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The Fall of the Vanishing Interim Regime Hypothesis: Towards a New Paradigm of the Choice of the Exchange Rate Regimes

Michał Jurek

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Michał Jurek Ph. D., The Poznan University of Economics, Banking Department.

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Abstract

This paper verifies strong and weak versions of the vanishing interim regime hypothesis (so-called bipolar view). It is shown herein that the strong as well as weak version of this hypothesis can be discredited. Empirical observations support the bipolar view only for the advanced countries, but not for emerging and developing ones. On the contrary – the number of interim regimes, used by emerging and developing countries more than doubled in the 1999–2008 period. Results of the logistic regression analysis also challenge a bipolar view. Moreover, they provide a strong support for the view that the probability of the use of interim regimes in emerging and developing countries significantly differs in various regions of the world. This can be treated as an evidence of the existence of other factors that influence these countries' choices concerning exchange rate regimes, partly resulting from differences in institutional fundamentals and different economic structures as well as macroeconomic policy stabilization programs.

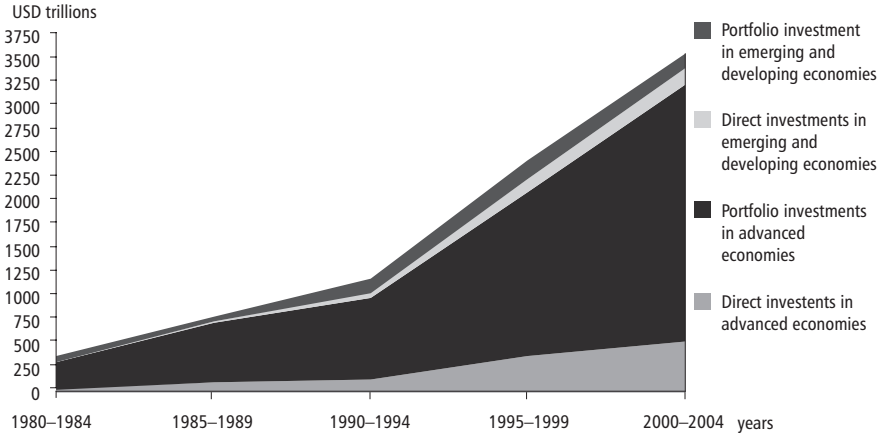
JEL codes: E42, E52, F31

Keywords: bipolar view, exchange rate regimes, monetary policy

Introduction

Since the seventies the interdependence of the world economy has grown to the unprecedented extent. This in turn has caused the increase in frequency and magnitude of capital flows, mostly of a speculative nature (Figure 1). The magnitude of these flows has become enormously high as is clear from the figure 1. As yield differentials have increasingly stimulated capital flows, sustaining restrictions on such flows has become very problematic because of their vanishing effectiveness (Kose *et al.* 2007). Taking this into account, many countries have already liberalized restrictions on capital flows (Mussa *et al.* 1994, Kose, Prasad 2007).

Figure 1.
Capital inflows to 71 countries in the years 1980–2004



Advanced economies: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Spain, Ireland, Italy, Japan, New Zealand, Norway, Portugal, Sweden, Switzerland, the Netherlands, UK, USA.
Emerging and developing economies: Algeria, Argentina, Bangladesh, Bolivia, Brazil, Cameroon, Chile, China, Columbia, Costa Rica, Dominican, Egypt, Ecuador, El Salvador, Fiji, Ghana, Guatemala, Honduras, India, Indonesia, Iran, Israel, Jamaica, Kenya, Korea, Malawi, Malaysia, Mauritius, Mexico, Nepal, Niger, Pakistan, Papua New Guinea, Paraguay, Peru, Senegal, Singapore, South Africa, Sri Lanka, Tanzania, Thailand, the Philippines, Togo, Trinidad and Tobago, Tunisia, Turkey, Uruguay, Venezuela, Zambia, Zimbabwe.
Source: Kose *et al.* (2006).

Observations of this process have induced many economists to insist that so-called interim exchange rate regimes with the particular emphasis on soft pegs do not fit changing macroeconomic circumstances anymore. A core of this standpoint is the view that mounting problems with speculative attacks, fading credibility of interim regimes in the world of vastly expanding capital flows and proneness of such regimes to currency crises sooner or later must force countries to "kick the habit" and reject theses regimes as obsolete (Calvo, Mishkin 2003; Eichengreen 1999a, 1999b; Spahn 2001).

This general assumption is supported by the interpretation of the Mundell-Fleming model and well-known concept of the Unholy Trinity (Impossible Trinity). According to it, monetary authorities usually aim at three targets: freedom of capital flows, stability of market exchange rate and monetary autonomy. However, only two of the three targets can be achieved simultaneously (Obstfeld *et al.* 2004). It used to be assumed that the phenomenon of financial integration and increasing capital flows has limited countries' choice regarding the degree of exchange rate flexibility. Only two corner solutions have become alternatives: a hard peg and freely floating exchange rate (Eichengreen 1994, Frankel 1999, Tavlas 2003).

This appears to be the core of so called bipolar view or vanishing interim regime hypothesis. According to its succinct hard version, all intermediate regimes are about to disappear (Eichengreen, Razo-Garcia 2006; Summers 2000). Soft version of this hypothesis was formulated by S. Fischer (2001, p. 5).[1] According to it: *for countries open to international capital flows: (i) soft exchange rate pegs are not sustainable; but (ii) a wide variety of flexible rate arrangements remain possible; and (iii) it is to be expected that policy in most countries will not be indifferent to exchange rate movements. To put the point graphically, if exchange rate arrangements lie along a line connecting hard pegs like currency unions, currency boards, and dollarization on the left, with free floating on the right, the intent of the bipolar view is not to rule out everything but the two corners, but rather to pronounce as unsustainable a segment of that line representing a variety of soft pegging exchange rate arrangement*.

The conventional wisdom that sooner or later interim regimes cease to be an option in exchange rate policy has become well established since the outbreak of crises during the 1990s (Crockett 2003), even though some economists have emphasized the lack of its clear-cut empirical verification (Bird, Rowlands 2005; Bubula, Ötker-Robe 2004; Frankel 2003, Frankel, Schmukler, Servén 2000; Rogoff *et al.* 2003). The outburst of the global crisis has changed this view. Since then, advantages of interim regimes have started attracting the attention of the academics and policymakers once again. The rules that govern the behaviour of exchange rates under such regimes have ceased to be only an "intellectual limbo".

Hence, feasibility of the choice of intermediate solution under perfect capital mobility is in dispute once again. According to one of critics of the bipolar view, J.A. Frankel (2009, p. 14): *Today, it is clear that most countries continue to occupy the vast expanse between floating and rigid institutional pegs, and it is uncommon to hear that intermediate regimes are a bad choice generically (…). If the corners hypothesis is "out" then intermediate regimes are "in"* Ghosh and Ostry (2009) go even further, proving that – apart from some weaknesses – intermediate regimes represent the balance between pegs and free floats and are associated with faster per capita output growth. Such result can be achieved, however, only if interim regimes are able to avoid exchange rate overvaluation and loss of competitiveness.[2]

On the other hand, S. Fisher (2008, p. 370) indicates that the general shift toward bipolarity is continuing, but at a reduced pace. Among the main reasons for such slowdown he sees the introduction of the euro and the emerging market financial crises of that decade. This leaves unthreatened view that as countries become more developed, they should be moving away from intermediate regimes, towards greater flexibility of the exchange rate or towards a hard peg. This view is shared by a strong proponent of the bipolar view, B. Eichengreen (2008). According to him, the advanced countries have already abandoned the unstable middle. Emerging and developing countries are going to do so introducing flexible arrangements because of growing popularity of inflation targeting.

Taking under consideration this dispute, this paper attempts to verify the strong and weak versions of the vanishing interim regime hypothesis. Another target is to identify factors that may influence probability of the choice of interim and corner solutions.

The paper starts with a brief characteristic of the methodological issues, concerning especially the merit of the classification of exchange rate regimes used in the paper as well as the framework of the logistic regression analysis, according to which the probability of the use of intermediate and corner solutions by the IMF members is estimated. Then,

[1] An earlier soft version of the bipolar view can be found in Swoboda (1986).

[2] This may seem a bit odd, as the same author came to opposite conclusion few years later. According to Ghosh *et al.* (2002, p. 173), "there is weak evidence that pegged (and, especially, intermediate) regimes are associated with better growth performance". It's interesting, whether the change point of view is the result of observation of changes in the global economy or simply the result of the use of a different set of variables to estimate the models.

the second section presents changes in the structure of the exchange rate regimes of the IMF members during the last decade. The third section covers empirical findings concerning the macroeconomic performance under different exchange rate regimes. The fourth section presents the results of the logistic regression analysis and their interpretation. The fifth section concludes.

