

# CAHIER D'ÉTUDES WORKING PAPER

N° 16

## CAPE VERDE'S EXCHANGE RATE POLICY AND ITS ALTERNATIVES

Romain Weber

October 2005



BANQUE CENTRALE DU LUXEMBOURG

EUROSYSTEM

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# CAPE VERDE'S EXCHANGE RATE POLICY AND ITS ALTERNATIVES

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## **Abstract**

This paper analyses Cape Verde's exchange rate policy and investigates whether viable alternatives exist. Cape Verde currently operates a fixed exchange rate regime which, since 1999, links the national currency to the euro. The fixed exchange rate has many benefits, but authorities have to leave interest rates high in order to attract foreign capital, which has inhibited private investment and economic growth; the appreciation of the euro in 2002 and 2003 put the fixed exchange rate under additional strain. This issue is addressed by contemplating whether interest rates can be reduced in the context of the current exchange rate regime, and what costs and benefits are associated with a regime change that enables a reduction in interest rates. The analysis strongly suggests that it is not so much the exchange rate regime that is to blame for high interest rates, but rather a structural problem in the banking sector. Consequently, the policy conclusion reached in this paper is that although changing the current exchange rate policy might reduce interest rates, structural reforms would be more appropriate to tackle the problem at hand.

Keywords: Cape Verde, exchange rates, interest rates, central banks and monetary policy, remittances, modern asset market model

JEL codes: O55, F31, E40, E58

## Résumé non-technique

### La politique de change actuelle du Cap-Vert et ses alternatives

Cette étude présente une analyse de la politique de change actuelle du Cap-Vert et cherche à déterminer si des alternatives viables existent. Le Cap-Vert a adopté un régime de change fixe et l'escudo capverdien (CVE) est lié à l'euro au taux officiel de EUR 1.00 = CVE 110.27 depuis 1999. Ce régime de change a un grand nombre d'avantages ; mais il existe aussi des inconvénients, notamment le niveau élevé des taux d'intérêt requis pour attirer les capitaux étrangers nécessaires qui induit un effet adverse sur l'investissement et la croissance économique. L'appréciation de l'euro en 2002 et 2003 a en plus exercé des pressions supplémentaires sur le régime de change actuel. Cet article examine donc la problématique du régime de change au Cap-Vert et considère si les taux peuvent être réduits dans le cadre du régime de change fixe existant ; les avantages et inconvénients des politiques et régimes de change alternatifs sont ensuite dûment évalués.

Le passage en revue de la situation économique au Cap-Vert dévoile une performance économique impressionnante qui s'inscrit dans le cadre d'un déficit structurel du compte courant en partie mitigé par l'afflux des transferts des émigrés. Concernant la répartition géographique de ces transferts, une partie importante (75% en 2004) émane de la zone euro, en ligne avec la répartition géographique des importations dont une grande partie (77% en 2004) provient également de la zone euro. Ce degré d'intégration a eu un effet modérateur sur l'évolution des prix au Cap-Vert : depuis que l'escudo capverdien a été fixé à l'euro, l'inflation et la volatilité des prix ont diminué considérablement. En dépit des progrès réalisés sur le plan économique, c'est la politique budgétaire et son impact sur les réserves de change qui risquent d'avoir des effets néfastes sur la politique de change de la Banque du Cap-Vert (BCV). Or, malgré l'augmentation considérable des réserves de change depuis 1999, l'économie capverdienne demeure vulnérable aux déficits fiscaux, tel que le montre la diminution des réserves de change de la BCV à la suite de la détérioration de la situation budgétaire en 2000.

La politique de change courante est examinée en appliquant une approche contemporaine fondée sur la théorie de la parité des taux d'intérêt. Le modèle en question permet d'illustrer la politique de change actuelle et d'en expliquer les avantages et inconvénients, notamment en vue d'une politique de change alternative qui permettrait de baisser les taux d'intérêt ; l'analyse économétrique est également fondée sur ce modèle et confirme l'importance des taux d'intérêt et des réformes introduites par les autorités pour attirer les transferts des émigrés. Néanmoins, l'étude menée fait apparaître un problème de caractère micro- plutôt que macro-économique : le niveau élevé des taux est en grande partie attribuable à la structure du secteur bancaire capverdien qui ne compte que quelques banques dont une en particulier qui contrôle une part de marché fort importante.

Compte tenu de ce problème structurel dans le secteur bancaire, l'étude pose ensuite la question du choix du régime de change alternatif. Les régimes flottants sont exclus sur base de l'analyse économique précédente : un régime flottant augmenterait la volatilité du taux de change et compromettrait la stabilité des prix. Les régimes intermédiaires, comme par exemple les régimes ajustables, sont également exclus comme alternatives puisqu'ils peuvent conduire à une succession de dévaluations, augmentant ainsi la prime de risque sur la devise capverdienne ainsi que la valeur de la dette libellée en devises étrangères. Les avantages et inconvénients des caisses d'émission sont ensuite élaborés. Une caisse d'émission enlève la politique monétaire des mains des autorités, tout en fixant un taux de change officiel. Bien qu'un tel régime de change conduise souvent à une

réduction des taux d'intérêt et de l'inflation, il enlève néanmoins un instrument important d'ajustement en cas d'un choc macroéconomique ; de plus, ce régime enlève aussi l'option d'un prêteur en dernier ressort. L'euroisation - un régime de change où l'euro se substitue à la devise nationale - apporte des gains d'échange, réduit l'inflation et les taux en important la politique monétaire de la zone euro mais enlève à nouveau un instrument d'ajustement et l'option d'un prêteur en dernier ressort, tout comme pour les caisses d'émission ; de plus, les estimations de la perte de seignuriage liée à l'euroisation dévoilent que les coûts qui en résultent ne sont pas négligeables. Il convient finalement de noter que les caisses d'émission et l'euroisation n'arriveraient sans doute pas à corriger le manque d'efficacité du secteur bancaire qui est une cause majeure du niveau élevé des taux d'intérêt.

L'étude aboutit donc à la conclusion qu'un régime de change alternatif ne réduirait pas considérablement les taux d'intérêt, bien qu'il puisse présenter d'autres avantages ; il faut toutefois se poser la question si un régime de change alternatif est la solution requise pour aboutir à une baisse des taux, compte tenu des inconvénients cités et des déficiences structurelles du secteur bancaire. Les mesures structurelles destinées à corriger ces déficiences au niveau micro-économique seraient sans doute plus efficaces.

## 1. Introduction

Cape Verde is made up of ten islands off the coast of Senegal. This small, open and insulated economy conducts the bulk of its trade with the euro zone; perennial droughts and desertification make the country heavily dependent on food imports which, coupled with a poor natural resource base, is the cause of systematic trade deficits primarily financed through donor aid, foreign borrowing and emigrants' remittances. In view of this, the Cape Verde escudo (CVE) has been pegged to the euro at 110.27 CVE since January 1999.

The peg, which is a hard peg without bands, protects the economy against excessive exchange rate movements which could hamper trade and exacerbate current account problems. Moreover, the exchange rate peg constitutes a nominal anchor to a low-inflation trading partner's currency, which keeps domestic inflation under control. An added benefit of the peg is that it has reduced uncertainty and increased investor confidence.

The sliding dollar in 2002 and 2003 had a damaging effect on the economy, not the least because it reduced remittances from US emigrants on which many Cape Verdeans still depend. It is estimated that the Cape Verdean diaspora is larger than the actual population, and the emigrant community is a key element of the country's economy. Moreover, although just a fifth of remittances are from the United States, US dollars still make up a sizeable share of Cape Verde's reserve portfolio. External creditors are mostly multilateral agencies - the International Development Association (IDA) and the African Development Fund (AfDF) are the two largest creditors - which tend to grant dollar-denominated loans,<sup>1</sup> and the weak dollar has made intervention in currency markets in the framework of a hard peg to the euro a costly issue.

With the appreciation of the euro, the peg has come under increasing pressure and the Cape Verde escudo has faced devaluation. Although the peg has been maintained through an appropriate interest rate policy, in the context of a rebuilding of foreign reserves, the rise in the real rate of interest has inhibited private investment and economic growth. It is thus imperative to reduce the cost of borrowing; the challenge is to do this without endangering the fixed exchange rate regime: a cut in the refinancing rate will reduce lending rates and hence the cost of borrowing, but it will also lower deposit rates and thereby reduce capital inflows which are vital to the sustainability of the hard peg and the financing of the structural trade deficit. Moreover, the Cape Verdean banking sector is subject to structural deficiencies which have resulted in high loan-deposit spreads; this reduces the efficiency of the central bank's monetary policy.

This paper explores the various policy scenarios available to Cape Verdean authorities in this context. The choice of an adequate exchange rate policy is of course dependent on the defining facets of a country's economy; Section 2 therefore presents the Cape Verdean economy, such that the ensuing material can be put into context. Section 3 proceeds from the assumption that the current (fixed) exchange rate regime is appropriate, and considers how interest rates might be brought down without resorting to a regime change; the discussion is formalised by deriving and applying a simple model which has a mathematical and diagrammatical interpretation. Section 4 removes this assumption and investigates what the costs and benefits of a regime change are, and whether abandoning the current regime would in fact reduce interest rates. Lastly, Section 5 concludes this paper.

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<sup>1</sup> Data on the denomination of external debt were not available.

## 2. The Cape Verdean economy

Since its independence from Portugal on July 5 1975, Cape Verde has made substantial progress in liberalising the economy and creating a more stable economic environment. This chapter begins to set the stage with an overview of the Cape Verdean economy; the analysis focuses on recent economic developments, with emphasis on the time period that follows the introduction of the euro, and the pegging of the Cape Verde escudo to the single currency, on January 1 1999.

Section 2.1 reviews and assesses main economic and financial indicators. Section 2.2 focuses on the external economy. The next section, Section 2.3, discusses the peg's *raison d'être* and its achievements up-to-date. Finally, Section 2.4 concludes.

### 2.1 Main indicators

Table 1 lists economic and financial indicators for the period 1999 - 2004; in this period, Cape Verde has enjoyed high economic growth, low inflation and generally favourable macroeconomic conditions.

**Table 1 - Economic and financial indicators, 1999 - 2004**

	1999	2000	2001	2002	2003	2004
<b>Income<sup>1</sup></b>						
Nominal GDP, mn EUR	542	585	640	685	746	748
Real GDP, % change	8.9%	7.3%	6.2%	5.0%	5.3%	4.5%
Real GDP per capita, % change	7.1%	3.8%	4.3%	3.1%	3.4%	2.7%
<b>Prices, money, banking<sup>2</sup></b>						
CPI, % change	4.4%	-2.4%	3.8%	1.8%	1.2%	-1.9%
Broad money (M2), end-of-period, % change	15.2%	13.3%	9.9%	14.4%	8.6%	10.5%
International reserves, end-of-period, mn EUR	41.8	29.2	50.3	75.6	74.1	102.4
International reserves, in months of imports	1.5	1	1.5	2	1.8	2.6
Refinance rate, yearly average	9.2%	8.5%	11.0%	10.5%	8.5%	8.5%
<b>Public finance<sup>3</sup></b>						
	<i>% of GDP</i>					
Total revenue incl. grants	30.4%	26.3%	25.5%	30.4%	26.6%	29.1%
Total expenditure	39.1%	45.1%	31.4%	33.0%	29.9%	30.9%
Overall balance excl. grants	-16.1%	-24.5%	-10.0%	-10.9%	-8.6%	-8.5%
Total grants	7.4%	5.6%	4.1%	8.4%	5.3%	6.7%
Internal debt incl. <i>TCMFs</i>	41.4%	48.9%	44.9%	45.8%	42.5%	-
External debt excl. arrears	50.8%	54.1%	58.9%	59.5%	56.6%	53.1%
<b>External sector<sup>4</sup></b>						
	<i>mn euros unless otherwise indicated</i>					
Exports of goods & non-factor services, FOB	123.3	158.7	186.4	206.0	244.3	241.7
Imports of goods & non-factor services, FOB	333.6	354.2	391.8	445.7	483.5	473.4
Export-import ratio	37.0%	44.8%	47.6%	46.2%	50.5%	51.1%
Current account incl. transfers	-69.8	-61.2	-62.8	-75.4	-68.1	-46.2
Current account deficit, % of GDP	-12.9%	-10.5%	-9.8%	-11.0%	-9.1%	-6.2%
Real effective exchange rate, % change	1.1%	-5.8%	-3.7%	2.4%	2.4%	-3.5%
CVE per one USD, annual average	102.7	115.9	123.2	117.3	97.8	88.75
Degree of openness ((X+M)/(2*GDP))	42.1%	43.8%	45.2%	47.6%	48.8%	47.8%

Source: <sup>1</sup>1999-2003 (IMF 2005f), 2004 preliminary (IMF, 2005g); <sup>2</sup>BCV, author's own calculations; <sup>3</sup>BCV, author's own calculations, debt data (IMF, 2005f) except 2004 projection (IMF, 2005g); <sup>4</sup>BCV, author's own calculations, 2004 BOP-related data preliminary (IMF, 2005g) and non-consolidated

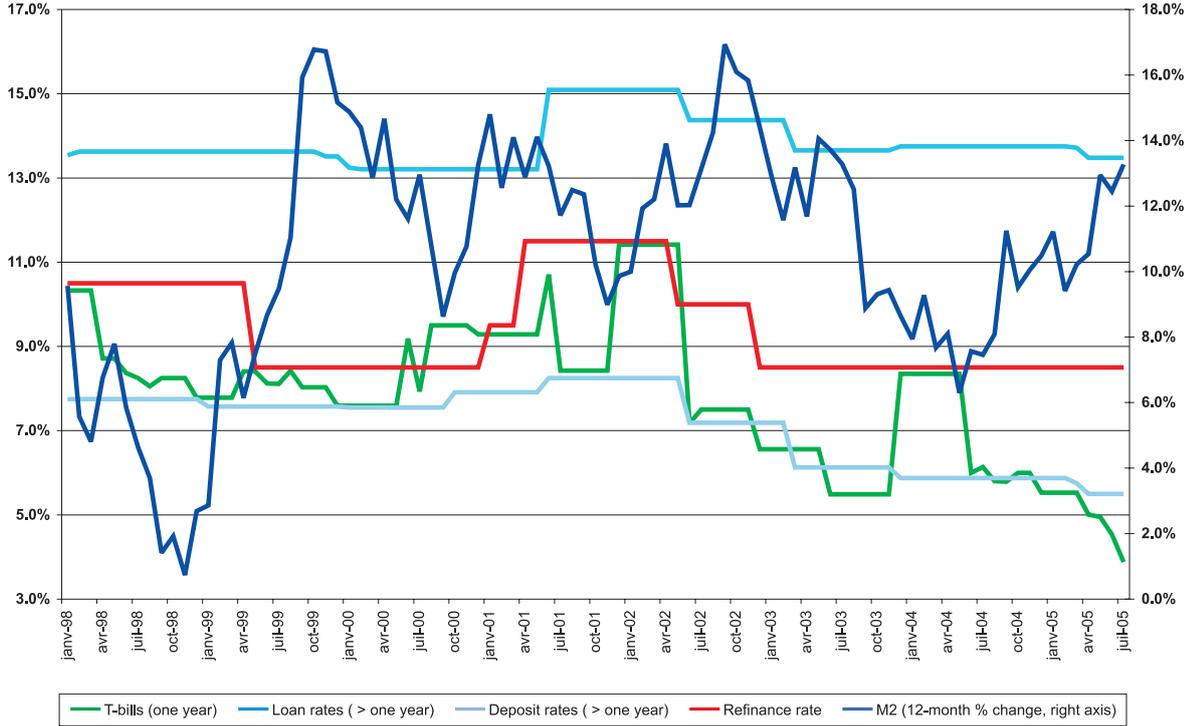
Since 1999, there has been a steady increase in income, both in absolute and in per capita terms; real gross domestic product (GDP) grew by a remarkable 8.9% in 1999, though in 2004 the real growth rate fell to a still impressive 4.5%.

Inflation, as measured by the average annual percentage change in the consumer price index (CPI), has fallen sharply, from 4.4% in 1999 to 1.2% in 2003; in 2000 and 2004, inflation was negative.<sup>2</sup> Broad money growth was between 8.6% and 15.2% for the period 1999-2004 and the main

<sup>2</sup> Further discussion of price developments is postponed to Section 2.3.

reference rate, currently at 8.5%, has returned to its May 1999 level. In Figure 1 below, commercial interest rate developments appear to be much more closely linked to the refinance rate than to changes in broad money (right axis), which were particularly steep in 1999 and 2002. Loan and deposit rates with maturities above one year reflect, albeit at times with some delay, stepwise changes to the main refinance rate in 2001 and 2002. T-bills are somewhat more volatile, though the drop in the refinance rate in 2002 caused the rate of interest to fall quite irrespective of broad money changes; more recently, T-bills plunged in line with an acceleration in monetary growth.

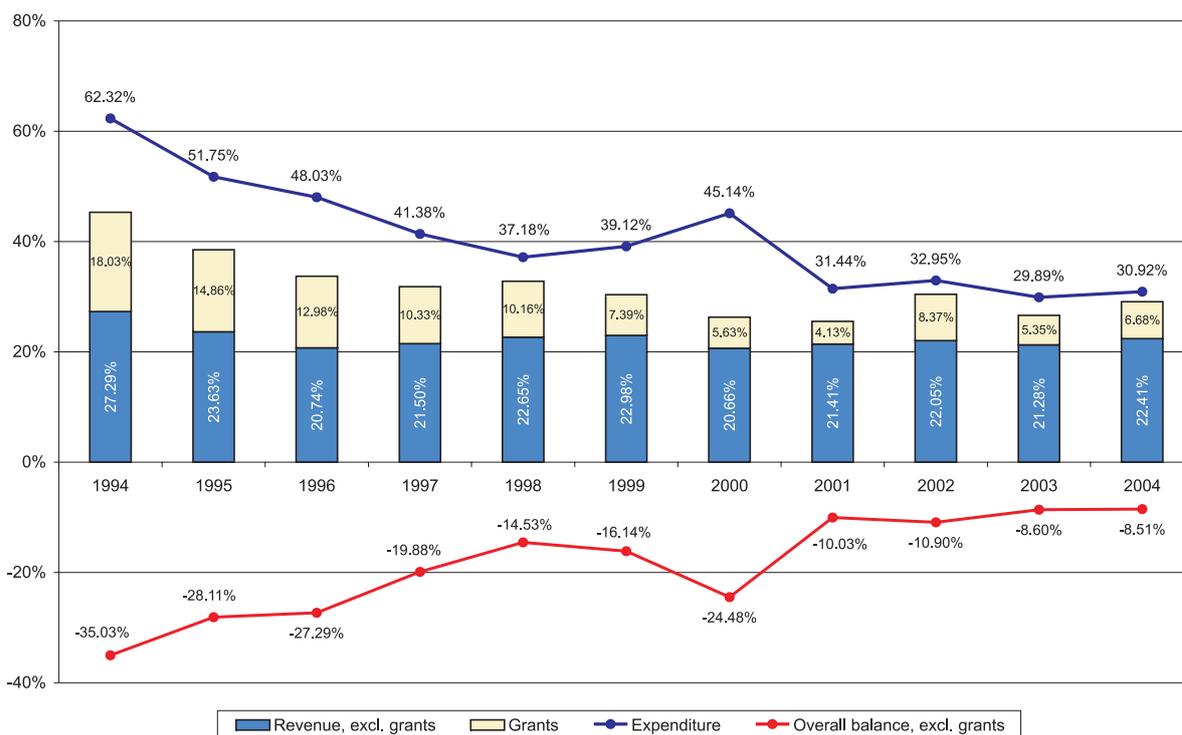
**Figure 1 - Broad money and interest rates, 1998 - 2005**



Source: BCV; author's own calculations

The performance of public finances has been mixed and was especially bad in 2000. Figure 2 traces the government's fiscal stance over time.

