A *de facto* Classification of Exchange Rate Regimes: A Methodological Note[1]

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[1] This note summarizes the methodology in Levy-Yeyati and Sturzenegger (2002).

1. Introduction

Most of the empirical discussion on exchange rate regimes has used the *de jure* (legal) regime as compiled by the IMF, which is based on the regime the country declares to be running.[2] However, many countries that *in theory* have a flexible rate intervene in exchange markets so pervasively that *in practice* very little difference exists (in terms of observable performance) with countries that have explicit fixed exchange rate regimes. Conversely, periodic devaluations of pegs in inflation-prone countries are the result of the implementation of monetary policies that are inconsistent with fixed exchange rates and that make the effective regime resemble a flexible arrangement.[3]

In Levy-Yeyati and Sturzenegger (2002), we construct an alternative classification, by proposing a new *de facto* classification of exchange rate regimes that reflects actual policies. We believe this may provide an interesting complement or alternative to the standard *de jure* classification. More precisely, we define exchange rate regimes according to the behavior of three classification variables: changes in the nominal exchange rate, the volatility of these changes, and the volatility of international reserves. Underlying the selection of these variables is the textbook definition of exchange rate regimes, where fixed exchange rate regimes are associated with changes in international reserves aimed at reducing the volatility in the nominal exchange rate, and where flexible regimes are characterized by substantial volatility in nominal rates with relatively stable reserves. Thus, the combined behavior of these three classification variables should be sufficient to determine the regime to which each country should be assigned at each point in time.

To construct the classification we use a cluster analysis methodology that, once we define the number of exchange rate regimes to be identified from the data, groups the cases according to similarity in the behavior of the three variables of reference. For example, the cluster with high volatility of reserves and low volatility in the nominal exchange rate identifies the group of fixers. Conversely, the cluster with low volatility in international reserves and substantial volatility in the nominal exchange rate corresponds to countries with flexible arrangements. While this allows to classify most country data points since 1974, for several countries this classification procedure is not feasible as data may be lacking on some of the classification variables. In some of these cases, however, the exchange rate regime may be uncontroversial, either because the country was successfully sustaining a peg or didn't have separate legal tender. For these uncontroversial cases we extend the classification using this ad-hoc information.

2. Methodology

Cluster analysis

Cluster analysis is a technique used to identify homogeneous groups of observations.[4] While the standard discriminant analysis starts from a known classification of the sample to derive a classification rule to be

[2] See the IMF's *Exchange Arrangements and Exchange Restrictions*. An example of the IMF *de jure* classification can be found in any issue of the *International Financial Statistics*.

[3] *As Frankel (1999) points out:* "Out of 185 economies, the IMF classifies 47 as independently floating and 45 as following rigid pegs... Most of those classified as fixed have in fact had realignments within the last ten years.... Similarly, most of those listed as floating in fact intervene in the foreign exchange market frequently." Similarly, Fischer (2001) concisely states: "… authorities own descriptions of exchange rate regimes in *Exchange Arrangements and Exchange Restrictions* is patently inaccurate for some countries…"

[4] The most common examples of the use of this technique come from the areas in which it is most frequently used: numerical taxonomy of animals and plants (biology), distinct pathological groups (medicine), people with similar buying habits (marketing), etc.

applied to out-of-sample cases, cluster analysis works in the opposite direction, constructing groups according to similarities (distances) between the sample elements.

In K-means cluster analysis (KMC), based on *nearest centroid sorting* (Anderberg, 1973), a case is assigned to the cluster with the smallest distance between the case and the center of the cluster (centroid). The number of clusters is specified *ex-ante* by the user, and cluster centers are iteratively estimated from the data. This method requires the least intervention from the researcher: just a definition of the numbers of clusters to be generated by the algorithm. Since it is crucial to our work that the resulting classification entails as minimal a manipulation of the classification criteria as possible, we choose KMC as our classification method.[5]

Classification Variables

According to the textbook description, flexible exchange rates are characterized by little intervention in the exchange rate markets together with unlimited volatility of the nominal exchange rate. Conversely, a fixed exchange rate regime occurs when the exchange rate does not move while reserves are allowed to fluctuate. A crawling peg corresponds to the case where changes in the nominal exchange rates occur with stable increments (i.e. low volatility in the rate of change of the exchange rate) while active intervention keeps the exchange rate along that path. Finally, a dirty float should be associated to the case in which volatility is relatively high across all variables, with intervention only partially smoothing exchange rate fluctuations.[6] With this in mind we chose the volatility of the nominal exchange rate, the volatility of its rate of change and the volatility of international reserves as our three classification variables.

Exchange rate volatility (σ_e), was measured as the average of the absolute monthly percentage changes in the nominal exchange rate during a calendar year.[7] The *volatility of exchange rate changes* ($\sigma_{\Delta e}$), was computed as the standard deviation of the monthly percentage changes in the exchange rate.

In order to compute these variables we need to find the appropriate currency of reference for each country. In some cases the answer seemed to pose no problem (for example, we use the U.S. dollar for Mexico or the DM for Italy). But the currency of reference is not clearly identifiable in all cases. For example, for the UK or for Switzerland, the US dollar and the German DM are, apparently, equally good candidates. To resolve these cases we use the following procedure. For countries that report a fixed exchange rate regime

[5] We use SPSS 8.0 as our computational device. The algorithm for the K-means classification proceeds as follows: "The first k cases in the data file, where k is the number of clusters requested, are selected as temporary centers. As subsequent cases are processed, a case replaces a center if the smallest distance to a center is greater than the distance between the two closest centers. The center that is closer to the case is replaced. A case also replaces a center if the smallest distance from the case to a center is larger than the smallest distance between the center and all other centers. Again, it replaces the center closest to it" (Norusis, 1993).

[6] Frankel (1999) identifies nine exchange rate regimes: currency union, currency board, "truly fixed" exchange rates, adjustable peg, crawling peg, basket peg, target zone or band , managed float and free float. These nine groups can be broadly mapped into the four categories identified in our work, with the first three groups corresponding to a fix, the next three to a crawling peg, and the last two to a dirty and a pure float. Exchange rate bands may behave either as a crawling peg (when the exchange rate hits one of the bounds), as a float (when it fluctuates within the band) or as a dirty float (in the presence of intramarginal intervention). At any rate, it is interesting to stress that an increase in the number of clusters in our specification did not lead to the appearance of a new and clearly identifiable group, suggesting that, from the point of view of the observed behavior of the data, there is no much information to be gained by going beyond our four-way classification.

[7] Choosing a calendar year as unit of account implies that in years where the exchange rate regime changes, the yearly number will reflect a combination of both regimes. Argentina, for example, implemented a fixed exchange rate in April of 1991. Our yearly data takes into account the strong movements in the nominal exchange rate during the first three months of the year and, as a result, the country is classified as a dirty float. Similarly Ecuador, which dollarized in late January 2000 is classified as crawling peg for that year. This improves upon IMF (1997) and Ghosh *et al.* (1997), which use the legal regime as of the end of each year, thus assigning the country to an ex-post regime which may be, to a large extent, endogenous. See Edwards and Savastano (1999).

we use the legal peg currency. For the rest, we use the currency against which their exchange rate exhibits the lowest volatility.[8] Countries that pegged their currency to a basket, were eliminated from the sample unless the central peg parity or the basket weights were known. The reference currency for each country is presented in Appendix 1.

Reserves are notoriously difficult to measure and there is usually a large difference between changes in reserves and interventions. Thus, our measure of the third classification variable, the *volatility of reserves* (σ_r) requires particular care. To approximate as closely as possible the change in reserves that reflects intervention in the foreign exchange market we subtracted government deposits at the central bank from the central bank's net foreign assets[9] More specifically, we define net reserves in dollars as:

$$R_t = \frac{ForeignAssets_t - ForeignLiabilities_t - CentralGov.Deposits_t}{e_t},$$

where *e* indicates the price of a dollar in terms of local currency. All Central Bank items are denominated in local currency and the time period for all variables corresponds to the end of period for a specific month. Our measure of monthly intervention in the foreign market r_t, is defined as:

$$r_t = \frac{R_t - R_{t-1}}{\frac{MonetaryBase_{t-1}}{e_{t-1}}} = \frac{\Delta R}{\frac{MonetaryBase_{t-1}}{e_{t-1}}}.$$

Our measure of volatility is the average of the absolute monthly change in *r*, i.e. the average of the absolute monthly change in net dollar international reserves relative to the monetary base in the previous month, also in dollars. [10]

We compute a yearly figure for each classification variable for all 183 countries that report to the IMF.[11] The period of analysis is 1974-2000. In all, for this period there are 4604 classifiable country-year data points. Of these 553 are left out as they belong to undisclosed basket pegs and 1062 lack data for one of the classifying variables. For the remaining 2989 observations we construct our data set, which

[8] For this exercise we considered the US dollar, the French franc, the German marc, the British pound, the SDR, the ECU and the Japanese yen. For some small countries the currency of a large neighbor was also considered.