1

The approach of this paper

1.1. Classification of the exchange rate regimes of the IMF members

This paper uses the data from IMF *Annual Reports* concerning de facto exchange rate policies. Countries are categorized on the basis of these policies with the use of the IMF nomenclature introduced in 1999, while establishing de facto classification, as presented in Table 1. De jure classification (published in *Reports on Exchange Arrangements and Exchange Restrictions*), which is based on official statements of the IMF members concerning implemented exchange rate regimes, is rejected, as many countries simply don't comply with their obligations and break officially announced commitments that should govern the behaviour of the exchange rate (Carmignani *et al.* 2008, Masson 2000, Poirson 2001).[3]

In the de facto classification, 8 different exchange rate regimes are distinguished. Implementing the approach of A. Bubula and I. Ötker-Robe (2004), regimes can be divided into three groups and four categories, as Table 1 presents. Taking this into account, the group of fixed pegs consists of hard pegs and soft pegs. Floating regimes and tightly managed floats make floating regimes. On the other hand, soft pegs and tightly managed floats can be incorporated into intermediate regimes. In this respect, hard pegs and floating regimes are corner solutions.

It has to be underlined that since 1999 IMF has modified rules of the de facto classification. Effective January 1, 2007, exchange arrangements of the countries that belong to a monetary or currency union in which the same legal tender is shared by the members of the union are classified under the arrangement governing the joint currency. The new classification is based on the behaviour of the common currency, whereas the previous classification underlined the lack of a separate legal tender.[4] In order to provide a comparability of the classification in the whole analyzed period, it appropriate changes are implemented to the classification for the years 1999–2006 as well.

1.2. The model

In order to identify the IMF members' choices between corner and interim solutions, a logistic model is used:

$$y_i^* = \beta_0 + \sum_{j=1}^{5} \beta_j X_{ij} + \sum_{k=1}^{6} \beta_k R_{ik} + \varepsilon_i \qquad (1)$$

In equation (1) i means cases (i.e. every country in every year in the 1999–2008 period); j, k – are numbers of independent variables, β are unknown structural coefficients that determine strength and direction of the influence of independent variables on dependent variable, y_i^* ε_i is a random error in the i-th case. Y^* is a binary variable and takes on values 1 if in the i-th case an interim regime is used and 0 if in the i-th case

[3] As J.A. Frankel aptly noticed: *there is a substantial difference between de jure classifications and de facto classifications, between what countries say they do and what they actually do* (Frankel 2003, p. 6).

[4] In the years 1999–2008 there were 4 such unions: the European Monetary Union, the Eastern Caribbean Currency Union, the West African Economic and Monetary Union and the Central African Economic and Monetary Community.

Table 1.
Exchange rate regimes of the IMF members

No.	Group		Category	Type of exchange rate regime	Rules of the exchange rate regime
1	*fixed pegs*	-	*hard pegs*	*exchange arrangement with no separate legal tender*	✓ the currency of another country circulates as the sole legal tender ✓ adopting such a regime implies the complete surrender of the monetary authorities' control over domestic monetary policy
2				*currency board arrangement*	✓ regime is based on an explicit legislative commitment to exchange the domestic currency for a specified foreign currency at a fixed rate, combined with restrictions on the issuing authority to ensure the fulfilment of this legal obligation ✓ domestic currency is issued only against foreign exchange and it remains fully backed by foreign assets, leaving little scope for discretionary monetary policy and eliminating traditional central bank functions ✓ some flexibility may still be afforded, depending on how strict the rules of the currency board arrangement are
3		*intermediate regimes*	*soft pegs*	*conventional fixed peg arrangement*	✓ a country pegs its currency within margins of ±1 percent or less vis-à-vis 1) another currency, 2) a cooperative arrangement, such as the ERM II, or 3) a basket of currencies that consists of currencies of major trading or financial partners ✓ exchange rate may fluctuate within narrow margins of less than ±1 percent around a central rate or the maximum and minimum value of the exchange rate may remain within a narrow margin of 2 percent for at least three months ✓ monetary authorities maintain the fixed parity via direct or indirect interventions (e.g., via the use of interest rate policy, imposition of foreign exchange regulations etc.) ✓ autonomy of monetary policy, though limited, is greater than in case of exchange arrangements with no separate legal tender and currency boards because traditional central banking functions are still possible
4				*pegged exchange rate with horizontal bands*	✓ exchange rate is maintained within certain margins of fluctuation of more than ±1 percent around a fixed central rate or the margin between the maximum and minimum value of the exchange rate exceeds 2 percent ✓ as in the case of conventional fixed pegs, currency can be peg to a single currency, a currency composite, or as a result of a cooperative arrangement ✓ there is a limited degree of monetary policy discretion, depending on the band width
5				*crawling peg*	✓ exchange rate is adjusted periodically in small amounts at a fixed rate or in response to changes in selective quantitative indicators, such as past inflation differentials vis-à-vis major trading partners or differentials between the inflation target and expected inflation in major trading partners ✓ the rate of crawl can be set according to inflation rate changes or to other indicators (backward looking), or set at a preannounced fixed rate and/or below the projected inflation differentials (forward looking) ✓ maintaining a crawling peg imposes constraints on monetary policy in a manner similar to a fixed peg system
6				*exchange rate with crawling bands*	✓ exchange rate is maintained within certain fluctuation margins of at least ±1 percent around a central rate, or the margin between the maximum and minimum value of the exchange rate exceeds 2 percent and the central rate or margins are adjusted periodically at a fixed rate or in response to changes in selective quantitative indicators ✓ bands are either symmetric around a crawling central parity or widen gradually with an asymmetric choice of the crawl of upper and lower bands (in the latter case, there may be no preannounced central rate) ✓ the commitment to maintain the exchange rate within the band imposes constraints on monetary policy, the degree of policy independence is a function of the band width
7	*floating regimes*		*tightly managed floats*	*managed floating with no predetermined path for the exchange rate*	✓ monetary authorities attempt to influence exchange rate without having a specific exchange rate path or target ✓ indicators to manage the exchange rate are broadly judgmental (e.g., balance of payments position, international reserves etc.), and adjustments may not be automatic ✓ intervention may be direct or indirect
8		-	*other floating regimes*	*independently floating*	✓ exchange rate is market-determined, without official foreign exchange market intervention ✓ monetary authorities prevent undue exchange rate fluctuations rather than stabilize exchange rate

Source: Bubula, Ötker-Robe (2004, 2002), IMF (2007).

a corner regime is used. As the main subject of the research is to grasp changes in the IMF classification of exchange rate regimes as well as changes of monetary authorities' decisions concerning these regimes, and not to measure the exchange rate duration, implemented logistic model implies that the choice of exchange rate regime in a given year is independent from the past choices.[5] However, it should be emphasized that when examining the causal relationships that occur between the type of exchange rate regime and economic processes in the country, such a static approach has some weaknesses. This matter will be further considered at the beginning of the Section 3.

Verification of both hard and soft versions of the vanishing interim regime hypothesis required two approaches while determining the value of y_i. Hence, using the first approach variable y_i takes value of 1 for soft pegs and managed floats with no predetermined path for the exchange rate. In the second one, variable y_i equals 1 only if in the i-th case a soft peg is used. Implementation of the two approaches allows estimating two versions of the equation (1).

Then, it is assumed, that 5 independent variables may affect y_i variable:

X_1 – year-on-year changes of constant price GDP,
X_2 – GDP based on purchasing-power-parity (PPP), share of world total[6],
X_3 – inflation rate,
X_4 – modulus of the current account balance as a % of GDP,
X_5 – foreign exchange as a % of GDP.

Moreover, in order to capture the differences between the probability of the use of interim and corner solutions in emerging and developing countries from different regions of the world, a dummy variable R_{ik} is introduced to the model.[7] R_{ik} takes on the value of 1, if the i-th case from the group of emerging and developing countries belongs to the region k and the value of 0 in the opposite situation.

According to the classification of the *World Economic Outlook*, 6 such regions are distinguished:

R_1 – Central and Eastern Europe,
R_2 – Africa,
R_3 – Asia,
R_4 – Commonwealth of Independent States and Mongolia,
R_5 – Middle East,
R_6 – Western Hemisphere.

In order to estimate the models, macroeconomic indicators and forecasts for the IMF members are used, according to the *Word Economic Outlook Database*, as well as IMF *Annual Reports* data on exchange rate policies.[8] Elimination of cases for which data appeared to be unavailable yielded a database of 1690 different cases.

[5] An example of study that includes the time-dependence of exchange rate regimes can be found in Setzer (2005).
[6] Purchasing power parity (PPP) exchange rate means the rate at which the currency of one country would have to be converted into that of another country to buy the same amount of goods and services in each country. International organizations often use purchasing power parity (or PPP) figures, as these facilitate international comparisons, because there is a large gap between market and PPP-based rates in emerging market and developing countries. As a result, developing countries get a much higher weight in aggregations that use PPP exchange rates than they do using market exchange rates (Callen 2007).
[7] In order to avoid a dummy variable trap, R_{ik} for cases from the group of advanced countries equals zero.
[8] Full list of countries included in the research can be found in the Annex.

2

Evolution of the exchange rate regimes of the IMF countries since 1999

In order to test the bipolar view, the evolution of exchange rate regimes of the IMF members in the years 1999–2008 is analyzed. While analyzing Tables 2–3 and Figures 2–3, one can observe a sharp decrease in the number of corner solutions. This phenomenon is even more eye-striking in emerging and developing countries, as these very countries have increasingly used the intermediate regimes.