**Figure 2 - The evolution of public finances, % of GDP, 1994 - 2004**



Source: BCV, IMF; author's own calculations

The diagram nicely illustrates the relationship between total expenditure and the overall fiscal deficit: with revenue relatively constant between 20.66 and 23.63 percent (1994 is an outlier in the period under consideration), changes in expenditure are the main determinant of the fiscal stance. Up to 1998, both expenditure and the overall fiscal deficit fell considerably, only to reach over 45 and 24 percent of GDP respectively in 2000. The underlying reason was the 1998/99 drought, but also fiscal slippages in the run-up to legislative and presidential elections in early-2001 (IMF, 2001).<sup>3</sup> There has been a sharp reduction in government expenditure after 2000, and the fiscal deficit in 2004 was lower than any other year since 1994; the introduction of a value added tax in 2004 should boost revenue further in the near future.<sup>4</sup>

Fiscal deficits are especially pernicious if the government resorts to non-concessional lending such as bank-lending, which can quickly lead to excessive money creation. In the late nineteen-nineties, domestic debt reached astronomical proportions; in 1998, the Domestic Debt Reduction Operation (DDRO) was designed to tackle this problem. In essence, the DDRO aimed at reducing domestic debt through a privatisation programme. However, in order to avoid inflationary pressures in the economy through the injection of disproportionate liquidity, privatisation proceeds must be transferred to an offshore Trust Fund which issues and services securities (called TCMFs) which would gradually replace domestic debt, up to the point where all debt has been phased out; the government is to buy back the TCMFs over a 20-year period.

The domestic debt burden has increased since 1999, from 24 714 CVE (41.4% of GDP) to 34 959 CVE (42.5% of GDP) in 2003. Consequently, the percentage share of TCMFs in domestic debt has gone down, from 45.3% in 1999 to 32.0% in 2003; this is largely due to a sudden rise in domestic debt in 2000 to 48.9 percent of GDP.

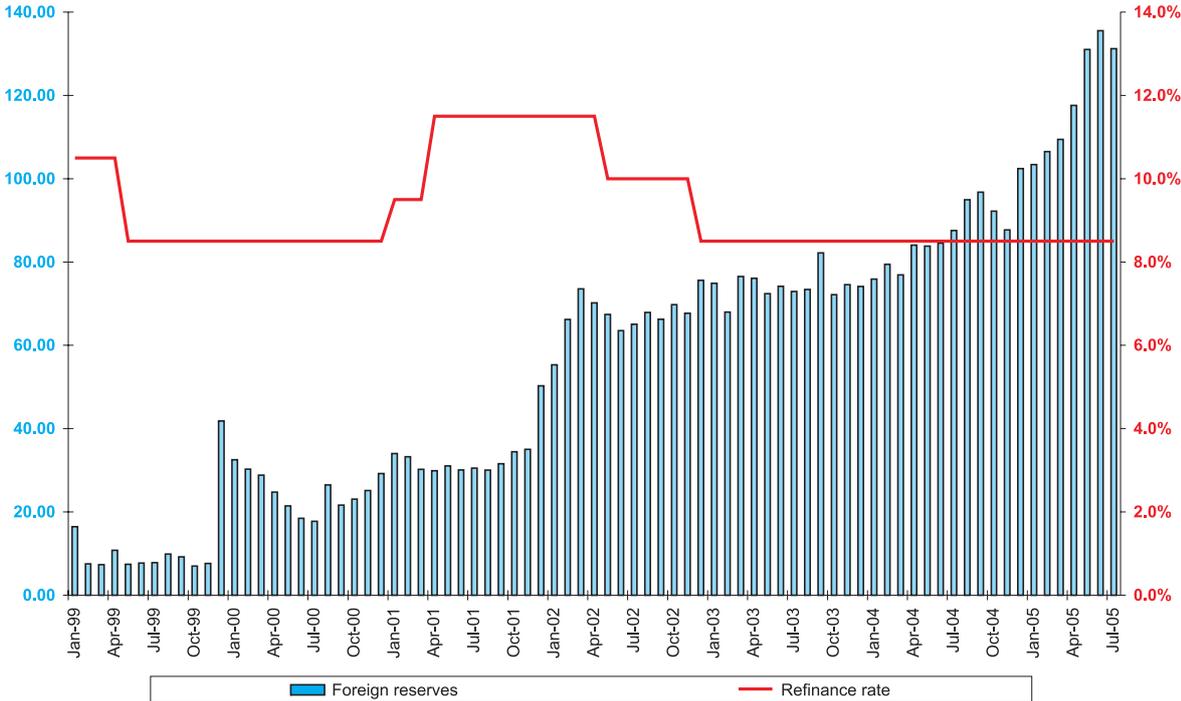
<sup>3</sup> The IMF also cited potential fiscal slippages arising from the municipal elections in early 2004 as one of the main medium-term risks to the economy (IMF, 2003d).

<sup>4</sup> Also note the IMF (2003j, p.4) comment concerning the non-observance of several performance criteria in 2003 due to an expansion in credit to government, the BCV's net domestic assets and net international reserves, caused by a revenue shortfall.

External debt, though higher than in 1999, has increased more moderately lately and in 2003 stood at 56.6% of GDP.<sup>5</sup> 73.8% of total external debt was from multilateral creditors, of which the IDA and the AfDF held 50.2 and 30.9 percent respectively.

Foreign reserves have risen and fallen with the government's fiscal stance but there has been a strong and gradual build-up of reserves since 2001. In the context of a fixed exchange rate regime, the economy's level of foreign reserves - which can be drawn on for direct support of the exchange rate - constitutes an important vulnerability indicator; Figure 3 below graphs the evolution of foreign reserves from January 1999 to July 2005.

**Figure 3 - The evolution of foreign reserves, EUR mn, 1999 - 2005**



Source: BCV; conversion to euros by author

Although foreign exchange rationing was officially abandoned in 1998, with a temporary reintroduction of foreign exchange queues the following year, foreign reserves did not begin to recover until end-1999, when the government received foreign assistance and privatisation receipts. However, a severe drought had destroyed much of the 1998/99 harvest and a fiscal expansion was required to redress the situation; moreover, the run-up to the early-2001 elections was the cause of further fiscal slippages (IMF, 2001c). Failure to repay the 13.2 million dollars borrowed from Portugal led to the suspension of the Portuguese credit facility. These slippages were largely responsible for the balance of payments deterioration in 2000, especially since they led to a decrease in foreign lending as creditors had to put up with a build up of external arrears; consequently, authorities felt compelled to draw down foreign reserves to defend the peg. Reserves remained relatively constant in 2001, in spite of a significant hike in the refinancing rate by 300 basis points.

Since December 2001, the reserve position has greatly improved. In 2002, reserves increased considerably despite a sharp reduction in the refinancing rate back to 8.5% in the course of the year; Table 1 and Figure

<sup>5</sup> Projections (IMF, 2005g) hint at a further reduction to 53.1% of GDP in 2004. Percentages were computed from gross data and may not coincide with IMF calculations.

2 reveal that this period also coincides with an increase in grants from 4.1 to 8.4 percent of GDP. This assessment suggests that foreign reserves are more sensitive to external factors and fiscal slippages than to changes in the refinance rate. Since end-2004, reserves have increased very strongly.

Returning to Table 1, the external sector indicators are of particular interest. The structural current account deficit is attributable to Cape Verde's import dependence. The Sahelian climate gives rise to perennial yet erratic droughts, rendering annual crop yield uncertain and volatile. In addition, the volcanic and mountainous topography severely limits agricultural activity, while desertification and soil erosion - caused by overgrazing and improper land use - further reduce the already scarce arable land, which is only 11% of the total area (IMF, 2002c). Although fish is an abundant resource, it is not fully exploited and the industry has suffered from overfishing, insufficient investment and an EU embargo lifted only recently.

As a consequence, the country is heavily dependent on food imports which, together with a poor natural resource base, is the cause of persistent current account deficits; according to preliminary IMF data, the deficit has fallen sharply in 2004 though. There has been a steady increase in exports and imports, leading to a rise in the already high degree of openness, measured as the ratio of imports plus exports of goods and non-factor services to GDP times two; the export-to-import ratio has gained 14.1 percentage points since 1999. The real effective exchange rate has fallen since 1999 and the escudo, pegged to the euro, has risen sharply against the US dollar.

## 2.2 Balance of payments analysis

Table 2 presents current account statistics for the period 2000-2003;<sup>6</sup> the table highlights the large and persistent current account deficits.

**Table 2 - Current account, EUR mn, 2000 - 2003**

	2000			2001prov			2002prov			2003prov		
	CREDIT	DEBIT	NET									
<b>Current account</b>	<b>323.7</b>	<b>384.8</b>	<b>-61.2</b>	<b>367.7</b>	<b>430.6</b>	<b>-62.8</b>	<b>406.4</b>	<b>481.8</b>	<b>-75.4</b>	<b>458.8</b>	<b>527.0</b>	<b>-68.1</b>
<b>Goods</b>	<b>41.7</b>	<b>245.2</b>	<b>-203.5</b>	<b>41.5</b>	<b>258.8</b>	<b>-217.3</b>	<b>44.5</b>	<b>295.5</b>	<b>-251.0</b>	<b>46.7</b>	<b>304.1</b>	<b>-257.4</b>
General merchandise, FOB	2.7	228.6	-225.9	2.2	241.0	-238.8	2.5	279.7	-277.2	2.6	283.5	-280.9
Goods for processing	9.7	9.0	0.6	9.5	6.2	3.2	9.5	6.3	3.2	*	*	*
Repairs on goods	1.5	2.3	-0.8	1.6	6.4	-4.9	1.5	3.4	-1.9	*	*	*
Goods proc. in ports by carriers	27.9	5.2	22.7	28.3	5.1	23.2	31.0	6.1	25.0	*	*	*
<b>Services</b>	<b>117.0</b>	<b>109.0</b>	<b>8.1</b>	<b>144.9</b>	<b>133.0</b>	<b>11.9</b>	<b>161.5</b>	<b>150.2</b>	<b>11.3</b>	<b>197.6</b>	<b>179.4</b>	<b>18.1</b>
Transport	48.2	48.4	-0.2	56.6	56.1	0.5	66.3	68.6	-2.3	93.4	87.3	6.1
Sea transport	3.2	26.3	-23.1	3.6	28.0	-24.4	1.9	29.2	-27.3	1.7	28.0	-26.3
Air transport	45.1	22.1	23.0	53.0	28.0	25.0	64.4	39.4	25.0	91.6	59.3	32.4
Travel	44.2	39.4	4.7	60.1	56.3	3.8	69.2	59.5	9.8	75.3	62.5	12.8
Business	0.4	4.8	-4.4	0.7	4.8	-4.1	1.2	6.4	-5.3	*	*	*
Personal	43.8	34.6	9.2	59.3	51.4	7.9	68.1	53.0	15.1	*	*	*
Other	24.6	21.1	3.5	28.2	20.7	7.6	26.0	22.2	3.8	*	*	*
<b>Factor income</b>	<b>5.5</b>	<b>17.9</b>	<b>-12.4</b>	<b>7.5</b>	<b>13.5</b>	<b>-6.0</b>	<b>7.1</b>	<b>19.5</b>	<b>-12.4</b>	<b>11.8</b>	<b>26.3</b>	<b>-14.5</b>
Compensation of employees	1.3	0.4	0.9	8.3	13.5	-5.3	0.4	0.3	0.1	0.1	0.5	-0.3
Investment income	4.2	17.5	-13.3	6.9	13.2	-6.3	6.7	19.2	-12.5	11.7	25.8	-14.1
Direct investment	2.4	4.1	-1.7	4.2	1.0	3.2	5.0	7.2	-2.2	*	*	*
Income on equity	1.5	4.1	-2.6	0.6	0.9	-0.4	0	4.6	-4.6	*	*	*
Interest from TCMFs	0	0	0	3.7	0	3.7	4.6	0	4.6	*	*	*
Portfolio investment	0	0	0	0	0.1	0	0	0	0	*	*	*
Other investment	1.8	13.4	-11.6	2.7	12.1	-9.5	2.1	14.6	-12.5	*	*	*
Interest on external debt	0	5.1	-5.1	0	4.3	-4.3	0.6	8.1	-7.5	4.2	14.4	-10.2
<b>Current transfers</b>	<b>159.4</b>	<b>12.8</b>	<b>146.6</b>	<b>173.8</b>	<b>25.2</b>	<b>148.6</b>	<b>193.2</b>	<b>16.6</b>	<b>176.7</b>	<b>202.7</b>	<b>17.1</b>	<b>185.5</b>
Public transfers	28.2	4.5	23.7	24.3	0.8	23.6	38.2	0.5	37.7	44.2	0.9	43.3
Private transfers	131.3	8.3	122.9	149.4	24.5	125.0	155.1	16.1	139.0	158.5	16.2	142.2
of which foreign remittances <sup>§</sup>	70.1	0	70.1	80.3	0	80.3	89.4	1.4	88.0	71.9	0	71.9

Source: BCV; \* indicates that there are discrepancies between aggregate data and the break-down; § means such discrepancies also exist for remittances in 2002; all data are consolidated

<sup>6</sup> Projected/preliminary BOP data for 2004 were omitted due to data consolidation problems.

Merchandise exports relative to merchandise imports virtually pale into insignificance, underscoring the afore-mentioned external dependence. Goods procured in ports by carriers is a recurring large positive item and stresses Cape Verde's importance as a refuelling site.

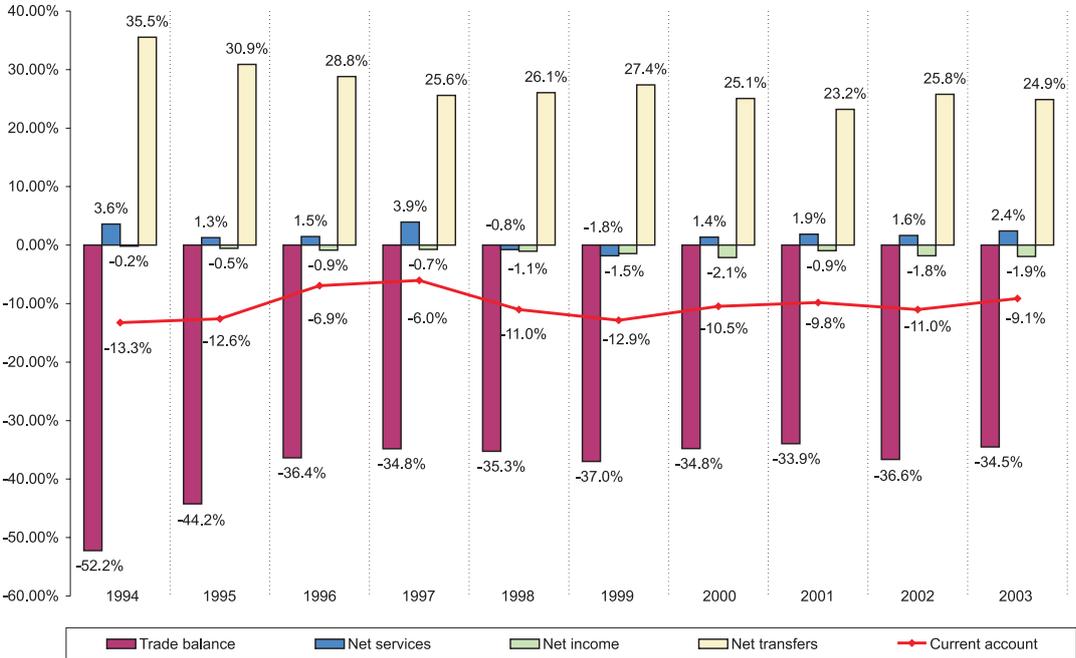
The trade in services account was in surplus between 1999 and 2003; however, the surpluses are insufficient to offset the deficits from the merchandise balance. Personal travel, which captures the impact of tourism on the economy, is a recurring positive item. Not reported is the breakdown of Other services, with Communications services, Other business services (negative) and Government services of particular importance.

The factor income balance is systematically in deficit. This is because investment income is a recurring negative entry, owing to persistent large debits on Other investment largely arising from interest payments on external debt. Income from securities issued and serviced by the Trust Fund (the TCMFs) partially alleviates the factor income deficits.

The transfers balance is the major positive balance in the current account. Public transfers are repeatedly positive, reflecting foreign assistance. Private transfers are especially large; of major significance in the transfers balance are workers' remittances, the importance of which will be expounded shortly. Not only do they mitigate the current account deficit, they also constitute the country's largest source of foreign exchange earnings (IMF, 2003d).

Figure 4 plots the break-down of the current account for the period 1994 to 2003.

**Figure 4 - Current account break-down, % of GDP, 1994 - 2003**



Source: BCV; author's own calculations

In the mid-1990s, the trade deficit and overall balance improved substantially. The trade deficit has been mostly unchanged at around 35% since then, and the overall current account deficit has increased from 6.0% of GDP in 1997 to an average of 10.7% for the remainder of the period;<sup>7</sup> the services balance was mostly in surplus.

<sup>7</sup> Preliminary IMF (2005g) data suggest the current account deficit dropped to 6.1% of GDP in 2004.

The net income balance has deteriorated in the last ten years; Table 2 suggests that this is because of rising interest payments on external debt.

Net transfers as a percentage of GDP have fallen significantly since 1994: transfers averaged 25.8% of GDP in the period 1996 to 2003, down from 35.5 and 30.9 percent of GDP in 1994 and 1995 respectively. This drop in transfers as a percentage of GDP contrasts sharply with the steep increase in remittances.

The capital and financial account is reported in Table 3.