[9] Oil producing countries and countries with important privatization programs are examples of cases where the latter correction matters. Calvo and Reinhart (2000) indicate other reasons (hidden foreign exchange transactions, use of credit lines, derivative transactions, or issuance of debt in foreign currency) that make it difficult to compute the real movement in reserves. To these one could add coordinated intervention by other central banks (though this should be limited to G-3 economies) and the measurement error introduced by the fact that all accounts are transformed to dollar units. If the Central Bank holds a portfolio of assets with several currencies, changes in the parities between the reserve currencies can be mistaken for foreign exchange interventions. We believe this measurement error problem should not be very significant as most of the reserves are in dollar denominated assets.

[10] In practice we use line 11 from the IFS for foreign assets, line 16c for foreign liabilities and 16d for central government deposits. Line 14 (or 14a if line 14 was not available) lagged one month is used as a measure of the monetary base. *Contrary* to Calvo and Reinhart (2000) we use the changes relative to the monetary base rather than the percentage change in reserves. We believe this is a better measure, as a given percentage change in reserves in countries with low monetization implies a larger relative intervention in forex markets.

[11] This still excludes some fixed exchange rate countries that are not IMF country members such as Andorra, Liechenstein, Monaco, Nauru, Tuvalu and Vatican City, all of them fixed throughout the post Bretton Woods period (Tuvalu since 1979). See Obstfeld and Rogoff (1995). We also exclude many semi-independent countries, dependencies or territories. On these see Rose (2000). All other countries are included.

corresponds to the number of cases in which country-year data for the three reference variables could be computed.

The Exchange Rate Regime Classification

Once the three classification measures are computed for our universe of countries, we use *cluster analysis* as a way of assigning the data to different groups. We consider each cluster as representing a distinct exchange rate regime, independently of the "legal" regime stated by the country that is assigned to this group. Table 1 presents our prior as to how the three classification variables described above map into exchange rate regimes. The only clarification required relates to those countries that by displaying little variability along the three variables cannot be assigned to any particular type of regime, and which we label "inconclusives." The wording is not arbitrary. First, if neither the nominal exchange rate nor reserves move, it is not obvious the exchange rate regime the country is implementing. Second, given the magnitude of the changes involved, the experience of these countries may not tell us much about the specific impact of the exchange rate regime on the behavior of the economy.

Table 1

	σ_e	$\sigma_{\Delta e}$	σ_r
Inconclusive	Low	Low	Low
Flexible	High	High	Low
Dirty Float	High	High	High
Crawling Peg	High	Low	High
Fixed	Low	Low	High

The classification procedure is depicted in the diagram of Figure 1. Because KMC relies on the relative distance between points it is important that measures be comparable in order to obtain a relevant classification along all dimensions. Therefore, we first eliminate the two percent-upper tail of observations for each of the three classification variables, which entails leaving 129 outliers (out of 2989 data points) out of the sample.[12] We then z-normalize the remaining 2860 observations. Next, we use the K-means algorithm to classify the data into the 5 clusters described in Table 1. We call this first pass at the data the 1st round classification.[13] The clusters are shown in Figure 2.

This initial classification assigns a regime to 1062 data points but allocates a high number of countries within the "inconclusive" category (1798 out of 2860 cases). However, while variations in the classification variables within this group may be small relative to the data points clustered in the 1st round, the data still displays enough volatility to identify exchange rate regimes among these observations. In order to unveil these, while maintaining the distinction between high and low variability cases, we reclassify the "inconclusives" using the same methodology used in the 1st round. That is, we re-normalize the data for these 1798 observations, and apply the K-means algorithm on the new values, again allowing for five groups. We call the resulting grouping of the "inconclusive" sub-sample the 2nd round

[12] Because these outliers do not present classification problems, we re-classify these observations ex-post, by assigning them to the cluster with the nearest centroid. In the tables countries classified according to this criteria are denoted by the indicator (3). The 2% threshold was chosen arbitrarily. Alternative values for this threshold deliver a virtually identical classification.

[13] We start with a number of clusters that we believe should describe all exchange rate regimes. We check robustness of our exchange rate regimes prior by increasing the number of clusters beyond the original five. However, we found that by doing this we simply partition an existing cluster adding no richness to the description of the data. In this sense, the methodology helps identify the right numbers of regimes that can be distinguished in the data.

classification.[14] The two-round procedure assigns an exchange rate regime to 1100 of the original 1798 data points in the original sample, with only 698 2nd round inconclusives left unclassified. Again, the clusters can be seen in Figure 2.

The distinction between first and second round, which mirrors observations with high and low variability, provides an additional refinement in the classification. By introducing this variability dimension, this methodology allows to discriminate, albeit in a crude manner, the *intensity* of the shocks to which the regime is subject, something that qualitative indexes previously used did not allow for. This may turn out to be crucial for empirical work, if, as we suspect, policy responses under different exchange rate regimes, and the impact of the regime on other economic variables, depend on the relative magnitude of underlying shocks.

Table 2 shows central value for the classification variables as well as the upper and lower bounds for each cluster. Fixed regimes are characterized by relatively low nominal exchange rate volatility (with centroid absolute change of 0.20% per month as opposed to 2.31% in the case of floats), and high volatility in reserves (14.68% for fixers against 4.59% for pure floats). The two intermediate groups, on the other hand, exhibit not only substantial intervention in the exchange rate market but also the highest exchange rate volatility. This evidence suggests the following important point: *Pure floats appear to tolerate relatively minor fluctuations in the exchange rate*. Conversely, as a rule, countries with substantial movements in the nominal exchange rate usually intervene actively.

Table 2 also shows that 2nd round groups are characterized by less overlap between fixers and floaters. While fixers exhibit an absolute monthly volatility of the nominal exchange rate that ranges from zero to 0.63%, the minimum volatility for floaters is 0.72%. On the reserves dimension, floaters have an absolute change in reserves ranging between 0.25% and 6.46% of the monetary base, whereas for fixers the minimum intervention is 5.65%. Within the 2nd round crawling pegs are associated with substantially smaller reserve intervention.

A refined classification

While the method proposed has been successful in assigning an exchange rate regime to most data points, the fact that 698 data points remain unclassified begs the questions as to why not undertake additional rounds of classification until all observations are assigned a regime. Additionally, one could ask whether some regimes within the 1062 data points for which one of the classification variables was not available could be identified in an uncontroversial fashion independently of availability of data for the classification variables. For example, shouldn't dollarized Panama or Hong-Kong´s currency board be classified regardless of the fact that no data on reserves is available? As the objective is to provide as comprehensive as possible a database on exchange rate regimes for the post Bretton-Woods period, we do use additional information to classify those countries that were not assigned a regime through the previous methodology.

The first refinement corresponds to the classification of the 698 2nd round inconclusives. Among this group a fixed exchange rate regime was assigned to all those data points that exhibited zero volatility in the nominal exchange rate as well as to those data points identified by the IMF as corresponding to countries with a fixed exchange rate and which had an average volatility in the nominal exchange rate smaller than 0.1% (placing them safely off limits to 2nd round floats and dirty floats).[15] As this criteria classified 625 of the 698 cases, we decided that no additional iterations of the cluster analysis methodology were necessary. In the end, only 73 cases (2.4%) out of the original 2989 data points were left unclassified.

[14] In the tables, the countries that are classified in this second round are denoted by the indicator (2) to keep track of low variability countries within each category.
[15] The cases identified in the data base through this methodology are identified with a *.

In addition there are 1062 data points for which at least one of the classification variables is not available. Countries without a separate legal tender, for which no data on reserves is accessible, are an example. Many of these countries, which include cases such as Panama, San Marino or Hong Kong's currency board can be safely assigned a fixed exchange rate regime. Again, we assigned a fixed exchange rate regime to all hard pegs according to Rose (2000) or the IFS, to those cases that exhibited zero volatility in the nominal exchange rate, and to data points identified by the IMF as corresponding to countries with a fixed exchange rate and which had an average volatility in the nominal exchange rate smaller than 0.1%. The country year data points classified in this manner are identified as uncontroversial fixes in the database.[16] The complete classification is presented in Appendix 2.[17]

[16] These countries are identified in the data base by the symbol †.
[17] The complete database is available at http://www.utdt.edu/~ely or http://www.utdt.edu/~fsturzen.

