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Ambiguous Effects on FDI?  
Not a Bit!**

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## **More Stringent BITs, Less Ambiguous Effects on FDI? Not a Bit!**

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### Abstract:

We focus on investor-state dispute settlement provisions contained in various, though far from all, bilateral investment treaties as a possible determinant of BIT-related effects on bilateral FDI flows. Our estimation results prove to be sensitive to the specification of these provisions as well as the inclusion of transition countries in the sample. Stricter dispute settlement provisions do not necessarily result in higher FDI inflows so that the effectiveness of BITs as a credible commitment device remains elusive.

Keywords: Dispute Settlement, BITs, FDI flows.

JEL classification: F21; F23; K33

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## 1. Motivation

Negotiations over an increasing number of bilateral investment treaties (BITs) have continued unabated even though previous empirical findings are highly ambiguous on whether host countries of foreign direct investment (FDI) gain attractiveness by granting more rights to, and offering better protection of foreign investors. Policymakers in the host countries may have scant regard for the academic literature, collected in Sauvants and Sachs (2009) and reviewed by UNCTAD (2009), berating its findings as practically irrelevant. Indeed, there was at least one plausible reason to do so: While earlier studies differ in terms of coverage and econometric approach, they typically have in common that all BITs are treated as homogenous – thus ignoring that the provisions contained in BITs often differ significantly.

In the present analysis, we take into account that some BITs are particularly strict in binding the host country's hands, whereas important provisions are completely missing in other BITs. The focus is on dispute settlement provisions. Experts agree that BITs are a particularly credible commitment device if foreign investors have direct and guaranteed access to international arbitration, where they can bring a claim against the host country for breaches of the agreement and seek monetary compensation for resulting damages (Wälde 2005; Allee and Peinhardt 2010). This would imply that informed foreign investors cannot reasonably be expected to react in the same way to BITs with and without binding investor-state dispute settlement (ISDS) provisions.

Nevertheless, it is far from obvious that ISDS provisions result in higher FDI flows. According to Poulsen (2010), “investors very rarely inquire about BITs, and when they do it is typically when disputes have arisen and not when they plan their investments.”<sup>1</sup> Furthermore, stricter ISDS provisions obviously involve the risk that host countries are challenged before an arbitration panel and lose disputes through international arbitration. The reputation of host countries may be eroded in this way, and FDI flows may decline as a result (Allee and Peinhardt 2009).

We test these conflicting hypotheses that have been addressed only indirectly and superficially in the existing literature.<sup>2</sup> Some studies focus on FDI from the United States whose BITs are assumed to be relatively strict. Nevertheless, findings from these studies are no less ambiguous. Other studies assume that all BITs signed in the more recent past include effective dispute settlement mechanisms. For instance, Kerner (2009) finds that recent BITs do promote FDI while older BITs

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<sup>1</sup> For a similar observation, see World Bank (2005: 177).

<sup>2</sup> See UNCTAD (2009) for detailed references.

fail to do so. Yackee (2009) represents an exception by using a classification of BITs concluded by 17 capital exporting countries until 2002 to show that earlier studies are not reliable. More specifically, Yackee finds that small changes to the estimation strategy of Neumayer and Spess (2005) erode the effectiveness of BITs stressed by these authors. This even applies when “weak” BITs without binding arbitration are excluded from the sample.

## 2. Method and data

We follow large parts of the relevant literature and estimate a gravity-type model on the determinants of FDI, the baseline specification of which reads as follows:

$$\ln\left(\frac{FDI_{ijt}}{FDI_{it}}\right) = \alpha_0 + \gamma'X_{jt} + \alpha_1 BIT_{ijt} + \alpha_2 BITDS_{ijt} + \lambda_t + \mu_{it} + \varepsilon_{ijt} \quad (1)$$

where  $FDI_{ijt}$  stands for bilateral FDI flows from country  $i$  to country  $j$  in period  $t$ , and  $FDI_{it}$  for total FDI of country  $i$  in all (developing) countries included in our sample.<sup>3</sup>  $X_{jt}$  represents a set of control variables. Whereas  $BIT_{ijt}$  corresponds to a ratified bilateral investment treaty without effective ISDS provisions,  $BITDS_{ijt}$  refers to a ratified treaty that contains effective ISDS provisions. More precisely, the dummy variable  $BITDS$  is equal to one if a BIT allows the investor to unilaterally initiate binding international arbitration for violations of treaty obligations (full pre-consent), or at least a limited class of disputes including on the amount of compensation for expropriation (partial pre-consent).<sup>4</sup> Finally,  $\lambda_t$  is a set of year dummies,  $\mu_{it}$  stands for source-year effects, and  $\varepsilon_{ijt}$  represents the error term.