**Table 3 - Capital and financial account, EUR mn, 2000 - 2003**

	2000			2001prov			2002prov			2003prov		
	CREDIT	DEBIT	NET	CREDIT	DEBIT	NET	CREDIT	DEBIT	NET	CREDIT	DEBIT	NET
<b>Capital and financial account</b>	<b>122.2</b>	<b>45.2</b>	<b>77</b>	<b>132</b>	<b>42.8</b>	<b>89.3</b>	<b>92.1</b>	<b>-2.2</b>	<b>94.3</b>	<b>109.8</b>	<b>40.1</b>	<b>69.7</b>
<b>Capital account</b>	<b>12.2</b>	<b>0</b>	<b>12.2</b>	<b>27.2</b>	<b>0</b>	<b>27.2</b>	<b>9.6</b>	<b>0</b>	<b>9.6</b>	<b>18.8</b>	<b>0</b>	<b>18.8</b>
Capital transfers	12.2	0	12.2	27.2	0	27.2	9.6	0	9.6	0	0	0
Official capital transfers	0.4	0	0.4	0	0	0	2.2	0	2.2	18.8	0	18.8
Private transfers (Other)	11.8	0	11.8	27.2	0	27.2	7.4	0	7.4	0	0	0
Acquisition/disposal of nonproduced, nonfinancial assets	0	0	0	0	0	0	0	0	0	0	0	0
<b>Financial account</b>	<b>110.1</b>	<b>45.2</b>	<b>64.9</b>	<b>104.8</b>	<b>42.8</b>	<b>62</b>	<b>82.5</b>	<b>-2.2</b>	<b>84.6</b>	<b>91.1</b>	<b>40.1</b>	<b>51.0</b>
Direct investment	35.3	0	35.3	10.1	0	10.1	15.6	0	15.6	10.7	-1.6	12.2
of which privatisations	26.1	0	26.1	0	0	0	0	0	0	0	0	0
Portfolio investment	0	0.1	-0.1	1.6	0	1.6	0	0	0	0	0	0
Other investment	65.3	45.1	20.2	67	42.8	24.3	68.7	-2.2	70.8	72.3	42.5	29.8
Assets	0	22.4	-22.4	-1.7	2	-3.7	-1.2	1.1	-2.2	5.5	12.2	-6.7
Loans	0	0.1	-0.1	0.1	0	0.1	0	0.1	-0.1	0	0.5	-0.5
Banks	0	0.1	-0.1	0.1	0	0.1	0	0.1	-0.1	0	0.5	-0.5
Other sectors	0	0	0	0	0	0	0	0	0	0	0	0
Currency and deposits	0	0	0	-1.8	0	-1.8	0	0	0	0	0	0
Other assets	0	22.3	-22.3	0	2	-2	-1.1	1	-2.1	5.5	11.7	-6.1
Liabilities	65.3	22.7	42.6	68.7	40.7	28	69.8	-3.3	73.1	66.8	30.3	36.5
of which Commercial Credit	0	2.3	-2.3	6.3	0	6.3	-1.9	-23.7	21.8	1.1	2.7	-1.6
Loans	37	20.3	16.7	33	31	2.1	32.6	17.3	15.3	36.1	27.7	8.5
Monetary authorities	0	0	0	0	0	0	0	0	0	0	0	0
General government	37	12	25	33	22.1	10.9	27.3	16.5	10.9	32.2	19.1	13.1
Long-term	22	12	10	28	10.2	17.8	22.3	11.5	10.9	27.2	14.1	13.1
Short-term	15	0	15	5	11.9	-6.9	5	5	0	5.0	5.0	0
Banks	0	3.3	-3.3	0	2	-2	5.7	0	5.7	0	0	0
Other sectors	0	5	-5	0	6.9	-6.9	-0.4	0.8	-1.3	3.9	8.6	-4.7
Currency and deposits	23.7	0	23.7	29.4	0	29.4	31	0	31	29.6	0	29.6
Other liabilities	4.6	0	4.6	0	9.8	-9.8	8.2	3.1	5	0	0	0
Reserve assets	9.5	0	9.5	26.1	0	26.1	-1.8	0	-1.8	8.1	-0.8	8.9
<b>Errors and omissions</b>	<b>0</b>	<b>0</b>	<b>-15.9</b>	<b>0</b>	<b>0</b>	<b>-26.5</b>	<b>0</b>	<b>0</b>	<b>-18.9</b>	<b>0</b>	<b>0</b>	<b>-1.6</b>

Source: BCV

The BCV (2004, p.57) notes that foreign direct investment (FDI) flows in 2003 were primarily for the acquisition and construction of property. The privatisation share in foreign direct investment (FDI) was 73.9% in 2000; in 2005, six privatisations were pending.<sup>8</sup> These privatisation proceeds must be earmarked for the Trust Fund, provided that they are denominated in foreign currency.

Portfolio investment is virtually non-existent, indicative of the fact that Cape Verde engages in little trading in international financial and capital markets. Other Investment is considerably larger than direct investment and portfolio investment. The net position on Other investment is positive for all four years and it is especially large in 2003, owing to a bank loan of 5.7 million euros and a large commercial credit of 23.7 million euros. In general, liabilities are high, mostly due to general government borrowing abroad or repaying loans to foreigners.

<sup>8</sup> See IMF (2005g, Box 2, p.15): the fish storage company Interbase, the maritime company Arca Verde, the shipyard CABNAVE, the pharmaceutical distribution enterprise EMPROFAC, the port authority ENAPOR and the airline TACV.

The reader is also referred to Box 1 for a summary of exchange restrictions from the IMF's Annual Report On Exchange Arrangements And Exchange Restrictions (IMF, 2003k).

### **Box 1 - Present exchange restrictions**

Cape Verde has accepted the transitional arrangements of IMF Article XIV, but so far has failed to sign Article VIII, though it intends to do so in the future. Below is a summary of present exchange restrictions.

- All transactions are controlled by the BCV; foreign exchange transactions are neither taxed nor subsidised
- Current account transactions, investment in securities and foreign lending and borrowing pertaining to current transactions have been liberalised; however, foreign borrowing and lending in connection with current transactions are subject to verification by the BCV
- There are controls on exports and imports of banknotes: residents are allowed to take up to CVE 20 000 in domestic and up to CVE 1 000 000 in foreign currency abroad; domestic and foreign currency may be imported up to specified limits
- Residents may open up foreign currency deposits in Cape Verde; there are no domestic currency deposits held by residents abroad
- Non-residents are allowed to open up foreign currency accounts, provided that they have the BCV's approval and that the deposits are not maintained for longer than one year; non-remunerated domestic currency accounts are also available to non-residents
- Exchange and trade restrictions on imports subsist: authorities have a foreign exchange budget (i.e. a plan outlining prior allocation of a certain amount of foreign exchange for import purposes), some domestically produced goods are protected by import tariffs, licenses are required for imports over CVE 100 000 and there are pre-registration requirements for goods imports in excess of CVE 100 000 which do not involve payments from the country's foreign exchange resources
- Export proceeds must be repatriated and exporters must surrender foreign exchange for local currency
- There are controls on current transfers and payments for invisibles; more specifically, limits have been set for trade-and investment related payments, travel-related and personal payments, foreign workers' wages and credit card use abroad
- Proceeds from invisibles must also be repatriated and surrendered for local currency
- Controls on capital transactions are in place and include:
  - authorisation requirements from the BCV on inward capital transactions (except those specified above), financial credits (i.e. non-commercial credits granted by residents to non-residents), real estate transactions, and borrowing abroad and lending to non-residents by commercial banks;
  - controls on the local purchase of shares and other capital market securities of a participating nature by non-residents, and on the purchase abroad of money market instruments by residents;<sup>9</sup>
  - the requirement for all capital market securities purchases abroad by residents to go through the newly-created stock market or authorised dealers;
  - controls on commercial credits and on personal capital transactions such as lending and borrowing, including transfers of assets abroad by emigrants or into the country by immigrants;
  - controls on outward direct investment and permit requirements for inward direct investment which must also be registered with the BCV; there are no controls on the liquidation of direct investment;
  - there is no derivatives market, and hence no forward exchange market for foreign exchange transactions.

Source: IMF (2003k)

<sup>9</sup> Data on the local sale or purchase of money market instruments by non-residents, and on the sale and issue abroad by residents, are not available.

### 2.3 The peg to the euro

Since January 1999, the Cape Verde escudo has been pegged to the euro at a level of 110.27 CVE. Box 2 gives further details on Cape Verde's monetary history.

#### Box 2 - A brief review of Cape Verde's monetary history

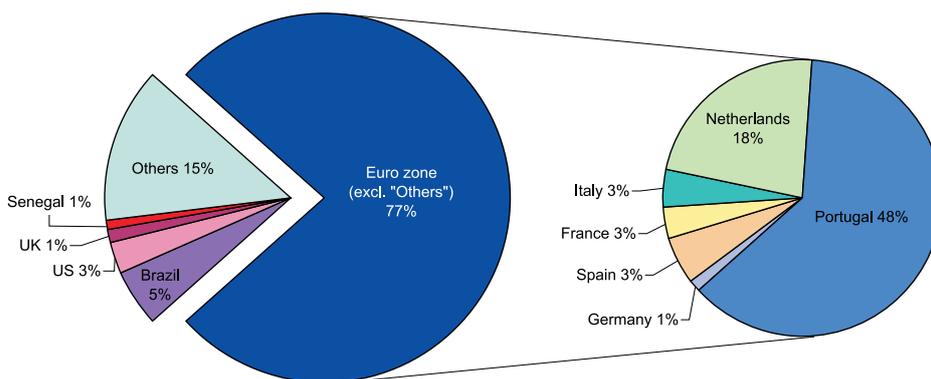
The Cape Verde escudo was first issued by the BCV on July 1 1977 and was pegged to a basket of currencies, following the local escudo's unlinking from the Portuguese escudo (PTE) due to the latter's depreciation. When Cape Verde and Portugal signed the Acordo de Cooperação Cambial - or Exchange Cooperation Accord - on March 13 1998, the escudo was re-pegged at 0.50 CVE to the PTE. The agreement did not actually become operational until July 1998, and the currency was devalued to 0.55 CVE to the PTE on March 30 1998. The escudo has been pegged to the euro at 110.27 CVE since January 1 1999.

The Banco de Cabo Verde (BCV) has not always existed in its present form. When Cape Verde became independent from Portugal on July 5 1975, the BCV came into existence shortly thereafter. It was set up as a monobank, performing central and commercial banking functions monopolistically; the Caixa Económica de Cabo Verde (CECV) operated very much like a savings bank. In 1993, the revised organic law (Lei Orgânica do Banco do Cabo Verde) separated the monobank's central and commercial banking functions. The BCV continues to operate as a central bank, whilst the Banco Comercial do Atlantico (BCA), which was privatised in 2000, performs commercial and investment banking functions. The CECV has been restructured into a corporation and universal bank, and it was privatised in 1999. The BCA and the CECV effectively operate a duopoly in the banking sector.

Source: Schuler (2004), IMF (2001c)

It is essential to stress the importance of having the Cape Verde escudo pegged to the euro in the first place. Cape Verde is, to a large extent, dependent on imports, most of which are from the euro zone; Figure 5 plots the geographical distribution of imported goods for the year 2004 and very well illustrates the preponderance of euro zone imports.

**Figure 5 - Geographical distribution of imports (CIF), % share, 2004**



Source: BCV; author's own calculations

Within the euro area, Portugal is the major country from which goods are imported (48% of total imports), followed by the Netherlands (18%). Imports from the United Kingdom and the United States are a mere 1% and 3% respectively. In 2004, Cape Verde imported 21 million CVE worth of goods from Luxembourg (IMF, Direction of Trade Statistics).

This figure conceals the evolution of Cape Verde's import distribution over time by country of origin; between 1990 and 2004, there was a very sharp increase in imports, from 9 496 to 34 309 million

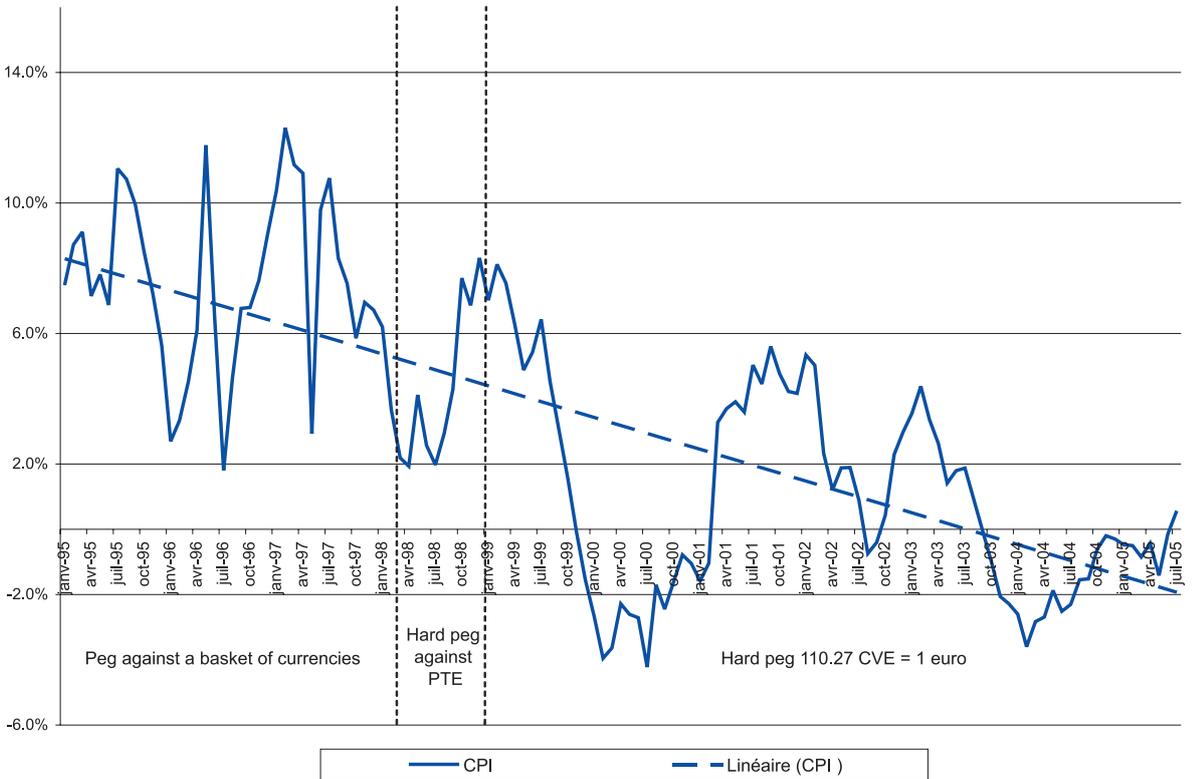
CVE (CIF). Imports from the euro area have risen dramatically both in absolute and in relative terms, from 5 024 (52.9% of total imports) to 26 316 million CVE (76.7%). Imports from Luxembourg have varied substantially.

Between 1990 and 2000, foodstuffs alone accounted for approximately 30% of total imports. Other major imports in 2000 were chemical and mineral products (roughly 15%), metal and metal products (around 6.5%), machines and electronic equipment (over 16%), and transport material (more than 9%) (BCV).

These numbers are in stark contrast with exported goods, which are made almost exclusively to Portugal; since 1998, Portugal's share in exports has risen from an average of 65.9% for the period 1990-1997, to an average of 83.9% for the remainder of the period. Favourable economic developments in the United States seem to have offset the dollar's weakness with regard to US demand for Cape Verdean goods in 2003: the drop in Portugal's share in exports (to 70.8%) means that the US share increased to 22.5% that year, up from 4.4% a year earlier. Main exports are footwear (7.9 to 12.3 percent of total exports between 2001 and 2003), clothing and seafood. The BCV lists "re-exports" as the single most important category (BCV, 2004, p.53); this comes under the heading of Goods procured in ports by carriers, which in 2002 made up almost 70% of total exported goods. Actual merchandise exports made up 5.3 to 6.5 percent between 2000 and 2003. This leaves services as the only substantial exports, especially air transport and personal travel (tourism). Exports to Luxembourg are minimal.

Given this trade pattern, it is not surprising that the exchange rate anchor has been an important mechanism for achieving price stability. Figure 6 plots 12-month percentage changes in the CPI for the period 1995-2005.

**Figure 6 - CPI, 12-month percentage change, 1995 - 2005**



Source: BCV; author's own calculations

The diagram has been sub-divided into three phases: prior to March 13 1998, the Cape Verde escudo was pegged to a basket of mainly European currencies;<sup>10</sup> there was a devaluation from 0.50 CVE to 0.55 CVE per Portuguese escudo on March 29 1998, and the subsequent pegging to the euro since January 1 1999, at 110.27 CVE per euro. Since the adoption of a hard peg to the euro, there has been a marked reduction in inflation, emphasised in the diagram by the light blue trend-line. The low rate of inflation in 2003 is all the more remarkable given the rise in oil prices and an increase in water and electricity tariffs by 20% and 25% respectively (Banco de Portugal, 2003). There were also instances of negative inflation which had not occurred before the adoption of a hard peg to the euro; particularly extraordinary is the prolonged period of negative inflation in 2000, which overlaps with a period of high growth (7.3% in real terms) and a substantial monetary expansion. Inflation was negative throughout 2004 and has only turned positive recently. Note that CPI data may not be entirely reliable as the basket dates from 1990.

CPI volatility has also declined; the standard deviation of inflation was highest in 1997 (1.8), fell substantially when the Cape Verde escudo was pegged to the Portuguese escudo in 1999 (down to 0.6) and has remained low ever since.

Thus, with regard to price stability the exchange rate anchor has done a remarkable job. The reason is Cape Verde's trade pattern; pegging the exchange rate ties the rate of inflation of traded goods to that of the anchor country: the foreign price of traded goods or imports is determined internationally, while the domestic price is fixed through the exchange rate anchor. In other words, "imported" inflation and price volatility are low; price stability is directly imported from the major trading partner which is the anchor country (or zone).

These price developments also impinged on the economy's external competitiveness, which can be gauged through the effective exchange rate. The nominal effective exchange rate (NEER) is a geometric average of three currencies: the euro (which has the largest coefficient, equal to 0.8829), the pound (0.0222) and the dollar (0.0949). With the Cape Verde escudo pegged to the euro, variations in the exchange rate to the dollar (and the pound) inversely affect the NEER, as graphed in Figure 7.<sup>11</sup> This explains why the NEER is falling when the dollar rises and vice versa; however, the dollar coefficient is quite low, resulting in very subtle changes in the NEER even though the actual dollar exchange rate may exhibit large swings.

The real effective exchange rate (REER) takes prices into account.<sup>12</sup> The inverse relationship between the dollar and the REER is much more blurred than for the NEER. Figure 7 shows that the REER has been trending downwards since the introduction of the euro, in particular since 2003. This should not come as a surprise as Figure 6 illustrated the fall in inflation since 1999.

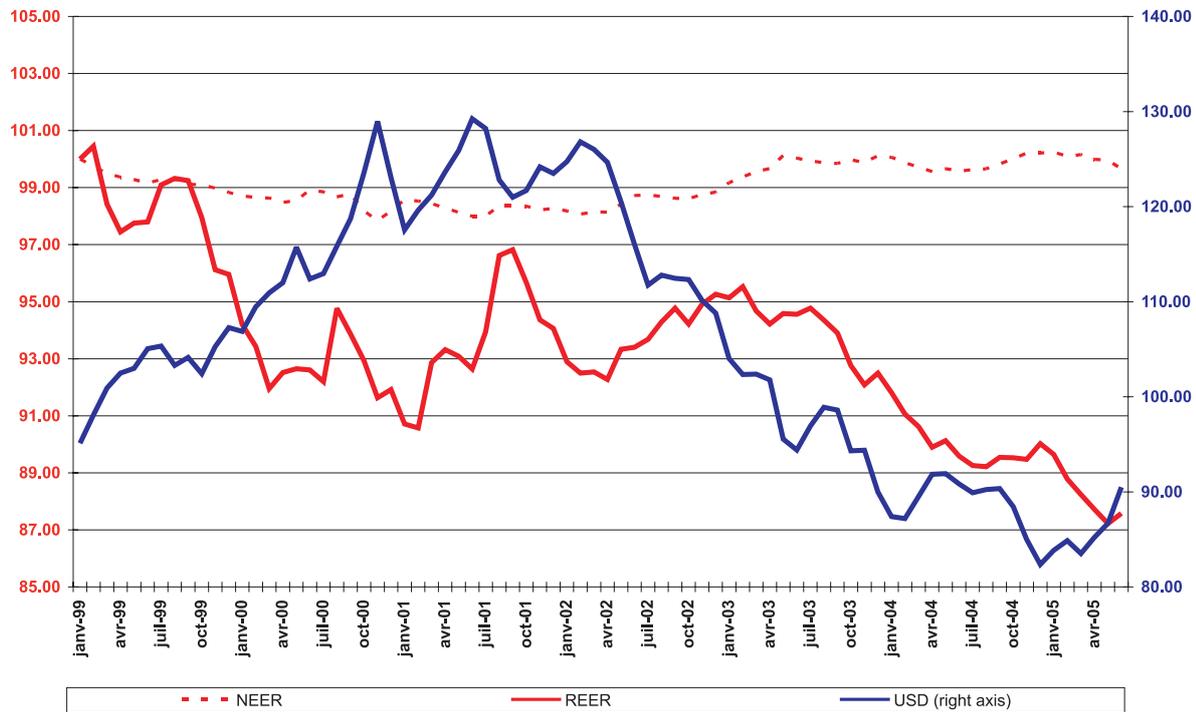
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<sup>10</sup> The switch in the peg from a basket of currencies to the Portuguese escudo did not actually become operational until July 1998.

