Model laws, Abitration and FDI
Theory, empirics & policy

Andrew Myburgh[a]   Jordi Paniagua[b,c,d]

[a]World Bank

[b]University of Valencia

[c]Institute of International Economics

[d]Chair of Energy Sustainability (UB)

UNCITRAL 50th Anniversary Congress,
Vienna, July 4th, 2017

# Benefits of arbitration
Myburgh & Paniagua (JLE, 2016)

- The majority of contracts (80%) that cross borders implement mechanisms to settle disputes through international commercial arbitration.
    - In this system, disputes are adjudicated before private tribunals and the resulting awards are enforced in domestic courts.
- Benefits of arbitration:
    - Independence of where the dispute may arise.
    - more flexibility than domestic courts
    - Specialized lawyers
    - facilitates parties' choice over the law under which the contract is heard
    - the cost of engaging in nuisance suits is substantial

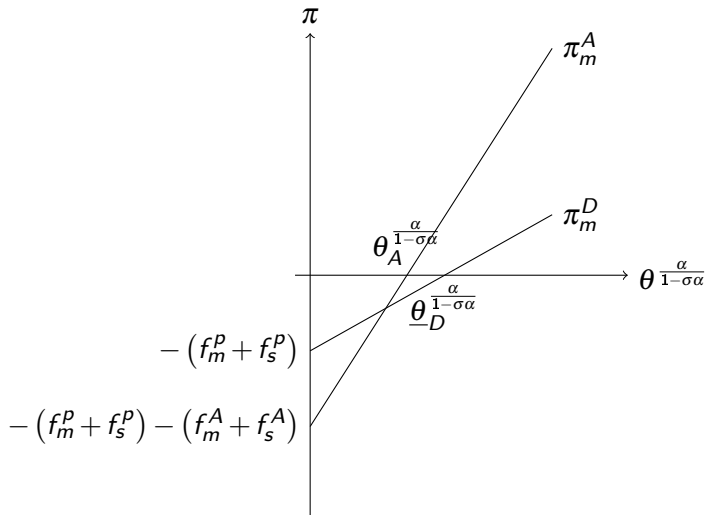# Costs of arbitration
Myburgh & Paniagua (JLE, 2016)
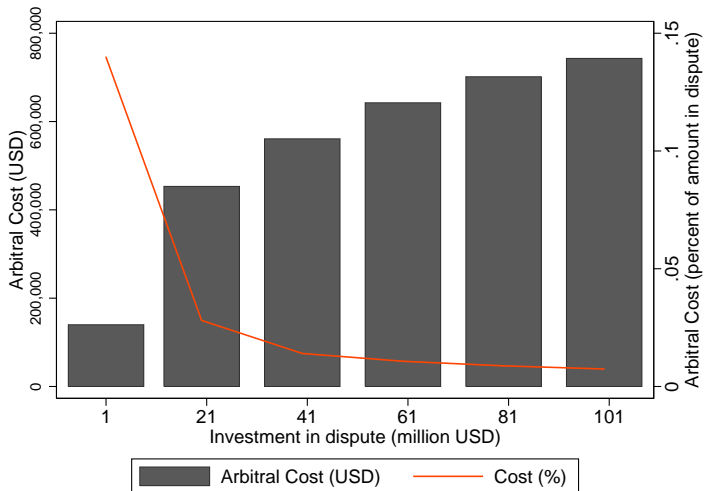
Source: ICC arbitral cost calculator