We make use of Yackee’s coding of ISDS provisions in BITs to assess the effects on *bilateral* FDI flows.<sup>5</sup> The use of ISDS provisions has been rare at the beginning of our period of observation. In 1978 our sample comprises just six BITs with full pre-consent for investor-state arbitration, while most BITs did not include ISDS provisions. In 1990 about one third of all sample BITs included ISDS provisions with full pre-consent, while ISDS provisions were still missing in another third of the sample. By contrast, almost three quarters of all BITs in 2002 belonged to the former category. At the same time, the inclusion of ISDS provisions varies across source countries of FDI. All 28

<sup>3</sup> Negative FDI flows are set equal to zero to include as many observations as possible.

<sup>4</sup>  $BITDS$  is equal to zero (and  $BIT$  is equal to one) if a ratified BIT contains no ISDS provisions or just “promissory” ISDS, i.e., without any pre-consent or guarantee of being able to bring a claim to international arbitration. As detailed below, we apply alternative definitions of  $BITDS$  to check the robustness of our results.

<sup>5</sup> We are most grateful to Jason Webb Yackee for sharing his coding of ISDS in BITs with us.

sample BITs involving the United States in 2002 had strong ISDS provisions, in striking contrast to many BITs involving Germany and Switzerland which only started to include ISDS with comprehensive pre-consent from the 1990s.

We employ a fairly standard set of controlling variables. We include total real host country *GDP* and real GDP *Growth*, host country *Inflation*, host country *Openness* to trade, and the difference in GDP per capita between the source and the host country (*DiffGDPpc*). Moreover, we incorporate dummies for the existence of a bilateral or regional trade agreement (*RTA*), a double taxation treaty (*DTT*), and a common currency (*ComCur*). We expect a positive association of *GDP*, *Growth*, *DiffGDPpc*, *RTA*, *DTT*, and *ComCur* with FDI; the opposite applies to *Inflation* as our proxy for macroeconomic distortions. *PolCon* reflects political constraints on the executive branch and is included as a controlling variable as poor institutions may discourage FDI by giving rise to uncertainty.<sup>6</sup>

We take the natural logarithm of *FDI*, *GDP*, *DiffGDPpc*, and *Inflation* to reduce the skewness in the data. To keep the zero and negative observations, we use the following logarithmic transformation:

$$y = \ln \left( x + \sqrt{(x^2 + 1)} \right) \quad (2)$$

Using this transformation leaves the sign of  $x$  unchanged, while the values of  $x$  pass from a linear scale at small absolute values to a logarithmic scale at large values.

We use three-year averages of FDI flows covering the period 1978-2004. To avoid the sample selection bias that has plagued most of the previous literature, we include the maximum number of 14 source and 83 (developing) host countries, including poor and small countries having received little FDI or none at all, for which UNCTAD's Data Extract Service provides FDI data and the ISDS coding is available from Yackee.<sup>7</sup>

We apply different estimation techniques in line with Busse et al. (2010). For a start, we ignore the potential endogeneity of *BIT* and *BITDS* and estimate a simple ordinary least squares (OLS) fixed-effects model. We then estimate a fixed-effects Poisson Pseudo-Maximum Likelihood (PPML)

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<sup>6</sup> See Appendices A and B for definitions and sources as well as summary statistics.

<sup>7</sup> See Appendices C and D for the lists of source and host countries.

model to account for the fact that the sample includes a large number of zero observations. Finally, we account for possible endogeneity by employing a dynamic Generalized Methods of Moments (GMM) estimator, i.e., the system GMM estimator proposed by Blundell and Bond (1998).