<sup>11</sup> Note that the dollar is quoted directly, whereas the effective exchange rate is a weighted average of indirectly quoted bilateral exchange rates.

<sup>12</sup> The author used CPIs to deflate the NEER.

**Figure 7 - Real and nominal effective exchange rates, and USD vs CVE, 1999 - 2005  
(January 1999 = 100)**



Source: BCV, IMF (International Financial Statistics); author's own calculations

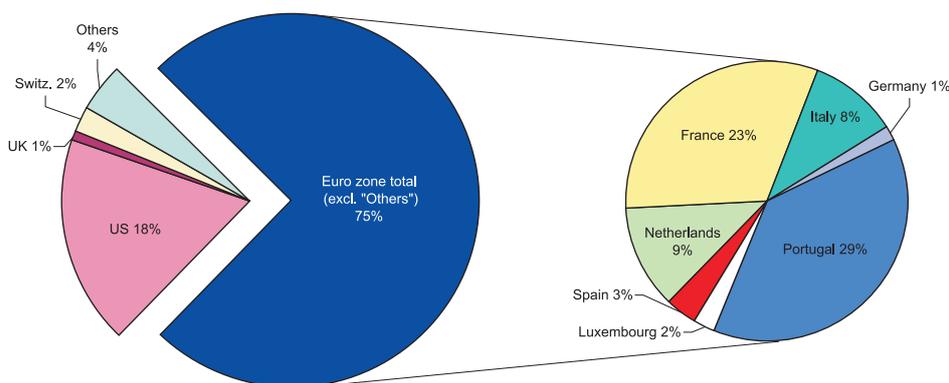
The rise of the dollar (right axis) until early 2002 is mirrored by a slight decline in the NEER; the REER has also fallen between 1999 and 2002, though price movements are the cause of some short-term fluctuations. Since the dollar's slide against the euro, the NEER has been rising again. The REER has also been on the rise until mid-2003, but more recently Cape Verde has enjoyed a rise in competitiveness. These gains in competitiveness are largely attributable to the exchange rate anchor which has kept prices relatively stable.<sup>13</sup>

The balance of payments analysis has demonstrated that the current regime cannot possibly be sustained without the vast amounts of money transferred to Cape Verde by private individuals. The importance of these emigrants' remittances can hardly be overstated: with very low portfolio investment and FDI (barring one-off privatisations), remittances are the major channel through which the BCV's interest rate policy attracts foreign capital. These private transfers therefore deserve special attention and careful analysis.

Figure 8, which plots the geographical distribution of emigrants' remittances by country of origin for 2004, illustrates the preponderance of American and euro area transfers.

<sup>13</sup> However, it is quite likely that the outdated CPI data exaggerate this success story.

**Figure 8 - Foreign remittances by country of origin, % share, 2004**



Source: BCV; author's own calculations

Although a large majority of transfers were from the euro zone, the United States alone contributed almost a fifth of total remittances. Together, the United States and the euro area contributed over 90% of total remittances; the Netherlands, France, Italy and Portugal were the biggest euro zone contributors, while Luxembourg's share in total remittances was roughly 2% in 2004.

Digging deeper and looking at the evolution of remittances over time, overall annual remittances have increased by over 160% between 1990 and 2004. Remittances from the United States, which have made up between 18.1% and 30.0% of total transfers in the period under consideration, have been more volatile than those from the euro zone, where there has been an upward trend in the share of transfers, which has increased from 56.3% to 74.6%.

Remittances are thus key in sustaining the peg and the balance of payments in general. Authorities have therefore been working towards improving the escudo's credibility in order to attract these private transfers. In the period 1995-1998, Cape Verde had severe problems with foreign exchange queues. A major problem which contributed to the building up of these queues was the lack of credibility in the Cape Verdean currency, partly due to very low foreign reserves. In order to restore confidence in the peg and ensure the full convertibility of the Cape Verde escudo, Portugal offered assistance to Cape Verde which in exchange agreed to abide by the Maastricht criteria: a substantial short-term precautionary credit line (up to a maximum of 50 million USD to be repaid each year by year's end), jointly managed by the two countries, was set up through the July 1998 Exchange Cooperation Accord. Portugal's support of the fixed exchange regime reduced devaluation fears and remittances increased. Foreign exchange queues were quickly paid off and, by mid-April 1999, eliminated.<sup>14</sup>

Authorities have repeatedly made use of the credit line to support the budget. In 2000, for example, authorities drew three times on the credit line (for a total of 13.2 million USD) and actually failed to repay the money by year's end, thereby causing suspension of the credit facility as agreed by the rules of the 1998 accord. Suspension of the credit line led to a sharp reduction in official reserves and threatened the sustainability of the exchange rate peg. The repayment of the 13.2 million USD by the new government in July 2001, however, led to the re-opening of the credit line.

<sup>14</sup> Foreign exchange queues were temporarily re-introduced at the end of 1999.

## **2.4 Section summary**

This section has paved the way for much of the subsequent analysis. Cape Verde has enjoyed relatively stable macroeconomic conditions in the last few years: real growth has been impressive and the exchange rate anchor to the euro has kept inflation low. Since the adoption of a hard peg to the euro, trade with the euro area has increased further; this has not weaned Cape Verde off its import-dependence, and in fact imports have increased substantially.

There has also been a gradual build-up of foreign reserves in the context of a reduction in the main refinancing rate back to its May 1999 level of 8.5%. However, maintaining the level of foreign reserves, and actually accumulating further reserves, is conditional on sound macroeconomic management, especially the government's fiscal policy stance, as fiscal slippages have drawn down foreign reserves in the past and endangered the exchange rate regime. Although Cape Verdean authorities have accepted the Maastricht criteria, there is little the government can do to avoid expenditure increases in the face of idiosyncratic shocks like the bad 1998/99 harvest.

There is no doubt that the degree of integration with the euro area has increased considerably over the last few years, as evidenced by the changes in Cape Verde's trade pattern and the geographical distribution of remittances. The peg to the euro can be seen as both cause and effect in the integration process; Section 3 assesses the current exchange rate regime in the context of the economic analysis presented in this chapter.

### 3. The current exchange rate policy: a formal analysis

The previous chapter has presented a survey of the Cape Verdean economy; this chapter specifically looks at the present exchange rate regime. Section 3.1 develops a formal model which will be used for much of the subsequent discussion; the modern asset market model, adapted from Mishkin (2004, pp.443-483),<sup>15</sup> provides a mathematical and diagrammatical framework within which to analyse policy and exchange rate issues. Section 3.2 then goes on to apply this model; a review of central bank strategy stresses the constraints the BCV is facing. Section 3.3 focuses on interest rates and considers how they can be brought down within the context of the BCV's current strategy; econometric estimates confirm that real interest rate differentials significantly affect emigrants' remittances, and hence that some caution should be exercised in reducing rates. Section 3.4 concludes this chapter.

#### 3.1 Theoretical underpinnings

In order to better understand how the existing exchange rate regime operates, it is useful to have a formal framework within which to explain it. The foregoing analysis has revealed that emigrants' remittances are a salient feature of the Cape Verdean economy; their importance in sustaining the exchange rate anchor was also stressed. The specially created emigrant deposits are an integral part of commercial banks' business strategies - in its Annual Report 2002, the Banco Comercial do Atlantico (BCA), the leading commercial bank in Cape Verde, registers an 18% growth rate in emigrant deposits over 2001:

*The bank's endeavours to establish stronger and better links with the emigrant community through its creation of customised products and promotion of transfer agreements with its correspondent banks in host countries has undoubtedly been an important factor.*

(BCA Annual Report 2002, p.12)

Special emigrants' deposits pay an interest rate premium over and above domestic deposit rates. Interest rates are, however, not the sole determinant of private transfers from the emigrant community. Olters (IMF, 1999) argues that devaluation fears - largely prompted by a low level of foreign reserves - were a chief reason why emigrants switched to foreign currency transfers between end-1995 and mid-1998. These unrecorded flows are cited as an explanation to the peg's sustainability as recorded transfers were too low to sustain the anchor. Authorities have since tried to pull the informal market into the formal one through the introduction of foreign currency deposits. However, devaluation fears can actually reduce the level of remittances altogether since foreign currency deposits yield much lower interest rates as they echo competitive international rates and do not carry an exchange rate premium. If interest rates strongly affect remittances, and devaluation fears lead to emigrants switching away from the escudo and into foreign currency deposits which have a lower rate of return than domestic currency deposits, devaluation expectations will reduce the volume of these transfers. Interest rates and devaluation expectations are thus seen as important factors which impinge on the peg's sustainability.

Modern asset market theory, which defines a country's exchange rate as the price of domestic assets (bank deposits, bonds, securities, etc.) in terms of foreign assets, provides a neat framework within which to explain the behaviour of a currency by integrating the above-mentioned factors into a model. Although the theory relies on a number of assumptions which, strictly speaking, are not entirely applicable to Cape Verde, it is nevertheless possible to re-interpret the model conceptually in order to formalise the analysis of the current exchange rate policy.

<sup>15</sup> The mathematical specification was modified so as to bring it in line with the graphical interpretation. Moreover, Mishkin does not derive the model in real terms; see Blanchard (2000, pp.415-421) for the introduction of real interest rates and the real exchange rate into the model.

The theory's starting point is the recognition that the key element determining the demand for domestic and foreign assets is the expected return on these assets relative to each other. Domestic assets are defined as assets denominated in Cape Verde escudos, whereas foreign assets are denominated in euros, say. The expected return on assets is equal to the respective rate of interest; however, returns must be expressed in terms of a common numeraire. To see this, let  $R^D$  be the expected rate of return on domestic assets; from a non-resident's perspective, expressing the expected return in terms of euros, we get:

$$R^D = r^D + \frac{\epsilon_{t+1}^e - \epsilon_t}{\epsilon_t} = \left[ i^D - \left( \frac{\dot{p}}{p} \right)^{eD} \right] + \frac{E_{t+1}^e \frac{CPI_{CV,t+1}^e}{CPI_{i,t+1}^e}}{E_t \frac{CPI_{CV,t}}{CPI_{i,t}}} - 1 \quad \text{Equation 1}$$

In this equation,  $r^D$  is the real rate of interest on the respective domestic asset. The real exchange rate  $\epsilon_t$  is defined indirectly, i.e. in terms of foreign currency per unit of domestic currency, such that a rise in  $\epsilon_t$  constitutes an appreciation of the real exchange rate. Quoted indirectly, the nominal spot exchange rate has been  $\frac{1}{110.27}$  since January 1999;  $\epsilon_{t+1}^e$  is the expected next-period real

spot exchange rate.  $E_{t+1}^e \frac{CPI_{CV,t+1}^e}{CPI_{i,t+1}^e} \left( \frac{CPI_{CV,t}}{CPI_{i,t}} \right)^{-1} - 1$  is therefore the expected real appreciation

of the escudo, which must be added to the rate of interest on domestic assets to get the expected return in terms of foreign currency; the expression also captures exchange rate risk. The real rate of interest is given by the Fisher equation; it is obtained by subtracting the expected domestic rate of inflation  $\left( \frac{\dot{p}}{p} \right)^{eD}$  from the nominal interest rate  $i^D$ . The real exchange rate is given by adjusting the nominal exchange rate for changes in the price level, as shown in Equation 1.

Let  $R^F$  be the expected return on foreign assets; then:

$$R^F = r^F = i^F - \left( \frac{\dot{p}}{p} \right)^{eF} \quad \text{Equation 2}$$

Here, the expected return is simply equal to the real rate of interest on the respective asset. From the point of view of an economic agent from the euro area, say a migrant, the interest earned on an asset denominated in euros bears no exchange rate risk since it is already expressed in euros.<sup>16</sup>

Equilibrium requires the expected returns - expressed in a common numeraire - to be equal, such that  $R^D = R^F$  and:

$$r^D + \frac{\epsilon_{t+1}^e - \epsilon_t}{\epsilon_t} = r^F \quad \text{Equation 3}$$

Equation 3 is the uncovered interest parity (henceforth UIP) condition in real terms. UIP makes three basic assumptions:

<sup>16</sup> There is no country risk premium on these assets either.

1. Domestic and foreign assets are perfect substitutes such that capital is perfectly mobile with no exchange controls
2. Transaction costs are negligible
3. Capital and financial markets are fully integrated

Strictly speaking, these assumptions do not apply to the Cape Verdean economy. Regarding the first assumption, it was pointed out in Box 1 that Cape Verde has not yet accepted IMF Article VIII, and several capital and exchange controls are still in place; in practice, foreign and domestic assets will therefore not be perfect substitutes. Furthermore, there must be an interest rate premium if foreigners are to invest in Cape Verdean assets. The premium encompasses sovereign risk, such as the risk of default or political risk, as well as the current sentiment towards emerging markets and exchange rate risk. Domestic interest rates will thus be higher than foreign interest rates, as they must be.

The second assumption never holds in the real world but the effect of transaction costs on international capital flows is insignificant provided that these costs are moderate.<sup>17</sup>

The third assumption is also violated, since financial markets in Cape Verde are incomplete. However, the balance of payments analysis has indicated that the peg is not so much sustained via financial markets than through foreign remittances. Emigrants will reason along the same lines as any other rational economic agent facing an investment decision: if they are better off putting their money into euro deposits, it must be the case that the expected return on these deposits is higher relative to escudo deposits; conversely, if they are better off investing in escudo deposits, it must be the case that the expected return on these deposits is higher relative to euro deposits. In order for emigrants (or indeed any economic agent contemplating an investment decision) to be indifferent between euro and escudo assets, the relative expected return on these assets must be zero.

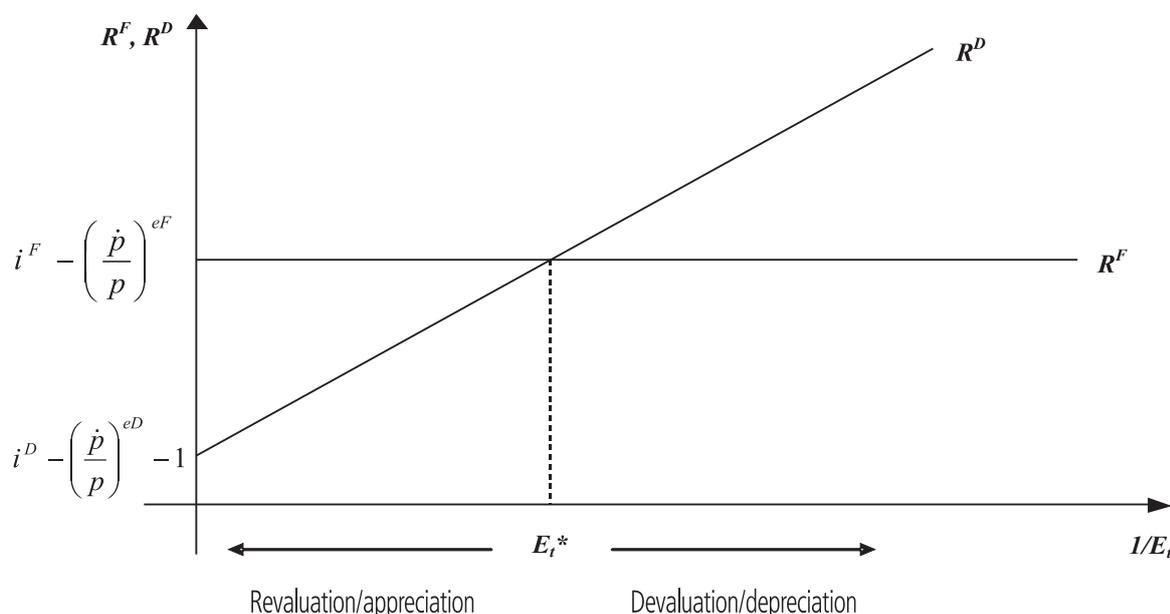
Following these considerations, UIP should be seen as an approximating behavioural relationship, rather than a strictly deterministic mechanism. This relationship also has a diagrammatical interpretation; to see this, re-write the expression for the expected return on domestic assets as:

$$R^D = \left[ i^D - \left( \frac{\dot{p}}{p} \right)^{eD} - 1 \right] + \frac{E_{t+1}^e \frac{CPI_{CV,t+1}^e}{CPI_{i,t+1}^e}}{\frac{CPI_{CV,t}}{CPI_{i,t}}} \times \frac{1}{E_t} \quad \text{Equation 4}$$

Figure 9 plots expected returns against the exchange rate, quoted directly (escudos per unit of foreign currency).

<sup>17</sup> A study on remittances in Latin America has revealed that transaction costs impinge on emigrants' spending decisions: a reduction of these costs from 15 to seven percent of the value of the transfer has increased the frequency of transfers from six to four weeks. See Financial Times Europe (17/05/2004), *Study Finds More Migrants Sending More Money Home*, p.2.

**Figure 9 - An asset market approach to exchange rate determination**



Since the expected return on foreign assets, equal to  $R^F = r^F$ , is independent of the exchange rate, the  $R^F$  schedule is drawn in as a horizontal line. A rise in the foreign nominal interest rate or a fall in the foreign expected rate of inflation raises  $R^F$  and, for a given exchange rate, shifts the schedule up. The  $R^D$  schedule is upward-sloping in  $(R, 1/E_t)$  space.  $i^D$  and  $\left(\frac{\dot{p}}{p}\right)^{eD}$  are shift parameters, such that a rise in the domestic nominal interest rate (or a drop in the expected domestic rate of inflation) increases the expected return and shifts the schedule up.