Table 2.
Exchange rate regimes of the IMF members in the years 1999–2008

Exchange rate regime[a]	Number of countries									
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
(1)	6	6	7	8	9	9	9	9	10	10
(2)	14	14	14	14	13	13	13	13	13	13
(3)	58	59	58	55	56	55	56	63	70	68
(4)	8	6	6	5	5	4	5	6	5	3
(5)	6	5	4	4	5	5	5	5	6	8
(6)	9	7	5	6	5	5	1	0	1	2
(7)	25	27	33	42	46	49	52	53	48	44
(8)	59	61	59	52	48	47	46	38	35	40
Interim regimes (3+4+5+6+7)	106	104	106	112	117	118	119	127	130	125
Soft pegs (3+4+5+6)	81	77	73	70	71	69	67	74	82	81
Overall	185	185	186	186	187	187	187	187	188	188

[a] Exchange rate regimes are numbered as in Table 1.
Source: own calculations based on IMF (1999–2008).

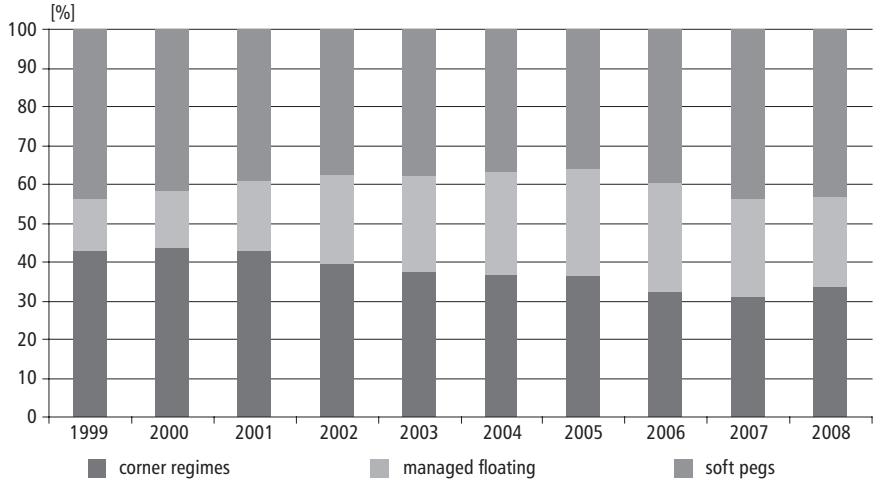
Table 3.
Exchange rate regimes of the emerging and developing IMF members in the years 1999–2008

Exchange rate regime[a]	Number of countries									
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
(1)	5	5	6	7	8	8	8	8	9	9
(2)	13	13	13	13	12	12	12	12	12	12
(3)	58	59	58	55	56	55	56	63	70	67
(4)	5	3	4	3	3	2	3	4	3	3
(5)	6	5	4	4	5	5	5	5	6	8
(6)	8	6	4	5	4	4	1	0	1	2
(7)	23	25	31	41	45	48	51	52	47	43
(8)	39	41	37	29	25	24	22	14	10	13
Interim regimes (3+4+5+6+7)	100	98	101	108	113	114	116	124	127	123
Soft pegs (3+4+5+6)	77	73	70	67	68	66	65	72	80	80
Overall	157	157	157	157	158	158	158	158	158	157

[a] Exchange rate regimes are numbered as in Table 1.
Source: own calculations based on IMF (1999–2008).

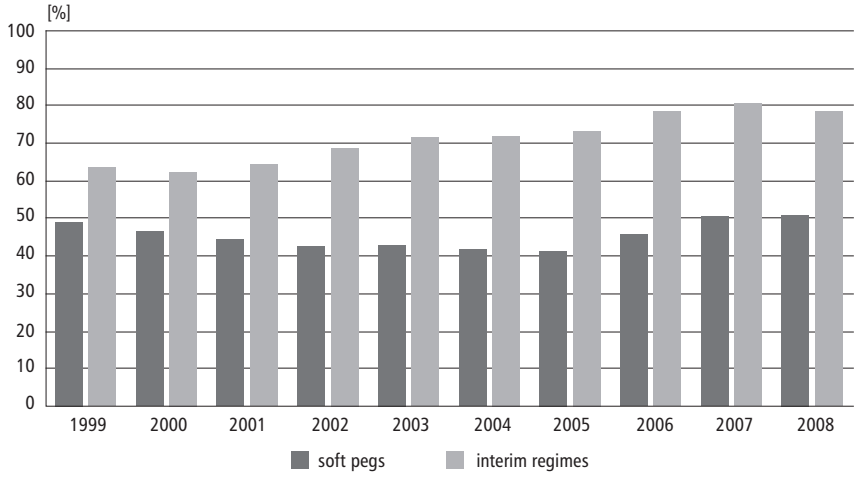
Interestingly, the number of soft pegs also increased. After an initial decline in the number of these regimes in the years 1999–2005, the trend was reversed. Since 2006, the popularity of soft pegs has grown once again. As in case of interim regimes, this phenomenon it is more evident in the group of emerging and developing countries: in 1999 only 77 countries from this very group used soft pegs and in 2008 – 80.

Figure 2.
The structure of the exchange rate regimes of IMF members in the 1999–2008 period



Source: own calculations based on Table 2.

Figure 3.
The structure of the exchange rate regimes of emerging and developing IMF members in the 1999–2008 period



Source: own calculations based on Table 3.

Following data presented above, it is logical to notice that soft pegs are still a monetary policy option in emerging and developing countries. It has to be emphasized that such regimes are used almost exclusively by these very countries. In 2008 only one advanced country – Denmark – implemented exchange rate regime of a soft peg type (it was conventional fixed peg arrangement). Moreover, it is worth noticing that in the whole reference period number of soft pegs fluctuated between 49% and 51% of the overall exchange rate regimes used by emerging and developing countries, as it is clear from Figure 3.

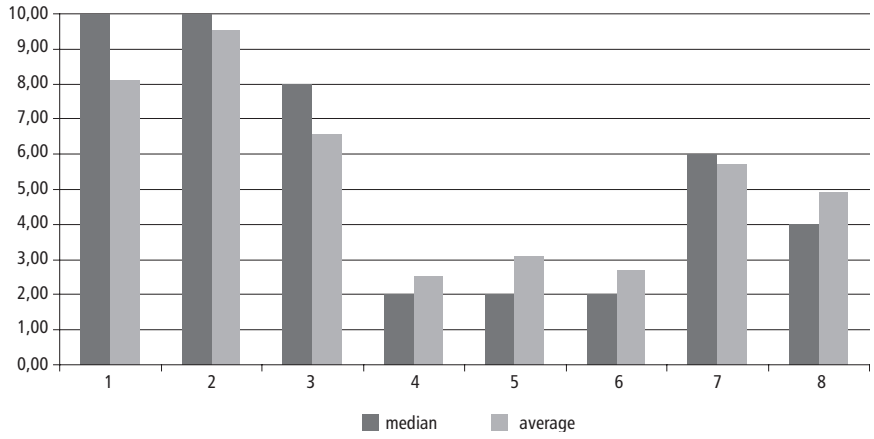
Empirical data don't also support the view that emerging and developing countries are more prone to change the rules of the exchange rate regimes. As shown in Table 4 and Figure 4, almost all countries which have introduced a hard peg (1)-(2), comply with its rules throughout 10-year period. Quite similar results are obtained, however, for the conventional fixed peg arrangement (3). Almost half of the countries that have applied this exchange rate regime, used it for 8 years, whereas average duration of this exchange rate regime exceeded 6,5 years.

Table 4.
Duration of the exchange rate regimes of emerging and developing IMF members in the 1999–2008 period (in years)

Exchange rate regimes[a]	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
first quartile	7,00	10,00	3,00	1,00	1,00	2,00	4,00	2,00
median	10,00	10,00	8,00	2,00	2,00	2,00	6,00	4,00
third quartile	10,00	10,00	10,00	3,00	4,00	4,00	8,00	8,00
mode	10,00	10,00	10,00	1,00	1,00	2,00	3,00	2,00
average	8,11	9,54	6,56	2,54	3,12	2,69	5,70	4,92

[a] Exchange rate regimes are numbered as in Table 1.
Source: own calculations based on IMF (1999–2008).

Figure 4.
Median and average duration of the exchange rate regimes of emerging and developing IMF members in the 1999–2008 period (in years)



Source: own calculations based on Table 4.

Moreover, results obtained for both conventional fixed pegs (3) and managed floats (7) – which appeared to be the most popular regimes among emerging and developing countries – exceeded those estimated for independently floating regime (8). It can be interpreted as there is a higher inclination to change the rules of the independently floating regime than the rules of the two previous regimes. Hence, soft pegs – and generally speaking interim regimes – tend to be more stable than the pure floating corner of the Impossible Trinity triangle.

Similar conclusions can be drawn while observing changes of the classification of exchange rate regimes of the IMF members, as presented in Table 5. They may be regarded as abandonment of the use of a particular exchange rate regime in favour of a different one, which better suits economic circumstances. It can be noticed, that in the analyzed decade changes of exchange rate regimes were put into practice in 162 cases. The highest number of resignations – 90 – occurred in the case of managed floating regimes (7) and independently floating regimes (8). On the other hand, in as many as 65 cases managed floating regimes (7) were introduced.