Years before and after adoption of the New York Convention
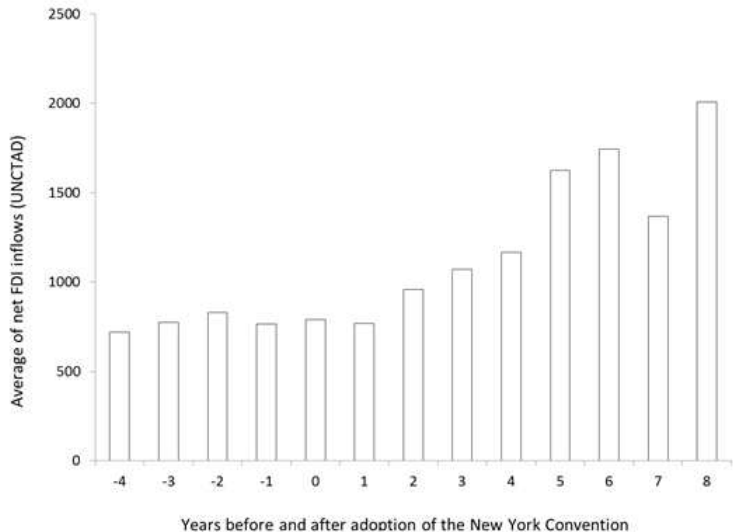
The model
Myburgh & Paniagua (JLE, 2016)

The model
Myburgh & Paniagua (JLE, 2016)

$$\%\triangle K = \left(\left(\frac{1-2y^A}{1-2y^{D(j)}} \right)^{\frac{1}{1-\sigma\alpha}} \times \int_{\underline{\theta}_A}^{\overline{\theta}} \theta^{\frac{\alpha}{1-\sigma\alpha}} \, d\theta \right).$$

- Commitment to the NY Convention should lead to an increase in investment by MNEs,
- the increase in investment and projects will be greater for countries with weaker institutions, and
- the effect of arbitration on the volume of investments will be greater than its impact on the number of investments

The gravity equation applied
Myburgh & Paniagua (JLE, 2016)

- A country-pair per year panel specification is the following augmented gravity equation:

$$FDI_{ijt} = exp \begin{pmatrix} \beta_1 \ln\left(Y_{it} * Y_{jt}\right) + \beta_2 BIT_{ijt} + \beta_3 FTA_{ijt} \\ \beta_4 NYC_{ijt} + \beta_5 NYC1_{ijt} \\ + \lambda_{ij} + \lambda_{i,3t} + \lambda_{j,3t} + \lambda_t \end{pmatrix} + e_{ijt}, \qquad (1)$$

Data

- FDIMarkets: covers firm level greenfield investments
  - Official source of greenfield investment for the UNCTAD.
  - 190 countries from 2003 to 2012
  - Firm-level data, that we aggregate by country (and sector or activity).
  - Database is efficiently constructed with over 70% zeros (Paniagua, 2016)

- The theory underlying a gravity-like specification provides predictions on unidirectional bilateral trade rather than on two-way bilateral trade. This is the silver medal mistake in gravity 101 (Baldwin & Taglioni, 2006).
  - FDIMarkets allows to use unidirectional FDI data (i.e, $FDI_{ij} \neq FDI_{ji}$).

