World Bank, as Economic Adviser to the Private Sector Development Department, he pioneered the Bank's work on the reform of developing country legal frameworks for secured lending, work that he continued at CEAL after his retirement from the World Bank.

[3] These problems are set out most recently in Fleisig, Safavian, de la Pena (2006). Its footnotes and bibliography, in turn, gives further references. The CEAL website (at http://www.ceal.org) sets out several diagnostic studies and short notes related to special areas of this problem.

[4] For a more extended discussion, see Fleisig, Safavian, de la Pena (2006) and references therein.

[5] These calculations draw on general economic facts and principles. They are here to serve as a placeholder pending industry review. Most manufacturers and exporters have sales projections that take account of the effects of different credit conditions. The US data shown in the example can usually be purged of macroeconomic differences among countries by looking at credit terms relative to the governments "risk free" borrowing rate. Since borrowing rates for 5-7 year private loans relative to a risk-free baseline on US Treasurys, .61% - 1.38% on 28 April 2012 (available at http://www.bloomberg.com/markets/rates-bonds/government-bonds/us/). Expressed in this way, US borrowers are borrowing unsecured at 789 basis points (= 8.5% - .61%) over the risk-free rate; they are borrowing secured at 366 basis points (= 5% - 1.38%) over the risk-free rate. So comparing national interest rates free of macroeconomic risk requires determining the interest rates facing MAC purchasers in national currency relative to the government borrowing rate for secured and unsecured loans. For local interest rates on loans denominated in dollars or euros, the calculation may become more complex. The country risk for a private loan secured by good collateral can be lower than the sovereign risk for the government of that country. For example, we met with coffee dealers in a Central American country who routinely paid lower dollar rates to finance their stocks of coffee held in bonded warehouses than did their government for its sovereign dollar-denominated debt.

[6] Nehru and Dhareshwar (1993) on capital/output ratios and the other studies cited therein.

[7] We know of no complete study of these issues. Some suggestions include the hire/purchase system in the UK; judicial institutions that appear to rapidly enforce claims against movable property in Germany under the sale with retention of title; the bailiff system in the Netherlands; French state banks and guarantee funds that finance movable property but seem considerably better managed than equivalent institutions in developing countries; cooperative lending systems in Germany and Austria. The bottom line is whether equipment purchasers in these countries can get the same credit terms as those in the reformed countries when offering only movable property as collateral for loans.

[8] "Economies in Transition" is a term used by many international organizations to include Eastern Europe and the Former Soviet Union.

[9] See Fleisig, Safavian, and de la Pena (2006) and references therein.

[10] Fleisig, Safavian, and de la Pena (2006)

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[11] Fleisig, Safavian, and de la Pena (2006), chapters 3, 4, 5.
[12] Nehru and Dhareshwar (1993)
[13] US Department of Commerce, BEA Export data, available at (CEAL insert reference here)
[14] IMF World Economic Outlook database, (CEAL insert reference here)

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