

## Introduction

This paper discusses the design and management of exchange rate regimes in Africa.<sup>1</sup> It starts by looking at the current landscape of exchange rate regimes in the region and comparing it to other regions of the world. It then discusses relevant considerations for the choice of exchange rate regimes in developing countries, including the optimal currency area, but also their limitations in a developing country context. The ability of countries to deliver disciplined macroeconomic policies inside or outside a currency union is an important consideration in that regard, along with political goals and the promotion of financial sector development and integration. The paper then proceeds to discuss in turn the management of flexible exchange rates, the design of exchange rate pegs and monetary integration.

## Exchange rate regimes in Africa

Exchange rate regimes in Africa reflect choices made at the time of independence as well as more recent trends in exchange rate regimes of developing countries. Original exchange rate pegs in many cases evolved over time into flexible exchange rates. That development was given a further boost by the stabilisation and liberalisation programmes in the 1980s and 1990s. Former colonies of France constitute a core group in the CFA franc zone of western and central Africa, which is composed of two currency unions with a hard external peg to the euro, underpinned by the French authorities. Three neighbouring countries of South Africa are part of the rand zone, where national currencies are

<sup>1</sup> The paper draws extensively on Masson and Pattillo (2005). See also Hawkins and Masson (2003).

exchanged at par with the rand and the rand circulates extensively inside their borders. Several countries in Africa operate pegged exchange rate regimes of the more traditional type.

The majority of countries in Africa are currently classified by the IMF as having flexible exchange rate regimes<sup>2</sup> (see Annex Table A1). The predominance of such regimes is even more noticeable if measured in terms of economic size, as such countries account for almost three quarters of the continent's GDP. Eleven African countries covering just over 13% of the continent's GDP have opted for pegged exchange rates; three of these countries have hard pegs against either the US dollar or the euro. However, it is important to bear in mind that the difference between a managed float and a peg may not be very large: countries which manage their floating rates tightly could exhibit more exchange rate stability than countries which have adopted crawling pegs or adjust their horizontal pegs rather frequently. Thus some countries in Africa that are classified as having a pegged exchange rate have significantly higher exchange rate volatility than many countries in the managed floating group (see Annex Table A1). However, exchange rate volatility measures are broadly consistent with the classification if outliers affected by war, severe internal conflicts and major instability are left out.

The remaining countries belong to monetary areas, ie they are either members of the CFA franc zone or are in an exchange rate union with South Africa through the Common Monetary Area (CMA). Both of these monetary areas combine features of different exchange rate regimes.

The CFA franc zone is made up of two currency unions, the West African Economic and Monetary Union (WAEMU) and the Central African Economic and Monetary Community (CAEMC), each with its own central bank that issues its own currency with a fixed parity to the euro. Both currencies are commonly called the CFA franc. They are, however, distinguishable and not freely interchangeable, except via the euro convertibility that is guaranteed by the French Treasury, which holds at least 65% of the pooled reserves of each area.<sup>3</sup>

The CMA is not a currency union as national currencies are issued in each of its member countries. However, these currencies are tightly

pegged to the rand through a currency board-type arrangement and exchanged at par. The rand circulates extensively in the member countries and is legal tender along with the national currencies. There is free movement of capital between the member countries of the CMA. Using accepted terminology the CMA could be labelled a formal exchange rate union.

More African countries are members of monetary areas than have a pegged exchange rate. However, the economies on a pegged exchange rate are, on average, more than twice as large, and the share of monetary area members in the continent's total GDP is therefore smaller, at just over 12%.<sup>4</sup>

How have exchange rate regimes evolved in recent years in Africa and how does the pattern compare to those of the rest of the world? African countries seem to have shown a stronger tendency than other developing countries in the last decade and a half or so to move in the direction of flexible exchange rates (see Annex Table A2). This is a reflection of the liberalisation and stabilisation efforts in many countries in the 1980s and 1990s, mentioned above. This shift has brought Africa into line with patterns in other parts of the world in terms of the number of countries on flexible exchange rates. Slightly more countries are currently members of exchange rate or currency unions in Africa than at the beginning of the 1990s, and the share of countries in such unions is clearly higher in Africa than in the rest of the world, mainly due to the existence of the CFA franc zone. However, that share would be significantly smaller if measured in terms of GDP (see above).