Table 5.
Matrix of exchange rate regimes' changes in the years 1999–2008

All countries[b]									
Exchange rate regime[a]	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	Resignation
(1)	-	0	0	0	0	0	0	0	0
(2)	0	-	0	0	0	0	1	0	1
(3)	1	0	-	4	10	0	17	2	34
(4)	0	0	3	-	0	0	5	5	13
(5)	0	0	6	0	-	2	2	2	12
(6)	0	0	2	2	1	-	2	5	12
(7)	0	0	30	2	2	3	-	10	47
(8)	1	0	3	0	1	0	38	-	43
Implementation	2	0	44	8	14	5	65	24	162
Advanced economies									
Exchange rate regime	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	Resignation
(1)	-	0	0	0	0	0	0	0	0
(2)	0	-	0	0	0	0	0	0	0
(3)	0	0	-	0	0	0	0	0	0
(4)	0	0	1	-	0	0	0	3	4
(5)	0	0	0	0	-	0	0	0	0
(6)	0	0	0	0	0	-	0	1	1
(7)	0	0	0	0	0	0	-	1	1
(8)	0	0	0	0	0	0	0	-	0
Implementation	0	0	1	0	0	0	0	5	6
Emerging and developing economies									
Exchange rate regime	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	Resignation
(1)	-	0	0	0	0	0	0	0	0
(2)	0	-	0	0	0	0	1	0	1
(3)	1	0	-	4	10	0	17	1	33
(4)	0	0	2	-	0	0	5	1	8
(5)	0	0	6	0	-	2	2	2	12
(6)	0	0	2	2	1	-	2	4	11
(7)	0	0	30	2	2	3	-	9	46
(8)	1	0	3	0	1	0	38	-	43
Implementation	2	0	43	8	14	5	65	17	154

[a] Exchange rate regimes are numbered as in Table 1.

[b] Matrices of changes of exchange rate regimes in advanced economies and in emerging and developing economies do not add up to respective matrix for all IMF's members. This occurs due to the inclusion of Slovakia (in 2007) and Malta (in 2008) to the group of advanced economies as a result of the euro adoption by these very countries. Only the matrix of changes of exchange rate regimes in all IMF members captures changes resulting from this inclusion.

Source: own calculations based on IMF (1999–2008).

These changes occurred mostly in emerging and developing economies. Monetary authorities of these very countries in 46 cases resigned from managed floating regimes (7), in 43 cases – from independently floating regimes (8) and in 33 cases from conventional fixed pegs (3). It is worth noticing, however, that the number of resignations from the two former regimes (33 and 46 respectively) was smaller than the number of cases, in which these very regimes were implemented (43 and 65 respectively). As a result, a consistent fall in the number of countries was observed only in the case of independently floating

regime (8). Moreover, it is worth underlining that emerging and developing economies renounced interim regimes in as many as 110 cases during analyzed decade, however, at the same time these very countries implemented intermediate regimes in 135 cases.

Entirely different phenomena occurred in advanced economies. In the years 1999 –2008 there were only 6 cases of change of exchange rate regime. In all these cases the switch to corner solutions (especially to independently floating regime) and resignation from interim regime was observed.

To recapitulate, analysis of the empirical data doesn't support the soft as well as the hard version of the bipolar view. Vanishing of interim regimes simply did not occur in the reference period. On the contrary – an opposite tendency appeared. Emerging and developing countries turned to interim regimes, resigning from independently floating regimes (8) and replacing them mainly with managed floats (7).

Taking abovementioned under consideration, one can hardly assume that vanishing of interim regimes can occur in the foreseeable future. Empirical observations challenge a common view that the distinctive feature of intermediate solutions is instability. The data show explicitly that within the group of emerging and developing countries such regimes are of far higher stability, than the independently floating regime (8). Evidently no option can be ruled out *a priori*, as the governments – especially in emerging and developing countries – make trade-offs between currency stability and other objectives of policy (Cohen 2004). As such trade-offs are ruled out under corner solutions, it is not surprising why emerging and developing countries are reluctant to renege on interim regimes. On the other hand, hard pegs and floating regimes don't fully insulate economies from currency crises. Besides, avoiding crises is not the only policy objective (Williamson 2007). Bipolar view becomes then much less appealing, especially confronting with the empirical observation that in fact intermediate regimes do not disappear.

3

Corner regimes, interim regimes and macroeconomic performance

From a policy perspective it is always desired to achieve both internal and external balance. Nowadays internal balance is usually referred to price stability, whereas external balance can be perceived as equilibrium in the balance of payments – especially in the balance on trade – combined with relative stability of the exchange rate (Mundell 2000).

According to the theoretical foundations of exchange rate regime selection, inflation is lower under hard pegs – as tough exchange rate commitment increases credibility of the anti-inflationary programs (Bordo 2003, Corden 1994) – and under pure floating regimes, due to the possibility of concentrating solely on the stabilization of price level (Caramazza, Aziz 1998; Mussa *et al.* 2000). However, it is often emphasized that such lower inflation rate can come at the expense of the fall in GDP (Ghosh, Gulde, Wolf 2002). On the other hand, hard pegs and pure floating regimes should be accompanied with lower external imbalance compared to soft pegs or managed floats. Under pure floating regimes external balance should be restored *per se* due to exchange rate movements, and under hard pegs external imbalance can't be maintained in the long run as in the consequence foreign official reserves may dwindle as a result of continual trade deficits. Hence, mounting external imbalance leads either to devaluation of the official exchange rate or to exit from a hard peg (Gandolfo 2004).

Is this really an empirical case? Analysis of Table 6 and Figures 5–6 may help to answer this question. However, as mentioned in the Section 1, as the approach used in the paper is of static character, it is difficult to examine links that occur between the type of exchange rate regime and economic situation. In particular, in this type of the analysis one can hardly take into account explicitly the fact that between the adoption of a certain type of exchange rate regime and inflation, GDP, balance of payments and other characteristics of economic activity compound time-lags may and do occur.

Taking into account the concerns expressed above it can be concluded that both Table 6 and Figures 5–6 do not provide a basis to formulate a clear opinion on the relationship between exchange rate regimes and macroeconomic situation in the analyzed countries. As shown in Table 6, the average level and the volatility of the inflation rate and GDP growth were alike under corner and interim regimes in the two compared groups, i.e. advanced countries and emerging and developing countries. There were some noticeable differences, however, in the external balance under the two regimes: countries that use interim regimes were on average more successful in restoring external balance. This phenomenon was more distinct in the group of emerging and developing countries – an average level of the variable X_4 accounted for 12,1% under corner regimes and only 8,5% under intermediate regimes. Observed variation in this variable was higher also under corner regimes.

In order to restore the external balance successfully, country must hoard foreign official reserves. Hence, it is not surprising that countries under interim regimes accumulated high foreign exchange relatively to GDP. What can be surprising is the fact that higher reserves were hoarded by advanced economies, doubling on average reserves of emerging and developing countries. This difference at least partly can be explained by unequal conditions in which countries compete for reserves. For advanced countries it is easier to accumulate reserves as their external trade is more intensive, their financial markets are better developed and they can borrow foreign capital on more favourable conditions.

Table 6.
Exchange rate regimes and macroeconomic situation in the IMF members in the years 1999–2008

Group of countries (number of cases)		Variable (in %)				
		X_1	X_2	X_3	X_4	X_5
all regimes						
Advanced (281)	mean	3,1	2,1	2,3	6,0	12,2
	S.D.	2,2	4,2	1,6	5,3	21,0
	median	2,8	0,5	2,2	4,3	4,9
Emerging and developing (1409)	mean	4,9	0,3	8,3	9,5	16,9
	S.D.	4,7	0,9	17,7	16,6	13,5
	median	4,8	0,0	5,3	6,2	14,1
Overall (1690)	mean	4,6	0,6	7,3	8,9	16,1
	S.D.	4,4	2,0	16,3	15,4	15,1
	median	4,3	0,1	4,2	5,8	13,2
corner regimes						
Advanced (241)	mean	3,0	2,4	2,3	5,7	8,2
	S.D.	2,1	4,5	1,6	4,9	14,4
	median	2,8	0,6	2,3	4,3	3,4
Emerging and developing (392)	mean	4,1	0,3	8,2	12,1	13,7
	S.D.	4,3	0,7	19,9	28,3	8,5
	median	4,2	0,0	4,6	5,8	13,2
Overall (633)	mean	3,7	1,1	5,9	9,7	11,6
	S.D.	3,6	3,0	15,9	22,6	11,4
	median	3,6	0,2	3,1	5,3	9,5
interim regimes						
Advanced (40)	mean	3,5	0,3	2,2	8,0	36,3
	S.D.	2,9	0,1	1,5	7,4	34,9
	median	3,4	0,3	2,1	5,1	20,6
Emerging and developing (1017)	mean	5,2	0,3	8,4	8,5	18,2
	S.D.	4,8	1,0	16,8	8,5	14,8
	median	5,0	0,0	5,6	6,3	14,6
Overall (1057)	mean	5,1	0,3	8,1	8,5	18,9
	S.D.	4,8	1,0	16,6	8,4	16,4
	median	4,9	0,0	5,4	6,3	14,8

Source: own calculations based on *WEO* database.

