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Exchange rate variability and FDI – consequences of EMU enlargement.

1. Introduction

The aim of the paper is to analyze theoretically and empirically the likely impact of the reduction in exchange rate uncertainty, due to the EMU accession, on the intensity of FDI inflow into candidate countries. The EU enlargement is expected to bring about a reduction in risk associated with investments in entrant countries and to spur FDI inflow. Given monetary and fiscal policy constraints imposed in the first place by the EU membership, the reduction of exchange rate variability will be the main alteration of investment's conditions in candidate countries after the EMU enlargement.

The paper is structured as follows. Section 2 is devoted to the review of pertinent literature. The main empirical results are presented in section 3. Finally, section 4 concludes.

2. Literature survey

The theoretical as well as empirical research into the impact of exchange rate volatility on the flow of FDI is scarce. The existing theoretical literature can de divided among two strands, coping with the consequences of exchange rate volatility in different time horizons.

2.1 Short-run production flexibility

The first approach focuses on the **production flexibility** argument expounded by Aizenman (1992), Darby *et al.* (1999), and Sung and Lapan (2000). In this type of models producers commit to domestic and foreign capacity *ex ante* and commit to employment decisions *ex post*, following the realization of a nominal or real shock. The assumption of *ex post* variable factors of production is more realistic for short horizon. Effects of exchange rate volatility will in this approach generally depend on sunk costs in capacity, competitive structure and the convexity of the profit function in prices.

The key outcome of Aizenman's (1992) analysis is that a fixed exchange rate regime is more conducive to FDI relative to a flexible exchange rate, regardless of the type of shock hitting an economy. For the case of monetary shocks, the concavity of the production function implies that nominal shocks will reduce expected profits under a flexible exchange rate regime. Fixed exchange rate are capable of isolating the level of employment and production from monetary shocks and are associated with higher expected profits. This in turn stimulates domestic investment and FDI. For real shocks, flexible exchange rates are associated with higher volatility of employment and with lower expected profits. This is due to the fact that a country experiencing a positive productivity shock will tend to experience nominal and real appreciation, which will mitigate the resultant employment expansion. In the fixed exchange rate system positive productivity shock leads to an increase in employment and in expected profits. Therefore in the presence of productivity shocks the flow of FDI will be larger in a fixed than in a flexible exchange rate system.

Darby *et al.* (1999), challenge conventional wisdom of a negative impact of exchange rate uncertainty on investment. The model is an extended and adapted version of Dixit - Pindyck (1994) and they share the basic structure. Production costs are fixed in local currency and an investor has to incur a sunk entry cost as well as a sunk cost of exit. In face of uncertainty, firms often find it optimal to wait rather than to commit to a given production capacity. Waiting is a proper alternative to investing or not investing. The option value (invest now or later) then becomes part of the investment costs because, once an irreversible investment is made, the possibility of exercising this option to invest later on has been lost. Therefore the expected discounted value of the investment project has to be compared to the value of waiting, with the option of investing later.

At that stage the analysis leads to a conclusion of a negative relationship between exchange rate uncertainty and FDI. However Darby *et al.* assume that the firm's discount rate is increasing in exchange rate volatility and the opportunity cost of waiting is a difference between the discount rate and the deviation of the exchange rate from its equilibrium path. In other words exchange rate volatility affects FDI in two opposite ways. On the one hand it depresses investment because the firm will only invest it the present value of the expected revenues is higher, by an amount equal to the value of waiting, than the entry sunk cost. On the other hand the opportunity cost of waiting raises with exchange rate volatility and hence boost investment. Darby *et al.* establish parametric conditions under which the former or the latter mechanism will overwhelm, i.e. exchange rate volatility will reduce or increase foreign direct investment.

The model constructed by Sung and Lapan (2000) is also inspired by Dixit-Pindyck (1994) theory and FDI is viewed as an investment option that allows the firm to defer the decision as to where to produce. The cost of the option is the sunk cost associated with opening the second plant and its value is equal to extra profits earned if the firm opens the foreign plant instead of the home plant. As the variability of exchange rate increases, the firm may find it profitable to either open the foreign plant instead of the home plant or open both plants. In a deterministic setting the firm opens only one plant because each plant exhibits decreasing average cost. However under exchange rate uncertainty firms may wish to open more plants[1] since such a strategy allows to channel the production abroad if the foreign currency depreciates.