Intensive margin
Myburgh & Paniagua (JLE, 2016)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	CY&CP FE PPML	CY& CP FE PPML	CY&CP FE PPML	CY& CP FE PPML	CY&CP FE PPML	CP FE PPML	CP FE PPML
$\ln(Y_{it} \cdot Y_{jt})$	-0.011 (0.36)	-0.799 (0.85)	-0.043 (0.22)	-0.040 (0.25)	0.613** (0.29)	-0.120 (0.24)	0.010 (0.26)
FTA_{ijt}	0.207 (0.13)	-0.008 (0.25)	0.417*** (0.15)	0.459*** (0.15)	0.121 (0.19)	0.329*** (0.11)	0.240** (0.12)
BIT_{ijt}	-0.516*** (0.16)	0.092 (0.31)	-0.430** (0.21)	-0.335 (0.25)	-0.464 (0.35)	-0.448** (0.20)	-0.302* (0.20)
NYC_{ijt}	0.984* (0.59)	1.750** (0.86)	-0.461 (0.79)	0.091 (0.60)	1.826*** (0.67)		
$NYC1_{ijt}$	1.395* (0.74)	3.024*** (0.99)					
NYC_{ijt-1}			0.608* (0.32)				
NYC_{ijt-3}				0.681*** (0.24)			
NYC_{ijt-4}					0.099 (0.22)		
NYC_{it}						0.502 (0.49)	1.171 (1.40)
NYC_{jt}						0.534** (0.25)	2.075*** (0.46)
$rights_{it}$							0.254 (0.33)
$rights_{jt}$							0.388*** (0.08)
$rights_{it} * NYC_{it}$							-0.184 (0.37)
$rights_{jt} * NYC_{jt}$							-0.624*** (0.08)
$\ln(D_{ij}) * NYC_{it}$							0.487 (0.37)
$\ln(D_{ij}) * NYC_{jt}$							-0.133 (0.38)
Dep Variable	FDI	FDIpc	FDI	FDI	FDI	FDI	FDI
Observations	38279	37774	33618	29157	19558	39263	34630
R^2	0.625	0.357	0.624	0.642	0.701	-	-
Country*(3year) FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country pair FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Extensive margin
Myburgh & Paniagua (JLE, 2016)

	(1)	(2)	(3)
	CY&CP FE PPML	CP FE PPML	CP FE PPML
$\ln(Y_{it} \cdot Y_{jt})$	-0.058 (0.17)	-0.339 (0.30)	-0.159 (0.25)
FTA_{ijt}	0.183* (0.09)	0.048 (0.07)	0.0140 (0.08)
BIT_{ijt}	0.050 (0.06)	0.022 (0.12)	0.023 (0.11)
NYC_{ijt}	-0.039 (0.27)		
$NYC1_{ijt}$	-0.305 (0.33)		
NYC_{it}		0.679*** (0.22)	1.039** (0.51)
NYC_{jt}		0.454*** (0.10)	1.094*** (0.251)
$rights_{it}$			0.129 (0.10)
$rights_{jt}$			0.0839* (0.05)
$rights_{it} * NYC_{it}$			-0.116 (0.10)
$rights_{jt} * NYC_{jt}$			-0.180*** (0.05)
$\ln(D_{ij}) * NYC_{it}$			0.0981 (0.18)
$\ln(D_{ij}) * NYC_{jt}$			-0.188 (0.17)
Observations	38279	39263	34630
R^2	0.011		

Quantile regression
Myburgh & Paniagua (JLE, 2016)

	(1) Q(0.10) CY&CP FE	(2) Q(0.25) CY&CP FE	(3) Q(0.50) CY&CP FE	(4) Q(0.75) CY&CP FE	(5) Q(0.90) CY&CP FE
$\ln(Y_{it} \cdot Y_{jt})$	0.378***	0.417***	0.457***	0.500***	0.563***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
FTA_{ijt}	-0.038*	0.013***	-0.059***	-0.023**	-0.186***
	(0.02)	(0.00)	(0.00)	(0.01)	(0.01)
BIT_{ijt}	-0.126***	-0.066***	-0.119***	0.067***	0.011**
	(0.01)	(0.01)	(0.00)	(0.00)	(0.01)
NYC_{ijt}	0.041***	0.131***	0.164***	0.204***	0.192***
	(0.01)	(0.01)	(0.00)	(0.01)	(0.00)
$NYC1_{ijt}$	-0.093***	-0.112***	-0.023***	-0.081***	0.043***
	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)
Observations	39393	39393	39393	39393	39393
Average Project size (mUSD)	4.54	13.99	27.9	61.09	78.99

Bootstrap standard errors in parentheses,

Country pair, country*year (3 years) and year fixed effects included. Dep variable: ln(FDI+1)

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Arbitration & FDI
Myburgh & Paniagua (JLE, 2016)

1. The paper explains the mechanisms by which arbitration affects FDI;
2. countries' arbitration regimes have a positive effect on FDI, that is, the positive shock to countries' arbitration regimes from joining the NY Convention increases the levels of bilateral FDI;
3. the effect of arbitration reduces costs associated with domestic judicial systems;
4. the improvement in countries' arbitration regimes tends to have a larger effect on the volume of FDI investments, rather than the number of foreign projects;
5. the effect of arbitration is greater in higher FDI levels and
6. a positive shock on a country's international arbitration diverts FDI from non-members with low bilateral FDI.