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Appendix 1: Currencies of Reference

To the US dollar

Afghanistan, Algeria, Angola, Antigua and Barbuda (77-), Argentina, Armenia, Aruba, Australia, Azerbaijan, Bahamas, Bahrain, Bangladesh (89), Barbados (75-), Belarus (95-), Belize (77-), Bolivia, Brazil, Brunei, Bulgaria (94-95), Burundi (74-83;92-), Cambodia, Canada, Chile (74-89;99-), China, Colombia, Democratic Republic of Congo, previously Zaire, (74-75;83-), Costa Rica, Djibouti, Dominica (79-), Dominican Republic, Ecuador, Egypt, El Salvador, Ethiopia, The Gambia (86-), Georgia, Germany, Ghana, Grenada (77-), Guatemala, Guinea (86-), Guyana (76-), Haiti, Honduras, Hong Kong, Hungary, India (75-), Indonesia, Iran (74-80, 93-), Iraq, Israel, Jamaica, Japan, Jordan (88-), Kenya (74;87-), Korea, Kyrgyz Republic, Lao PDR, Lebanon, Liberia, Libya (74-86), Lithuania, Malawi (74; 84-), Malaysia, Maldives, Marshall Islands, Mauritania, Mauritius (83-), Mexico, Micronesia, Mongolia, Mozambique, Nepal, Netherlands Antilles, New Zealand, Nicaragua, Nigeria, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, Peru, Poland (74-79), Qatar, Romania, Russia, Rwanda (74-82;94-), Sao Tomé and Príncipe, Saudi Arabia, Seychelles (96-), Sierra Leone (83-), Singapore, Solomon Islands, Somalia, South Africa, Sri Lanka, St. Kitts and Nevis (77-), St. Lucia (77-), St. Vincent and the Grenadines (77-), Sudan, Suriname, Syrian Arab Republic, Tajikistan, Tanzania (74; 79-), Thailand, Trinidad and Tobago (76-), Turkey, Turkmenistan, Uganda (74-78; 81-), Ukraine, United Arab Emirates, United Kingdom (74-86; 95-), Uruguay, Venezuela, Yemen, Zambia (74-75; 83-), Zimbabwe.

To the British Pound

Antigua and Barbuda (74-76), Bangladesh (74-78), Barbados (74), Belize (74-76), Dominica (74-78), The Gambia (74-85), Grenada (74-76), Guinea (74-85), Guyana (74-75), India (74), Ireland (74-78), Seychelles (74-78), Sierra Leone (74-77), St. Kitts and Nevis (74-76), St. Lucia (74-76), St. Vincent and the Grenadines (74-76), Trinidad and Tobago (74-75).

To the German Mark

Albania, Austria, Belgium, Bosnia and Herzegovina, Bulgaria (96-), Croatia, Czech Republic, Denmark, Estonia, Finland, France, Greece, Iceland, Ireland (79-), Italy, Macedonia FYR, Moldova, Netherlands, Norway, Poland (80-), Portugal, Slovak Republic, Slovenia, Spain, Sweden Switzerland, United Kingdom (87-94), United States.

To the French Franc

Benin, Burkina Faso, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Republic of Congo, Cote d'Ivoire, Equatorial Guinea, Gabon, Guinea Bissau, Madagascar, Mali, Morocco, Niger, Senegal, Togo, Tunisia.

To the SDR

Burundi (84-91), Democratic Republic of Congo, previously Zaire, (76-82),Iran (81-92), Jordan (74-87), Kazakhstan, Kenya (75-86), Latvia, Libya (87-), Malawi (75-83), Mauritania, Mauritius (74-82), Myanmar, Rwanda (83-93), Seychelles (79-95), Sierra Leone (78-82), Tanzania (75-78), Zambia (76-82).

Other

Bhutan, Indian Rupee
Botswana, South African Rand
Chile, Central band parity as published by the Central Bank of Chile (90-98)
Cyprus, ECU/Euro
Kiribati, Australian Dollar
Lesotho, South African Rand
Luxembourg, Belgium Franc
Malta, Italian Lira/Euro
Namibia, South African Rand
San Marino, Italian Lira/Euro
Swaziland, South African Rand
Tonga, Australian Dollar