As a consequence if sunk costs are relatively large but similar across plants, then for low exchange rate variability, only the home plant will be opened, for intermediate values, only the foreign plant will be opened, whereas for large exchange rate variability, both plants will be opened. If sunk costs are not too large (or are relatively different across plants), then for low exchange rate variability, only the home plant will be opened, whereas for larger values of exchange rate variability, both plants will be opened. The conclusion that exchange rate volatility boost FDI is also supported if strategic dimension is added to the model, i.e. the multinational faces a local competitor.

2.2 Long-run risk aversion

The second approach, adopted by Cushman (1985), Goldberg and Kolstad (1995), and Bénassy-Quéré *et al.* (2001), focuses on **risk aversion** with no possibility of *ex post* adjustment of a variable productive factor. Exchange rate risk arises because of the time lag between investment and profits in foreign currency. Cushman (1985) analyzed the effects of real exchange rate risk and expectations on FDI for four different cases, depending on where inputs were purchased, where output was produced, where financial capital was acquired, and where output was sold.

He found that an increase in exchange rate volatility induces a depreciation of the risk adjusted real exchange rate and thus lowers the costs of domestic versus foreign financing of foreign capital which translates into an increase in FDI. In case of foreign production with imported inputs a decrease in exchange rate volatility lowers both factor (foreign labor and capital) costs. However the ratio of wages to rents rises and the usage of capital invested abroad increases. Under the circumstances of domestic production and sale but with foreign subsidiary delivering an intermediate good, lower exchange rate volatility raises the cost of foreign labor while lowering the cost of foreign capital. As a result three outcomes are possible. FDI rises and foreign employments falls or rises (if the increased FDI raises marginal productivity of labor enough to offset the rise in its cost) or both FDI and foreign employment falls (when the decline in the latter reduces the marginal productivity of capital invested abroad enough to offset the fall in its cost) Finally, in case of export production with plant located domestically or abroad, a decrease in exchange rate volatility may again reduce as well as increase FDI. The former result is more likely to occur if price elasticity of foreign demand is relatively high.

[1] Plant-opening decisions are made prior to exchange-rate realization.

Goldberg and Kolstad (1995) argue that exchange rate volatility unambiguously stimulates the share of investment activity located abroad. Under risk aversion the nature of the relationships between exchange rate variability and flow of FDI critically depends on the covariance structure between exchange rate and foreign demand shocks. If both shocks are negatively correlated, a rise in the variability of exchange rates magnifies the share of capacity located offshore, although the overall capacity declines. Therefore the analysis does not allow to conclude that the absolute level of FDI rises or falls. However, as long as demand is not excessively convex with respect to price, the FDI share increases as the correlation between exchange rate and demand shocks rises.

Finally, Bénassy-Quéré *et al.* (2001) emphasize the role played by the covariance between the exchange rates of currencies used in two alternative locations of inward direct investment. A risk-averse firm contemplates relocating in two alternative foreign locations in order to re-export[2] and therefore transportations costs influence the sensitiveness of FDI to exchange rate uncertainty. It stems from the analysis that regardless of the sign of correlation between the two exchange rates movements, an increase in the volatility of any of the two countries exchange rate leads to a reduction in FDI. Moreover lower volatility of exchange rate in a country increases the sensitivity of output in that country to local costs.

The empirical research mostly finds that increased exchange rate uncertainty has a positive effect on foreign direct investment. Positive effects are found by Goldberg and Kolstad (1995) on bilateral investment flows between the U.S. on the one hand and the U.K., Canada and Japan on the other for 1978-1991, were use was made of quarterly data. Exchange rate variability had a positive and statistically significant effect on four of the six bilateral FDI shares: real exchange rate variability increased the share of total United Sates investment capacity located in Canada and in Japan, and increased the share of Canadian and United Kingdom investment located in the United States. Exchange rate variability entered with opposite to expected sign or was insignificant only in cases where problems (nonstationarity and heteroskedasticity) arose in estimating the regression equations.

Cushman (1985) reports positive effects of exchange rate volatility on annual, bilateral FDI flows from the United States to the United Kingdom, France, Germany, Canada and Japan for the years 1963 through 1978. Alternative measures of variability lead to a conclusion that the exchange rate risk variable's effect is consistently positive for all specifications. However it is insignificant when contemporaneous error correlation is assumed. Since the contemporaneous error formulation outperforms other specifications with respect to remaining variables significance and correct signs, we may conclude that Cushman's results give weak support to a hypothesis of positive link between direct investment and exchange rate volatility.