### 3. Results

In columns (1) and (2) of Table 1, we enter BITs independently of whether they include effective ISDS provisions. Using the largest possible sample in column (1) reproduces the significantly positive effects of BITs on bilateral FDI flows found in Busse et al. (2010).<sup>8</sup> The coefficients of most controlling variables are statistically significant with the expected signs. In particular, we find significant evidence for both horizontal (*GDP*) and vertical FDI (*DiffGDPpc*). In addition to BITs, trade agreements (*RTA*) and tax treaties (*DTT*) stimulate FDI, whereas higher country risk (i.e., low values of *PolCon*) and macroeconomic instability (*Inflation*) discourage FDI. The results for the controlling variables are hardly affected when replicating the estimation for the smaller sample of source countries for which we have information on ISDS provisions (column 2). Most importantly, the BIT variable remains significant with a just slightly smaller coefficient.

Turning to dispute settlement as the variable of principal interest, the results shown in column (3) suggest that any positive effect of BITs on FDI can be attributed to ISDS provisions. BITs without such provisions prove to be ineffective at conventional levels of significance, whereas BITs with ISDS provisions in the form of full or partial pre-consent on investor-state arbitration have significantly positive effects at the five percent level. However, this finding is highly sensitive to the exact specification of the *BITDS* variable. It is hardly surprising that the results on *BITDS* weaken considerably when extending the definition of ISDS to include so-called promissory BITs containing language that the host country may consent to international arbitration should the investor request so at some later date (results not shown in the table). Most strikingly, the same applies when using a narrower definition of effective ISDS, i.e., excluding BITs with only partial pre-consent. According to column (4), BITs with the strongest ISDS provisions (*BITDS strong*) are as irrelevant for bilateral FDI flows as are BITs without such provisions.

Before offering an explanation for these surprising findings, we show that the same ambiguity persists when running PPML estimations instead of OLS. The results reported in columns (5) – (8) of Table 1 are exactly as before for all BIT-related variables. In particular, it is only when ISDS is

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<sup>8</sup> In the full sample, we have 28 source countries rather than the reduced sample of 14 countries for which we have information on ISDS. The sample of host countries does not change.

defined to include both partial and full pre-consent that bilateral FDI flows are positively affected in a significant way. Furthermore, the same results are achieved in Table 2 where we report the system GMM estimations accounting for possible endogeneity of BIT-related and other explanatory variables.<sup>9</sup> The GMM estimations reveal that bilateral FDI flows are strongly path dependent. Nonetheless, the results on BITs with and without ISDS provisions are essentially unchanged.

Focussing on our preferred GMM estimations, we assess the importance of sample selection for the sensitivity of results on BIT-related variables. Inspecting the data on the strength of ISDS provisions reveals that pre-consent is only partial in most BITs involving some transition countries in Central and Eastern Europe (Bulgaria, Czech Republic, Hungary, Poland, Romania, Russia, and Slovakia) as well as in BITs with China. The bargaining power of China may explain why pre-consent has remained incomplete until recently (Allee and Peinhardt 2010).<sup>10</sup> Nonetheless, our results on all BIT-related variables are unaffected when excluding China from the sample of host countries (results not shown in the table).

By contrast, our results depend significantly on whether the above listed transition countries in Central and Eastern Europe are included in the sample. As shown in columns (5)-(8) of Table 2, all BIT-related variables turn completely insignificant once these countries are excluded. Note that this even applies to the estimations in which ISDS provisions are not accounted for (columns 5 and 6). The latter result resembles previous findings of Busse et al. (2010), according to whom the positive effects of the mere existence of BITs on FDI flows weaken drastically once transition countries are excluded. The reason may be that BITs were an effective means to attract FDI to transition countries that lacked any reputation concerning the credibility of unilateral FDI-related measures immediately after the regime change. In contrast to Poulsen (2010), managers responding to an earlier survey conducted by UNCTAD rated BITs to be among the most important decision factors when undertaking FDI in transition countries (UNCTAD 2009: 51-52).

Furthermore, BITs may be more relevant for small and medium-sized enterprises (SMEs) which played a major role for FDI flows to Central and Eastern European countries, compared to large multinationals which often enter into direct and tailor-made contracts with host country

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<sup>9</sup> It should also be noted that alternative definitions of the dependent FDI variable, i.e., bilateral flows in absolute amounts or relative to the host country's GDP, hardly affected our results on the effects of BITs with and without effective ISDS provisions. These results are available on request.