Appendix 2: Regimes for all countries

Country	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
AFGHANISTAN, I.S. OF	Fix*	Fix*	Fix*	Fix*	Fix*				Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*				Fix*	Fix*	Fix*	Fix*
ALBANIA																						Float	Float	Interm*	Float	Float	Float ²
ALGERIA**																					Interm*	Float	Interm* ²	Interm ²	Float ²	Float	Float
ANGOLA																							Interm ³	Fix ³	Interm*	Interm ³	Interm* ³
ANTIGUA AND BARBUDA	Fix*	Fix*	Fix*	Fix*	Fix*	Fix²	Fix²	Fix	Fix	Fix	Fix²	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix²	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †
ARGENTINA**	Fix †	Interm ³	Interm	Float	Float	Float	Float	Interm	Interm ³	Interm*	Interm* ³	Interm ³	Float	Interm*	Interm*		Interm ³	Interm	Fix²	Fix²	Fix²	Fix²	Fix †	Fix †	Fix †	Fix †	Fix²	Fix²
ARMENIA																					Interm ³	Interm ²	Fix	Float	Fix	Fix	Interm ²
ARUBA														Fix²	Fix²	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †
AUSTRALIA*											Float	Float	Float	Float	Float	Float	Float	Float ²	Float	Float	Float	Float	Float ²	Float	Float	Float	Float
AUSTRIA*								Incon	Fix †	Incon	Fix²	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix²	Fix †	Fix †	Fix †	Fix †	Fix †	Incon	Incon	Fix*	Fix*
AZERBAIJAN																						Fix	Interm* ²	Interm* ²	Fix	Interm ²	Interm* ²
BAHAMAS, THE	Fix²	Fix²	Fix²	Fix²	Fix²	Fix²	Fix²	Fix²	Fix	Fix²	Fix²	Fix²	Fix²	Fix²	Fix²	Fix²	Fix²	Fix²	Fix²	Fix²	Fix²	Fix²	Fix²	Fix²	Fix²	Fix †	Fix †
BAHRAIN	Fix*	Fix	Fix²	Fix²	Fix	Fix²	Fix²	Fix²	Fix²	Fix²	Fix †	Fix²	Fix †	Fix †	Fix²	Fix	Fix ³	Fix²	Fix	Fix	Fix	Fix	Fix ³	Fix	Fix²	Fix²	Fix †
BANGLADESH	Fix †	Interm	Float	Interm ²	Float											Fix †											
BARBADOS	Fix²	Fix	Fix²	Fix †	Fix²	Fix²	Fix²	Fix²	Fix †	Fix †	Fix †	Fix †	Fix †	Fix²	Fix †	Fix †	Fix †	Fix²	Fix²	Fix²	Fix †	Fix²	Fix²	Fix²	Fix²	Fix²	Fix †
BELARUS																						Float	Float	Interm*	Interm ³	Float	Interm*
BELGIUM*	Float ²	Interm* ²	Interm* ²	Interm* ²	Interm* ²	Interm* ²	Fix²											Incon	Fix²	Float ²	Incon	Incon	Incon	Incon	Incon	Fix*	Fix*
BELIZE				Fix²	Fix	Fix	Fix	Fix	Fix²	Fix²	Fix²	Fix †	Fix²	Fix †	Fix²	Fix²	Fix †	Fix²	Fix²	Fix	Fix †	Fix²	Fix²	Fix †	Fix †	Fix †	Fix †	Fix²
BENIN	Fix²	Fix²	Fix²	Fix²	Fix	Fix²	Fix	Fix	Fix²	Fix²	Fix²	Fix	Fix²	Fix²	Fix	Fix²	Fix †	Fix †	Fix †	Fix †	Interm ³	Fix²	Fix²	Fix²	Fix²	Fix	Fix²
BHUTAN	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix †	Fix²	Fix †	Fix	Fix²	Fix²	Fix²	Fix²	Fix †	Fix †
BOLIVIA	Fix †	Fix †	Fix †	Fix²	Fix †	Float	Fix²	Fix²	Interm ³	Interm	Interm ³	Interm ³	Interm*	Fix ³		Float	Interm ²	Interm* ²	Interm* ²	Fix	Interm* ²	Fix²	Interm* ²	Interm* ²	Interm* ²	Interm* ²	Fix²
BOSNIA																										Fix*	Fix*
BOTSWANA	Fix*	Fix*	Fix*																								
BRAZIL**	Interm ²	Float	Float	Float	Float	Interm*	Float	Interm*	Interm*	Interm*	Interm*	Fix ³	Fix ³	Interm* ³	Interm* ³	Interm ³	Interm ³	Interm* ³	Interm* ³	Interm* ³	Interm ³	Float	Interm* ²	Interm* ²	Fix²	Interm*	Fix
BRUNEI DARUSSALAM											Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*
BULGARIA**																					Interm*	Float ²	Interm ³	Interm ³	Fix²	Fix²	Fix²
BURKINA FASO	Fix †	Fix †	Fix †	Fix²	Fix²	Fix²	Fix †	Fix †	Fix †	Fix²	Fix †	Fix²	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Interm ³	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †
BURUNDI	Fix²	Fix²	Fix	Fix	Fix²	Fix	Fix²	Fix²	Fix †	Fix²	Float ²	Fix †	Float	Interm* ²	Float	Float	Interm* ²	Float									
CAMBODIA																						Float	Float ²	Float	Float	Interm* ²	Interm* ²
CAMEROON	Fix †	Fix †	Fix †	Fix²	Fix †	Fix †	Fix †	Fix²	Fix †	Fix	Fix	Fix²	Fix²	Fix²	Fix²	Fix²	Fix †	Fix †	Fix †	Fix †	Interm ³	Fix²	Fix	Fix²	Fix †	Fix †	Fix²
CANADA*	Interm* ²	Interm* ²	Float ²	Float ²	Float ²	Float ²	Float ²	Interm* ²	Float ²	Interm* ²	Float ²	Float ²	Interm* ²	Float ²	Float ²	Interm* ²	Float ²	Interm* ²	Float ²	Float ²	Float ²	Float ²	Float ²	Float ²	Float ²	Float ²	Float ²
CAPE VERDE																											
CENTRAL AFRICAN REP.	Fix²	Fix²	Fix †	Fix²	Fix²	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Interm ³	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †
COLOMBIA**	Float ²	Interm* ²	Interm* ²	Interm* ²	Interm* ²	Interm* ²	Interm* ²	Interm* ²	Interm* ²		Float				Float	Float	Float	Float	Interm* ²	Interm* ²	Float	Float	Float	Float	Float	Float	Float
COMOROS					Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix	Fix²	Fix²	Fix²	Fix²	Fix²	Fix²	Fix²	Fix*		Fix²	Fix²	Fix †	Fix²	Fix²	Fix²
CONGO	Fix²	Fix †	Fix²	Fix²	Fix²	Fix²	Fix²	Fix	Fix	Fix	Fix²	Fix	Fix²	Fix²	Fix²	Fix †	Fix²	Fix †	Fix²	Fix²	Interm ³	Fix †	Fix †	Fix²	Fix †	Fix²	Fix
COSTA RICA	Float	Fix †	Fix †	Fix †	Fix †	Fix²	Fix²	Interm ³				Interm ²	Interm* ²	Interm ²	Float ²	Interm* ²	Float	Float	Float	Interm* ²	Interm* ²	Interm* ²	Interm* ²	Interm* ²	Interm* ²	Interm* ²	Interm* ²
CÔTE D'IVOIRE**	Fix †	Fix²	Fix †	Fix²	Fix	Fix †	Fix²	Fix²	Fix²	Fix²	Fix²	Fix †	Fix †	Fix †	Fix †	Fix²	Fix †	Fix †	Fix²	Fix²	Interm ³	Fix †	Fix²	Fix²	Fix †	Fix²	Fix²
CROATIA																					Interm ²	Interm* ²	Interm* ²	Float	Interm* ²	Interm ²	Fix²
CYPRUS																	Interm* ²	Float ²	Float ²	Incon	Incon	Interm* ²	Interm* ²	Fix²	Interm* ²	Fix²	Incon
CZECH REPUBLIC**																						Interm ²	Interm* ²	Float	Float	Float	Float ²
CHAD	Fix²	Fix²	Fix²	Fix †	Fix²	Fix †	Fix †	Fix²	Fix †	Fix²	Fix²	Fix †	Fix †	Fix †	Fix²	Fix †	Fix²	Fix †	Fix²	Fix †	Interm ³	Fix	Fix²	Fix²	Fix †	Fix²	Fix †
CHILE**	Interm ³	Interm ³	Interm*			Float	Fix²	Fix †	Interm*	Float	Float	Float	Float ²	Float ²	Float ²	Float	Float ²	Interm* ²	Float	Float	Float	Float	Float ²	Float ²	Float ²	Float	Float
CHINA,P.R.: MAINLAND**														Fix*	Fix*												
DENMARK*	Fix	Fix	Fix	Interm ²	Fix	Fix	Fix²	Fix	Fix	Fix	Fix	Fix ³	Fix	Fix	Fix²	Fix	Fix²	Fix	Fix	Fix	Fix	Fix	Fix	Fix	Fix	Fix²	Fix²
DJIBOUTI	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix †	Fix †	Fix †	Fix †	Fix	Fix²	Fix²	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †
DOMINICA	Fix*	Fix*	Fix*	Fix*	Fix*	Fix	Fix²	Fix	Fix	Fix²	Fix	Fix²	Fix²	Fix²	Fix²	Fix²	Fix²	Fix †	Fix †	Fix²	Fix †	Fix †	Fix †	Fix †	Fix †	Fix²	Fix †
DOMINICAN REPUBLIC	Fix²	Fix †	Fix²	Fix †	Fix †	Fix²	Fix²	Fix²	Fix²	Fix †	Fix †	Interm ³	Fix	Interm*	Interm*	Fix †	Interm*	Float	Interm* ²	Incon	Float ²	Float ²	Float ²	Float ²	Float ²	Interm* ²	Interm* ²
ECUADOR**	Fix †	Fix †	Fix²	Fix †	Fix †	Fix †	Fix †	Fix †	Float	Interm*	Float	Interm*	Interm*	Float	Interm	Float	Float	Float	Interm*	Interm ²	Float ²	Float	Float	Float	Float	Interm	Interm*
EGYPT	Fix †	Fix †	Fix †	Fix †	Fix²	Interm	Fix*	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Interm	Interm	Interm	Incon	Incon	Incon	Incon	Incon	Incon	Fix †	Incon	Float ²
EL SALVADOR	Fix	Fix²	Fix²	Fix	Fix	Fix	Fix	Fix²	Fix †	Fix †	Fix †	Fix †	Interm	Fix²	Fix †	Fix †	Interm*	Interm* ²	Float ²	Interm* ²	Incon	Incon	Fix †	Incon	Fix †	Fix †	Fix †
EQUATORIAL GUINEA	Fix*	Fix*	Fix*	Fix*		Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix	Fix	Fix	Fix ³	Fix	Fix	Fix ³	Fix ³	Fix	Interm ³	Fix²	Fix²	Fix	Fix	Fix	Fix
ESTONIA																				Fix²	Fix †	Fix †	Fix †	Fix²	Fix²	Fix	Fix²
ETHIOPIA	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Interm ³	Fix †	Float	Float ²	Incon	Float ²	Interm ²	Float ²	Incon
FIJI																											
FINLAND*																			Fix	Fix	Fix	Fix	Fix	Fix	Fix	Fix*	Fix*
FRANCE*	Float	Interm ²	Float	Float	Float	Fix²	Fix²	Interm ²	Interm ²	Interm ²	Fix²	Fix²	Interm ²	Interm ²	Fix²	Fix²	Fix²	Fix²	Fix	Fix	Fix	Interm ²	Interm* ²	Incon	Fix²	Fix*	Fix*
GABON	Fix²	Fix	Fix	Fix	Fix	Fix	Fix	Fix	Fix²	Fix²	Fix	Fix	Fix	Fix	Fix	Fix	Fix	Fix²	Fix²	Fix	Interm ³	Fix	Fix²	Fix	Fix	Fix²	Fix
GAMBIA	Fix	Fix	Fix²	Fix	Fix	Fix²	Fix	Fix	Fix²	Fix²	Fix	Fix	Fix	Fix	Float	Fix	Float	Fix	Fix	Float	Fix	Fix	Fix²	Fix	Fix²	Fix	Float
GEORGIA																								Interm* ²	Float	Interm*	Float ²
GERMANY*	Float	Float	Float ²	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Fix*	Fix*
GHANA	Fix †	Fix †	Fix †	Fix †	Interm	Fix²	Fix †	Fix †	Fix †	Interm ³	Interm*	Float	Interm*	Interm	Float	Float	Interm ²	Fix	Float	Float	Float	Fix	Fix	Float	Fix²	Fix ³	Interm*
GREECE**	Float	Float	Float ²	Float ²	Float	Float ²	Float	Interm* ²	Fix	Float	Float	Float	Interm ²	Interm ²	Interm* ²	Interm ²	Interm ²	Interm ²	Interm ²	Fix	Fix	Interm ²	Fix	Fix	Fix	Fix	Fix
GRENADA	Fix²	Fix²	Fix	Fix †	Fix †	Fix²	Fix †	Fix²	Fix²	Fix †	Fix²	Fix †	Fix †	Fix †	Fix †	Fix²	Fix †	Fix †	Fix²	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix²
GUATEMALA	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix²	Fix²	Fix †	Fix²	Fix †	Fix †	Interm ³	Fix †	Float ²	Float	Interm*	Float ²	Float ²	Float ²	Float ²	Interm* ²	Float	Float	Interm ²	Float	Interm ²
GUINEA			Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*							Float ²	Interm* ²	Fix²	Fix²	Interm ²	Interm ²	Interm*		
GUINEA-BISSAU																Fix ³	Fix	Interm*	Interm*	Float	Float	Float	Float	Fix	Fix²	Fix²	Fix²
GUYANA	Fix	Fix	Fix	Fix²	Fix	Fix²	Fix	Fix	Fix²	Fix²	Interm*	Fix	Interm* ²	Interm	Fix †	Interm ³	Fix ³	Interm ³	Fix²	Fix	Interm ²	Fix²	Fix	Fix	Float	Interm ²	Fix²
HAITI	Fix †	Fix	Fix²	Fix²	Fix²	Fix²	Fix²	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix*						Float	Float	Float	Float ²	Float
HONDURAS	Fix²	Fix²	Fix²	Fix	Fix²	Fix²	Fix²	Fix²	Fix²	Fix²	Fix²	Fix	Fix²	Fix	Fix	Fix²	Interm ³	Interm* ²	Float ²	Float	Fix	Interm ²	Float	Fix	Interm* ²	Float ²	Incon
HONG KONG											Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix	Fix	Fix²	Fix²
HUNGARY**																											
ICELAND*	Interm*	Interm*	Float	Float	Interm*	Float	Float	Float	Interm*	Interm*	Float	Float	Float														
INDIA**						Float ²	Float ²	Float ²	Interm* ²	Interm* ²	Float ²	Float	Float ²	Float ²	Float	Float ²	Interm* ²	Float	Incon	Float	Incon	Float	Float	Float ²	Float ²	Incon	Interm* ²