### Choice of exchange rate regimes in developing countries

There is a vast literature on the choice of an exchange rate regime, especially on the pros and cons of entering a currency union.<sup>5</sup> At the most basic level, the theory of optimum currency area (OCA) compares the microeconomic benefits of entering a currency union in terms of reduced transaction costs with the macroeconomic costs associated with losing the tool of independent monetary policy. These benefits and costs depend in turn on at least four factors. First, the more open a country is, the greater the potential microeconomic benefits of entering a currency union and the smaller the benefits of an independent

<sup>2</sup> The term "flexible exchange rate regime" is in this paper meant to cover what the IMF classifies as either independent or managed floating.

<sup>3</sup> Strauss-Kahn (2003) provides a comparative study of the institutional aspects of the euro area and the CFA franc zone.

<sup>4</sup> South Africa is in this comparison classified as having a floating exchange rate, whereas the other members of the CMA are classified as being in an exchange rate union.

<sup>5</sup> The classical texts being Mundell (1961), McKinnon (1963) and Kenen (1969).

monetary policy. Second, the more asymmetric the shocks hitting the potential partners, the greater the importance of the stabilisation role of independent monetary policy. Third, the higher the share of trade with the potential currency area, the greater the microeconomic benefits and, in some cases, the lower the probability of asymmetric shocks. Fourth, the higher the degree of nominal wage and price flexibility and/or labour mobility, the more these factors can compensate for the loss of the domestic exchange rate as an equilibrating factor.

It is important to bear in mind that the OCA theory in its raw form is based on significant omissions and simplifications. Furthermore, it can be argued that its applicability to developing countries is probably weaker than in the case of developed countries. The theory assumes that exchange rate flexibility is used optimally and thus overlooks problems of credibility and the misuse of monetary independence. This is, however, a crucial issue in many developing countries, especially if fiscal dominance is a problem. Countries that have less disciplined fiscal policies and more need for monetary financing will *ceteris paribus* gain more from entering a monetary union but will at the same time be less desirable partners. Thus Masson and Pattillo (2005) add fiscal asymmetry measures to the more traditional OCA criteria when assessing the net benefits of currency unions in Africa.

The OCA criteria are possibly partly endogenous in the medium to long run (see Frankel and Rose (1998)). Joining a currency union might increase trade with other union members, which in turn might lead to more symmetric business cycles. The counterargument has been made that trade integration will lead to concentration and specialisation of manufacturing industries and thus less symmetric business cycles (Bayoumi and Eichengreen (1993) and Krugman (1993)). However, empirical studies (eg Frankel and Rose (1998)) seem to indicate that trade integration is indeed associated with more correlated business cycles. This, along with the hope for enhanced financial integration, is probably one of the reasons that the political desire for monetary unions seems in many cases to be greater than warranted by the OCA criteria or other current economic conditions. However, the empirical case for this assertion can be challenged. Financial integration has, for example, progressed at a slower pace in the euro area than hoped and is to this day rather low in the CFA franc zone. Additionally, there are sometimes perfectly reasonable political reasons behind this desire,

such as the hope that regional integration will, through peer pressure, create better conditions for disciplined macroeconomic policies and improved governance, or that it will contribute to a stronger sense of regional unity.

A clear distinction should be made between two separate but connected issues in this regard. One is the optimal degree of fixity or flexibility of a given currency. The other is the question of whether to have a separate currency at all. It could be that the microeconomic benefits of a fixed exchange rate do not become really significant until the currency has been eliminated or merged with other currencies. It is only at that point that expected exchange rate flexibility goes to zero and associated risk premia in domestic interest rates disappear.<sup>6</sup> This distinction might be one of the explanations for the contradictory results of studies that show, on the one hand, that reducing exchange rate volatility does not have a significant effect on foreign trade and other real economic variables (eg Krugman (1995), Levine and Carkovic (2001) and Rogoff (1998)) but, on the other, that entering a monetary union seems to have a strong trade creation effect without significantly affecting trade with third countries (Frankel and Rose (2002)).