<sup>10</sup> See Berger (2010) for a detailed analysis of China's policy towards BITs, which changed recently with China becoming an increasingly important source of FDI.

governments. At the same time, SMEs are most likely to be among those investors that rarely inquire about the exact contents of BITs “until some issue arises when its provisions may be relevant” (World Bank 2005: 177). This could explain why BITs stimulated FDI flows to Central and Eastern European countries even though ISDS provisions were not particularly strong in BITs with these host countries.

#### **4. Summary**

UNCTAD (2009: 37) has spotted a shift in the recent empirical literature towards a more positive assessment of the impact of BITs on FDI. This could be because BITs have become more binding over time in offering credible investor protection. Our results on ISDS provisions do not support this view, even though it is the investor's “ability to access a tribunal outside the sway of the Host State which is the principle advantage of a modern investment treaty” (Wälde 2005: 194). It rather appears that the mere existence of BITs has helped reputation building in a relatively small sub-set of host countries, notably in some post-socialist countries in Central and Eastern Europe whose BITs did not contain ISDS provisions in the strictest form.



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Table 1: BITs and Dispute Settlement Provisions, OLS and PPML Estimations

Estimation technique:	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) PPML	(6) PPML	(7) PPML	(8) PPML
ln (GDP)	0.193*** (5.47)	0.179*** (3.13)	0.179*** (3.12)	0.168*** (2.95)	0.461*** (3.91)	0.503*** (2.81)	0.502*** (2.81)	0.472*** (2.64)
ln (DiffGDPpc)	0.00825*** (3.54)	0.0798 (0.58)	0.0796 (0.58)	0.0912 (0.67)	0.0763*** (4.52)	0.300 (0.70)	0.299 (0.70)	0.324 (0.75)
Growth	0.00113 (1.21)	0.00202 (1.47)	0.00202 (1.47)	0.00198 (1.43)	0.0257*** (4.59)	0.0205*** (3.17)	0.0205*** (3.18)	0.0207*** (3.21)
ln (Inflation)	-0.00714* (-1.93)	-0.00187 (-0.39)	-0.00189 (-0.39)	-0.00365 (-0.76)	-0.0114 (-0.75)	-0.00460 (-0.26)	-0.00478 (-0.27)	-0.00789 (-0.44)
Openness	0.000240 (0.74)	0.000306 (0.70)	0.000307 (0.70)	0.000363 (0.82)	-0.000692 (-0.50)	0.00126 (0.74)	0.00123 (0.72)	0.00108 (0.63)
RTA	0.180*** (2.68)	0.127* (1.81)	0.127* (1.81)	0.151** (2.15)	0.0797 (0.97)	0.101 (0.97)	0.103 (0.98)	0.116 (1.10)
PolCon	0.110*** (3.183)	0.130*** (2.76)	0.130*** (2.76)	0.131*** (2.78)	0.390** (2.52)	0.428** (2.30)	0.428** (2.30)	0.425** (2.28)
ComCur	0.112 (1.47)	0.157* (1.95)	0.157* (1.95)	0.167** (2.09)	0.172 (0.92)	0.214 (1.14)	0.215 (1.14)	0.241 (1.28)
DTT	0.104** (2.22)	0.0430 (0.83)	0.0434 (0.83)	0.0700 (1.35)	0.0491 (0.63)	0.0421 (0.45)	0.0403 (0.42)	0.0740 (0.78)
BIT all	0.106*** (3.39)	0.0812** (2.35)			0.181*** (2.59)	0.204** (2.32)		
BIT without DS			0.0768 (0.85)				0.281 (0.92)	
BITDS			0.0801** (2.21)				0.190** (2.17)	
BIT without strong DS				-0.0663 (-0.60)				-0.0257 (-0.12)
BITDS strong				-0.0264 (-0.79)				-0.0257 (-0.28)
Observations	14,077	7,510	7,510	7,510	14,077	7,510	7,510	7,510
Country pairs	2,313	1,161	1,161	1,161	2,313	1,161	1,161	1,161
R <sup>2</sup> (within)	0.02	0.01	0.01	0.01				

Notes: All regressions include country fixed effects; t-values, reported in parentheses, are corrected for heteroskedasticity; due to space constraints, the coefficients for the year dummies are not shown; likewise, source-year effects are always included but not displayed; \*\*\* significant at 1% level; \*\* significant at 5% level; \* significant at 10% level.