Country	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
INDONESIA**	Fix †	Fix[2]	Fix †	Fix †	Interm*	Float [2]	Fix[2]	Fix[2]	Interm* [2]	Interm*	Interm [2]	Fix[2]	Interm*	Fix[2]	Fix[2]	Fix[2]	Fix	Fix	Fix	Fix[2]	Incon	Interm* [2]	Interm* [2]	Interm*	Interm [3]	Interm*	Interm*
IRAN, I.R. OF	Fix[2]	Interm* [2]	Fix[2]	Fix[2]		Fix*	Incon	Fix[2]	Fix*	Fix †	Fix*	Fix*	Fix*	Fix †	Fix †	Fix †	Fix †	Fix †	Incon	Interm [3]	Incon	Incon	Incon	Incon	Incon	Incon	Float [2]
IRAQ	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*		Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*
IRELAND*	Fix[2]	Fix[2]	Fix	Fix	Fix	Interm [2]	Fix[2]	Fix	Fix	Fix	Fix	Fix	Float	Fix	Fix	Fix	Fix	Fix	Fix	Fix	Fix	Fix	Fix	Fix	Fix	Fix*	Fix*
ISRAEL**	Interm*	Float		Interm*	Float	Float	Float	Float	Float	Interm*	Interm* [3]	Interm*	Interm* [2]	Float	Float [2]	Float						Interm [2]	Float	Interm [2]	Float	Float [2]	Float [2]
ITALY*	Float	Float [2]	Float	Float	Float [2]	Interm [2]	Fix[2]	Float [2]	Interm [2]	Interm* [2]	Interm* [2]	Float [2]	Incon	Interm [2]	Interm* [2]	Interm* [2]	Interm* [2]	Interm* [2]	Float	Float	Fix	Float	Fix	Interm [2]	Fix[2]	Fix*	Fix*
JAMAICA	Fix[2]	Fix	Fix	Fix	Interm*	Fix	Fix	Fix	Fix [3]	Interm [3]	Fix	Fix	Fix	Fix[2]	Fix[2]	Float	Fix	Interm*	Interm*	Float	Interm [2]	Float	Float	Interm* [2]	Interm* [2]	Interm* [2]	Float
JAPAN*	Float	Float [2]	Float [2]	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float
JORDAN**		Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Float	Float	Float [2]	Interm* [2]	Float [2]	Interm* [2]	Interm* [2]	Interm* [2]	Fix †	Fix †	Fix †	Fix †	Fix †
KAZAKHSTAN																								Interm [2]	Float	Interm*	Fix
KENYA	Interm* [2]	Float	Fix[2]	Fix[2]	Fix[2]	Fix[2]	Fix[2]	Float	Float	Float [2]	Interm* [2]	Float	Float [2]							Interm*	Interm*	Float	Fix	Float	Float	Float	Float
KIRIBATI						Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*
KOREA**	Float	Interm* [2]	Fix †	Fix †	Fix †	Fix †	Float	Interm* [2]	Interm* [2]	Fix[2]	Interm* [2]	Interm [2]	Fix[2]	Fix	Interm [2]	Fix[2]	Interm [2]	Fix[2]	Interm* [2]	Interm* [2]	Fix[2]	Interm [2]	Fix	Interm*	Interm*	Fix	Fix
KUWAIT																											
KYRGYZ REPUBLIC																							Float	Float	Interm*	Interm*	Float [2]
LAO PEOPLE'S DEM.REP																					Incon	Float	Incon	Interm*	Interm*	Interm*	Float
LATVIA																							Fix †	Fix †	Fix †	Fix †	Fix †
LEBANON**	Float			Float [2]	Float [2]	Float [2]	Float	Float	Float	Float	Interm*	Interm	Interm [3]	Interm [3]	Fix [3]	Interm*	Interm	Interm*	Interm [3]	Fix [3]	Fix	Fix[2]	Incon	Incon	Incon	Incon	Fix †
LESOTHO	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix	Fix	Fix	Fix	Fix	Fix	Fix	Fix	Fix	Fix	Fix	Fix	Fix [3]	Fix	Fix [3]	Fix	Fix	Fix	Fix	Fix	Fix
LIBERIA	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*			
LIBYA	Fix	Fix[2]	Fix[2]	Fix[2]	Fix[2]	Fix[2]	Fix[2]	Fix[2]	Fix[2]	Fix[2]	Fix †	Fix †	Fix †	Interm* [2]	Fix †	Fix †	Fix †	Fix †	Float [2]	Float [2]	Float	Fix †	Fix[2]	Fix	Float	Float	Float
LITHUANIA																					Interm* [2]	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †
LUXEMBOURG	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix †	Fix[2]	Fix †	Fix †	Fix †	Fix †	Fix*	Fix*	Fix*
MACEDONIA, FYR																					Fix	Interm [2]	Interm* [2]	Float	Fix[2]	Fix[2]	Fix
MADAGASCAR	Fix[2]	Fix[2]	Float [2]	Interm [2]	Fix †	Fix	Fix[2]	Fix[2]					Fix	Interm*	Fix	Fix	Fix				Interm	Interm*	Float [2]	Float [2]	Float [2]	Float	Float
MALAWI		Fix[2]	Fix[2]	Fix[2]	Fix[2]	Fix	Fix	Fix	Fix	Float										Float	Interm	Fix[2]	Fix[2]	Float	Interm*	Fix	Interm*
MALAYSIA**	Float	Float	Interm* [2]	Interm* [2]	Float [2]	Interm* [2]	Float	Interm [2]	Interm [2]	Float [2]	Interm [2]	Float	Interm [2]	Float [2]	Interm* [2]	Interm [2]	Fix[2]	Interm* [2]	Interm [2]	Interm [2]	Fix	Float [2]	Interm* [2]	Float	Interm*	Fix †	Fix †
MALDIVES	Fix*						Fix*	Fix*	Float [2]	Fix[2]	Fix †			Interm*	Float	Float	Float [2]	Float	Float	Float [2]	Interm* [2]	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †
MALI	Fix[2]	Fix	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix †	Fix †	Fix †	Fix †	Fix[2]	Fix †	Fix †	Fix †	Fix †	Interm [3]	Fix †	Fix †	Fix †	Fix †	Fix	Fix[2]
MALTA																											
MARSHALL ISLANDS														Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*
MAURITANIA																							Interm* [2]	Float			
MAURITIUS	Fix [3]	Fix	Fix[2]	Fix[2]	Fix[2]	Float	Fix	Float	Fix[2]												Float [2]	Float [2]	Interm [2]	Float	Interm [2]	Fix[2]	Interm [2]
MEXICO**	Fix †	Fix †	Interm	Float	Incon	Incon	Incon	Interm* [2]	Interm [3]	Interm*	Float	Interm*	Interm*	Interm*	Fix	Interm [2]	Interm [2]	Fix	Fix	Fix	Fix	Interm	Interm [2]	Float	Float	Float	Float
MICRONESIA, FED.STS.														Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*
MOLDOVA																				Float			Float [2]	Float	Interm [3]	Float	Float
MONGOLIA																				Fix	Interm [3]	Interm [2]	Interm*	Float	Interm [2]	Float	Float
MOROCCO**					Float	Interm* [2]	Interm* [2]	Interm* [2]	Float	Float	Float	Float	Float [2]	Float [2]	Float [2]	Float [2]	Float										
MOZAMBIQUE																				Interm*	Float	Float	Interm* [2]	Fix[2]	Float [2]	Float	Fix
MYANMAR	Interm* [2]	Float	Fix*	Float	Fix †	Fix	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †
NAMIBIA																	Fix*	Fix	Fix [3]	Fix	Fix[2]	Fix[2]	Fix[2]	Fix	Fix †	Fix[2]	Fix[2]