NY Convention & Model laws

- The *Convention on Recognition and Enforcement of Foreign Arbitral Awards* of 1958 "NY Convention".
  - The NY Convention is the legal cornerstone of arbitration.
- The Model Law on International Commercial Arbitration of 1985 "the Model Law on Arbitration".
  - According to UNCITRAL the Model Law on Arbitration is designed to help states to strengthen their arbitration laws.
- The Model Law on International Commercial Conciliation (2002)
  - provides uniform rules with respect to the conciliation process with the aim of ensuring greater predictability and certainty in its use.

A simple model
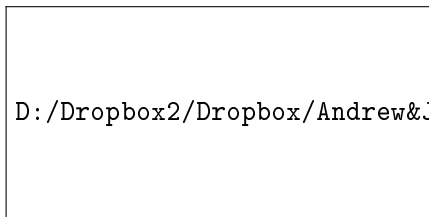
D:/Dropbox2/Dropbox/Andrew&Jordi/UNCITRAL/Prof

Scenarios

This model allows us to review three different scenarios:

1. **Firms can only use domestic courts** to enforce contracts: absent arbitration firms would need to rely on the domestic courts.

2. **Firms can use arbitration but without the benefit of UNCITRAL's initiatives**.

   1. absent the protections provided by the NY Convention, the Model Law on Arbitraiton and similiar domestic laws, arbitraiton would be seldomly used.

3. **Firms can use arbitration with the protections provided for by UNICTRAL's initiatives and similar domestic laws**. UNCITRAL's initiatives have two effects.

   1. The first is to make arbitration a more effective form of contract enforcement than using the domestic courts.

   2. The second effect is to lower the expected cost of using arbitration through the Model Law on Concilliation. This increases the number of projects for which it is profitable to use arbitration which in turn can be expected to increase the number of investment projects

Summary Results

Activity type	Activity	NY Convention	UNCITRAL's initiatives Model Law on Arbitration	Mo
Customer	Business services	+	+	
	Sales & Marketing	+		
	Customer care			
	Tech support			
	Shared services			
Complex	Headquarters			
	Design	+		
	ICT	+	+	
	RD			
	Education			
	Maintenance			
	Extraction			

High Fixed Cost Activities

	(1) Maintenance	(2) Extraction	(3) Recycling	(4) Manufacturing	(5) Logistics	(6) Construction
LGDP	0.865***	0.514***	0.908***	0.901***	1.078***	1.082***
	(0.08)	(0.18)	(0.10)	(0.09)	(0.10)	(0.12)
NYC	0.122	0.403	-0.424	0.610	1.093	2.482***
	(0.64)	(1.39)	(0.75)	(0.69)	(0.77)	(0.92)
UNCITRAL	0.144	0.263	0.104	0.020	0.734*	1.101**
	(0.34)	(0.74)	(0.40)	(0.37)	(0.41)	(0.50)
CONCIL	-0.032	-0.128	-0.125	-0.326	0.104	-0.094
	(0.56)	(1.21)	(0.65)	(0.60)	(0.67)	(0.81)
Observations	87	87	87	87	87	87
R^2	0.601	0.110	0.531	0.589	0.654	0.620

Robust standard errors in parentheses (clustered by country pair)