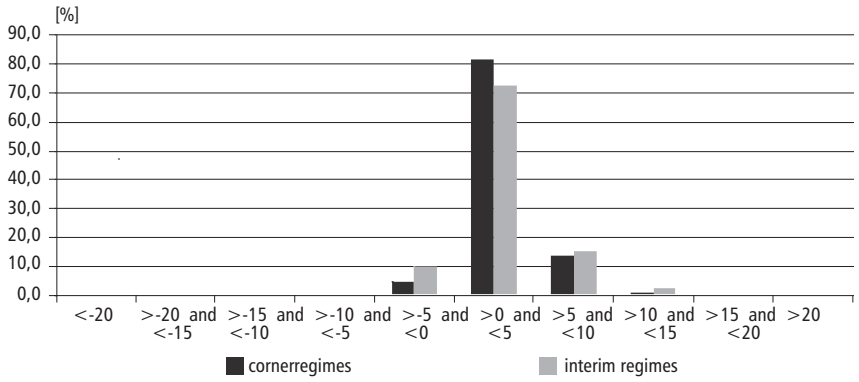
Figures 5–6 support previous findings. Inflation and the real GDP growth didn't differ systematically across corner and intermediate regimes in the two compared groups. For example, in the analyzed period, over 87% of advanced countries and over 80% of emerging and developing ones occurred in the 0–10 % GDP growth rate and c.a. 95% of advanced economies and 70% of emerging and developing countries occurred in the 0–10% inflation rate range. However, slight difference was noticeable as in countries under interim regimes inflation rate as well as GDP growth were a bit higher. This phenomenon was even more evident, while analyzing only emerging and developing countries.

As shown in Figures 5–6, between the analyzed countries, there were significant differences in the external balance. A vast majority of emerging and developing countries – c.a. 70% – under both types of regimes occurred in the 0–10% range of the modulus of the current account balance as a % of GDP. Situation was different in advanced countries. In a respective range one could find 85% cases from the group of countries under corner

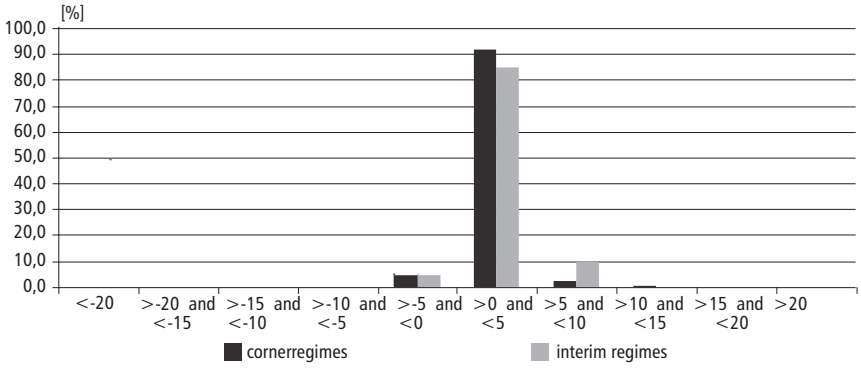
regimes and only 65% cases from the group of countries under intermediate ones. But within the range 5–10% the percentage of countries under corner regimes (31%) doubled the percentage of countries one under intermediate ones (15%). This can be treated as evidence that advanced economies were less tough while restoring the external balance, allowing the current account deficit (or – more seldom – surplus) to mount over 5% of the GDP.

Figure 5.
Exchange rate regime and macroeconomic performance in advanced economies in the years 1999–2008

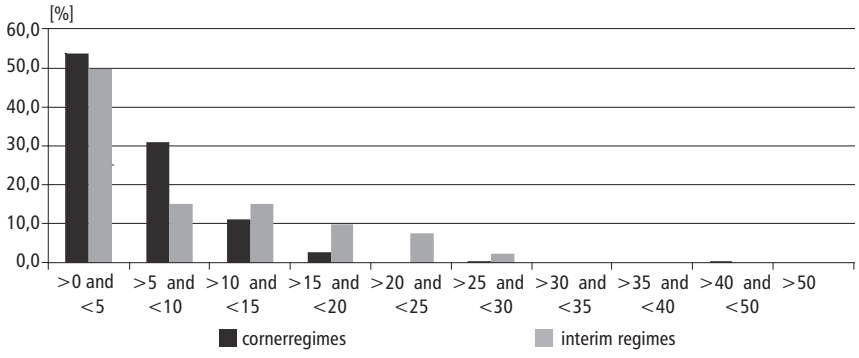
Year-on-year changes of constant price GDP (X_1)



Inflation rate (X_3)



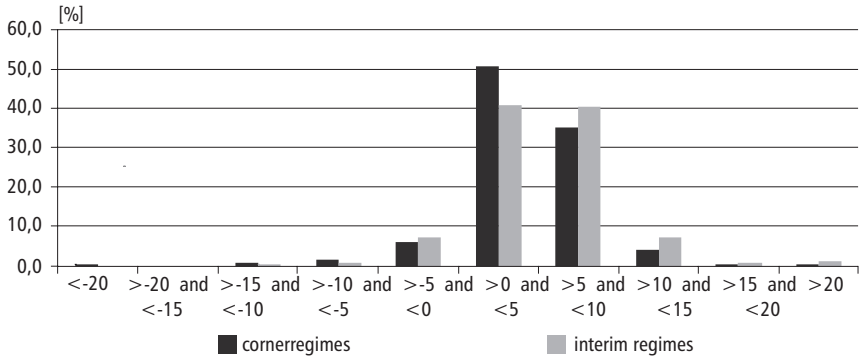
Modulus of the current account balance as a % of GDP (X_4)



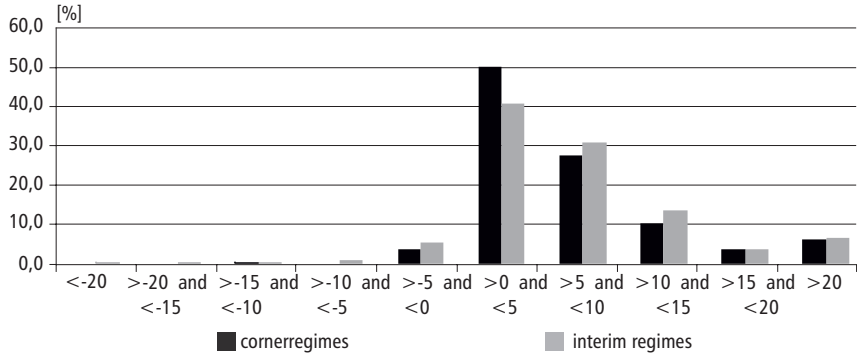
Source: own calculations based on *WEO* database.

Figure 6.
Exchange rate regime and macroeconomic performance in emerging and developing economies in the years 1999–2008

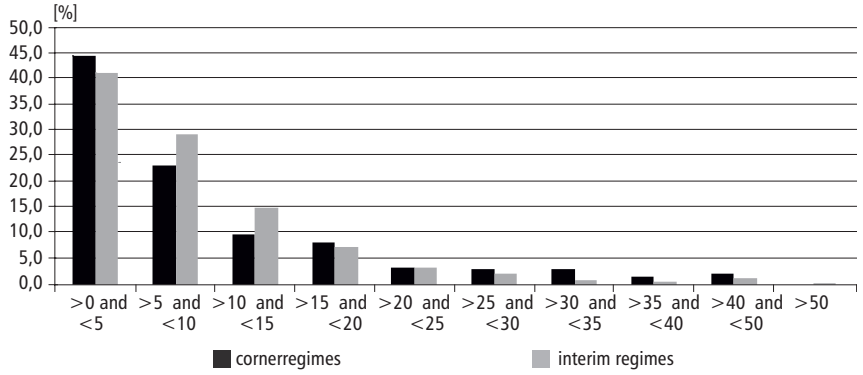
Year-on-year changes of constant price GDP (X_1)



Inflation rate (X_3)



Modulus of the current account balance as a % of GDP (X_4)



Source: own calculations based on *WEO* database.

Stylized facts presented in this section are ambiguous. There is no straight link between corner or interim exchange rate regime and macroeconomic performance. However, they challenge to some extent one common macroeconomic view – that countries under intermediate regimes are more prone to current account imbalances. The economic realities do not unambiguously support this view.

4

Results of the logistic analysis

Table 7 contains estimated coefficients and related standard errors (in parenthesis) of the two logistic models that predict the probability of the use of corner and interim solutions by the IMF members. As signalled, in the first model variable y_i takes value of 1 if in the i-th case soft peg or managed floating regime is used. In the second model, variable y_i equals 1 only if in the i-th case a soft peg is used. Variables included in the models are statistically significant (using a significance level of 0,1). Both models fit the data quite well. The ability to predict the use of interim regimes is presented in Table 8.

Table 7.
Parameter estimates for the logistic regression models

Variables	Model 1			Model 2		
	B	S.E.	Sig.	B	S.E.	Sig.
X_0	0,32	0,14	0,02	-0,40	0,12	0,00
X_1	0,04	0,01	0,01	-	-	-
X_2	-0,24	0,06	0,00	-0,16	0,06	0,00
X_3	-	-	-	-0,02	0,01	0,00
X_4	-0,03	0,01	0,00	-0,01	0,01	0,03
X_5	0,04	0,53	0,00	0,02	0,40	0,00
R_1	-0,71	0,16	0,00	-0,41	0,16	0,01
R_2	0,60	0,13	0,00	0,44	0,11	0,00
R_3	0,80	0,18	0,00	0,42	0,14	0,00
R_4	0,37	0,22	0,08	-0,10	0,23	0,00
R_5	1,86	0,35	0,00	2,40	0,27	0,00
R_6	-0,43	0,13	0,00	-0,21	0,13	0,09

Source: own calculations.