Bénassy-Quéré *et al.* (2001) test their theoretical model on a panel of 42 developing countries receiving FDI from 17 investing countries over 1984-1996. As expected the authors find that an increase in the nominal exchange rate volatility tends to reduce FDI. More precisely, it is shown that a 1 point increase in exchange rate volatility reduces the FDI stock by 0.63 percent. The result is particularly worth noting because seven transition countries from Central and Eastern Europe are included in the estimation sample.

3. Relationship between exchange rate variability and FDI in emerging market and transition countries

Before we proceed to test the impact of exchange rate volatility in transition and emerging market countries it is necessary to carefully disentangle empirically variability from uncertainty.

[2] FDI and trade are complements.

3.1 Measures of volatility and uncertainty

The measure of exchange rate variability is similar to those used in much of the literature. The variability variable *VOLAT* is constructed for a given year as a sample "standard deviation" of the change in the logarithm of the nominal average monthly exchange rate (*E*):

$$VOLAT_T = [(1/m)\sum_{i=1}^{m}(E_{t+i+1} - E_{t+1})^2]^{1/2} \quad (1)$$

where *m*=11 and *T* is a yearly time index. In case of Bulgaria for 1990, the data on is not available for January and February and for the following nine months the end of period value of monthly exchange rate is reported.

To measure exchange rate uncertainty I construct sample-based measure of dispersion of unpredictable innovation. It is given by the conditional variance of the innovation constructed using the generalized autoregressive conditional heteroskedasticity GARCH specification of Bollerslev (1986). To be more specific, I estimate using monthly data the following GARCH (4, 4) model:

$$E_t = \alpha_0 + \alpha_1 E_{t-1} + \varepsilon_t \quad (2)$$

$$\sigma_t^2 = \beta_0 + \sum_{i=1}^{4}\beta_i \varepsilon_{t-i}^2 + \sum_{i=1}^{4}\gamma_i \sigma_{t-i}^2 \quad (3)$$

where σ_t^2 denotes the variance of ε_t conditional on information up to period *t*. I estimate the two-equation model (2)-(3) separately for each country for the period extended to include four months before the starting year of the sample used in the estimation of my main equation. Bulgaria is again an exception. Due to the lack of data for Bulgaria I estimated GARCH (1, 1) model based on data starting in March 1990. Since for each year I obtain 12 values of σ_t^2, I take a simple mean of fitted values from Eq. (3) as the measure of uncertainty for a given country in a given year[3] *T*:

$$UNCERT_T = (1/m)\sum_{i=1}^{m}\sigma_{it}^2 \quad (4)$$

where *m*=12.

3.2 Determinants of FDI in emerging market and transition countries

The basic question I seek to address is whether exchange rate volatility or uncertainty affects FDI inflows into emerging market and transition countries. In order to estimate the impact of the variables of interest, I need to control for the potential influence of other factors shaping the pattern of FDI. Given the data set has both cross-section and time-series dimensions and the international "push factors" behind FDI flows are identical for each country, I choose the following "pull factors" model:

$$FDI_{iT} = \lambda_{i0} + \lambda_1 GDP_{it} + \lambda_2 POP_{it} + \lambda_3 GDPgrowth_{it-1} + \lambda_4 INFL_{it-1} + \lambda_5 FISCBAL_{it-1} + \lambda_6 RESRV_{it-1} + \lambda_7 TELEPH_{it-1} + \lambda_8 \text{variability} + \lambda_9 \text{interactive terms} + \mu_{it} \quad (5)$$

A large number of variables has been considered in the literature as possible determinants of inward FDI. Not many of them are consistently significant. One variable that is consistently statistically significant is the host country size measured by Gross Domestic Product expressed in US dollars (*GDP*). I also use population (*POP*) as another variable to normalize capital flows. Not to impose any particular normalization on the data is recommended by Garibaldi *et al.* (2001) especially when large fluctuations of both exchange rate and real GDP are observed.