For small countries, issues of monetary credibility only arise in the context of a separate currency. If credibility is low and/or there is a high probability that monetary independence will be misused, a policy of a stable exchange rate (with a separate currency) can impose some discipline, even if the OCA criteria suggest that a fixed exchange rate is not optimal. This is the basis for the use of the exchange rate as a temporary anchor for disinflation in many developing countries. However, thought needs to be given to an exit strategy to a more sustainable regime, especially when capital controls are limited or are in the process of being abolished, as experience has shown that it is difficult to sustain soft exchange rate pegs without such controls. Conversely, if the OCA criteria suggest that a fixed exchange rate is optimal for a given country, a flexible exchange rate may still be needed because there is a desire to have free capital movements and options for a suitable monetary union or bilaterally supported hard pegs do not exist.

<sup>6</sup> How far the process needs to go for this to happen is an open issue. The present monetary integration of Lesotho, Namibia and Swaziland with South Africa in the CMA does not entail the abolition of national currencies, but they are exchanged at par with the rand at negligible transaction costs. Formally speaking, the rates are not irrevocably fixed. However, markets seem to assume that they are, as interest rate spreads do not appear to incorporate the possible but very low-probability event that they might be changed.

The choice of an exchange rate regime in developing countries is subject to considerations that are both economic and political, and involve current conditions as well as expected future developments and development strategies. The stage of development of financial markets is key. On the one hand, very rudimentary and underdeveloped financial markets might make it difficult to operate a floating exchange rate. This might lead countries to adopt pegs of various sorts in the early phases of market development. On the other hand, currency unions or hard pegs to a strong currency could be adopted as a way to develop financial markets through integration. However, the options that countries have for currency unions and/or hard pegs to major currencies are historically determined. No single correct time-independent answer can therefore be given on the choice of exchange rate regime. The actual choices will be affected by the stage of development of the economy and its financial markets, the external environment and the options that exist in terms of monetary unions with trading partners.

Looking forward in an African context, there are several factors that could contribute to changing the relative merits of different regimes. On the one hand, a further liberalisation of capital movements and increased volume of such flows could make pegged regimes more difficult to operate. Further deepening of financial markets might make it easier to operate flexible exchange rates. On the other hand, a further widening of the euro area and the consolidation of the euro as an international currency could increase the attractiveness of maintaining and expanding euro pegs. Finally, further economic integration at the regional level might, along with political developments, give a boost to monetary integration.

### **Managing flexible exchange rates**

There are at least three conditions for successful management of a flexible exchange rate, in terms of delivering low and stable inflation at the same time as the exchange rate works as a real shock absorber: first, the existence of a foreign exchange market with some minimum depth and efficiency; second, a domestic anchor for monetary policy; third, minimum independence and capability of the central bank in order to be able to deliver an effective monetary policy. The meeting paper

“Anchors for monetary policy” discusses the framework and operation of monetary policy, including the choice of a domestic anchor, and the paper “The relationship between the central bank and the government” discusses several aspects of central bank governance. This section discusses the first aspect and makes a brief assessment of the performance of flexible exchange rate regimes in Africa.

Most countries in Africa operate some kind of flexible exchange rate regime (see Annex Table A1). However, these are, in all but a few cases, far removed from free floats operated by major developed countries. There are anyway more countries in the managed float group (16) than in the independent float group (9) and the distinction between tightly managed floats and loose pegs may not be very large in practice. Additionally, the scope for operating so-called intermediate regimes (ie between free floats and hard pegs) is probably higher in Africa than in many other parts of the world due to a higher degree of capital controls (see Annex Table A1), low integration with world capital markets and the fact that many of the countries would probably not be on the radar screen of international market participants even if controls were lower. Using the classification in Annex Table A1, many of the countries with a flexible exchange rate have not even moved to full current account convertibility and only very few have liberalised the bulk of capital movements.

Available indicators show that the shift to flexible exchange rates on the continent has indeed taken root. Masson and Pattillo (2005) quote an average increase in a measured flexibility index before and after official switches to a flexible exchange rate. But the increase is rather small, which might indicate that the “fear of floating” is a fact in many African countries, and perhaps for good reason.

Masson and Pattillo (2005) list financial sector weaknesses as a significant problem for the operation of flexible exchange rates in many African countries. The functioning of interbank markets is in some cases impeded by the existence of only few banks. That problem is compounded if information problems or, in extreme cases, strong rivalries inhibit banks from dealing with each other. Additionally, concentration in export sectors and the extreme seasonality of export earnings can strain these markets. In some countries, problems associated with interbank markets have prompted the development of

parallel auction markets, which may increase volatility and accentuate uncertainty for market participants.