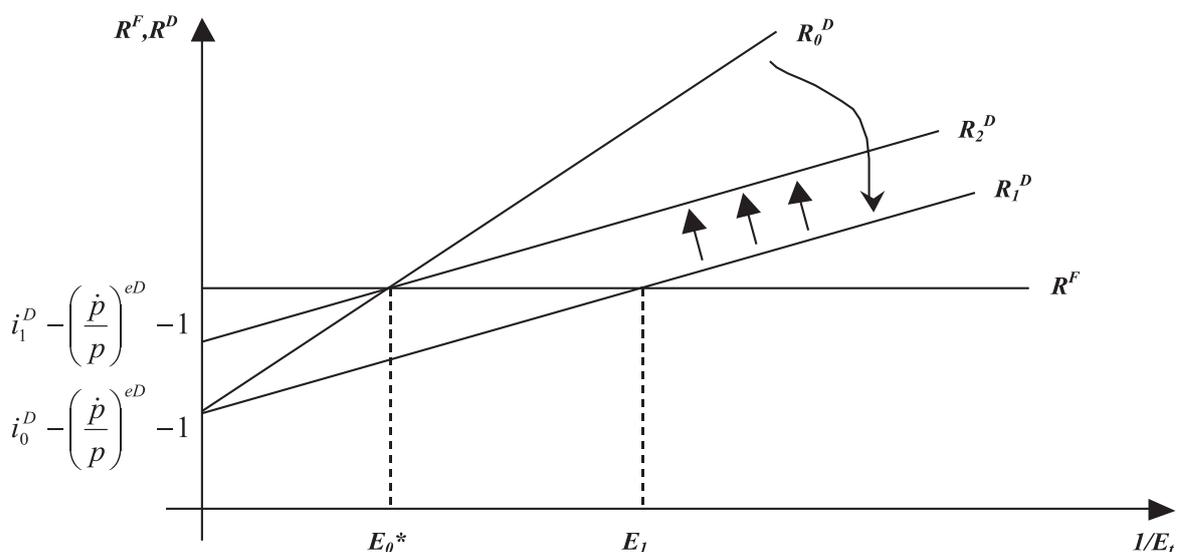
$E_{t+1}^e \frac{CPI_{CV,t+1}^e}{CPI_{i,t+1}^e} \left( \frac{CPI_{CV,t}^e}{CPI_{i,t}^e} \right)^{-1}$  is the slope parameter; a change in the expected exchange rate will

pivot the line around the point of intercept. A rise in  $E_{t+1}^e$  makes the slope steeper and the  $R^D$  schedule pivots up and to the left, whereas a fall in  $E_{t+1}^e$  makes the slope shallower with the  $R^D$  schedule pivoting down and to the right. Actual and expected price changes affect the slope and intercept; to simplify, prices and price expectations are assumed constant.<sup>18</sup>

This framework is useful in explaining the mechanics behind the interest rate strategy. The exchange rate has come under increasing pressure due to the weakness of the dollar. Insufficient foreign reserves and a sliding dollar could trigger off devaluation expectations, leading to a fall in  $E_{t+1}^e$  and pivoting the  $R^D$  schedule down and to the right, as shown in Figure 10 below.

<sup>18</sup> If prices are sticky, they will be constant in the short run anyway.

**Figure 10 - Defending the anchor by raising interest rates**



Without intervention, the exchange rate would fall to  $E_1$ . To offset the fall in the exchange rate this rise in devaluation expectations entails, authorities must boost domestic interest rates from  $i_0^D$  to  $i_1^D$  to counterbalance the rise in the exchange rate premium and attract capital. This shifts up the  $R^D$  schedule and equilibrium is restored at  $E_0^*$ .

The next section on central bank strategy applies this framework in more detail.

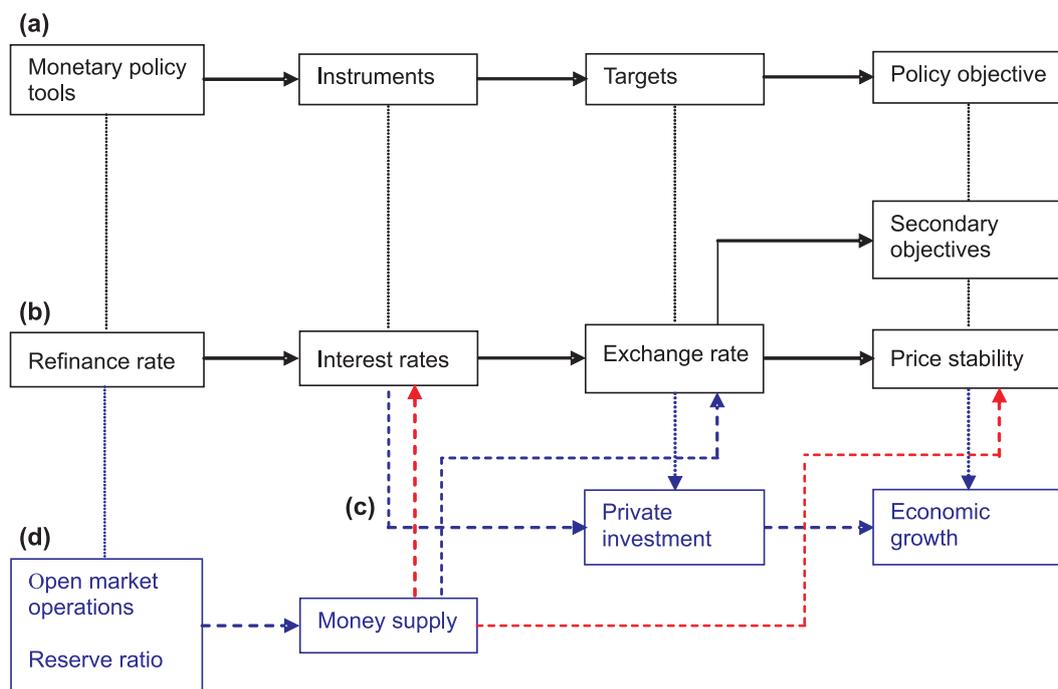
### 3.2 Central bank strategy in the current exchange rate regime

In part (a) of Figure 11, a central bank achieves its policy objectives sequentially: a number of monetary policy tools, such as open market operations or minimum reserve requirements, aim at instruments, which in turn aim at a number of targets; the latter then have a direct impact on policy objectives. Although there is some ambiguity as to what constitutes a goal, a target or an instrument, the choice (though not entirely arbitrary) leaves some room for interpretation.

For example, is a stable exchange rate an end in itself (i.e. a policy objective), or is it a target which aims at achieving price stability or stable trade patterns? The author's interpretation is set out in part (b) of Figure 11.<sup>19</sup> The BCV's preferred policy tool for controlling interest rates is the refinancing rate. A high refinancing rate has a direct impact on interest rates in the economy (the monetary policy instrument). The model from the previous section has shown how high domestic interest rates sustain the nominal exchange rate anchor and thus contribute to domestic price stability by keeping imported inflation low.

<sup>19</sup> Since the BCV uses exchange rate targeting, the author has decided not to categorise the exchange rate as a policy objective but as a target, the ultimate aim of which is price stability (and other, secondary objectives such as trade integration). The choice of private investment as a target is perhaps less clear-cut in the traditional sense.

**Figure 11 - Central bank strategy**



Suppose now that the BCV sets a second target such as stimulating private investment in order to boost economic growth, as shown in part (c) of Figure 11; a conflict arises because high rates of interest (required in the context of the exchange rate target) deter private investment and, in this fashion, thwart the BCV's growth objective.

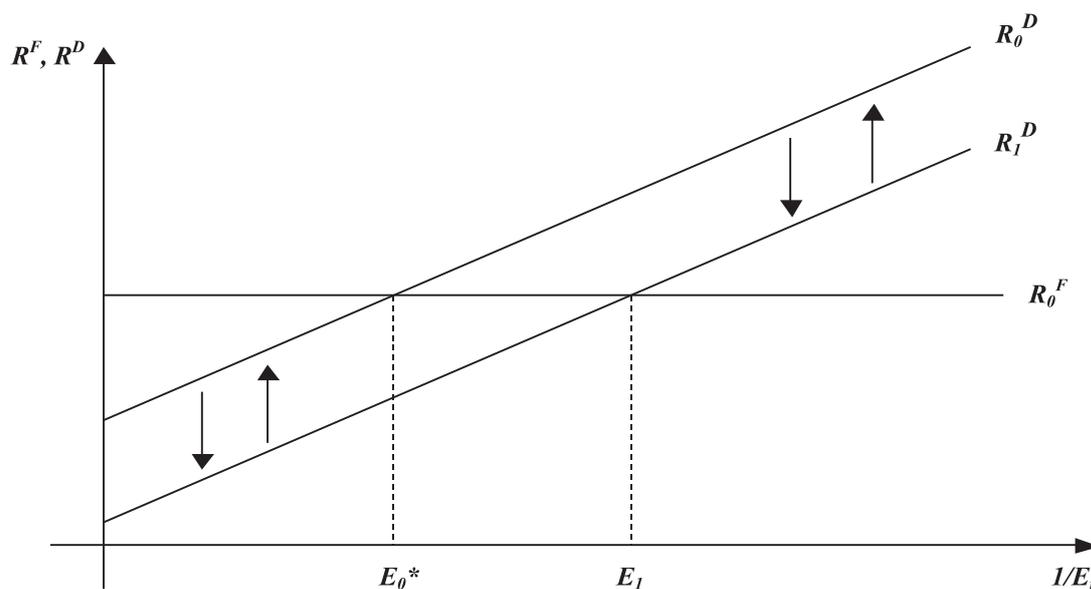
An important realisation is that the two policy objectives, achieving price stability and economic growth, do not clash in any way; in fact, price stability is conducive to higher economic growth. Nor is the issue one of lacking monetary policy tools: the BCV has a number of monetary policy tools at its disposal, such as repos, standing facilities and reserve requirements. The problem arises because only one instrument is used to aim at two different targets which do not respond in the same qualitative manner to changes in the instrument variable. The key question is therefore whether it is possible to affect the two intermediate targets in a manner that does not give rise to a conflict, such that the two policy objectives can be achieved simultaneously.

At this point it is possible to conjecture that one way of addressing the problem is to make use of a second instrument, as shown in part (d) of Figure 11. Despite a larger arsenal of policy tools, the list of monetary policy instruments essentially reduces to interest rates and the money supply. Suppose that the BCV decreases the refinance rate in order to lower interest rates and stimulate investment; to counterbalance the impact this has on the exchange rate (it would fall), the BCV can conduct an open market sale which reduces the money supply and prevents the exchange rate from falling.<sup>20</sup> The problem here is that the reduction in the money supply pushes interest rates up again through the liquidity effect,<sup>21</sup> although this helps sustain the exchange rate, it hampers investment: we are effectively back to square one, as is nicely illustrated in Figure 12 below.

<sup>20</sup> As shown in the diagram, open market sales also contribute to price stability (by lowering inflation).

<sup>21</sup> A discussion with Cape Verdean authorities has revealed that the link between the money supply and interest rates may not be very strong, as hinted at by Figure 1. A reduction in the money supply will only push up interest rates if the liquidity effect is not outweighed by the income, price-level and expected-inflation effects, which pull in the opposite direction. Thus, the BCV may have some leeway in changing the money supply to support the exchange rate without affecting interest rates significantly.

**Figure 12 - The BCV breaks even with two instruments**



The lower refinance rate affects interest rates throughout the economy: the  $R^D$  schedule shifts down. Since the expected return on Cape Verdean deposits is now lower, workers' remittances will fall and the exchange rate will depreciate to  $E_1$  unless the BCV steps in. Given that the degree of direct intervention is limited due to foreign reserve constraints, the BCV can, alternatively, conduct an open market sale to reduce the money supply. The exchange rate will remain at  $E_0^*$ , but this level of the exchange rate is inconsistent with lower interest rates: the change in the money supply increases interest rates and the  $R^D$  schedule shifts back up again.<sup>22</sup>

The above discussion highlights a major problem with exchange rate targeting: the loss of an independent monetary policy. Pegging the exchange rate is consistent with a given level of interest rates; the interest rate level is itself consistent with a given level of the money supply. But in this case, keeping the exchange rate fixed implies that authorities are unable to change monetary policy substantially without deviating from their exchange rate target. Since it takes a while for the variables to interact, it is quite possible to make changes to monetary policy for some time without giving up or endangering the exchange rate anchor; however, the benefits of such a policy can never be long-lasting and corrective monetary policy measures will have to be taken eventually to bring the level of interest rates, the money supply and the exchange rate back in line with each other.

This inconsistency is known as the monetary policy trilemma. Three elements are often considered desirable in monetary policy: stability (having a stable exchange rate as in an anchored exchange rate regime), convertibility (the absence of exchange controls) and independence (having some discretionary control of monetary policy). These three factors are inconsistent with each other and it is at best possible to achieve two of them at the same time for extended periods.

According to the monetary policy trilemma, there are only three consistent solutions to this problem; these are the so-called "extreme corner solutions": a fully convertible floating regime, a strictly fixed regime (i.e. a currency board or a dollarised economy) with full convertibility, and an inconvertible controlled regime, such as a centrally planned economy.

<sup>22</sup> Prices and price expectations are assumed fixed for the short-run analysis.

The Cape Verdean regime is considered inconsistent because having some degree of convertibility, in the context of an exchange rate anchor, means that discretionary monetary policy is seriously curtailed, for example in stimulating private investment. Assuming that the liquidity effect prevails, any discretionary changes to the money supply will impinge on interest rates; with free capital movement, money will flow into or out of the economy until arbitrage has equalised expected returns across countries, just like in the model developed in Section 3.1. Capital inflows/outflows will of course affect the exchange rate, hence authorities are compelled to sterilise any changes in the money supply to sustain the exchange rate anchor - thereby undoing the effects of the initial change in the money supply. The ineffectiveness of discretionary monetary policy in a fixed exchange rate regime with full convertibility is well-demonstrated in the traditional ISLM diagram in Appendix I. Of course, capital is not perfectly mobile in Cape Verde (see Box 1); this, though, does not mean that the current regime is easily sustained. All it means is that unsterilised interventions are effective for a limited time, with the effectiveness of the interventions inversely related to the degree of capital mobility. With higher capital mobility, interventions in foreign currency markets will become increasingly more difficult and ineffective.

The problem is even more severe if fiscal dominance holds; this hypothesis states that monetary policy is dominated by the government's fiscal policy or financing needs. Although with central bank independence there are limits to how or how much the government can borrow from the central bank, money creation nevertheless takes place if there is a fiscal expansion. Even without an obligation on the central bank's behalf to print money on demand, if the government borrows from the banking sector there will be an expansion in credit to the economy. For the exchange rate to stay put, the monetary expansion will have to be neutralised in one way or another, hence the government's fiscal policy stance further limits the degree of freedom of the monetary authorities. Monetary policy will thus have to be conducted in such a way that financing needs are met without endangering the exchange rate target.

This scenario can again be explained with reference to Figure 12; this time the fall in interest rates is induced by a fiscal expansion and the resulting rise in the money supply. In 2000, for example, fiscal slippages were mostly financed through bank-lending; these slippages were paralleled by a strong monetary expansion: the banking sector's net claims on general government increased by about 55% and net domestic assets by almost 20%.<sup>23</sup> As a result, the peg came under severe pressure and there was a sharp reduction (28%) in foreign reserves. Overall, there was a very modest reduction in deposit rates.<sup>24</sup> The government's financing needs in 2000 thus forced the BCV to partially neutralise the increase in the money supply in order to keep the exchange rate pegged. The loss of an independent monetary policy, caused by fiscal dominance and a strict adherence to the exchange rate target, is severe.

Conducting monetary policy in such a way that changes in the money supply are consistent with the exchange rate target, the government's financing needs as well as lower interest rates in order to stimulate investment and growth, is a difficult if not impossible balancing act. Short of giving up the exchange rate target, an alternative discussed in the next section, what options do authorities have to achieve these policy objectives?

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<sup>23</sup> Calculated from IMF (2003d), Table 3, p.31.

<sup>24</sup> See Figure 14, discussed below.

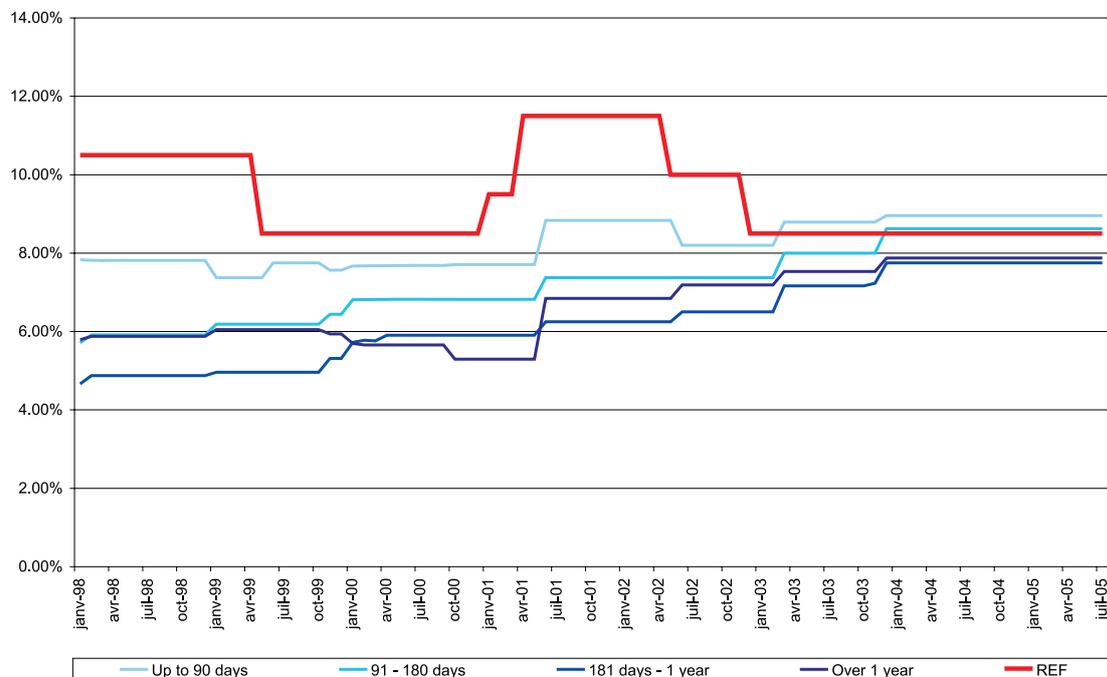
### 3.3 Reducing interest rates in the current regime

Section 3.2 has painted a rather ominous picture of the BCV's policy options; Figure 11 has illustrated that there are limits to what can be achieved with only two broad classes of policy instruments (viz. interest rates and the money supply). This section focuses on interest rates and how they can be reduced in the context of an exchange rate anchor. There are three sub-divisions: the first one looks at bank behaviour; the second sub-division briefly talks about interest rate premia; the final sub-division presents a more in-depth analysis of the determinants of remittances and investigates whether interest rates have any impact on private transfers at all.

#### 3.3.1 Bank behaviour

Figure 13 plots loan-deposit spreads for the period January 1998 to July 2005.<sup>25</sup> The first point which is striking is the sheer magnitude of the spreads, which range from 4.67 (181 days to one year) to 7.25 (up to 90 days) percent at the beginning of the period. The magnitude of the spreads may be attributable to the duopolistic market structure of the Cape Verdean banking sector. There are four commercial banks in Cape Verde: BCA, CECV, Banco Totta de Cabo Verde and Banco Interatlantico; the first two banks have the largest share of the market and account for about 89% of overall deposits (IMF, 2005f, Table 3, p.30). The banking sector is effectively a duopoly with the BCA as the market leader. There is a strong upward trend in spreads, especially since mid-2001.<sup>26</sup> The upward trend in spreads is in stark contrast with a lowering of spreads in other emerging economies; low interest rates in developed markets have led many investors to invest in riskier emerging market assets which yield a higher rate of return.<sup>27</sup>

**Figure 13 - Loan-deposit spreads are high and going up**



Source: BCV; author's own calculations

<sup>25</sup> Credit and debit maturities do not match, hence the data on some of the maturities have been averaged so as to create the four categories in Figure 13 and Figure 14; this does not significantly alter the main findings.