NEPAL	Fix[2]	Float	Fix †	Fix †	Interm* [2]	Fix †	Fix †	Float [2]	Interm [2]										Fix[2]	Float	Fix †	Float [2]		Float [2]	Float [2]	Incon	Interm* [2]
NETHERLANDS*	Float [2]	Interm* [2]	Interm* [2]	Interm* [2]	Fix[2]	Interm* [2]	Fix[2]	Interm* [2]	Interm* [2]	Fix[2]	Fix	Incon	Incon	Fix[2]	Fix[2]	Fix[2]	Incon	Fix[2]	Fix[2]	Fix[2]	Fix[2]	Fix[2]	Fix[2]	Fix[2]	Incon	Incon	Fix*	Fix*
NETHERLANDS ANTILLES	Fix †	Fix[2]	Fix[2]	Fix[2]	Fix †	Fix[2]	Fix †	Fix[2]	Fix	Fix[2]	Fix[2]	Fix	Fix †	Fix[2]	Fix[2]	Fix †	Fix †	Fix[2]	Fix[2]	Fix †	Fix[2]	Fix[2]	Fix[2]	Fix[2]	Fix †	Fix †	Fix †	Fix †
NEW ZEALAND*												Fix [3]	Fix [3]	Fix	Float	Fix	Float	Float	Fix	Fix	Fix	Fix	Fix	Fix	Fix	Fix [3]	Fix
NICARAGUA	Fix[2]	Fix[2]	Fix	Fix[2]	Fix[2]		Fix[2]	Fix	Fix[2]	Fix †	Fix*			Fix*		Interm [3]	Interm [3]	Interm [3]	Fix [3]	Interm [3]	Fix [3]	Fix [3]	Fix	Fix	Interm [2]	Fix [3]
NIGER	Fix[2]	Fix †	Fix[2]	Fix[2]	Fix	Fix[2]	Fix[2]	Fix[2]	Fix †	Fix[2]	Fix[2]	Fix[2]	Fix †	Fix[2]	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Interm [3]	Fix[2]	Fix[2]	Fix[2]	Fix	Fix[2]	Fix
NIGERIA**	Fix	Interm [2]	Fix[2]	Interm* [2]	Float [2]	Fix	Float	Float	Float [2]	Float [2]	Interm* [2]	Float	Interm [3]	Interm*	Float	Interm*	Fix	Interm*	Interm	Float	Fix †	Fix	Fix	Fix	Fix[2]	Interm [3]	Float
NORWAY*	Fix	Interm [2]	Interm [2]	Interm [2]															Fix	Fix	Fix	Fix	Fix	Fix	Fix	Fix	Fix
OMAN	Fix[2]	Fix[2]	Fix[2]	Fix[2]	Fix	Fix[2]	Fix †	Fix[2]	Fix[2]	Fix[2]	Fix[2]	Fix[2]	Float	Fix	Fix[2]	Fix[2]	Fix	Fix[2]	Fix[2]	Fix[2]	Fix †	Fix[2]	Fix[2]	Fix[2]	Fix[2]	Fix[2]	Fix
PAKISTAN**		Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Float	Interm* [2]	Float	Float [2]	Float [2]	Fix[2]	Interm* [2]	Float [2]	Interm* [2]	Float [2]	Interm* [2]	Float	Incon	Float [2]	Float	Float [2]	Float [2]			
PALAU																					Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*
PANAMA**	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*
PAPUA NEW GUINEA	Float	Interm [2]	Fix	Interm* [2]	Float																	Fix	Fix	Fix	Fix	Fix	Interm*
PARAGUAY	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Interm	Interm*	Interm	Fix †	Fix †	Interm	Float	Interm [2]	Float	Float [2]	Interm* [2]	Interm* [2]	Interm* [2]	Interm* [2]	Float	Float	Float [2]
PERU**	Fix †	Float	Interm*	Interm*	Float	Float	Float	Float	Float	Interm*	Interm*	Interm*	Fix †	Interm*	Interm [3]	Interm [3]	Interm [3]	Interm*	Interm*	Float	Interm [2]	Float [2]	Float [2]	Interm* [2]	Float [2]	Float	Interm* [2]
PHILIPPINES**	Interm [2]	Interm [2]	Fix[2]	Incon	Incon	Incon	Fix[2]	Fix[2]	Interm [2]					Fix[2]	Interm* [2]	Interm* [2]	Float	Interm* [2]	Interm [2]	Fix	Float [2]	Float [2]	Fix[2]	Float	Float	Float [2]	Float
POLAND**	Fix*	Fix*	Fix*	Fix*													Interm	Float	Float	Float	Float	Float	Float [2]	Float	Float	Float	Float
PORTUGAL*			Float	Float	Float	Interm [2]	Fix	Float	Float	Float	Interm [2]	Fix	Interm [2]	Interm [2]	Fix	Fix	Fix	Interm [2]	Fix	Fix	Fix	Fix	Fix	Fix	Fix	Fix*	Fix*
QATAR	Fix*							Fix*	Fix*	Fix †	Fix †	Fix †	Fix[2]	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix[2]	Fix[2]	Fix[2]	Fix	Fix[2]
ROMANIA	Fix*	Fix*	Fix*	Fix*		Fix*	Fix*		Fix*									Interm [3]			Interm*	Float	Float	Interm	Float	Interm*	Float
RUSSIA**																								Interm* [2]	Interm [3]	Float	Float [2]
RWANDA	Fix †	Fix †	Fix[2]	Fix †	Fix †	Fix[2]	Fix[2]	Fix †	Fix †	Float [2]	Fix †	Fix[2]	Fix[2]	Fix †	Fix[2]	Fix[2]	Interm*	Fix[2]	Float	Incon		Interm	Interm* [2]	Float [2]	Interm [2]	Float	Float
SAINT KITTS AND NEVIS	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix	Fix [3]	Fix[2]	Fix	Fix	Fix[2]	Fix †	Fix[2]	Fix †	Fix[2]	Fix †	Fix †	Fix[2]	Fix[2]	Fix[2]	Fix †	Fix[2]	Fix †	Fix[2]	Fix[2]	Fix[2]
SAINT LUCIA	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix[2]	Fix[2]	Fix[2]	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †
ST VINCENT AND GREN.	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix †	Fix[2]	Fix[2]	Fix[2]	Fix †	Fix †	Fix[2]	Fix[2]	Fix †	Fix[2]	Fix[2]	Fix †	Fix †	Fix †	Fix †	Fix †	Fix[2]	Fix[2]	Fix[2]	Fix †	Fix[2]
SAMOA																											
SAN MARINO*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*
SAO TOME & PRINCIPE																								Interm*	Fix	Interm* [2]	Float
SAUDI ARABIA	Fix [3]	Fix [3]	Fix [3]	Fix	Interm [2]	Fix	Fix	Fix			Fix	Fix	Fix	Fix	Fix[2]	Fix	Fix[2]	Fix	Fix[2]	Fix[2]	Fix[2]	Fix	Fix[2]	Fix †	Fix[2]	Fix	Fix[2]
SENEGAL	Fix[2]	Fix[2]	Fix †	Fix †	Fix[2]	Fix[2]	Fix[2]	Fix[2]	Fix[2]	Fix †	Fix[2]	Fix[2]	Fix[2]	Fix †	Fix †	Fix[2]	Fix †	Fix †	Fix[2]	Fix †	Interm [3]	Fix †	Fix †	Fix †	Fix †	Fix[2]	Fix[2]
SEYCHELLES					Fix*	Float	Fix[2]	Float	Fix[2]	Fix[2]	Fix[2]	Fix[2]	Fix[2]	Fix	Fix[2]	Fix[2]	Fix[2]	Fix[2]	Fix †	Fix †	Fix †	Interm* [2]					
SIERRA LEONE	Fix	Fix[2]	Fix[2]	Fix[2]	Float	Fix[2]	Fix[2]	Fix[2]	Incon	Interm [3]	Fix †	Interm [3]	Interm [3]	Interm* [3]	Fix	Interm*	Interm* [3]	Interm*	Fix	Fix	Fix [3]	Fix [3]	Fix [3]	Interm*	Float	Float	Interm*
SINGAPORE														Interm* [2]	Interm [2]	Interm* [2]	Interm [2]	Interm [2]	Interm [2]	Fix	Interm* [2]	Interm [2]	Interm* [2]	Float	Float	Fix	Fix
SLOVAK REPUBLIC																						Interm [2]	Interm* [2]	Interm [2]	Float	Fix	Fix
SLOVENIA																			Interm*	Float	Fix	Interm [2]	Interm [2]	Fix	Fix[2]	Interm [2]	Interm [2]
SOLOMON ISLANDS																											