Table 8.
Classification table

Observed	Predicted	
Model 1		
Corner regime	328 (51,8%)	305
Interim regime	78	979 (92,6%)
Overall percentage	77,8%	
Model 2		
Corner regime	871 (84,7%)	157
Interim regime	319	343 (51,8%)
Overall percentage	69,2%	

Source: own calculations.

In both models theoretical value of the probability ($\hat{y}_i$) is negatively affected by GDP based on purchasing-power-parity (PPP), share of world total (X_2) and the modulus of the current account balance as a % of GDP (X_4) and in the second model also by the inflation rate (X_3). Foreign exchange as a % of GDP (X_5) has a positive influence on the $\hat{y}_i$ values of the two models, whereas the year-on-year changes of constant price GDP influences positively only the $\hat{y}_i$ value in the first model.

Achieved results partially support the view that emerging and developing countries are more prone to use interim regimes, as their GDP growth is usually faster and the share in the world GDP based on purchasing-power-parity is lower than in advanced economies. The link between the magnitudes of the foreign exchange relative to the GDP with exchange rate regime is also of a clear-cut character. Countries that use corner solutions do not need large volumes of foreign exchange. Under pure floating regimes they are *per se* needles, and under hard pegs high level of credibility provided by such regimes can also weaken the need for foreign exchange accumulation.

It is a bit surprising, however, that parameters estimated for the modulus of the current account balance as a % of the GDP in both models and for the inflation rate in the second model are negative. This challenges the common view that corner regimes create favourable conditions for the inflation rate reduction because monetary authorities can fully concentrate on restoring an internal balance whereas hard pegs increase anti-inflationary credibility of the monetary authorities via the use of an official exchange rate as a solid nominal anchor, allowing them to achieve a sustainable reduction in inflation rate. Similarly, it is often assumed that corner regimes are associated with smaller external imbalance. Under floating regimes changes of the exchange rate should provide buffer for imbalance accumulation. On the other hand, preserving external balance appears to be one of preconditions for hard pegs' effective functioning as mounting current account deficit or surplus can trigger speculative attack off, thus undermining official exchange rate supported by the central bank. However, signs of estimated parameters show that in some cases the use of the corner regime doesn't lead per se to a reduction in the rate of inflation, nor to achieve external balance. To put it in more explicitly – corner regimes don't always protect from high inflation rates and mounting current account deficits.

Comparison of the two models leads to another conclusion. As shown in Table 7, variable X_1 appears to be statistically significant only in the first model, whereas variable X_3 – only in the second one. Hence, achieved results indicate that countries under managed floats suffer from higher inflation rate but achieve higher real GDP growth, than these under soft pegs. This is quite interesting, as usually higher real GDP growth and inflation rate are considered to be characteristic for the whole group of flexible regimes, capturing both independently floating regimes and managed floats (Markiewicz 2006). However, achieved results indicate that there are differences between the two regimes concerning real GDP growth and inflation rate, as these variables tend to be significantly higher in countries under managed floating regimes.

Inclination to use interim regimes is different in emerging and developing countries in various regions of the world. In both models $\hat{y}_i$ takes the highest values for countries from the Middle East. Moreover, $\hat{y}_i$ increases for Asian and African countries and decreases for CEECs and Western Hemisphere. Estimated models provide divergent results for CIS and Mongolia. Different magnitude and direction of influence of the R_{ik} variable can be interpreted as an evidence of the existence of other factors that influence emerging and developing countries' choices concerning exchange rate regimes, partly resulting from differences in institutional fundamentals and different economic structures as well as macroeconomic policy stabilization programs. Due to this lack of homogeneity countries can to different extent manifest the "fear of pegging" and "fear of floating". According to them, monetary authorities may tend to smooth exchange rate movements, even though they have no official commitment to maintaining the official central exchange rate (Calvo,

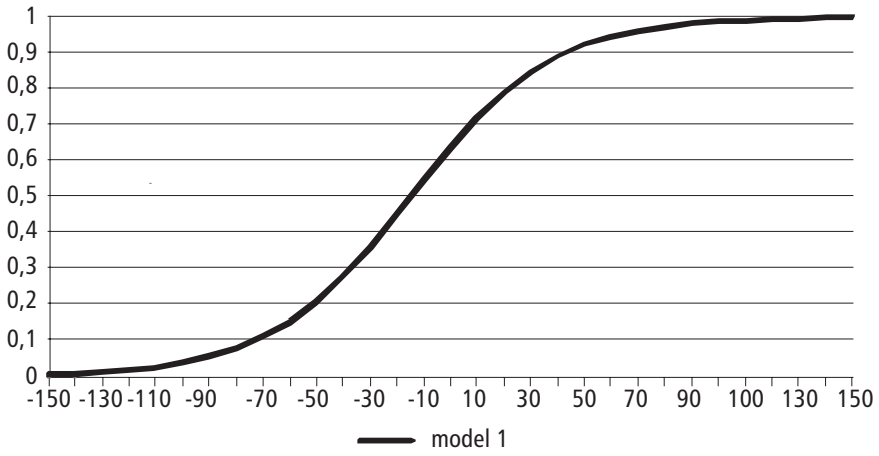
Reinhart 2000; Reinhart 2000) or on the other hand, monetary authorities can claim to have a pegged exchange rate, in fact carrying out frequent changes in reference exchange rate (Alesina, Wagner 2006; Genberg, Swoboda 2005).

On the basis of estimated models probabilistic curves can be determined. These curves enable to evaluate the probability of the use of the interim regime in the *i*-th case with respect to every independent variable assuming that other variables take average values and dummy variable equals zero. Figure 7 present obtained results.

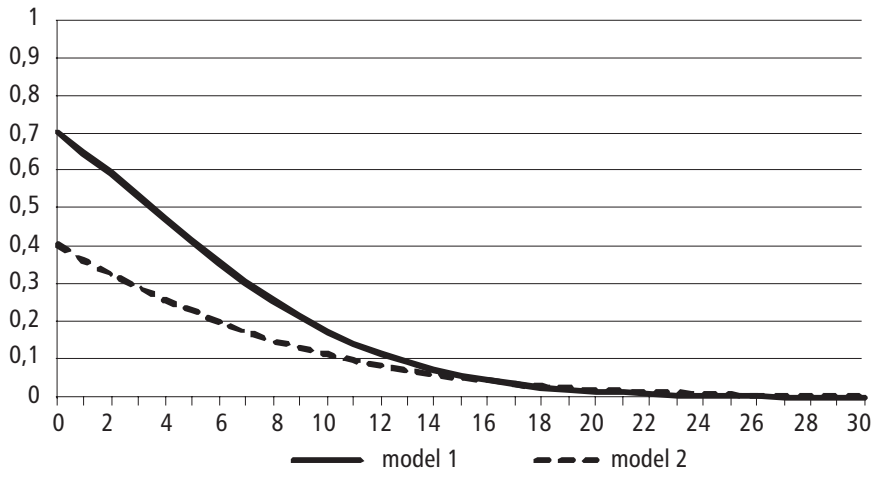
As shown in Figure 7, in both models increase of variables X_2 and X_4 cause the fall in the $\hat{y}_i$ value. However, there are some differences in a depth and a pace of this fall. In the first model value of $\hat{y}_i$ declines faster – for example, if X_2 equals 5% then *ceteris paribus* $\hat{y}_i$ equals 0,42 in the first model and only 0,23 in the second one. Similarly, the increase in the value of X_4 also influences the $\hat{y}_i$ differently – the theoretical value of the probability decreases faster in the first model. Moreover, it is worth noticing that in cases in which external balance is preserved ($X_4 = 0$), values of $\hat{y}_i$ are also different in both models, equalling 0,74 and 0,41 respectively. In the second model, the fall in the $\hat{y}_i$ value is associated with the increase of the inflation rate. However, this fall is relatively modest. For example, if the zero inflation rate is observed, the $\hat{y}_i$ takes on the value of 0,42, and for 10% inflation rate – 0,37. This means that the variability of the inflation rate observed in most countries is of a minor influence on $\hat{y}_i$.