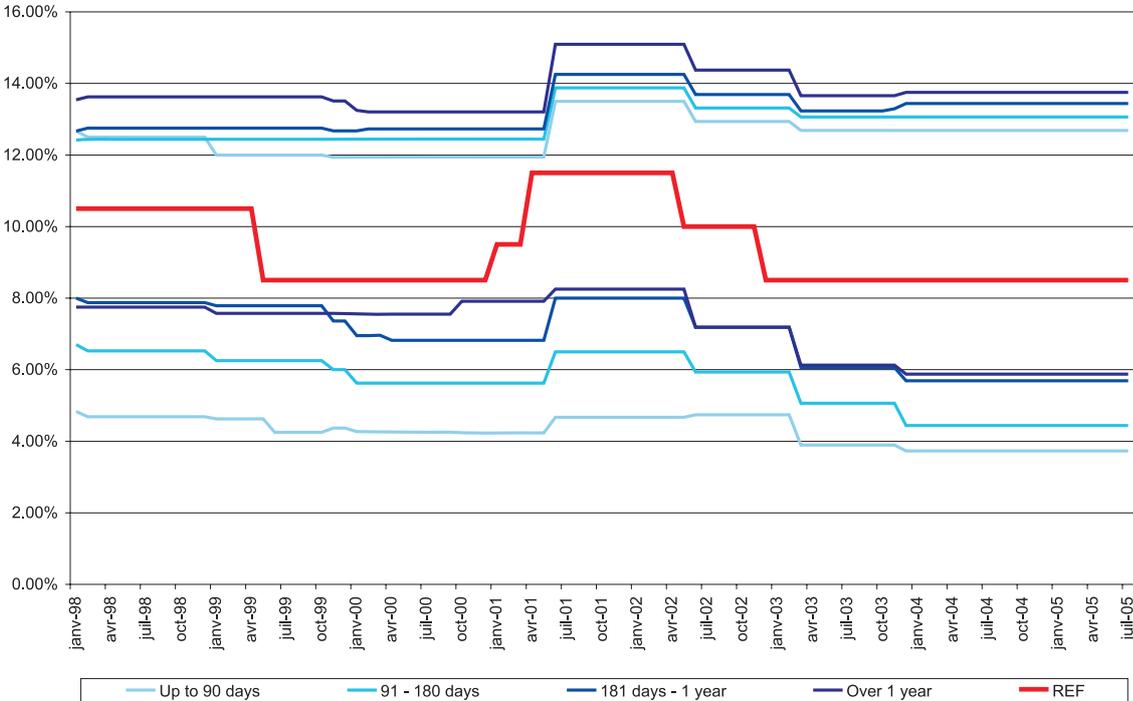
<sup>26</sup> A similar pattern emerges with regard to loan-emigrants' deposit spreads, though the spreads are lower since emigrants' deposits pay an interest rate premium over ordinary domestic deposits.

<sup>27</sup> See Financial Times Europe (26/04/2004), *Lilliput Economies Will Quake When Greenspan's Gulliver Stirs*, p.2.

Authorities should foster competition among banks to reduce spreads. The current market structure is, in part, attributable to Cape Verde's monetary history: the BCV used to be a monobank, and the BCA's commercial banking functions have only been separated from the BCV's central banking functions since 1993 (see Box 2 page 17). In fact, the two main banks have been privatised only recently. It is interesting to know whether the rise in spreads is attributable to higher loan rates, lower deposit rates or both. High loan rates deter private domestic investment, whereas low deposit rates will fail to attract foreign capital; a combination of high loan rates and low deposit rates is therefore particularly lethal, since it obstructs the effectiveness of the BCV's policy tools.

Figure 14 below sheds more light on this issue. Before the end of 2000, spreads have increased mainly due to lower deposit rates: deposit rates have gradually come down whereas loan rates have not changed much.

**Figure 14 - Loan rates have remained high while deposit rates have come down**



Source: BCV; author's own calculations

Of particular interest, however, is the period following the two-step rate hike to 11.5%. Early-2001 there was a two-step rise in the refinance rate from 8.5% to 11.5%; predictably, loan and deposit rates rose in tandem. However, following the two-step reduction of the refinance rate back to the May 1999 level in the course of 2002, loan rates have remained above their May 1999 levels, whereas deposit rates are below their levels from that period. The reduction in reserve requirements and the standing lending facility in December 2004 and February 2005 respectively had no effect on interest rates whatsoever.

Table 4 reports credit and debit rates, as well as loan-deposit spreads, for May 2000 and December 2003; it also reports the differential between May 2000 and December 2003 rates and spreads, as well as their percentage rise between the two dates. These dates have been chosen because they mark the beginning and end of the period where the refinance rate had been unchanged at 8.5% for a whole year, with several hikes and cuts between the two dates. Since the

refinance rate was the same for an extended period, commercial interest rates should be roughly the same at the beginning and at the end of the period.

Yet this is not the case: loan rates have increased by a range of 4.12 to 6.28 percent and debit rates have fallen by a band of 12.36 to 22.12 percent. Even more startling are the percentage increases in spreads, which range from 16.61 percent to almost 40 percent, depending on the maturity. This dramatic rise in spreads is not confined to standard deposits but also holds for emigrant deposit rates.

**Table 4 - Interest rate changes**

	May 2000	December 2003	Differential	Percentage rise
<b>Credit rates</b>				
Up to 90 days	11.94	12.69	0.75	6.28
91 – 180 days	12.45	13.06	0.62	4.94
181 days – 1 year	12.73	13.44	0.71	5.60
Over 1 year	13.21	13.75	0.54	4.12
<b>Debit rates</b>				
Up to 90 days	4.26	3.73	-0.53	-12.36
91 – 180 days	5.63	4.44	-1.19	-21.07
181 days – 1 year	6.82	5.69	-1.13	-16.60
Over 1 year	7.55	5.88	-1.67	-22.12
<b>Spreads</b>				
Up to 90 days	7.68	8.96	1.28	16.61
91 – 180 days	6.82	8.63	1.81	26.54
181 days – 1 year	5.91	7.75	1.85	31.24
Over 1 year	5.66	7.88	2.22	39.33

Source: BCV; author's own calculations

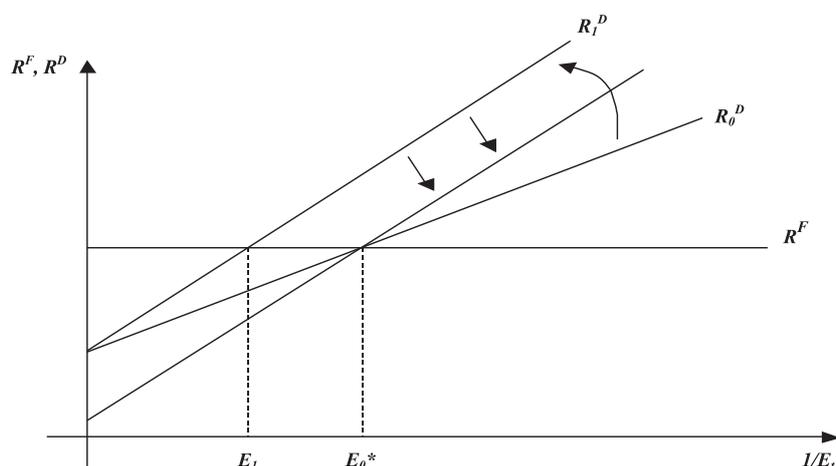
Spreads must be reduced if the BCV's key monetary policy tool is to be efficient. If cuts in the refinance rate get sucked into higher loan-deposit spreads, the BCV's grip on its policy objectives is weakened considerably. If lack of competition is to blame, the easiest way of fostering competition is to simply grant licenses to new banks to dissolve the duopoly in the banking sector. This must not be done without exercising caution, as the issuance of new licenses should not come at the cost of flouting prudential regulations. This has been a problem in the Baltic States in the nineteen-nineties; as Schipke et al. (2004, p.1) put it: the 1995 crises in Latvia and Lithuania, and the 1997-98 banking crisis in Estonia, "were largely related to authorities' strategy of developing the financial system by liberally granting licenses to new banks with relatively few prudential and regulatory safeguards." However, issuing new licenses may not be the answer: Montenegro, which has been fully euroised since 2002, failed to create an offshore banking centre and had to revoke many of the new licenses (Winkler et al., 2004, p.43, footnote 87).

### 3.3.2 Interest rate premia

In a fixed regime,  $E_{t+1}^e$  equals  $E_t$  only if the peg is entirely credible; this will never be the case in practice. There is always the possibility of a re- or devaluation if a peg is maintained through some form of intervention in foreign currency markets, whether monetary authorities step in directly by buying or selling currencies, or whether indirect methods such as interest rate strategies are used. In Cape Verde, lack of credibility was mostly attributable to a low level of foreign reserves and recurring fiscal slippages; these entail that economic agents demand an exchange rate risk premium over and above the interest rate and the sovereign risk premium.

A rise in this premium, brought about by a fall in  $E_{t+1}^e$ , that is to say a lower expected next period exchange rate, pivots the  $R^D$  schedule down,<sup>28</sup> the BCV then has to raise interest rates in order to avoid a depreciation of the exchange rate. Conversely, building up credibility through prudent macro-fiscal policy and a determined defence of the exchange rate anchor will raise  $E_{t+1}^e$  and lower the exchange rate premium, which enables the BCV to lower interest rates considerably as shown in Figure 15.

**Figure 15 - Increasing credibility lowers the exchange rate premium**



A sizeable buffer of foreign reserves, maintaining fiscal discipline and showing resolve in defending the peg will reduce the exchange rate risk premium by increasing credibility. How far authorities are ready to go in defending the exchange rate depends on the costs they are prepared to put up with: in response to speculative attacks Sweden raised its daily rate to 500% in September 1992 (Bensaid and Jeanne, 1997); it goes without saying that such a defensive move cannot be sustained in the long run. To the extent that such extreme defences work, authorities will reap their reward by earning credibility.

### 3.3.3 The determinants of remittances

The importance of emigrants' remittances can hardly be overstated. Remittances are Cape Verde's main source of foreign exchange earnings and are therefore crucial in sustaining the present exchange rate regime. For this reason, it is essential to know what determines these private transfers. More specifically, it is crucial to know whether the interest rate has any impact on remittances. If it doesn't, there is no reason not to lower the refinance rate; a zero or low interest rate elasticity would partially explain why foreign reserves have increased in spite of several rate cuts. If, on the other hand, remittances are interest rate elastic, authorities should exercise caution when making changes to the main refinancing rate.

This part of the paper estimates an econometric model which attempts to identify the determinants of remittances. Essentially, it repeats an IMF study (IMF, 1996, pp.84-97) on the determinants of remittances, though the original model has been adjusted slightly so as to accommodate the theoretical underpinnings from Section 3.1 as well as recent economic developments; furthermore, a more advanced estimation technique is used.<sup>29</sup>

Running a simple Ordinary Least Squares (OLS) regression, the IMF paper found that income differentials and exchange rate expectations were significant determinants of remittances; a time dummy which

<sup>28</sup> See Figure 10.

<sup>29</sup> A new study on remittances was published by the IMF (2005f) as this paper was going to press.

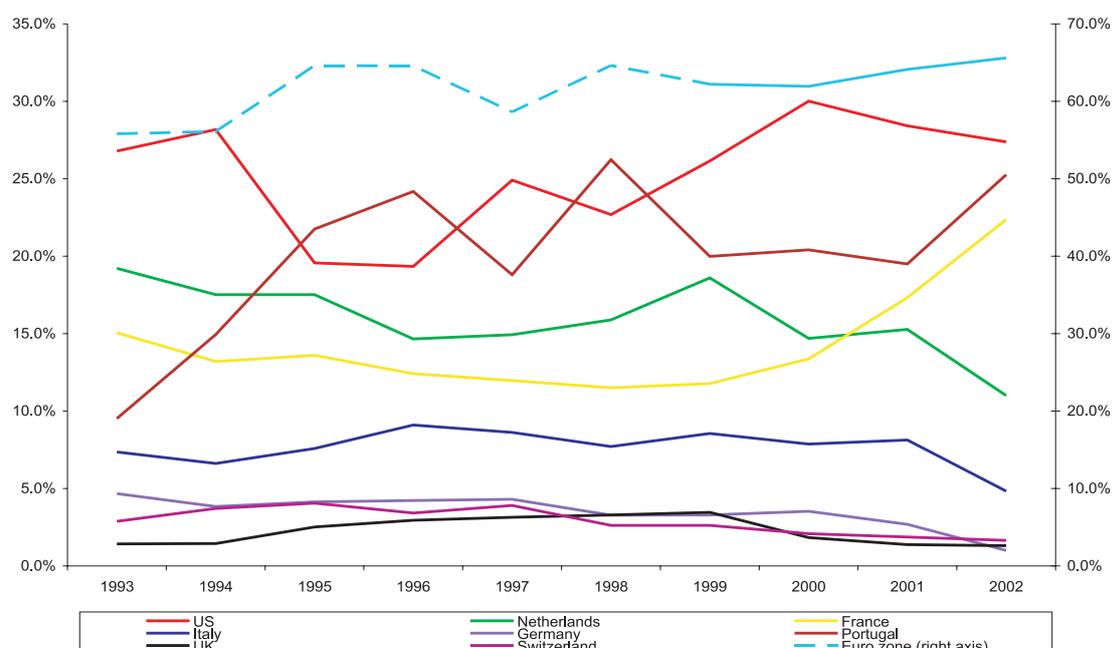
marked the introduction of special emigrants' deposits in 1985 was also highly significant. In addition, the intercept was found to be statistically significant, indicating that variables had been omitted from the model specification which in practice results in biased estimates. The real interest rate differential, on the other hand, was not significant and also had the wrong (positive) sign; but if the interest rate differential is insignificant, this casts doubt on the effectiveness of the BCV's strategy of defending the exchange rate anchor through higher interest rates, a strategy which implicitly relies on remittances being at least partially elastic to interest rate changes. In line with this, the aim of this sub-section is to establish whether anything has changed since the original paper was written, and in particular whether remittances are affected by changes in the real interest rate differential.

Besides expanding the number of cross-sections from six to eight, now including Switzerland and the United Kingdom,<sup>30</sup> a first modification to the original paper is the time period. Although the time dimension is reduced, data are updated and the estimates now cover the more recent period from 1993 to 2002, rather than the longer though outdated period from 1978 to 1995.

It remains true that the United States is the most significant contributing country (see Figure 16 and Figure 17 below); nevertheless, account must be taken of the fact that the situation has changed considerably since the introduction of the euro: since 1999, the main European contributors make all private transfers in a single currency which has also become the anchor currency. In that respect, euro area remittances are much more significant than US transfers, reaching more than twice the US percentage share in total remittances.

Regarding the composition of remittance shares over time, there is a modest upward trend in US and euro area remittances, and a significant upward trend in Portuguese transfers. US and Portuguese shares also seem more volatile than transfers from other countries. The French share has been increasing steeply since 1999, though the Dutch one has been falling slightly.

**Figure 16 - Remittances over time, percentage shares, 1993 - 2002**

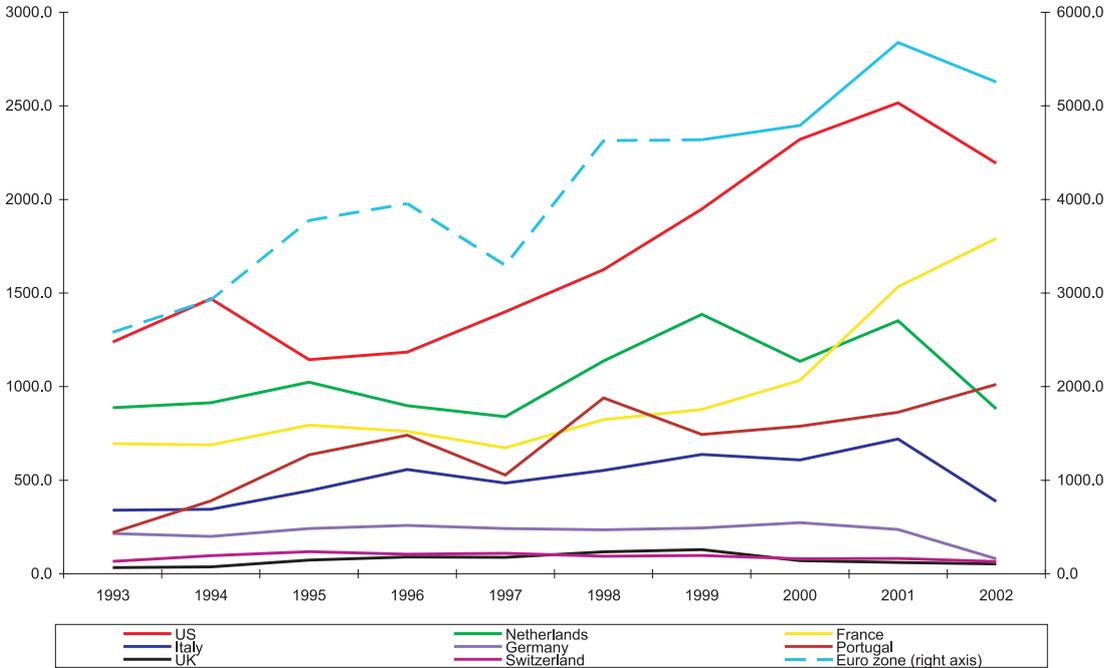


Source: BCV; author's own calculations

<sup>30</sup> Luxembourg could not be included in the sample due to missing data; the composition of "others" is unknown and the group could therefore not be included.

A similar picture emerges when looking at the level of remittances: though the United States continue to be top of the list of countries, euro zone transfers are vastly superior in terms of transfers in a single currency.