The remaining explanatory variables can be divided into three groups: macroeconomic factors, country creditworthiness and physical infrastructure. There are three variable sin the first group: lagged rate of growth of real GDP (*GDPgrowth*), lagged rate of inflation (*INFL*), lagged general government balance as percent of GDP (*FISCBAL*). Macroeconomic stability is viewed as

[3] For Bulgaria in 1990 the mean is computed using nine fitted σ_t^2 from Eq. (3)

conducive to FDI, hence I expect a negative sign to be associated with the rate of inflation. Low fiscal deficit is also a stabilization proxy and a positive sign should be expected. However large fiscal deficit translates into low domestic savings and a more pronounced need for foreign financing partly met by the FDI inflows. As a result the sign associated with *FISCBAL* is ambiguous. Similarly, GDP growth could be on the one hand regarded as a factor encouraging investment since a growing economy is a prospect of large profits. On the other hand the output decline could be accompanied by the increase in the marginal product of new capital if it is combined with other resources freed from stagnating sectors. I cannot therefore exclude that the estimated coefficient of *GDPgrowth* could be negative.

Country creditworthiness is measured by the change in the reserve assets. I preserve the balance of payments notational convenience, that is an increase in the stock of international reserves is recorded with the minus sign. I expect a negative coefficient to be associated with the *RESERV* variable.

A proxy for the physical infrastructure used in the estimation is the number of telephone lines and cellular subscribers per 100 inhabitants. That variable should positively affect the FDI inflows.

Finally the set of explanatory variables includes two measures of uncertainty described in the previous subsection, i.e. *VOLAT* and *UNCERT*. To asses the consequences of EMU enlargement I need to verify whether the FDI inflows into the transition and candidate countries react to exchange rate variability in a distinguishable manner. To that end I construct two dummy variables. *TRANS* takes on the value of 1 for transition countries and 0 otherwise and *ACCESS* takes on the value of 1 for eight accession countries and 0 otherwise. If FDI inflows into transition (accession) countries react to exchange rate variability in a distinct way the variable *VOLAT*TRANS* (*VOLAT*ACCESS)* equal to the product of *VOLAT* and *TRANS* (*VOLAT* and *ACCESS*) should be statistically significant.

The results of estimation of Eq. (5) with exchange rate volatility measure are presented in Table 1 with exchange rate uncertainty measure - in Table 2. Since availability of data on the general government balance reduced significantly the time span of the transition countries sample I estimated separately Eq. (5) with *FISCBAL* (column 1.3, 1.4, 2.3 and 2.4) and without it (column. 1.1, 1.2, 2.1 and 2.2). The countries and investigated periods are listed in Table A in the Annex.

It stems from regression results reported in Table 1 that exchange rate volatility reduces FDI inflows. For transition countries however this effect is negligible. On the other hand accession countries are particularly vulnerable to exchange rate uncertainty (see Table 2).

The lagged value of FDI may be an important determinant of current FDI inflow. The presence of foreign affiliates in a country may be the best recommendation for other investors contemplating placing their capital abroad. It is therefore justified to add the lagged value of FDI to the set of independent variables. The equation to be estimated takes then the form:

$$FDI_{iT} = \lambda_{i0} + \lambda_1 FDI_{iT-1} + \lambda_2 GDP_{it} + \lambda_3 POP_{it} + \lambda_4 GDPgrowth_{it-1} + \lambda_5 INFL_{it-1} + \lambda_6 FISCBAL_{it-1} + \lambda_7 RESRV_{it-1} + \lambda_8 TELEPH_{it-1} + \lambda_9 \text{variability} + \lambda_{10} \text{interactive terms} + \mu_{it} \quad (6)$$

The presence of lagged dependent variable precludes the use of the standard fixed effects estimator. The conventional approach is based on the difference GMM estimator proposed by Arellano and Bond (1991) which uses the second lag as instrument for the first difference of FDI_{iT-1}. The results are presented in Table 3 and 4.

The analysis of Table 3 and 4 leads to the conclusion that FDI inflows are mainly driven by the size of host country and the lagged value of direct investment. Neither exchange rate volatility nor uncertainty affects FDI inflow. The results reported in column 4.4 in Table 4 support the hypothesis that exchange rate uncertainty increases the FDI inflow into candidate countries.