Underdeveloped financial markets might be one of several good reasons to manage floats in developing countries more tightly than in more developed and diversified economies. The extreme lumpiness of foreign exchange earnings (especially aid inflows) could also constitute another reason. But at some point, beneficial smoothing could degenerate into an excessive emphasis on exchange rate stability and thus conflict with macroeconomic goals like low and stable inflation. A related question is the role of exchange rate movements in counteracting the effects of external shocks on inflation and output. Too much exchange rate smoothing through intervention will weaken that mechanism. However, there is a real danger of significant overshooting in thin foreign exchange markets where the excess demand for or supply of foreign exchange can develop into hot potatoes and vicious spirals.

The macroeconomic performance of countries on a flexible exchange rate varies greatly from country to country, as can be seen in Annex Table A1. Some have managed to deliver relatively low inflation whereas others have not been successful in substituting a domestic monetary anchor for an external one. Over the period 1996-2005, inflation was on average significantly higher among countries with a flexible exchange rate than among countries with a pegged rate or in a currency union, even if outliers are excluded (see Annex Table A1). However, countries on a flexible exchange rate have been more successful in the more recent period in lowering inflation (see the paper "Anchors for monetary policy"). Masson and Pattillo (2005) report that the growth performance of countries with intermediate exchange rate regimes is significantly worse in sub-Saharan Africa than among countries with a pegged exchange rate, controlling for the usual factors explaining growth differences. The difference in the case of floaters was not statistically significant.

### Designing exchange rate pegs

The design of a currency peg involves two basic choices. First, what should be the reference currency? Second, what should be the nature

of the peg in terms of commitment and tightness (currency board, horizontal, crawling, fluctuation band, etc)?

It can be argued that countries with a relatively diversified trade pattern should peg to an estimate of the effective exchange rate (in practice a trade-weighted basket) rather than to a single currency. Such a basket peg will minimise the effects of movements in major international currency pairs on the internal and external macroeconomic balance of the country at the same time as it should provide the desirable intermediate target and a nominal anchor, provided that major low-inflation currencies dominate the basket. However, it might be preferable for small countries to peg to the currency of one major trading partner instead of a basket, especially if financial integration with the trading partner is an important goal. Pegging to a single major currency might also be a sensible strategy, even in the face of a diversified trade pattern, if a monetary union with that currency is the preferred exit strategy. This applies for instance to those EU accession countries that have opted for exchange rate targeting.

It is sometimes argued that single currency pegs are by their very nature firmer and more credible than basket pegs.<sup>7</sup> A bilateral peg is generally more transparent and more easily understood by the public, although the experience of some countries that have followed a basket peg over a longer period seems to suggest that market participants and the public at large will learn how it operates and will be able to monitor its execution rather closely. In any case, the credibility argument can work in both directions. It is easier for the public to monitor a bilateral peg and it is more difficult for the authorities to cheat (changing weights to follow depreciating currencies etc). In that sense it can be said to be a more credible commitment. But if a bilateral peg is clearly not optimal due to the diversity of trade, it might in the end turn out to be less credible as it will not be as resilient to shocks. The problem will be compounded if this vulnerability is perceived by market participants.

There are pros and cons of operating fluctuation bands. Furthermore, there are the issues of whether they should have hard or soft edges and whether they should be publicly announced or not, which presumably only makes sense in the case of hard edges. These issues are of course not unrelated to the nature of the peg. They do not arise

<sup>7</sup> Frankel (2003, p 26), for instance, makes this point.

in the case of currency boards or other hard pegs, as for instance that of the CFA franc zone.

Having a fluctuation band in the case of a traditional horizontal peg avoids drawing a line in the sand for markets to make one-way bets against. This is a particular concern when capital movements have been liberalised. However, with an announced hard band the problem will arise anew at the edges of the band. On the other hand, announcing the band could help in anchoring expectations, provided that the peg has credibility. There are clearly several trade-offs to be considered in this connection (one being between flexibility and credibility), and different countries have made different choices in this regard.