Figure 7.
Probability of the use of the interim regime

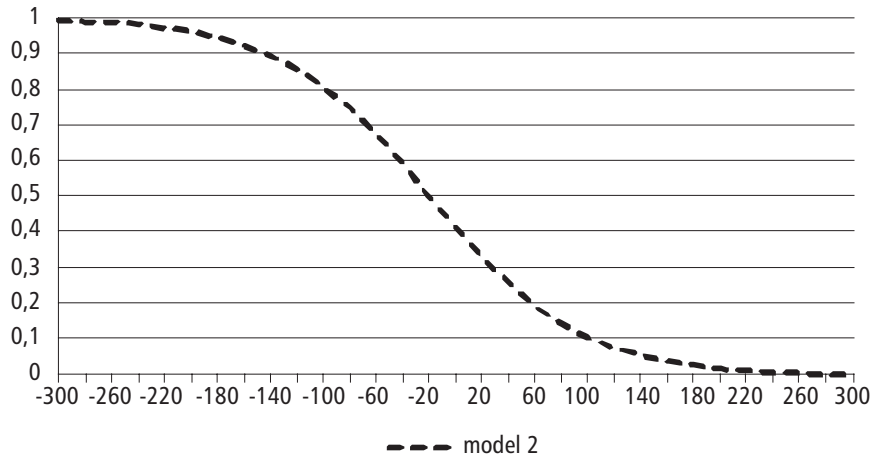
Year-on-year changes of constant price GDP *(X_1)*



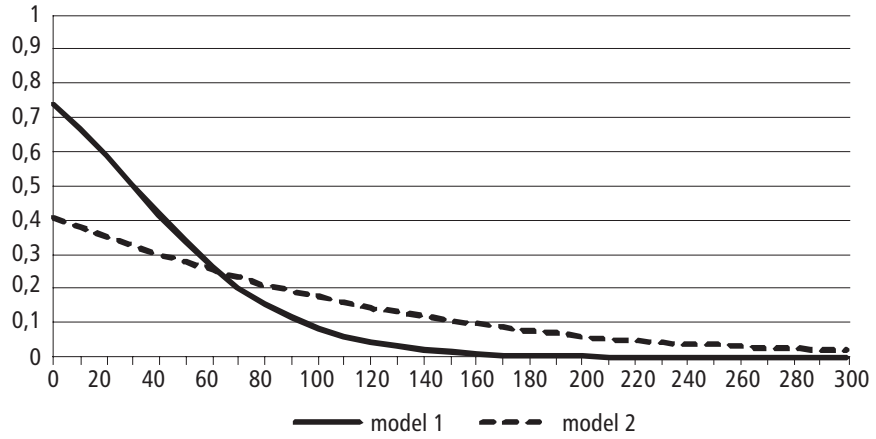
GDP based on purchasing-power-parity (PPP) share of world total *(X_2)*



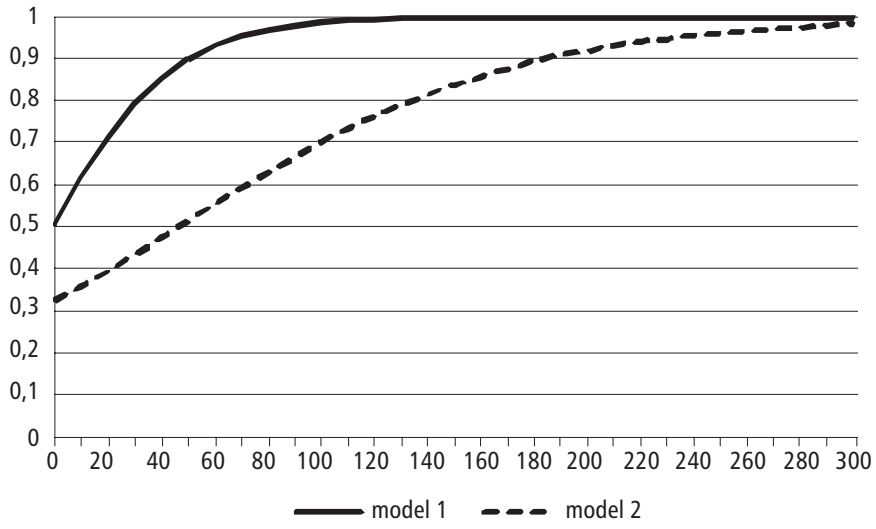
Inflation rate (X_3)



Modulus of the current account balance as a % of GDP (X_4)



Foreign exchange as a % of GDP (X_5)



Source: own calculations.

Moreover, $\hat{y}_i$ increases if the level of the foreign exchange relatively to the size of the economy increases. However, $\hat{y}_i$ increases slower in the second model – the 0,99 level of the probability is reached when foreign exchange exceeds 107% of the GDP in the first model and 340% in the second one. The $\hat{y}_i$ value in the first model is similarly affected by real GDP growth, i.e. theoretical value of the probability increases along with the increase of the X_1. It is worth emphasizing, however, that the $\hat{y}_i$ value approaches 1 only if the growth of the real GDP exceeds 110%, but for the zero growth equals more than fifty percent (0,64).

Of course, theoretical values of the probability are going to differ depending on region from which the country comes. These differences are presented in Table 9. Data provide support for the view that in countries from specific regions the link between macroeconomic data and the probability of the use of the specific type of exchange regime is of weak character. Threshold values of variables required in order to achieve the $\hat{y}_i$ value less than 0,5 are so extremely high that in practice one can hardly observe them in any country. Good examples of this phenomenon are countries from the Middle East, Asia and – to the smaller extent – Africa. The relevance of macroeconomic variables to the exchange regime choice is only slightly higher for CEEC countries, Commonwealth of Independent Countries and Western Hemisphere.

On the basis of Figure 7 one can find out what are the threshold values of variables that – if put into models – result in high values of $\hat{y}_i$. Such threshold values can be also identified in the ranking of analyzed cases in Table 10. Countries which achieved relatively high real GDP growth, very low share in the world GDP based on the purchasing-power-parity (0,1% and smaller), modest inflation rate and high share of reserves of foreign currencies in GDP are classified high in the ranking. It's interesting, however, that there's no such straight dependence between the theoretical value of the probability and the external imbalance – countries with balanced current account got up to the top of the ranking as well as countries suffering from mounting deficits.

The ranking supports conclusions which have been already formulated. It occurs that the countries at the forefront of the ranking come from the Middle East and Africa. Among the first 100 cases in the ranking based on the first model 70 are cases from the Middle East (56) and Africa (14). In the ranking based on the second model all first hundred places fall to countries form the Middle East. It proves once again that the probability of the use of the interim regime in countries from these regions is especially high.

To sum up, emerging and developing countries are not prone to renege on interim regimes as fast, as proponents of the bipolar view believe. Implementing a hard peg unilaterally requires abiding very tough monetary rules concerning money supply (like for example under currency board arrangement). Introducing a hard peg in a multilateral manner means joining the monetary union, what in turn requires the fulfilment of strict economic criteria and must be accepted by other members of such union. Enlargement of monetary union is hence a long-lasting and sometimes very painful process.

On the other hand, the extensive institutional and operational requirements needed to support a floating exchange rate as well as difficulties in assessing the right time of the exit from peg dampen the move towards pure floating corner of the Impossible Trinity triangle (Calvo, Reinhart 2000; Ötker-Robe, Vávra 2007). That's why managed floating regimes and soft pegs appear to be more durable, as usually assumed.

Table 9.
Probability of the use of the interim regime in emerging and developing countries according to the region

Region	Model	Probability	Variables' values (in %)[a]				
			X_1	X_2	X_3	X_4	X_5
CEECs (R_1)	1	0,75	33,0	-	-	-	41,5
		0,50	4,0	0,6	-	9,0	16,0
		0,25	-25,0	6,2	-	41,5	-
	2	0,75	-	-	-103,5	-	141,5
		0,50	-	-	-43,0	-	72,0
		0,25	-	1,9	19,5	27,5	2,0
Africa (R_2)	1	0,75	-1,5	1,5	-	16,0	10,5
		0,50	-30,5	6,1	-	48,0	-
		0,25	-59,5	10,7	-	80,5	-
	2	0,75	-	-	-56,0	-	87,5
		0,50	-	0,4	5,0	6,5	18,5
		0,25	-	7,0	210,5	101,5	-
Asia (R_3)	1	0,75	-7,0	2,4	-	21,5	6,0
		0,50	-36,0	7,0	-	54,0	-
		0,25	-65,0	11,5	-	86,0	-
	2	0,75	-	-	-57,0	-	89,0
		0,50	-	0,5	4,0	5,0	20,0
		0,25	-	6,9	66,0	100,0	-
Commonwealth of Independent States and Mongolia (R_4)	1	0,75	4,5	0,6	-	9,0	16,0
		0,50	-25,0	5,2	-	41,0	-
		0,25	-54,0	9,7	-	73,5	-
	2	0,75	-	-	-136,0	-	179,0
		0,50	-	-	-75,0	-	109,0
		0,25	-	-	-13,5	-	40,0
Middle East (R_5)	1	0,75	-35,0	6,7	-	53,0	-
		0,50	-64,0	11,3	-	85,0	-
		0,25	-93,0	15,9	-	117,5	-
	2	0,75	-	5,6	53,0	81,0	-
		0,50	-	12,3	113,0	177,0	-
		0,25	-	18,9	176,5	272,0	-
Western Hemisphere (R_6)	1	0,75	25,0	-	-	-	34,5
		0,50	-3,0	1,8	-	18,0	9,0
		0,25	-33,0	6,5	-	50,0	-
	2	0,75	-	-	-92,0	-	129,0
		0,50	-	-	-30,0	-	60,0
		0,25	-	3,1	30,0	45,0	-

[a] Values for a specific variable are calculated assuming average levels of other variables and taking into account that X_2, X_4 and $X_5 > 0$.
Source: own calculations.