Country	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
SOMALIA	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*																			
SOUTH AFRICA**	Fix	Float	Fix²	Fix²	Fix	Fix	Fix	Float	Float	Fix	Interm*	Interm*	Interm*	Float	Float	Float	Fix	Float	Float	Fix	Interm ²	Fix	Float	Float	Float	Float ²	Float
SPAIN*				Float	Float ²	Float	Float	Float ²	Float	Float ²	Float ²	Float ²	Interm* ²	Interm ²	Interm* ²	Float ²	Float ²	Interm* ²	Float	Float	Fix	Float	Fix²	Fix²	Fix²	Fix*	Fix*
SRI LANKA	Float ²	Float	Float	Interm	Float ²	Interm* ²	Float	Float	Fix²	Float	Interm* ²	Interm* ²	Incon	Interm* ²	Interm* ²	Float	Incon	Interm* ²	Interm* ²	Float	Interm* ²	Interm* ²	Interm* ²	Interm* ²	Fix	Interm* ²	Float
SUDAN	Fix †	Fix²	Fix †	Fix †	Float	Float	Fix²	Interm	Interm*	Fix*	Fix*		Fix*		Fix*	Fix*	Fix*			Interm*	Interm	Interm* ³	Interm	Float	Float		
SURINAME	Fix †	Fix²	Fix †	Fix †	Fix	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Interm	Interm*	Incon	Fix †	Fix †	Interm	Interm
SWAZILAND	Fix*	Fix	Fix	Fix²	Fix²	Fix²	Fix	Fix²	Fix	Fix	Fix	Fix²	Fix²	Fix²	Fix	Fix²	Fix	Fix	Fix	Fix	Fix	Fix²	Fix	Fix	Fix	Fix²	Fix
SWEDEN*	Float ²	Interm* ²	Interm* ²	Float	Float ²	Interm* ²	Float ²	Float	Float	Interm ²	Float ²	Interm ²	Float ²	Float ²	Interm* ²	Float ²	Interm ²	Fix	Fix ³	Fix	Float	Float	Float	Interm ²	Fix	Float ²	Float ²
SWITZERLAND*	Float	Interm ²	Interm ²	Interm ²	Float	Interm ²	Interm ²	Fix	Interm ²	Float ²	Interm ²	Interm ²	Interm ²	Interm* ²	Interm* ²	Interm ²	Float ²	Interm ²	Interm ²	Interm ²	Interm* ²	Interm ²	Interm ²	Interm ²	Interm ²	Interm* ²	Interm ²
SYRIAN ARAB REPUBLIC	Interm ²	Fix²	Interm ²	Fix	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Interm ³	Fix †	Fix †	Fix †	Fix*	Fix*	Fix †	Fix †	Fix †	Fix †	Fix*	Fix*	Fix †
TAJIKISTAN																											
TANZANIA	Interm* ²	Float	Fix †	Fix †	Fix †								Interm	Float	Interm*	Interm*				Interm*	Float ²	Float	Float	Interm ²	Float ²	Float	Incon
THAILAND**	Fix †	Fix †	Fix †	Fix²	Fix²	Fix²	Fix²	Float ²	Fix²	Fix †	Float	Float ²	Interm* ²	Interm* ²	Interm* ²	Interm* ²	Interm* ²	Interm* ²	Interm* ²	Interm* ²	Interm* ²	Interm* ²	Incon	Interm*	Interm*	Float	Float
TOGO	Fix²	Fix²	Fix²	Fix †	Fix²	Fix †	Fix †	Fix²	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix²	Interm ³	Fix²	Fix	Fix²	Fix²	Fix †	Fix²
TONGA			Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix*	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Incon	Incon	Interm* ²									
TRINIDAD AND TOBAGO	Fix	Fix²	Float	Fix †	Fix²	Fix²	Fix †	Fix²	Fix²	Fix	Fix²	Float	Float	Fix²	Float	Fix²	Fix²	Fix²	Fix †	Interm*	Interm ²	Fix²	Interm* ²	Incon	Incon	Fix †	Fix²
TUNISIA													Float	Interm ²	Interm* ²	Float ²	Interm* ²	Interm* ²	Interm* ²	Float ²	Float ²	Interm ²	Interm* ²	Float ²	Incon	Interm* ²	Interm ²
TURKEY**	Interm* ²	Interm* ²	Float ²	Float	Interm*	Float	Interm	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Interm	Float	Float	Float	Fix	Float	Float
TURKMENISTAN																											
UGANDA						Fix †	Fix †	Interm ³			Interm*	Interm	Float							Fix	Fix	Fix	Fix	Fix	Fix	Fix	Fix
UKRAINE																					Interm ³	Interm*	Float	Interm* ²	Float	Float	Float
UNITED ARAB EMIRATES			Fix	Fix²	Fix²	Fix²	Incon	Fix²	Fix †	Fix²	Fix*	Fix*	Fix*	Fix*	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix²	Fix †	Fix²	Fix †
UNITED KINGDOM*														Interm ²	Float ²	Float	Float	Float ²	Float	Float	Float ²	Float ²	Float ²	Float	Float ²	Float ²	Float
UNITED STATES*	Float	Float	Float ²	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float	Float
URUGUAY	Interm ³		Float	Float	Float	Interm ²	Interm ²	Interm ²		Interm*	Interm*	Interm*	Float	Float	Float	Interm*	Float	Float	Float	Float	Float	Float	Float	Interm* ²	Float ²	Interm* ²	Interm* ²
VANUATU																											
VENEZUELA**	Fix	Fix	Fix †	Fix †	Fix †	Fix †	Fix †	Fix †	Fix²	Fix †	Interm	Fix †	Interm	Fix²	Fix²	Interm ³	Float	Fix	Float	Float	Interm*	Interm*	Interm*	Fix	Fix	Interm ²	Interm ²
VIETNAM																											
YEMEN																		Fix †	Fix †	Fix †	Fix †	Interm ³	Interm ³	Float ²	Float ²		
ZAIRE	Fix²	Fix †	Interm*	Fix †	Float	Interm	Interm*	Interm*	Fix †	Interm ³	Fix	Fix	Fix	Interm*	Interm*	Float	Interm	Interm ³	Interm ³	Interm ³	Interm ³	Interm ³					
ZAMBIA	Fix	Fix²	Float	Fix²	Fix	Fix	Fix²	Fix²	Fix²			Interm ³	Interm ³	Interm ³	Float							Fix ³	Fix ³	Fix	Fix	Fix	Fix
ZIMBABWE																					Fix	Fix	Fix ³	Interm*	Interm* ³	Fix	Interm*