Thirteen countries in Africa operate pegged exchange rate regimes in addition to the CFA franc zone, which has an external peg to the euro (see Annex Table A3). Equal numbers peg to a basket, the dollar and the rand, or three each. Two countries peg to the euro (in addition to the countries of the CFA franc zone). The remaining two are pegged to the SDR (Libyan Arab Jamahiriya) and the real effective exchange rate (Tunisia), which implies a crawling peg in nominal terms. The two currency unions (CFA and CMA) will be discussed in the next section. Of the other countries operating a peg, three very small ones operate currency boards against the USD (Djibouti) or hard pegs against the euro (Cape Verde, supported by Portugal, and Comoros). None of the countries with a pegged exchange rate has an official fluctuation band around an announced central rate except Guinea, which has  $\pm 15\%$  fluctuation band. However, Nigeria successfully operated a  $\pm 3\%$  fluctuation band in 2005 within the framework of its managed float.

Excluding Zimbabwe, the countries on a pegged exchange rate in Africa (see Annex Table A1) have performed reasonably well and have had on average a lower inflation rate during the last 10 years than all other groups, except the CFA franc zone. The case of Botswana is interesting. It broke ranks with other members of the rand zone in 1976 and established an adjustable peg regime, first to the dollar and later to a basket composed of the rand (70%) and the SDR (30%). The first adjustment in the peg was a 5% revaluation. Over the past 10 years its inflation rate was slightly above that of South Africa but lower than that of the other members of the rand zone. However, its growth rate was

significantly higher. Masson and Pattillo (2005) attribute the relative success of Botswana to the maintenance of fiscal discipline underpinned by tax revenues from exports of diamonds, a liberalised exchange control system, and some degree of central bank independence and occasional adjustment of the exchange rate in order to maintain competitiveness and/or keep inflation in check.<sup>8</sup>

## Monetary integration

The existing forms of monetary integration in Africa have a long history. The two currency unions of the CFA franc zone go back to 1959 in their current forms and the rand zone has existed since the independence of South Africa's neighbours in the late 1960s. There is thus significant experience on which to build an assessment.

When assessing the CFA franc zone, it is important to bear in mind that it is composed of two elements, ie the internal currency union and the bilateral hard peg to the euro (previously, to the French franc). Some studies indicate that these unions are on the whole beneficial to zone members.<sup>9</sup> Studies further indicate that they have promoted internal trade but that financial integration remains low. The unions have been successful in delivering low inflation, probably mostly due to the external peg. However, this did not prevent a bank crisis. Nor did it prevent a serious overvaluation of the real exchange rate due to undisciplined fiscal policies and occasional monetisation of fiscal deficits. Lack of fiscal discipline along with a long period of deteriorating terms of trade and real effective exchange rate appreciation (partly due to the French franc's appreciation against the US dollar in the late 1980s and early 1990s) had serious adverse consequences for growth. The 50% devaluation of the CFA franc against the French franc in 1994 did, however, revive growth while avoiding significant inflation. A prohibition of direct monetary financing of government deficits and convergence criteria and surveillance of macroeconomic policies were also introduced in order to prevent similar misalignments arising in the future.

The experience of the CMA is also somewhat mixed. On the one hand, the South African Reserve Bank has probably the highest degree of central bank independence in Africa, and since adopting an inflation

<sup>8</sup> See also Masalila and Motshidisi (2003) on Botswana's exchange rate policy.

<sup>9</sup> For instance, Masson and Pattillo (2005, pp 103-107) find that, taking into account monetary externality, fiscal asymmetry and shock asymmetry, all members of WAEMU would suffer a welfare loss if they were to leave the union.

target it has been increasingly successful in delivering low inflation. On the other hand, the small members of CMA have experienced adverse effects on their macroeconomic balance and competitiveness due to significant swings in the rand vis-à-vis major currencies.<sup>10</sup> Botswana was able to avoid such adverse effects by leaving the rand zone in 1976 without paying a significant price in terms of monetary stability. However, it is not clear that the political economy of the other members of CMA would deliver the same results if they were to follow such a course.