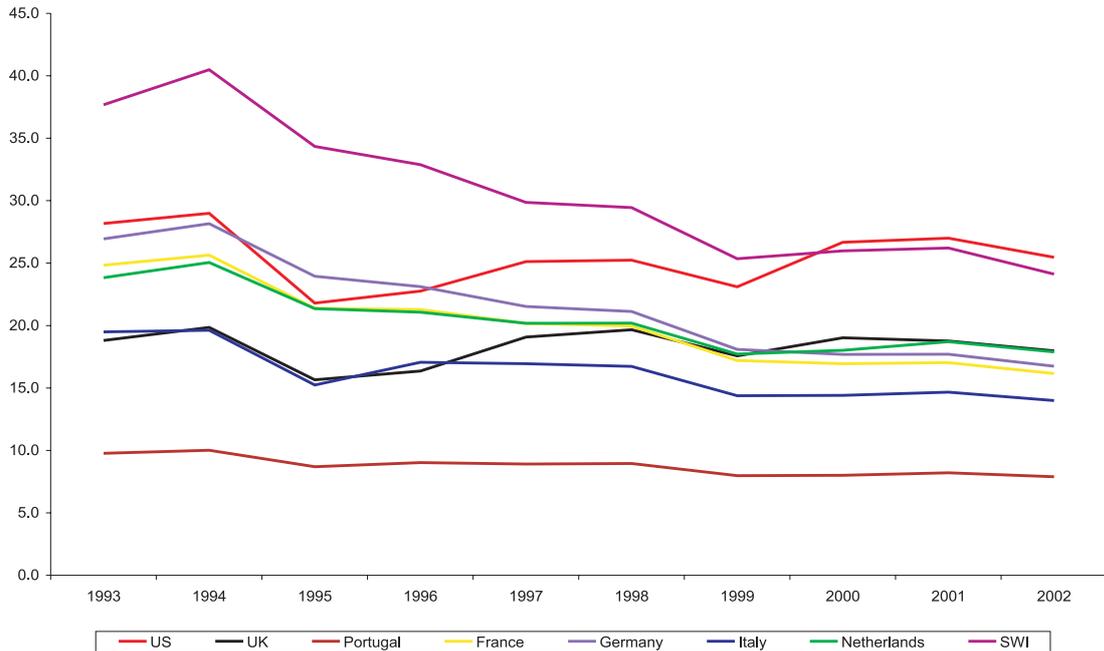
**Figure 17 - Remittances over time, CVE mn, 1993 - 2002**



Source: BCV; author's own calculations

A first impression on a potential relation between the afore-mentioned regressors and remittances can be gained through graphical inspection. Figure 18 plots per capita GDP ratios, defined for all time periods  $t$  as  $\frac{\text{per capita GDP in country } i}{\text{per capita GDP in Cape Verde}}$ ; income ratios have trended down except for the United States and the United Kingdom. Contrasting the graph with the previous two diagrams, a positive correlation seems to exist for the United States; particularly striking is the joint fall in remittance shares, total remittances and the income ratio in 1995 and 2002, and the joint rise in 1997 and 2000. Strangely, the correlation appears negative for Portugal, which has witnessed an increase in remittances but a gentle drop in the income ratio; the same holds true of France and, to a lesser extent, Italy. The downward convergence of income ratios in euro area countries is also striking, since in itself it should have been followed by a reduction in remittances if there really is an income effect. The visual inspection does not give a clear indication as to whether there is an income effect or not; the picture is blurred at best, though a negative relation between income and remittances appears to exist for some countries.

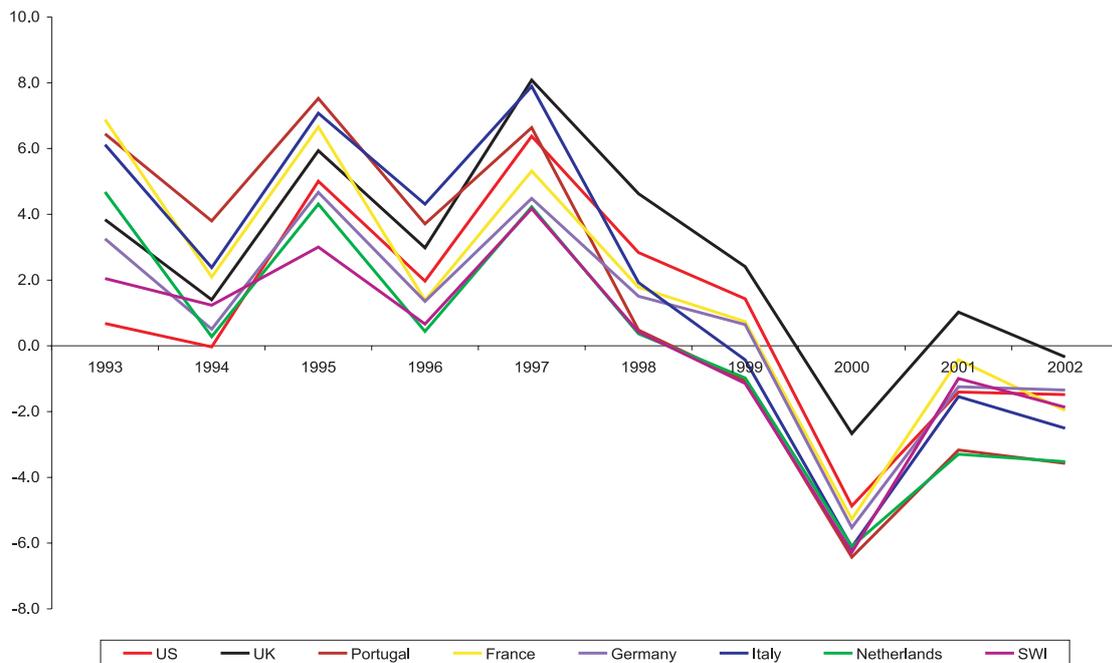
**Figure 18 - Per capita income ratios, 1993 - 2002**



Source: various; author's own calculations

Regarding interest rate differentials, defined as  $(i_i - INF_i) - (i_{CV} - INF_{CV})$ ,<sup>31</sup> Figure 19 clearly shows that, starting in 1999, it has been more profitable to invest in emigrants' deposits than at home. The year 2000 was especially profitable; the large negative real interest rate differential is mainly due to the -2.4% inflation rate. There has been some convergence between euro area countries since 1999, and the interest rate differential with the United Kingdom is, on average, a bit lower than for other countries.

**Figure 19 - Real interest rate differentials, 1993 - 2002**



Source: various; author's own calculations

<sup>31</sup> This follows from the Fisher equation, which holds that real interest rates equal nominal rates minus the expected rate of inflation. Ex-post inflation rates were used for the regression analysis.

Though visual inspection of the diagrams is helpful in spotting co-movements, it is nonetheless rather limited in scope and precision; the regression analysis that follows is more revealing. The regression equation is very similar to the one from the original IMF paper. However, the function was not derived from microfoundations but instead effectively consists of an ad hoc adoption of the model introduced earlier. Thus, the model considers the expected rate of return as an important factor but does not leave it at that. The model specification is:

$$\ln REMITS_{i,t} = \alpha_i + \beta_1 Yd_{i,t} + \beta_2 \ln R_{i,t} + \beta_3 \ln APP_{i,t+1} + \beta_4 D99_t + \eta_{i,t}$$

where  $REMITS_{i,t}$  is remittances for country  $i$  at time  $t$ ;  $Yd_{i,t}$  is the real income ratio between Cape Verde and country  $i$  in period  $t$ ;  $R_{i,t}$  is the time  $t$  real interest rate differential between country  $i$  and Cape Verde; assuming perfect foresight,  $\ln APP_{i,t+1}$  is the log of the next period (realised) real expected appreciation, i.e. the log of:

$$\frac{\epsilon_{i,t+1} \frac{CPI_{CV,t+1}}{CPI_{i,t+1}}}{\epsilon_{i,t} \frac{CPI_{CV,t}}{CPI_{i,t}}} - 1$$

where  $\epsilon$  is the nominal exchange rate quoted indirectly.  $D99_t$  is a time dummy which attempts to capture the significance of the euro changeover.  $\alpha_i$  is a time-invariant country-specific fixed effect and  $\eta_{i,t}$  is the error term, with  $E[X_{i,t} \eta_{i,t}] = 0$  but  $E[X_{i,t} a_i] \neq 0$ , where  $X_i$  is any regressor.

It is worth emphasising how this specification differs from the original one. For one thing, the model is specified as a panel data model: the 1996 paper reported a significant intercept in the OLS regression, leading the authors to conclude that there were other significant variables not accounted for by the model. The problem with OLS is that omitting significant variables causes the coefficient estimates to be biased. The fixed effects model specified above sidesteps the omitted variable bias by explicitly allowing for the excluded variables to be correlated with the regressors, resulting in unbiased estimates. The impact of these omitted variables is captured by the fixed effects; the  $\alpha_i$ 's can be thought of as any factors which determine remittances but which have not been included in the model explicitly. The fixed effects thus encompass altruism and other factors which in practice are difficult to measure. The fact that the fixed effects regression avoids the omitted variable bias allows for a sound numerical interpretation of the regression coefficients. Coefficients on logged variables can be interpreted as elasticities, whereas the coefficients on untransformed variables have the usual "rate of change" interpretation.

A second change in the model specification is the substitution of a 1999 time dummy for the 1985 dummy in the IMF paper. The latter was meant to capture the impact of special emigrants' deposits, which were created in 1985. In fact, the paper established that the introduction of these emigrants' accounts was important since the time dummy was highly significant. Since the time period has changed, the 1985 time dummy has become obsolete. The 1999 dummy which replaces it has been chosen because it marks the introduction of the euro - in other words, it tests whether there is a "euro" effect, and whether the introduction of the single currency has had a major impact on remittances. But the year 1999 also almost coincides with the signing of the Exchange Cooperation Accord between Cape Verde and Portugal, which came into force in July 1998. The agreement marked a commitment by Portugal to support the Cape Verdean exchange rate peg, but it also led to the abolishment of foreign exchange queues by mid-April 1999. The introduction of

the euro and the 1998 Accord almost overlap, and the dummy must therefore be seen as capturing their combined effect which the author has dubbed the "credibility effect".

Thirdly, the IMF paper tested for the significance of the next period (log) exchange rate; here, the regression analysis was brought in line with the theoretical model developed earlier and the model regression for the significance of the escudo's real appreciation.

The regression results are reported in Table 5 and Table 6.

**Table 5 - Regression output**

Observations	80
Degrees of freedom	68
R-squared	0.91
Adjusted R-squared	0.89
Residual Sum of Squares	6.91
Standard error	0.32
F (11,68)	59.58
F (7, 68) (Fixed Effects)	83.09

Variable	Coefficient	Standard error	t - stat
Real per capita income ratio	0.0057	0.0125	0.458
Real interest rate differential	-0.26	0.0709	-3.668
Expected appreciation	-0.053	0.097	-0.547
Dummy 1999	0.2139	0.0974	2.197

Source: author's own estimates; standard errors are White heteroskedasticity corrected standard errors

The regression has a high R-squared and adjusted R-squared. The F-test for the model's overall significance has a probability value of zero; the F-test for the joint significance of the group effects also has a zero p-value, in fact rejecting the OLS specification in favour of the fixed effects model.

If in the IMF regression the real income ratio was significant and the interest rate differential was not, the scenario is reversed in the updated estimates. The real income differential has the correct positive sign but the variable is not statistically significant.

Of much greater importance is the real interest rate differential, which has the correct negative sign and is highly significant. This dramatically inverts the regression results from the 1996 analysis; since there is no time dummy for the creation of special emigrants' deposits in 1985, the interest rate variable picks up the full impact of these special deposits. Very importantly, the significant t-ratio on the interest rate differential suggests that the BCV's policy does indeed have a bearing on emigrants' spending decisions. This result is encouraging, for it implies that a low-inflation environment with interest rate premia over and above international rates are key in implementing the interest rate policy, as such a policy indeed attracts foreign capital which, in Section 2, was shown to be instrumental for the balance of payments sustainability. Although one should interpret such numbers with caution, the coefficient on the interest rate differential means that a 1% fall in the real interest rate differential increases remittances by roughly 0.26%.<sup>32</sup> The 1% fall refers to a relative fall in rates, not an absolute decrease, i.e. it refers to a 1% change in the real rate differential, not a change of one percentage point.

<sup>32</sup> Remember that the real differential is  $(i_i - INF_i) - (i_{CV} - INF_{CV})$ . Thus, higher rates in Cape Verde decrease the differential (which becomes negative when real domestic rates are sufficiently high) and thereby attract remittances.

Encouraging as this result may be, it puts all the more emphasis on the urgent need to reduce loan-deposit spreads. The real rate differential has four components, namely foreign and domestic interest rates and inflation respectively. The foreign interest rate and rate of inflation are beyond the BCV's control. Domestic inflation and interest rates are determined by the BCV's monetary policy strategy, as outlined in Figure 11. The crucial link is therefore between the refinance rate and emigrants' deposits rates. Figure 14 has illustrated how a lowering of the refinance rate has resulted in a proportionately greater reduction in deposit rates which results in a greater rise in the differential in relative terms. Thus, when the BCV lowers the refinance rate, the impact on the real rate differential is magnified since spreads have widened. Lowering loan-deposit spreads will strengthen the transmission mechanism between the refinance rate, deposit rates and remittances.

The author feels compelled to stress that some caution should be attached to the quantitative interpretation of the coefficient estimates. For one thing, the estimates - though fairly robust - did vary in the course of the estimation process. Also, the model imposes common slope coefficients across the cross-sections, whereas the elasticities will, in practice, most certainly vary across groups.

Expected appreciation, which replaces the next period (log) exchange rate from the original IMF paper, is not significant, and the variable has an incorrect negative sign. Two reasons can be put forward for this: firstly, the introduction of the euro in 1999 has substantially reduced within-group variation for the exchange rate data, which decreases estimation accuracy; and secondly, it is more likely that the highly significant dummy variable picks up the exchange rate effect, rather than appreciation which in practice assumes perfect foresight. Appreciation raises returns, but it is also meant to proxy some measure of confidence in the currency and in the BCV's monetary policy stance. With the perfect foresight assumption, the "credibility effect" is better picked up by the time dummy which also incorporates the elimination of foreign exchange queues. The significant and positive dummy variable therefore means that there is something like a credibility effect which has provided a boost to remittances. As was pointed out, this is a combined effect which consists of a "euro effect" and a separate effect caused by the July 1998 Agreement and the abolition of foreign exchange queues.

That not all the determinants of remittances are in the model is underscored by the statistics reported in Table 6 below, which lists the fixed effects.

**Table 6 - Fixed effects**

<b>Fixed effects</b>	<b>Coefficient</b>	<b>Standard error</b>	<b>t - stat</b>
USA	7.7553	0.369	21.017
UK	5.37	0.3075	17.462
Portugal	7.5916	0.2452	30.956
France	7.2216	0.3147	22.946
Germany	5.7438	0.3257	17.637
Italy	6.6206	0.288	22.99
The Netherlands	7.294	0.3166	23.04
Switzerland	5.5005	0.4144	13.274

Source: author's own estimates

All eight countries have high and significant fixed effects which capture the impact of omitted variables as explained previously; this includes factors such as altruism which were omitted because they are difficult to measure empirically, but also transaction costs which may have a significant impact on remittances despite the underlying model's simplifying assumptions.

### **3.4 Section summary**

The current regime has been sustained since January 1999. There have been no devaluations since the escudo was pegged to the euro, the BCV's and the escudo's credibility have risen, and Cape Verde has enjoyed high growth in a low-inflation environment.

The drawback of the anchor to the euro is the dollar's weakness, which makes foreign exchange interventions costly and reduces the value of US transfers in terms of Cape Verde escudos. There is also the cost of keeping interest rates high to attract foreign capital so as not to endanger the peg to the euro. In addition, rising loan-deposit spreads imply that it becomes increasingly difficult for the BCV to use the refinance rate as an effective adjustment mechanism. This leaves discretionary control of the money supply as the other policy tool, but this also works through interest rates (through the liquidity effect). The BCV's policy effectiveness is therefore conditional on lowering loan-deposit spreads.

In any case, the significant fixed effects in the regression suggest that there may be autonomous factors, like altruism, which dampen fluctuations in private transfers arising from changes in interest rates or other variables. The fact that not all remittances end up in special deposits also lends support to the view that emigrants are not entirely motivated by self-interest and expected returns, but that there is an autonomous factor to emigrants' spending decisions. The size of the fixed effects coefficients suggests that these autonomous factors could be quite strong.

As long as some restrictions remain on capital flows, the BCV can partially sidestep the constraints from the monetary policy trilemma. However, as capital flow rigidities disappear, the monetary policy trilemma stipulates that it will become increasingly difficult to sustain the pegged exchange rate regime.

This chapter has made observations as to what can be done in order to bring interest rates down without a regime change: improving credibility further, perhaps through the build-up of foreign reserves, a cautious fiscal policy and a reduction in loan-deposit spreads will enable authorities to cut rates. These recommendations are not overnight solutions, and most of them are applicable whatever the specific exchange rate regime. However, in the face of rising foreign interest rates, high loan-deposit spreads, potentially excessive budget deficits and a weak dollar, the present exchange rate regime may come under increasing pressure. This warrants an in-depth discussion of alternative exchange rate regimes, presented in Section 4.

## **4. Alternative exchange rate regimes**

Up to this point it has been assumed that the two intermediate targets are in fact appropriate as a means to achieving the policy objectives. Although private investment is key in stimulating economic growth, it is conceivable that a change in the exchange rate regime will not have a substantial impact on price stability. This chapter assesses the advantages and disadvantages of giving up the first intermediate target (the nominal exchange rate anchor), an action which may enable a lowering of domestic interest rates.

Section 4.1 considers whether a managed float or an intermediate regime, such as a crawling or adjustable peg, is appropriate for the Cape Verdean economy. Theoretical repercussions of a devaluation are also assessed. Section 4.2 and Section 4.3 consider two extreme corner solutions, namely currency board arrangements (CBAs) and outright euroisation. Finally, Section 4.4 draws concluding remarks about the choice of the exchange rate regime.

### **4.1 Free floats and intermediate regimes**

A free float with full convertibility is one of the consistent corner solutions. The foregoing analysis very strongly suggests that adopting a free float would do more harm than good, and in fact the movement has - from a historical perspective - been towards the fixed end of the spectrum as authorities have recognised the need for a stabilisation programme which operates through the exchange rate. The BCV's inflation achievements would be put at risk with a floating rate, and such a regime change would most definitely be a source of macroeconomic instability and volatility: the dependence on imports, together with a freely floating exchange rate, could quickly transmit to other layers of the economy and impede economic growth.

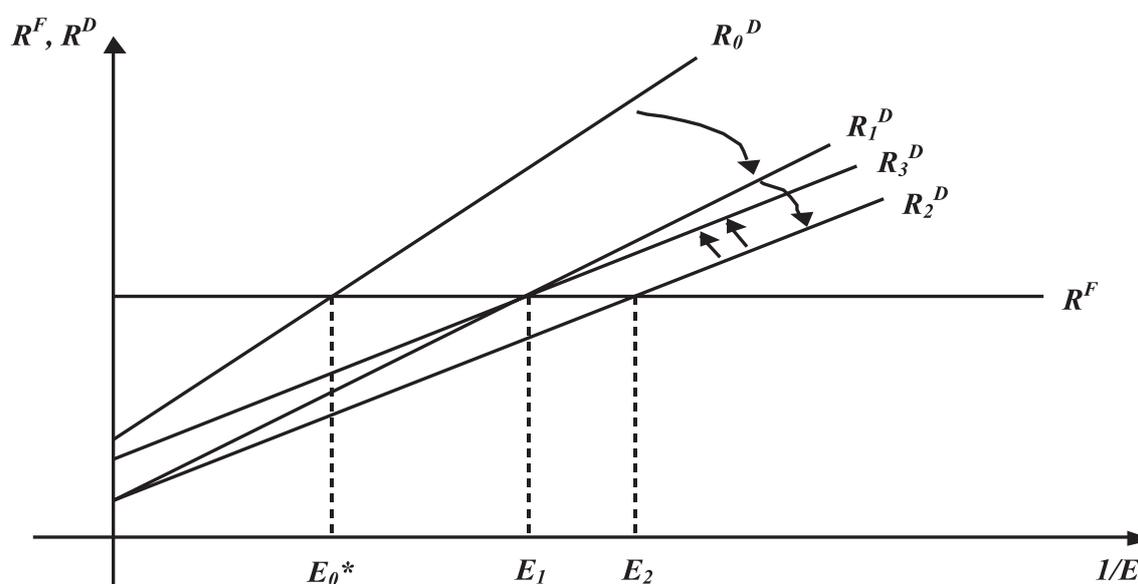
Numerous exchange rate regimes exist between the consistent but "extreme" corners referred to by the monetary policy trilemma. In an adjustable peg system, for example, the exchange rate is re-pegged at regular intervals, the time horizon is medium to long term and the purpose of the adjustment is usually to correct fundamental disequilibria. For this reason, corrections tend to be larger but less frequent than under a crawling peg system, where numerous small successive adjustments are made over a shorter time horizon. Even closer towards the flexible end of the spectrum of exchange rate regimes are exchange rate bands. Here, authorities set an upper and a lower limit close to a central parity; the exchange rate is free to fluctuate until it hits the upper or lower bound, at which time authorities step in. This system is quite flexible and there is some leeway as to how far the bands can diverge from the midpoint. Bands can be wide or narrow; the Exchange Rate Mechanism (ERM) II, for example, specifies that the bands must not exceed +/-15% of the central parity, though the bands can be narrowed by mutual agreement. Moreover, bands can be moving or fixed, symmetric or asymmetric. Barring ordinary pegs with fixed bands, intermediate regimes go hand in hand with re- or devaluations; the Cape Verdean escudo is, of course, much more prone to a devaluation than to a revaluation given the weakness of the dollar and Cape Verde's structural trade deficit. A devaluation can be induced if the regime becomes unsustainable or, alternatively, it can be part of a monetary policy strategy which could, for instance, specifically aim at lowering interest rates to a level that is consistent with a new exchange rate target. In the former case, devaluation is a necessity rather than a monetary policy choice: instead of giving up the anchor entirely, the exchange rate is re-pegged at a level that can be sustained - the exchange rate becomes part of an adjustment mechanism which moves the economy to a new equilibrium. In the latter case, devaluation is not a necessity but a policy choice which aims to consolidate a low-interest policy (the policy objective of which is to boost private

investment) with exchange rate targeting (the policy objective of which is, first and foremost, price stability).