	Basket
	Not existing or not independent country
	One classification variable not available
Fix †	Inconclusives
Fix*	Uncontroversials
Interm	Dirty
Interm*	Dirty/CP
2	Classified in 2nd round
3	Outliers
*	Industrial Countries
**	Emerging Economies

Figure 1: Exchange Rate Classification

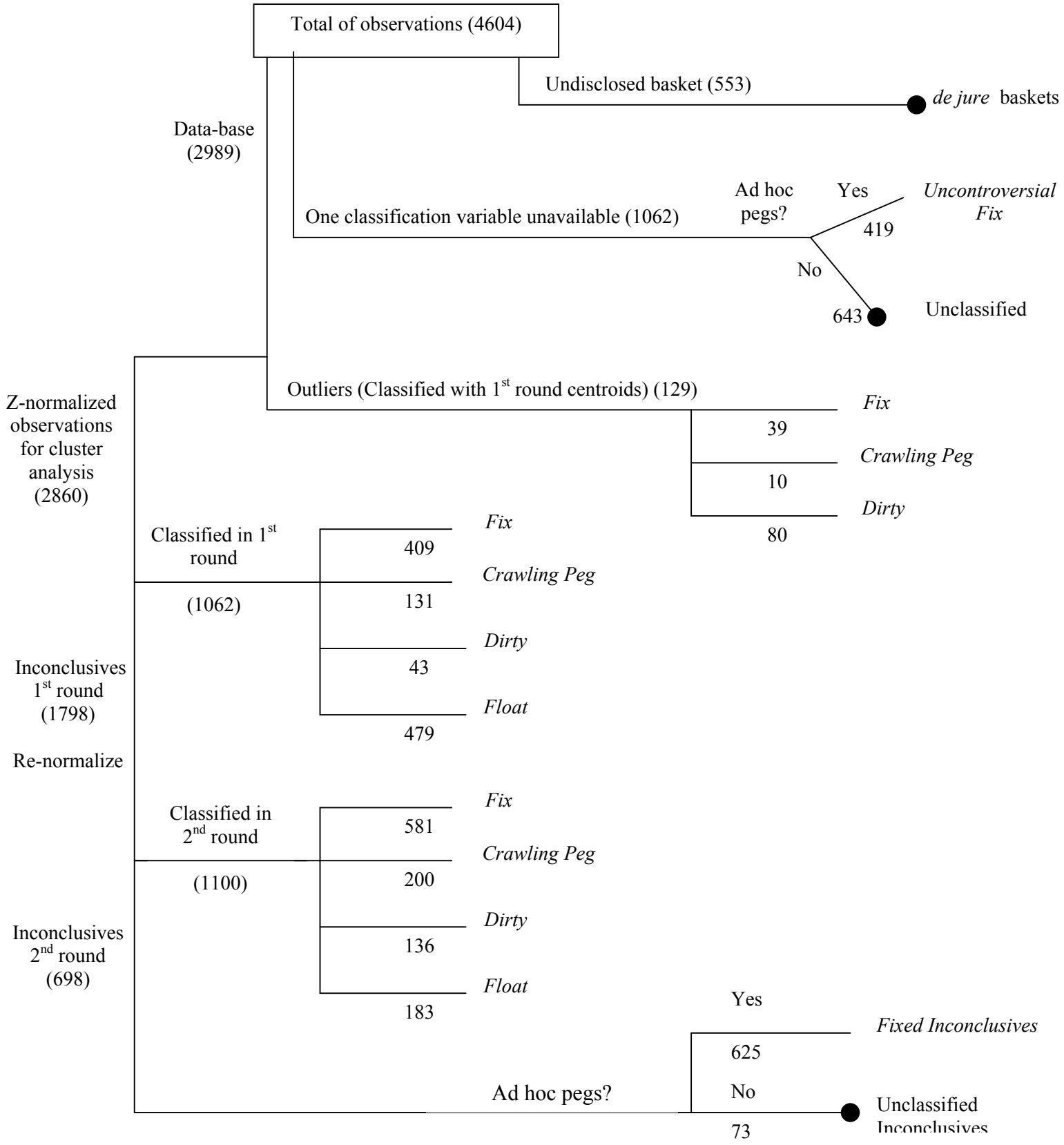
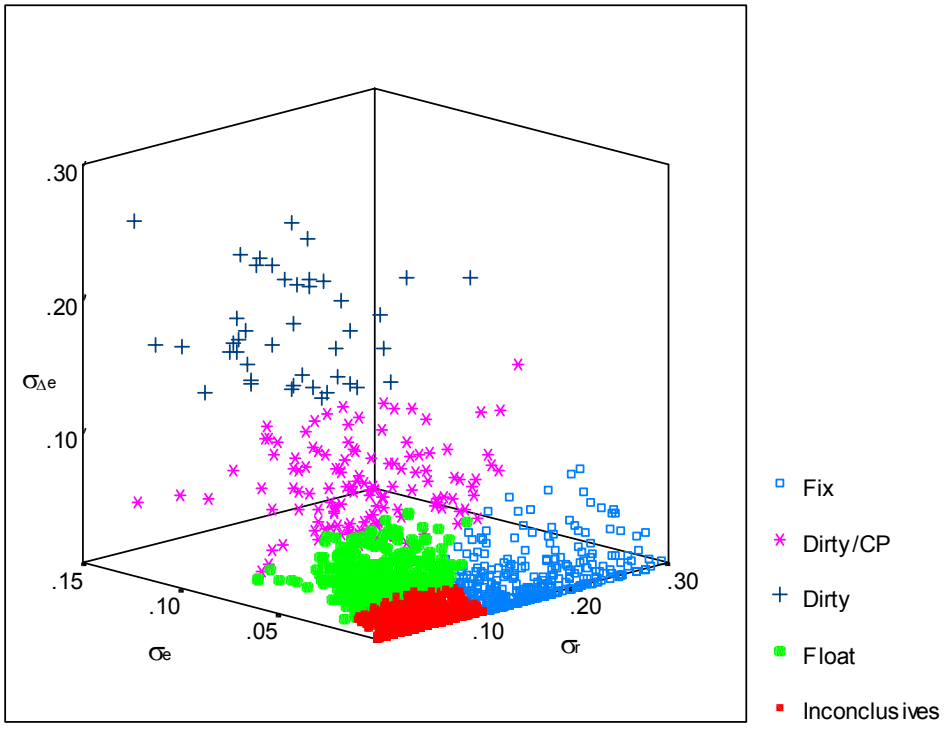


Figure 2

a) 1st round



a) 2nd round

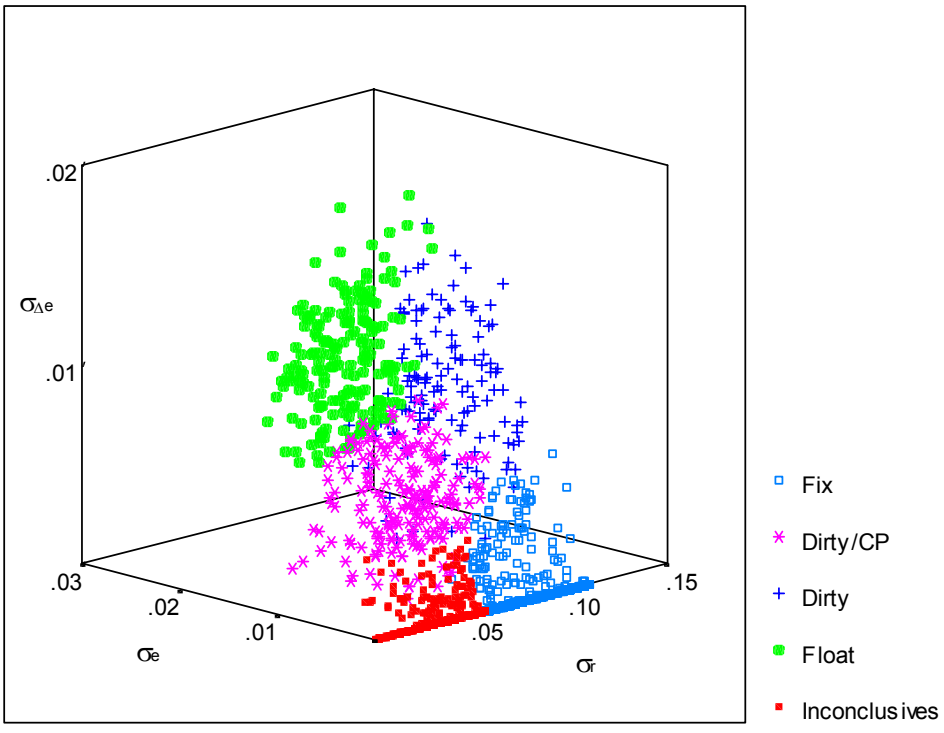


Table 2: Cluster Boundaries

	Average monthly volatility in the exchange rate			Average monthly volatility in the change of the exchange rate			Average monthly volatility in international reserves (relative to monetary base)		
1st Round Boundaries									
	Minimum	Centroid	Maximum	Minimum	Centroid	Maximum	Minimum	Centroid	Maximum
Float	0.09%	2.31%	7.22%	0.81%	2.03%	6.70%	0.60%	4.59%	13.44%
Dirty	12.80%	17.27%	26.94%	4.76%	8.51%	13.68%	0.88%	6.98%	23.07%
Dirty / CP	0.53%	6.96%	14.22%	2.49%	5.21%	13.74%	1.38%	8.67%	27.52%
Fixed	0.00%	0.20%	7.22%	0.00%	0.23%	4.61%	10.57%	14.68%	29.87%
2nd Round Boundaries									
	Minimum	Centroid	Maximum	Minimum	Centroid	Maximum	Minimum	Centroid	Maximum
Float	0.72%	1.18%	2.37%	0.36%	0.96%	1.37%	0.25%	3.19%	6.46%
Dirty	0.16%	0.95%	1.77%	0.33%	0.86%	1.58%	5.38%	7.86%	10.63%
Dirty / CP	0.02%	0.53%	1.05%	0.24%	0.50%	1.44%	0.35%	4.29%	7.53%
Fixed	0.00%	0.00%	0.63%	0.00%	0.00%	0.66%	5.65%	7.51%	11.02%