There are currently several overlapping plans for monetary integration in Africa. Some of these plans seem to be driven more by desire than realism, and completion dates have in several instances been postponed. No doubt these plans are driven by worthwhile goals of imposition of external discipline on macroeconomic policies, promotion of economic and financial integration, and more regional and even pan-African political unity.<sup>11</sup> But the link of those with a monetary union is not always as clear cut as sometimes presumed. On the one hand, there is evidence from the CFA franc zone and other currency unions that they promote trade inside the union. Furthermore, there are several cases in history where sharing the same currency promoted financial integration. On the other hand, financial integration among members of the CFA franc zone is still at a relatively low level and the experience in the euro area has been disappointing to many. In Europe, economic and financial integration had progressed significantly before a common currency came into existence. Finally, the verdict on macroeconomic policies is mixed. Based on the experience of the CFA franc zone, Masson and Pattillo (2005) argue that monetary unions will not automatically provide a disciplinary effect on fiscal policies.

The proposed monetary union of the West African Monetary Zone (WAMZ)<sup>12</sup> is an interesting example. It is, in terms of planned completion date, next in line in Africa. It is currently scheduled to take place by December 2009, but earlier completion dates (2002 and 2005) were not met, partly due to the lack of economic convergence. The WAMZ monetary union is supposed to be a stepping stone to a monetary union of all member countries of the Economic Community of West African States (ECOWAS) (including both the current WAEMU of the CFA franc zone and WAMZ). Studies seem to indicate that both WAMZ and full ECOWAS monetary union will face problems due to

<sup>10</sup> Foulo (2003) and van Zyl (2003) discuss the case of the CMA from the perspective of, respectively, Lesotho and South Africa.

<sup>11</sup> European monetary union was motivated by the perception that exchange rate volatility would be detrimental to the single market at the same time as free capital movements made pegged exchange rate regimes inoperable. In the case of Africa, institution building and external restraint on macroeconomic policies seem to be more important as motivation.

<sup>12</sup> Gambia, Ghana, Guinea, Nigeria and Sierra Leone.

asymmetric shocks. Additionally, should Nigeria's past lack of macroeconomic discipline continue, then its relatively large size would constitute a problem for both unions (Bénassy-Quéré and Coupet (2005) and Masson and Pattillo (2005)). The formation of such a union would anyway raise interesting issues concerning the potential expansion of the current WAEMU link to the euro to a wider area or the adoption of an alternative nominal anchor.<sup>13</sup>

A single currency for Africa has been a long-standing goal of African unity. The latest plan is part of the 1991 treaty establishing the African Economic Community (AEC). It envisages the creation of an African central bank and a single African currency at the latest by 2028. The road to that goal is supposed to be through the creation of regional economic communities, forming customs and currency unions that would then be progressively integrated. This could be seen as an ambitious goal given that Africa is, at present, very far from being an optimal currency area and the level of trade integration and labour mobility is low. Shocks tend to be asymmetric as exports of individual countries tend to be dominated by a few commodities whose prices move differently. Fiscal transfers are non-existent. Furthermore, existing areas of monetary integration have not expanded in recent decades. This goal is therefore probably to be seen as a political leitmotiv expressing some of the desires for economic integration and external discipline on macroeconomic policies discussed in the section above on the choice of exchange rate regimes. However, further progress in African economic and financial integration might, sometime in the distant future, lead to one or more African monetary unions.

<sup>13</sup> See Ojo (2003) and Ebi (2003) on the experience of and future plans for monetary integration in West Africa.

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## Exchange rate regimes in Africa in 2004, by country