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Complex Activities

	(1) Headquarters	(2) Design	(3) ICT	(4) RD	(5) Education
LGDP	1.136***	1.201***	0.707***	1.161***	0.857***
	(0.10)	(0.09)	(0.12)	(0.10)	(0.08)
NYC	0.136	1.230*	2.557***	0.916	-0.574
	(0.77)	(0.70)	(0.95)	(0.77)	(0.58)
UNCITRAL	0.261	0.369	1.133**	-0.180	0.260
	(0.41)	(0.38)	(0.51)	(0.41)	(0.31)
CONCIL	-0.133	-0.291	0.408	0.343	-0.066
	(0.67)	(0.61)	(0.83)	(0.67)	(0.50)
Observations	87	87	87	87	87
R^2	0.642	0.724	0.472	0.656	0.633

Robust standard errors in parentheses (clustered by country pair)

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Customer Activities

	(1) Business Services	(2) Sales Marketing	(3) Customer Care	(4) Tech Support	(5) Shared
LGDP	Services	1.201***	0.707***	1.161***	0.857***
	0.688***	0.787***	0.835***	0.732***	0.660***
NYC	(0.06)	(0.06)	(0.08)	(0.10)	(0.11)
	0.932**	1.407***	-0.069	-0.369	0.500
UNCITRAL	(0.42)	(0.44)	(0.63)	(0.76)	(0.84)
	0.616***	0.305	0.439	0.335	0.326
CONCIL	(0.23)	(0.23)	(0.34)	(0.41)	(0.45)
	0.748**	-0.170	0.541	0.310	0.167
Observations	(0.37)	(0.38)	(0.55)	(0.66)	(0.73)
R^2	0.729	0.764	0.604	0.434	0.360

Robust standard errors in parentheses (clustered by country pair)

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Gravity estimation on projects and volumes

	(1) FDI (volumes)	(2) FDI (volumes)	(3) FDI (projects)	(4) FDI (projects)
LGDPs	-0.121	-0.018	-0.130	-0.115
	(0.22)	(0.23)	(0.18)	(0.19)
Distance	-0.342 ***		-0.369 ***	
	(0.06)		(0.04)	
Common Border	0.024		-0.131*	
	(0.13)		(0.08)	
Common Language	0.488***		0.510***	
	(0.11)		(0.06)	
Colony	0.514***		0.626***	
	(0.11)		(0.08)	
Same Country	0.388		0.571***	
	(0.24)		(0.15)	
Religious affinity	0.840***		0.416***	
	(0.23)		(0.13)	
Landlocked	-0.107		-0.049	
	(0.09)		(0.06)	
Free Trade Agreement	0.242**	0.321***	0.248***	0.069
	(0.11)	(0.11)	(0.07)	(0.07)
Bilateral Investment Treaty	-0.097	-0.464**	-0.007	0.020
	(0.07)	(0.21)	(0.05)	(0.12)
NYC	0.622***	0.652***	0.544***	0.548***
	(0.24)	(0.22)	(0.09)	(0.09)
Arbitration model source	0.082	0.063	-0.098	-0.089
	(0.12)	(0.12)	(0.08)	(0.08)
CONCIL source	-0.165	-0.177	-0.071	-0.077
	(0.12)	(0.12)	(0.11)	(0.10)
Arbitration model destination	-0.059	-0.031	0.022	0.027
	(0.13)	(0.13)	(0.06)	(0.06)
CONCIL destination	0.398	0.399	0.605**	0.607**
	(0.26)	(0.26)	(0.28)	(0.28)
Observations	39181	39263	39181	39263
R2	0.451		0.810	
Country fixed effects	Yes		Yes	
Country-pair fixed effects		Yes		Yes
Year fixed effects	Yes	Yes	Yes	Yes

Robust standard errors in parentheses (clustered by country-pair)
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Lessons learned

1. The results suggests that UNCITRAL's initiatives have promoted relationship specific investments.

2. Countries that adopt the NY Convention and UNCITRAL's Model Law on Arbitration and Conciliation tend to experience higher levels of investments in sectors such as construction and activities such as ICT.