Table 2: BITs and Dispute Settlement Provisions, System GMM Estimations

Country sample:	(1) all	(2) all	(3) all	(4) all	(5) excl. CEE	(6) excl. CEE	(7) excl. CEE	(8) excl. CEE
ln (FDI <sub>t-1</sub> )	0.699*** (11.90)	0.722*** (12.73)	0.697*** (12.40)	0.661*** (12.45)	0.640*** (10.78)	0.673*** (11.41)	0.611*** (10.97)	0.619*** (11.06)
ln (FDI <sub>t-2</sub> )	0.0418 (0.72)	0.0229 (0.39)	0.0397 (0.69)	0.043 (0.84)	0.118** (2.13)	0.0893 (1.48)	0.124** (2.16)	0.117** (2.09)
ln (GDP)	0.0437*** (4.08)	0.0492*** (3.27)	0.0504*** (3.26)	0.0584*** (3.69)	0.0422*** (3.69)	0.0533*** (3.40)	0.0598*** (3.63)	0.0597*** (3.64)
ln (DiffGDPpc)	0.00309 (0.75)	0.00348 (1.40)	0.00325 (1.25)	0.00298 (1.10)	-0.00117 (-1.22)	0.00277 (1.22)	0.00352 (1.43)	0.00339 (1.36)
Growth	0.00403*** (3.41)	0.00182 (1.27)	0.00169 (1.20)	0.00215 (1.43)	0.00435*** (3.87)	0.00289** (2.15)	0.00265** (1.98)	0.00328** (2.31)
ln (Inflation)	-0.000123 (-0.024)	0.000934 (0.14)	-0.000880 (-0.13)	-0.00145 (-0.22)	0.00212 (0.41)	-0.00151 (-0.24)	-0.00411 (-0.64)	-0.000643 (-0.092)
Openness	-0.000349 (-1.38)	0.000284 (0.97)	0.000260 (0.90)	0.000331 (1.09)	-0.000361 (-1.54)	0.000200 (0.74)	0.000281 (1.01)	0.000234 (0.82)
RTA	0.112** (2.49)	0.0783 (1.61)	0.0756 (1.53)	0.108** (2.20)	0.111** (2.12)	0.0904 (1.64)	0.0908 (1.59)	0.0977* (1.73)
PolCon	0.000365 (0.008)	0.000536 (0.009)	-0.00306 (-0.052)	0.0347 (0.59)	0.0133 (0.30)	-0.0226 (-0.42)	-0.0179 (-0.32)	0.000702 (0.013)
ComCur	-0.0267 (-0.65)	-0.000765 (-0.018)	-0.0119 (-0.27)	0.00296 (0.06)	0.000748 (0.018)	0.0309 (0.72)	0.0249 (0.57)	0.0328 (0.74)
DTT	0.157*** (3.66)	0.155*** (3.79)	0.169*** (4.21)	0.193*** (4.45)	0.157*** (3.61)	0.121*** (3.14)	0.135*** (3.43)	0.139*** (3.46)
BIT all	0.0572* (1.74)	0.0692* (1.90)			0.0240 (0.75)	0.00182 (0.057)		
BIT without DS			-0.0492 (-1.07)				-0.0665 (-1.50)	
BITDS			0.0657** (1.95)				-0.00467 (-0.16)	
BIT without strong DS				-0.00839 (-0.09)				-0.000578 (-0.0065)
BITDS strong				-0.0239 (-0.80)				-0.0214 (-0.73)
Observations	9,972	5,506	5,506	5,506	9,373	5172	5172	5172
Country pairs	2,216	1,155	1,155	1,155	2,071	1078	1078	1078
Sargan (p-value) <sup>1</sup>	0.13	0.16	0.13	0.22	0.11	0.18	0.16	0.34
AB 2 (p-value) <sup>2</sup>	0.27	0.10	0.16	0.13	0.83	0.32	0.55	0.50
Instruments (lags)	316 (2 to 6)	316 (2 to 6)	362 (2 to 6)	362 (2 to 6)	316 (2 to 6)	316 (2 to 6)	362 (2 to 6)	362 (2 to 6)

Notes: See Table 1; \*\*\* significant at 1% level; \*\* significant at 5% level; \* significant at 10% level; Estimations are based on one-step system-GMM estimator with robust standard errors; <sup>1</sup> Sargan-test of overidentification; <sup>2</sup> Arellano-Bond-test that second-order autocorrelation in residuals is 0.