Countries grouped by IMF classification 2004	Currency	IMF classification, 1991 <sup>1</sup>	Convertibility <sup>5</sup>	Inflation (%) (1996-2005)	GDP growth (%) (1996-2005)	Exchange rate volatility, <sup>6</sup> 2002-05 to the USD	to the EUR	NEER <sup>9</sup>
<b>Independent floating</b>								
Congo, Dem Rep of	New zaire	FP	2	208.5	0.1	6.8	7.6	N/A
Liberia	Liberian dollar	FP	1			9.4	9.9	N/A
Madagascar	Malagasy franc	MF	2	8.7	3.5	7.8	7.3	N/A
Malawi	Kwacha	FP	2	24.3	2.8	5.6	6.1	13.3
Sierra Leone	Leone	IF	2	13.1	2.1	3.8	5.8	7.6
Somalia	Somali shilling	MF	1			N/A	N/A	N/A
South Africa	Rand	IF	2	6.2	2.7	6.7	6.5	N/A
Tanzania	Tanzanian shilling	FP	2	8.7	5.4	3.9	5.3	N/A
Uganda	Ugandan shilling	FP	4	4.0	6	4.5	6.0	8
<i>Simple average</i>				12.0 <sup>2</sup>	4.5	6.1	6.8	N/A
<b>Managed floating</b>								
Algeria	Algerian dinar	FP	2	5.0	3.8	3.8	5.5	8.4
Angola	New kwanza	FP	1	548.1	8	6.3	7.3	12
Burundi	Burundi franc	FP	1	13.3	0.4	6.3	7.0	N/A
Egypt	Egyptian pound	MF	1	4.4	4.5	6.2	7.1	N/A
Ethiopia	Birr	FP	1	2.7	4.8	0.6	5.4	N/A
Gambia	Dalasi	IF	4	6.5	5.1	5.7	6.7	10.3
Ghana	Cedi	IF	2	21.8	4.6	2.7	5.6	5.8
Kenya	Kenyan shilling	FP	2	7.3	1.9	4.2	5.2	N/A
Mauritania	Ouguiya	MF	2	5.0	4.5	3.0	5.3	N/A
Mauritius	Mauritian rupee	FP	3	5.6	4.9	4.6	5.1	N/A
Mozambique	Metical	MF	1	12.7	8.3	6.3	6.5	N/A
Nigeria	Naira	IF	1	13.5	4.2	4.0	6.0	7.7
Rwanda	Rwanda franc	FP	2	5.7	7.8	3.8	5.7	N/A
Sao Tomé and Príncipe	Dobra	MF	1	23.4	3.6	2.2	5.2	N/A
Sudan	Sudanese pound	FP	2	25.4	6.7	2.4	5.5	N/A
Zambia	Kwacha	MF	4	24.6	3.5	8.0	8.5	10.1
<i>Simple average</i>				11.8 <sup>3</sup>	4.8	4.4	6.1	N/A

<sup>1</sup> IF = independent float; MF = managed float; FP = fix peg.

<sup>2</sup> Excluding Congo, Democratic Republic.

<sup>3</sup> Excluding Angola.

<sup>4</sup> Currency board.

<sup>5</sup> 1 = Article VIII of the IMF agreement does not apply; 2 = Article VIII applies but capital movement controls are in place;

3 = current account convertibility and partial freedom of capital movement; 4 = current account convertibility and free capital movements.

<sup>6</sup> Calculated as annualised standard deviation of monthly percentage change.

<sup>7</sup> Excluding Zimbabwe.

<sup>8</sup> Crawling peg.

<sup>9</sup> Nominal effective exchange rate.