Table 1 Exchange rate variability and FDI.
Dependent variable: FDI

Variable (t-statistic)	(1.1)	(1.2)	(1.3)	(1.4)
GDP	.024939	.022444	.036288	.033617
	(2.30975)	(2.07687)	(4.15865)	(3.76918)
POP	85.7731	95.6842	31.8371	41.6657
	(1.76712)	(1.92226)	(1.00267)	(1.23356)
GDPgrowth(-1)	-448.910	53.1966	3428.62	3981.76
	(-.207733)	(.023324)	(1.14556)	(1.2547)
INFL(-1)	-60.8771	-125.303	32.4510	-16.6354
	(-.694529)	(-1.44543)	(1.13439)	(-.591229)
FISCBAL(-1)	…	…	-9228.97	-6854.56
	…	…	(-2.05332)	(-1.57864)
RESERV(-1)	-.397043E-03	-.385832E-03	-.245570E-03	-.232057E-03
	(-1.96377)	(-1.87616)	(-1.74564)	(-1.6132)
TELEPH(-1)	59.6281	58.8274	24.4500	24.2635
	(3.30804)	(3.14964)	(1.92035)	(1.81071)
VOLAT	-16532.9	-4858.34	-13471.8	-3815.49
	(-2.06697)	(-1.85239)	(-4.05956)	(-1.77567)
VOLAT*TRANS	15598.2	…	12830.1	…
	(1.934)	…	(3.84588)	…
VOLAT*ACCESS	…	2781.45	…	2887.39
	…	(1.03117)	…	(1.28885)
Number of observ.	334	334	308	308
R-squared adj.	.764181	.756803	.847538	.841839
F test of $A=A_i$	F(32,294)=8.845	F(32,294)=9.095	F(32,267)=17.48	F(32,267)=17.45

Source: Author's calculations.
Method of estimation: OLS, fixed effects panel model
t-statistic computed with the use of White heteroskedastic-consistent standard errors

Table 2 Exchange rate uncertainty and FDI.
Dependent variable: FDI

Variable (t-Statistic)	(2.1)	(2.2)	(2.3)	(2.4)
GDP	.021382	.021228	.032539	.032507
	(1.96161)	(1.94419)	(3.53052)	(3.52938)
POP	99.8669	100.447	45.3871	45.3874
	(1.97542)	(1.98195)	(1.29051)	(1.29126)
GDPgrowth(-1)	423.609	400.577	4346.32	4502.82
	(.178524)	(.166279)	(1.30723)	(1.3316)
INFL(-1)	-149.89	-149.502	-32.9144	-32.4503
	(-1.69697)	(-1.69776)	(-.945949)	(-.937098)
FISCBAL(-1)	…	…	-4578.9	-4550.82
	…	…	(-1.15888)	(-1.15733)
RESERV(-1)	-.381203E-03	-.384378E-03	-.226487E-03	-.225805E-03
	(-1.83187)	(-1.85369)	(-1.55034)	(-1.54588)
TELEPH(-1)	58.2198	57.6515	25.0932	26.1362
	(3.18051)	(3.18591)	(1.92979)	(1.98712)
UNCERT	-.522390E-05	-.522242E-05	.181029E-05	.182890E-05
	(-.93029)	(-.929067)	(1.07317)	(1.07237)
UNCERT*TRANS	-.139393E-02	…	-.165175E-02	…
	(-1.00799)	…	(-1.50764)	…
UNCERT*ACCESS	…	-8876.54	…	-82734.6
	…	(-2.39112)	…	(-2.13147)
Number of observ.	334	334	308	308
R-squared adj.	.753235	.75365	.839234	.839303
F test of $A=A_i$	F(32,294)=9.103	F(32,294)=9.133	F(32,267)=17.182	F(32,267)=17.115

Source: Author's calculations.
Method of estimation: OLS, fixed effects panel model
t-statistic computed with the use of White heteroskedastic-consistent standard errors

Table 3 Exchange rate volatility and FDI.
Dependent variable: FDI

Variable (t-Statistic)	(3.1)	(3.2)	(3.3)	(3.4)
FDI(-1)	.5562607 (7.45)	.5516081 (7.48)	.4541536 (3.48)	.4563605 (3.46)
GDP	.0115195 (2.79)	.0113937 (3.07)	.0079139 (1.49)	.0074553 (1.30)
POP	16.02334 (0.55)	16.44332 (0.59)	38.10565 (0.92)	39.22394 (0.94)
GDPgrowth(-1)	818.6639 (0.29)	545.4613 (0.19)	5642.727 (1.17)	5226.04 (1.09)
INFL(-1)	-16.02709 (-0.43)	-36.45914 (-1.09)	9.364191 (0.60)	-2.019841 (-0.20)
FISCBAL(-1)	… …	… …	-4762.675 (-1.32)	-4089.8 (-1.08)
RESERV(-1)	.0601715 (0.89)	.0530979 (0.85)	.0134481 (0.32)	.0095999 (0.23)
TELEPH(-1)	4.791887 (0.74)	5.826936 (0.75)	15.09502 (1.09)	15.56905 (1.06)
VOLAT	-10284.68 (-1.48)	-1210.216 (-0.84)	-5421.646 (-1.47)	-656.2654 (-0.99)
VOLAT*TRANS	10287.44 (1.48)	… …	5160.858 (1.39)	… …
VOLAT*ACCESS	… …	901.1717 (0.55)	… …	-106.9964 (-0.10)
Number of observ.	270	270	244	244