Table 10.
Ranking of cases according to the probability of the use of the interim regime

Ranking[a]	Model 1							Ranking[a]	Model 2						
	$\hat{y}_1$	X_1	X_2	X_4	X_5	R^b	y^*		$\hat{y}_1$	X_2	X_3	X_4	X_5	R^b	y^*
1	0,997	7,5	0,1	40,7	108,7	5	1	1	0,957	0,1	6,2	40,7	108,7	5	1
3	0,996	5,9	0,0	9,7	110,8	2	1	3	0,956	0,1	-9,9	3,0	60,0	5	1
3	0,995	9,8	0,0	10,5	105,0	2	1	3	0,955	0,1	1,4	44,6	102,5	5	1
4	0,995	6,7	0,1	44,6	102,5	5	1	4	0,949	0,1	10,4	40,7	101,0	5	1
5	0,994	3,4	0,1	40,7	101,0	5	1	5	0,947	0,1	-2,1	19,9	69,3	5	1
6	0,993	8,5	0,1	11,6	68,8	5	1	6	0,945	0,1	2,9	38,9	86,8	5	1
7	0,993	13,0	0,1	19,9	69,3	5	1	7	0,944	0,1	1,0	21,4	70,2	5	1
8	0,993	10,3	0,1	38,9	86,8	5	1	8	0,943	0,1	1,3	13,2	62,9	5	1
9	0,993	9,0	0,0	3,2	88,3	2	1	9	0,941	0,1	5,6	5,3	59,3	5	1
10	0,992	3,5	0,0	9,9	96,2	2	1	10	0,940	0,1	10,8	11,6	68,8	5	1
…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…
1456	0,503	0,9	0,4	9,5	1,7	0	0	516	0,500	0,1	9,8	0,2	9,7	2	0
1457	0,502	2,3	0,0	2,8	3,0	6	1	517	0,500	0,0	5,2	10,4	11,2	2	1
1458	0,501	3,6	1,0	7,6	1,1	0	0	518	0,500	0,0	-4,8	17,4	5,0	2	1
1459	0,500	1,9	0,4	9,4	0,5	0	0	519	0,500	0,0	9,5	3,5	10,9	2	0
1460	0,500	1,9	2,1	1,2	3,6	0	0	520	0,500	0,0	8,3	12,2	16,0	2	1
1461	0,499	3,0	2,0	1,9	2,7	0	0	521	0,500	0,0	3,4	5,0	4,9	2	1
1462	0,499	5,7	2,8	0,1	13,5	6	0	522	0,500	0,1	9,8	4,1	12,3	2	0
1463	0,499	4,5	0,5	11,1	0,2	0	0	523	0,499	0,0	0,2	6,8	2,8	2	1
1464	0,498	3,1	2,0	2,3	3,0	0	0	524	0,499	0,0	4,2	21,6	18,0	2	1
1465	0,498	9,5	0,0	7,6	7,1	1	0	525	0,499	0,0	10,2	9,9	16,4	2	0
…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…
1681	0,007	2,7	21,7	6,0	0,3	0	0	1681	0,015	22,4	2,7	5,3	0,4	0	0
1682	0,006	3,1	22,1	5,9	0,3	0	0	1682	0,014	22,7	2,3	4,7	0,4	0	0
1683	0,006	3,6	22,4	5,3	0,4	0	0	1683	0,014	22,9	1,6	4,3	0,3	0	0
1684	0,006	2,5	22,7	4,7	0,4	0	0	1684	0,013	23,2	2,8	3,9	0,3	0	0
1685	0,005	1,8	22,9	4,3	0,3	0	0	1685	0,013	23,5	3,4	4,2	0,3	0	0
1686	0,005	4,8	23,7	3,2	0,3	0	0	1686	0,012	23,7	2,2	3,2	0,3	0	0
1687	0,005	4,1	23,5	4,2	0,3	0	0	1687	0,012	0,1	168,6	3,2	3,4	4	0
1688	0,005	1,1	23,2	3,9	0,3	0	0	1688	0,010	0,1	248,2	27,5	8,1	2	1
1689	0,002	8,4	0,0	296,1	57,9	3	0	1689	0,003	0,1	325,0	8,7	13,1	2	0
1690	0,000	12,8	0,0	408,3	42,2	3	0	1690	0,001	0,1	293,7	1,6	2,4	4	0

[a] Ranking is created according to non-growing probabilities of the use of the interim regime.
[b] $R = 0$ means that country belongs to the group of advanced economies.
Source: own calculations.

5

Concluding remarks

Conducted research challenge the bipolar view. During the analyzed period number of the interim regimes in emerging and developing countries doubled. The share of soft pegs in overall regimes in the years 1999–2008 was relatively stable, fluctuating around 50%, whereas the share of the whole group of interim regimes increased from 64% to 78%. The evolution of the interim regimes is then opposite to what is assumed by the authors and supporters of the vanishing interim regime hypothesis.

Results of the logistic analysis also don't support the bipolar view. The analysis of the probabilistic curves allows to notice that the $\hat{y}_i$ value approaches 0,01 only when the share of a specific country in the world GDP based on the purchasing-power-parity reaches 23% (model 1) or 25% (model 2). For the sake of comparison – share of the U.S. economy in the world GDP based on the purchasing-power-parity fluctuated in the years 1999–2008 in the range of 20,6–23,7 %. Moreover, as shown in Table 10, $\hat{y}_i$ lowers if at least one of variables X_2, X_3 and X_4 reaches extremely high values. It has to be underlined, however, that such phenomena are not typical for a normal economic situation. High inflation rates as well as deep external imbalance are rather a sign of an unusual shock that affects the economy.

It is reasonable then to agree with Calvo and Mishkin (2003) that the exchange rate regime choice is rather in the background of the structure of the economy and a whole package of macroeconomic policies. Exchange rate regimes are not to be blamed for the inappropriate functioning of the domestic economy, they are also not a panacea to eliminate economic disturbances. Openness to capital flows is only one among the variety of economic and political factors influencing the choice of the exchange regime. This is why, the bipolar view eventually – if ever – may be positively verified in the very (very) long run. This makes this view of little relevance to the contemporary macroeconomics.

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Annex

Members of the IMF are divided into following groups:

1. Advanced: Austria, Australia, Belgium, Canada, Cyprus (after 2001), Denmark, Finland, France, Germany, Greece, Ireland, Island, Israel, Italy, Japan, Korea, Luxemburg, Malta (after 2008), the Netherlands, New Zealand, Norway, Portugal, San Marino, Singapore, Slovenia (after 2007), Spain, Sweden, Switzerland, United Kingdom, United States.
2. Emerging and developing:
   a. Central and eastern Europe: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus (before 2001), Estonia, Hungary, Latvia, Lithuania, Macedonia, Malta (before 2008), Montenegro, Poland, Romania, Serbia, Slovenia (before 2007), Turkey;
   b. Africa: Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo (Democratic Republic of), Congo (Republic of), Côte d'Ivoire, Djibouti, Eritrea, Ethiopia, Gabon, the Gambia, Ghana, Guinea, Guinea Bissau, Equatorial Guinea, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Morocco, Mauretania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, São Tomé and Príncipe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, Sudan, Swaziland, Tanzania, Togo, Tunisia, Uganda, Zambia, Zimbabwe;
   c. Asia: Afghanistan, Bangladesh, Bhutan, Brunei, Cambodia, China, Fiji, India, Indonesia, Kiribati, Laos, Malaysia, Maldives, Marshall Islands, Micronesia, Myanmar, Nepal, Pakistan, Palau, Papua New Guinea, the Philippines, Samoa, Solomon Islands, Sri Lanka, Thailand, Timor-Leste, Tonga, Vanuatu, Vietnam;
   d. Commonwealth of Independent States and Mongolia: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kirgizia, Moldavia, Mongolia, Russia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan;
   e. Middle East: Bahrain, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Oman, Qatar, Saudi Arabia, Syria, United Arab Emirates, Yemen;
   f. Western Hemisphere: Antigua and Barbuda, Argentina, Aruba, Barbados, the Bahamas, Belize, Brazil, Bolivia, Chile, Colombia, Costa Rica, Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guyana, Guatemala, Haiti, Honduras, Jamaica, Mexico, the Netherland Antilles, Nicaragua, Panama, Paraguay, Peru, Saint Christopher (Kitts) and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Uruguay, Venezuela.

Since *WEO* and *IFS* databases don't contain data for some countries, they are partially or wholly excluded from the analysis. These are: Afghanistan, Algeria, Aruba, Bahrain (2005–2008), Barbados (2008), Congo (Democratic Republic of) (1999–2001), Fiji (2006–2008), Ghana (2007–2008), Guinea (2003, 2006–2008), Iran, Iraq (1999–2004), Kiribati, Lesotho (2007–2008), Liberia (1999–2000), Marshall Islands, Mauretania (2008), Micronesia, Mongolia (2008), Montenegro (1999-2000), Myanmar (2007–2008), Nepal (2006–2008), the Netherland Antilles, Palau, Panama (2008), São Tomé and Príncipe (2008), Serbia (1999–2000), Somalia, Syria, Tajikistan (2007–2008), Timor-Leste (1999–2002), Turkmenistan, Uzbekistan, Zimbabwe (2003–2008).