## Exchange rate regimes in Africa in 2004, by country

Countries grouped by IMF classification 2004	Currency	IMF classification, 1991 <sup>1</sup>	Convertibility <sup>5</sup>	Inflation (%) (1996-2005)	GDP growth (%) (1996-2005)	Exchange rate volatility, <sup>6</sup> 2002-05 to the USD	to the EUR	NEER <sup>9</sup>
<b>Pegged</b>								
Botswana	Pula	FP	3	6.9	5.4	6.7	6.1	N/A
Cape Verde	Cape verde escudo	FP	1	3.0	6.7	5.3	-	N/A
Comoros	Comoro franc	FP	2	4.0	2	5.3	-	N/A
Djibouti <sup>4</sup>	Djibouti franc	FP	2	2.1	1.5	-	5.4	N/A
Eritrea	Nakfa		1	14.8	2.1	2.6	5.5	N/A
Guinea	Guinea franc	MF	2	7.3	3.7	6.2	6.3	N/A
Libyan Arab Jamahiriya	Libyan dinar	FP	2			5.8	5.9	N/A
Morocco	Dirham	FP	2	1.8	4.1	4.8	2.5	2.2
Seychelles	Seychelles rupee	FP	3	3.7	2.3	4.2	5.3	N/A
Tunisia <sup>8</sup>	Tunisian dinar	MF	2	3.0	5.1	4.4	3.2	3.8
Zimbabwe	Zimbabwe dollar	FP	2	163.5	-2.7	50.7	50.8	N/A
<i>Simple average</i>				5.2 <sup>7</sup>	3.0	8.7	8.3	N/A
<b>Exchange rate and currency unions</b>								
<b>CMA</b>								
Lesotho	Loti	FP	2	7.7	3	6.7	6.5	12.2
Namibia	Namibian dollar	IF	2	8	3.3	6.7	6.5	N/A
Swaziland	Lilangeni	FP	2	7.7	2.7	6.7	6.5	N/A
<i>Simple average</i>				7.8	3.0	6.7	6.5	N/A
<b>WAEMU</b>								
Benin	CFA franc	FP	2	3.3	5.1	5.3	-	N/A
Burkina Faso	CFA franc	FP	2	2.5	6	5.3	-	N/A
Cote d'Ivoire	CFA franc	FP	2	2.9	1.9	5.3	-	3.2
Guinea-Bissau	CFA franc	MF	2	13.0	-0.3	5.3	-	N/A
Mali	CFA franc	FP	2	2.3	5.3	5.3	-	N/A
Niger	CFA franc	FP	2	2.1	3.8	5.3	-	N/A
Senegal	CFA franc	FP	2	1.6	4.6	5.3	-	N/A
Togo	CFA franc	FP	2	2.4	2.2	5.3	-	3
<i>Simple average</i>				3.8	3.6	5.3	-	N/A
<b>CEMAC</b>								
Cameroon	CFA franc	FP	2	2.8	5	5.3	-	3.2
Central African Rep	CFA franc		2	1.9	0.8	5.3	-	2.8
Chad	CFA franc	FP	2	3.0	8.7	5.3	-	N/A
Congo, Rep of	CFA franc	FP	2	3.5	3.6	5.3	-	N/A
Equatorial Guinea	CFA franc	FP	2	6.3	31.4	5.3	-	2.3
Gabon	CFA franc	FP	2	1.9	0.9	5.3	-	2.8
<i>Simple average</i>				3.2	8.4	5.3	-	N/A

Sources: IMF, *Annual report on exchange arrangements and exchange restrictions*; IMF, *International financial statistics*; author's calculations.

**Distribution of exchange rate regimes by country<sup>1</sup>**

	<i>Africa</i>		<i>All developing</i>		<i>All countries</i>	
	1991	2004	1991	2004	1991	2004
Flexible <sup>2</sup>	26.9	47.2	34.8	46.5	34	45.2
Pegs:	44.2	18.9	54.0	42.1	56.6	38.2
Currency boards	1.9	1.9	1.5	4.4	1.3	3.8
Other <sup>3</sup>	42.3	17	52.6	37.7	55.3	34.4
Currency unions	28.8	34	11.1	11.3	9.4	16.7
<i>Memo: number of countries</i>	52	53	135	159	159	186

<sup>1</sup> End of period, as a percentage of countries in each category.

<sup>2</sup> Independently and other managed floating regimes.

<sup>3</sup> Composed of regimes with conventional fixed peg to a single currency or to a basket, peg within a horizontal band, crawling peg and crawling band.

Sources: IMF, *Annual report on exchange arrangements and exchange restrictions*; author's calculations.

**Pegged regimes in Africa, 2004**

Country/area	Currency	Reference currency	Official fluctuation band
Botswana	Pula	Basket <sup>1</sup>	No
Cape Verde	Cape verde escudo	Euro	No
Comoros	Comoro franc	Euro	No
Djibouti	Djibouti franc	USD	No
Eritrea	Nakfa	USD	No
Guinea	Guinea franc	USD	± 15%
Lesotho	Loti	Rand	No
Libyan Arab Jamahiriya	Libyan dinar	SDR	No
Morocco	Dirham	Basket	No
Namibia	Namibian dollar	Rand	No
Seychelles	Seychelles rupee	Basket	No
Swaziland	Lilangeni	Rand	No
Tunisia	Tunisian dinar	REER	No
WAEMU/CEMAC	CFA franc	Euro	No

<sup>1</sup> 30% SDR, 70% rand.

Sources: IMF, *Annual report on exchange arrangements and exchange restrictions*; author's calculations.

**Central banks and the challenge of development**

A special meeting of Governors at the BIS  
on Tuesday 14 and Wednesday 15 March 2006  
List of participants



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Tiémoko Meyliet Kone  
Linah Mohohlo  
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