Source: Author's calculations.
Method of estimation: Arellano-Bond GMM dynamic panel data model
t-statistic computed with the use of heteroskedastic-consistent standard errors

Table 4 Exchange rate uncertainty and FDI.
Dependent variable: FDI

Variable (t-Statistic)	(4.1)	(4.2)	(4.3)	(4.4)
FDI(-1)	.5512693 (7.49)	.5512699 (7.49)	.4574357 (3.46)	.4575743 (3.45)
GDP	.0113417 (3.10)	.0113455 (3.10)	.0073568 (1.27)	.0073655 (1.27)
POP	16.73139 (0.60)	16.71418 (0.60)	39.53844 (0.94)	39.40143 (0.94)
GDPgrowth(-1)	547.6568 (0.19)	552.8787 (0.20)	5061.37 (1.06)	5103.925 (1.07)
INFL(-1)	-38.59739 (-1.17)	-38.64207 (-1.17)	-2.913557 (-0.29)	-2.83533 (-0.29)
FISCBAL(-1)	… …	… …	-3471.644 (-0.91)	-3534.439 (-0.93)
RESERV(-1)	.0517994 (0.85)	.0518193 (0.84)	.0091492 (0.22)	.0091423 (0.22)
TELEPH(-1)	5.63927 (0.72)	5.675102 (0.72)	14.76977 (1.05)	14.92564 (1.06)
UNCERT	-1.94e-06 (-0.45)	-1.94e-06 (-0.45)	2.11e-06 (0.47)	2.14e-06 (4.49e-06)
UNCERT*TRANS	-.1978106 -1.05	… …	-.1007842 (-0.48)	… …
UNCERT*ACCESS	… …	45829.13 (0.34)	… …	1.06e+07 (1.70)
Number of observ.	270	270	244	244

Source: Author's calculations.
Method of estimation: Arellano-Bond GMM dynamic panel data model
t-statistic computed with the use of heteroskedastic-consistent standard errors

Annex

TABLE A List of countries and period used in estimation of Eq. (5)

Emerging market countries	Investigated period without *FISCBAL*	Investigated period with *FISCBAL*	Transition countries	Investigated period without *FISCBAL*	Investigated period with *FISCBAL*
Argentina	1990-2001	1990-2001	Bulgaria	1990-2001	1990-2001
Brazil	1990-2001	1990-1995	Croatia	1994-2001	1995-2001
Chile	1990-2001	1990-2001	Czech Rep.	1994-2001	1994-2001
China	1990-2000	1990-2000	Estonia	1994-2001	1994-2001
Colombia	1990-2001	1990-2001	Hungary	1991-2001	1991-2001
Costa Rica	1990-2001	1990-2001	Kazakhstan	1996-2001	1996-2001
Dominican R.	1990-2001	1990-2001	Kyrgyz Rep.	1995-2001	1995-2001
Ecuador	1990-2000	1990-2000	Latvia	1993-2001	1997-2001
Egypt	1990-2000	1990-1999	Lithuania	1994-2001	1994-2001
India	1991-2000	1991-2000	Poland	1990-2001	1995-2001
Indonesia	1990-2001	1990-2000	Romania	1991-2001	1991-2000
Korea	1990-2001	1990-1998	Slovak Rep.	1994-2000	1997-2000
Malaysia	1990-2000	1990-2000	Slovenia	1993-2001	1994-2001
Nigeria	1990-1999	1990-1999			
Peru	1990-2001	1990-2001			
Phillipines	1990-2001	1990-2001			
Thailand	1990-2001	1990-2001			
Turkey	1990-2000	1990-2000			
Venezuela	1990-2000	1990-2000			