## Appendix A: Definition of Variables and Data Sources

Variable	Definition	Source
FDI	Bilateral FDI flows from source to host country in % of total FDI from source country to all developing countries included in our sample	UNCTAD (2010a)
GDP	Real GDP, constant 2000 US\$	World Bank (2010)
DiffGDPpc	Difference between source and host countries' GDP per capita, constant 2000 US\$	World Bank (2010)
Growth	Real GDP growth rate of host country in %	World Bank (2010)
Inflation	Inflation rate of host country in % (GDP deflator)	World Bank (2010)
Openness	Sum of imports and exports in % of GDP (host country)	World Bank (2010)
BIT all	Bilateral investment treaty, ratified between source and host country	UNCTAD (2010b)
BITDS	Bilateral investment treaty with investor-state dispute settlement mechanism with comprehensive or partial pre-consent	made available by Jason Webb Yackee
BITDS strong	Bilateral investment treaty with investor-state dispute settlement mechanism with comprehensive pre-consent	made available by Jason Webb Yackee
DTT	Double taxation treaty, ratified between source and host country	IBFD (2010)
ComCur	Common currency between source and host country	Reinhart and Rogoff (2004)
RTA	Dummy regional trade agreement	WTO (2010)
PolCon	Political constraints III, Henisz database, range from 0 to 1	Henisz (2000)

## Appendix B: Descriptive Statistics for the Main Variables

Variable	Observations	Mean	Std. Dev.	Minimum	Maximum
ln (FDI)	14,077	0.30	0.83	0	5.30
ln (GDP)	14,077	23.26	1.70	19.14	28.07
ln (DiffGDPpc)	14,077	8.76	4.54	-10.15	11.21
Growth	14,077	3.46	5.58	-18.20	77.70
ln (Inflation)	14,077	3.02	1.66	-3.25	9.43
Openness	14,077	73.10	39.86	9.31	245.80
BIT all	14,077	0.17	0.37	0	1
BIT all (reduced sample)	7,510	0.26	0.43	0	1
BITDS	7,510	0.19	0.38	0	1
BITDS strong	7,510	0.16	0.36	0	1
DTT	14,077	0.21	0.40	0	1
ComCurrency	14,077	0.01	0.10	0	1
RTA	14,077	0.05	0.21	0	1
PolCon	14,077	0.25	0.20	0	0.68

## Appendix C: Source Country Sample

Argentina, *Australia*, *Austria*, *Belgium-Luxembourg*, Brazil, Chile, Colombia, *Denmark*, *Finland*, *France*, *Germany*, Iceland, *Japan*, Republic of Korea, Malaysia, Mexico, *Netherlands*, New Zealand, Portugal, *Spain*, *Sweden*, *Switzerland*, Taiwan, Thailand, Turkey, *United Kingdom*, *United States*, Venezuela

Note: Source countries with information on dispute settlement in *italics*.

## **Appendix D: Host Country Sample**

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Albania, Algeria, Angola, Argentina, Azerbaijan, Bangladesh, Bolivia, Botswana, Brazil, Bulgaria, Burkina Faso, Cameroon, Chile, China, Colombia, Republic of Congo, Costa Rica, Côte d'Ivoire, Croatia, Czech Republic, Dominican Republic, Ecuador, Egypt, El Salvador, Equatorial Guinea, Estonia, Ethiopia, Gambia, Ghana, Guatemala, Guinea, Guyana, Haiti, Honduras, Hungary, India, Indonesia, Jordan, Kazakhstan, Kenya, Latvia, Lithuania, Madagascar, Malaysia, Mali, Mauritius, Mexico, Mongolia, Morocco, Mozambique, Namibia, Nicaragua, Niger, Nigeria, Oman, Pakistan, Papua New Guinea, Paraguay, Peru, Philippines, Poland, Romania, Russian Federation, Senegal, Seychelles, Slovakia, Sri Lanka, Sudan, Swaziland, Syrian Arab Republic, Tanzania, Thailand, Togo, Trinidad and Tobago, Tunisia, Turkey, Uganda, Ukraine, Uruguay, Venezuela, Vietnam, Zambia, Zimbabwe

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