Although these regimes have their merits, they can be dangerous in that they remove firmly anchored exchange rate expectations: successive devaluations or adjustments within exchange rate bands can trigger off a series of devaluation expectations which can cause the exchange rate to continue spiralling downwards through a loss of confidence in the currency.

In Figure 20, the BCV has devalued the currency in order to be able to pursue a low-interest policy: the  $R^D$  schedule shifts down (from  $R_0^D$  to  $R_1^D$ ) to reach a new equilibrium, that is the locus of the new exchange rate ( $E_1$ ) and interest rate levels respectively. However, the change in the anchor will also affect exchange rate expectations (and hence the slope of the  $R^D$  schedule). If the devaluation is meant to be one-off, and the new exchange rate target is credible without the possibility of further devaluations, the economy will stay at  $E_1$  with lower interest rates (provided the new equilibrium exchange rate can be sustained); the slope of the  $R^D$  schedule has changed to reflect the new exchange rate expectations, now also anchored at  $E_1$  since there was no credibility loss.

**Figure 20 - Adjusting the anchor can trigger off devaluation expectations**



Problems begin to surface if the devaluation leads to further devaluation expectations. The regression analysis has underscored the credibility effect; in many ways, credibility has been critical in maintaining the current regime, as demonstrated by the surge in emigrants' deposits since the elimination of foreign exchange queues, the introduction of the euro and the 1998 Exchange Cooperation Agreement. The Cape Verde escudo has not been devalued in over six years now, and exchange rate expectations are more or less firmly anchored; even a modest devaluation could jeopardise the equilibrium by instilling uncertainty. In this instance, the  $R^D$  schedule will continue to pivot down and to the right (from  $R_1^D$  to  $R_2^D$ ) and devaluation expectations will cause the exchange rate to fall further (to  $E_2$ ). To redress the situation, the BCV has to raise interest rates again - shifting  $R_2^D$  up to  $R_3^D$  - in order to get the economy back to  $E_1$ .

Although in this scenario interest rates are still lower than before the initial devaluation, the actual outcome can be very pernicious if the credibility loss continues and the exchange rate keeps slipping. In this case, the BCV will have to raise rates continuously to compensate the fall in capital

inflows induced by the loss in credibility. In other words, the credibility loss can raise the exchange rate premium considerably.

Devaluing will also increase the debt burden if debt is denominated in foreign currency, while successive devaluations will increase the debt burden gradually, which in itself can cause further devaluation expectations by fostering low confidence. Although exports will probably go up following the relative decline in export prices, the downside is that imports will be priced up with the devaluation(s); not only will this jeopardise price stability, higher import prices will also impinge on exports owing to the high import-content of export products.

It may be argued that the consequences of introducing some flexibility into the current system depend a lot on how the system is actually changed. If the regime change is part of the BCV's strategy, the credibility loss is likely to be mitigated, in contrast with a regime change brought about by a collapse of the anchor. Also, exchange rate bands with a fixed floor and ceiling are less likely to incur a credibility loss, especially if the margins are narrow and the fluctuations around the central rate moderate. A sizeable buffer of foreign reserves would be advisable, however, to allow the central bank to step in at the margins. The credibility loss is lowest with narrow bands introduced as part of a well-defined, transparent strategy, and highest under an adjustable peg system with wide moving bands that comes about through a collapse of the existing anchor.

The next two sections present regimes where the credibility issue is sidestepped through the adoption of a truly fixed regime where exchange rate adjustments, though not impossible, are very difficult to implement.

## **4.2 Currency board arrangements**

Currency boards are monetary authorities which issue notes and coin, and sometimes deposits, which are usually fully backed by a foreign reserve currency, also called the anchor currency; the domestic currency is fixed to and fully convertible into the reserve currency on demand.<sup>33</sup> The reserves held by a currency board are typically interest earning low-risk assets denominated in the anchor currency. Orthodox currency boards back up their domestic currency 100%, sometimes more (up to 105-110%) in case their reserve assets lose value. Typical currency boards do not have any discretionary powers over monetary policy, which is set on "autopilot", with market forces determining the monetary base (M0). M0 consists of currency board notes and coins and commercial banks' reserves, if any, at the currency board; the public's deposits at commercial banks are thus excluded. The money supply includes the public's deposits, which are not backed up by foreign reserves.

Currency boards have been adopted by countries with a wide variety of economic and cultural backgrounds: from April 1991 to January 2002, Argentina had its peso/US dollar exchange rate fixed at one to one; Hong Kong has had a currency board since 1983; Estonia and Lithuania, two countries which have joined the European Union only recently on May 1 2004 and which are among the first to have been admitted to ERM II (on June 28 2004) also operate a currency board. Moreover, there are a few very small countries, such as Djibouti (population 450 000), Brunei (population 336 000) and Gibraltar (population 29 000) which have had successful currency boards since 1949, 1952 and 1929 respectively.

Like every exchange rate regime, currency boards have advantages as well as shortcomings; these are outlined and evaluated below.

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<sup>33</sup> This section draws primarily on Hanke and Schuler (2000).

## *Credibility*

One major difference between a truly fixed exchange rate such as a currency board arrangement and a peg is credibility, an issue touched upon repeatedly throughout this paper. When the exchange rate is merely pegged, there is always a non-negative probability that authorities will re-peg or abandon the peg entirely; this is because, as was illustrated in the previous chapter, the exchange rate target conflicts with a central bank's discretionary control of monetary policy. In a currency board this issue does not arise because there is no discretionary monetary policy. Consequently, credibility can be much higher than with a central bank system, especially if the exchange rate is entrenched in law such that it is very difficult to change the parity. The benefits of higher credibility were illustrated in Figure 15. With a standard currency board, the exchange rate premium - and thus (nominal and real) interest rates - are much lower. The underlying assumption is that the currency board is set up in such a way that credibility is not undermined. With the exchange rate credibly fixed to the reserve currency, investors know with certainty how much their repatriated profits will be worth. By reducing uncertainty and improving investor confidence, a currency board contributes to a healthy investment climate.

Credibility is inversely related to the ease with which the currency board can be abandoned. In order to make it harder to abandon the currency board, and thereby boost its credibility, the exchange rate should be written into the constitution or otherwise entrenched in law. Another important point is that the currency board should not hold domestic currency assets as reserve assets; this would defeat the purpose of having a rule-bound monetary policy (explained shortly), and hence a credible exchange rate, by making it possible to conduct open market operations and thereby alter the money supply.

### *Rule-bound monetary policy and no lender of last resort*

The main criticism pertaining to currency boards is that monetary authorities have no discretionary control of the money supply. The quantity of notes, coins and sometimes deposits which the currency board supplies is determined in response to commercial banks' and the public's demand for currency. Monetary policy is rule-bound rather than discretionary, and the rule simply states that the currency board shall convert notes and coins into reserve currency at a fixed rate and on demand.

Although a major advantage of such a system is that inflation is low, it can also be quite hazardous, as the Argentine experience has demonstrated. After several successful years of sharp reductions in inflation and higher growth, the Argentine economy was hit badly by the "Tequila crisis" in 1994/5;<sup>34</sup> a period of bank runs followed and the money supply contracted sharply, with real GDP receding by 5%. With no discretionary monetary policy to offset the contraction in the money supply arising from the bank panic, authorities could only sit back and watch in dismay. Without the possibility of printing money, authorities were unable to step in to act as lenders of last resort. Even then Argentina was not spared further economic hardship, and in 2002 the then stand-in president Eduardo Duhalde dismantled the currency board. Argentina now operates a managed float.

Lack of discretionary power over the money supply means that the currency board cannot print money even in the unlikely event of a bank run, as was the case in Argentina; in other words, a

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<sup>34</sup> Also known as the Mexican peso crisis: political instability and news about an unhealthy banking sector triggered devaluation expectations which spread like wildfire.

currency board lacks a central bank's power to act as a lender of last resort. In Cape Verde, this is particularly hazardous given the market structure of the banking sector. With one commercial bank in possession of a very large share of the market, the consequences of this bank experiencing a severe liquidity shortage would be disastrous: the resulting contraction in the money supply would be very sharp and the economy would plunge into a deep recession.

Another point to consider is the maturity mismatch in the banking sector. From the BCA's Annual Reports, it is possible to compute an approximating measure of the degree of maturity mismatch in the banking sector. The ratio of sight to total deposits in 2004 was 39.1%. The ratio of medium and long term to total (performing) credit was 83.3%. The maturity mismatch has, however, decreased from 2001 to 2003: in 2001, deposits were 42.1% short term, down to 40.6% two years later, and credit was 83% long term, slightly down to 82.2% in 2003. Maturity mismatches are typical of economies with incomplete financial markets. The East Asian crisis from the 1990s is partially attributable to maturity and currency mismatches: the inability to borrow long term in international markets forced many firms to either issue short term domestic debt or obtain long term foreign credit; regarding the maturity mismatch, the problem was one of excessive short term exposure where a rise in interest rates, perhaps in the context of a defence against a speculative attack on the currency, would raise debt servicing costs beyond a level that was sustainable. The possibility of a bank run fuelled by maturity mismatches highlights the need for a lender of last resort: with illiquid assets and short term liabilities, bank run expectations lead, in the worst case scenario, to a massive withdrawal of funds.

Having the already indebted government replace the monetary authorities as a lender of last resort is costly, although grant revenue could perhaps be re-directed to this purpose. However, banks in Cape Verde are predominantly Portuguese-owned and supported by credit lines, which to some extent shields the economy from banking crises.

Currency board systems will also further increase exposure to external shocks from the anchor country: because monetary policy is rule-bound, adjustments to idiosyncratic shocks have to go through other channels (see the next section for more details on this).

### *Deflation*

In a currency board, the money supply can only increase if there is a balance of payments surplus. However, it is unlikely that Cape Verde will achieve systematic balance of payments surpluses without foreign assistance: with structural current account deficits being financed primarily through borrowing and occasional one-off privatisations, balance of payments surpluses will tend to be the exception rather than the rule. If the money supply does not expand in line with increased money demand arising from economic growth, this will have a deflationary effect. Moreover, it is possible that the lower interest rates induced by the currency board will reduce remittances, thereby further intensifying the magnitude and likelihood of balance of payments deficits.

However, in practice very few currency boards have actually experienced deflationary periods. As Hanke and Schuler (2000) point out, this is because currency boards usually experience large capital inflows in the form of FDI.

### *Is the conversion feasible?*

Having discussed the pros and cons of a regime change in the form of a currency board, the next step is to consider whether the conversion is in fact feasible. It is possible to determine the level of

initial foreign reserves required for a currency board system and compare the result with Cape Verde's current level of international reserves to establish whether these are sufficient in order to assure the conversion from a central bank to a currency board system. An orthodox currency board requires the monetary base to be fully backed up by foreign reserves. The monetary base consists of issued notes and coin (that is, notes and coin held by the public plus vault cash) and deposits of commercial banks at the central bank. If the entire monetary base is backed up by foreign reserves, using July 2005 BCV data, a total of 20 162 million CVE is required for the conversion to a currency board, which is much more than the 13 522 million CVE of available net foreign assets. In other words, the conversion is not feasible without obtaining extra foreign reserves.

This is of course just an estimate. In order to obtain a more exact figure, the level of the exchange rate fixed by the currency board would have to be determined first. However, the estimates above provide a reasonable approximation, and the financing gap for the conversion is large enough to warrant the conclusion that adopting a currency board is not feasible without recourse to extra sources of foreign reserves.

### **4.3 Euroisation**

Euroisation is the adoption of the euro alongside or instead of the domestic currency. Following Schuler (2000), it is possible to distinguish between unofficial, semi-official and official euroisation: unofficial or *de facto* euroisation occurs when euro assets are held in the domestic economy without making the euro legal tender; semi-official euroisation takes place when the euro is part of a bi-monetary system where the foreign currency is legal tender but the domestic currency still circulates as legal currency in the economy; official or *de jure* euroisation occurs when the euro is the sole currency having legal tender.

Only semi-official and official euroisation are actual policy choices since unofficial euroisation is largely beyond the monetary authorities' control. There is little research on semi-official and official euroisation, although the topic has attracted interest in recent years, especially since many emerging markets have experienced currency crises in the late-1990s. Montenegro and Kosovo have been euroised very recently, and three other countries - Ecuador, El Salvador and East Timor - have adopted the dollar as legal tender in recent years. There are also several European microstates (San Marino, Vatican City, Monaco and Andorra) which have adopted the euro as legal tender.<sup>35</sup>

In many ways, adopting the euro is the logical culmination of Cape Verde's monetary history: Cape Verde has strong economic ties to the euro area, especially Portugal, as evidenced by the country's trade pattern and remittance shares; since the 15th century, the role of the Portuguese currency - now replaced by the euro - has been prominent; Cape Verde has even accepted the Maastricht criteria. However, advocating a regime change on the grounds that it is logical may not be the most appropriate methodology. What is required is an assessment of the advantages and disadvantages of replacing the escudo with the euro.

The benefits of euroisation are discussed first; next, the costs are duly analysed; lastly, convergence criteria are examined.

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<sup>35</sup> Liechtenstein unilaterally adopted the Swiss franc as legal tender in 1924.

### *Trade gains*

There is little doubt that currency unions or euroisation foster trade; more controversial is the quantification of these trade gains (for a comprehensive review, see IMF (2004), pages 23-29). Pioneering work on trade gains arising from currency unions has been done by Rose and co-authors. Estimating a panel data model, Rose et al. find that the currency union dummy variable (equal to one if a country pair is a currency union) is significant, and that currency union membership could boost trade up to 300 percent. These results have attracted some criticism, though: Persson (2001) found that correcting for selection bias reduces trade gains from 300 to 60 percent; Tenreyro (2001) finds that correcting for simultaneity bias arising from the potential endogeneity of trade patterns also reduces trade gains to 60 percent; other studies suggest that the Frankel and Rose results are biased due to omitted variables.

Whatever the true magnitude of the trade gains arising from currency unions or substitutions, there is little doubt that trade gains do exist.

### *Investment*

One of the major advantages of euroisation is that it completely sidesteps all credibility issues. Removing the national currency from circulation means that authorities have to give up discretionary control of monetary policy; this eliminates the dynamic inconsistency problem, which arises when policy makers do not pre-commit to an inflation target but rather choose to renege on the target which ex post is no longer optimal. However, since the public expects policy makers to renege, inflation expectations are also higher, resulting in higher actual inflation. Without discretionary monetary policy, the dynamic inconsistency problem cannot arise: inflation is kept at bay and Cape Verde can continue to enjoy low and stable prices, which will contribute to higher investment.

Gains from credibility are not confined to removing the inconsistency problem. Because the national currency no longer exists in an officially euroised economy, interest rates will fall since risk premia will be lower. As noted previously, the risk premium consists of an exchange rate premium and a sovereign risk premium. By eliminating one of the two premia, interest rates will come down.

An added benefit is that commercial banks will be able to hold fewer reserves (Schuler, 2000): a distinct national currency forces banks to separate domestic currency from euro portfolios, but adopting the euro removes the need for dichotomising portfolios which can now be pooled; this in turn again reduces the cost of business.

It is very important to point out that euroisation/dollarisation alone may well be only partially successful in bringing down interest rates. The previous chapter has highlighted that rate cuts can equally well translate into widening spreads, and any reduction in risk premia could get sucked into higher bank profits rather than leading to lower lending rates. This is indeed not an implausible scenario, as evidenced by the recent discussion on the reduction of reserve requirements: "there is concern at the central bank to ensure that a lowering of reserve requirements (or remuneration of required reserves) translates into reduced loan-deposit spreads rather than higher bank profits" (IMF, 2004f, p.9). In the same document, it is noted that "structural reforms in credit markets could be more effective in lowering lending rates at this juncture than monetary policy" (IMF, 2004f, p.9), referring without a doubt to the lack of competition in the banking sector; the author would add that very much the same point can be made with regard to the choice of the exchange rate regime: without potentially lengthy structural reforms, it is quite likely that euroising the economy will only be moderately successful in reducing rates, if at all.

Other countries' experience with euroisation/dollarisation will perhaps shed some light on whether adopting a foreign currency as legal tender brings down interest rates, even though the basis of comparison may be rather weak given each country's peculiarities. For example, in Panama - dollarised since 1904 - spreads over US Treasuries seem to be largely driven by investor sentiment on emerging markets, as Winkler et al. (2004) indicate. In Kosovo, a difficult lending environment, limited access of domestic banks to international financial markets and the absence of an interbank market have contributed to high loan rates although deposit rates have been close to euro area rates.

The Kosovar experience is, in some ways, instructive for the Cape Verdean economy, although from a cultural, political and historical point of view Kosovo and Cape Verde have little in common. Be that as it may, regarding the economy there is much to be learnt. For one thing, the structural inefficiencies in the banking sector in Kosovo are not very different from those in Cape Verde: with only seven commercial banks and seventeen microfinance institutions (IMF, 2004h), two thirds of total banking assets are owned by only two banks; the banking sector is thus a de facto duopoly just like in Cape Verde. Since the economy was officially euroised in 2002, lending spreads have come down just a little in Kosovo; between 2001 and 2004,<sup>36</sup> spreads have fallen from just under sixteen percent to just over fourteen percent. In other words, it took three years to reduce spreads by less than two percentage points. How much of this is the merit of adopting the euro as legal tender, and how much of this achievement can be attributed to the United Nations Interim Administration Mission in Kosovo (UNMIK) and their efforts to stabilise the country, is difficult to disentangle. Less controversial, in the author's view, is the fact that UNMIK's stabilisation efforts have had some impact on loan rates and lending spreads, implying that the actual impact euroisation has had on spreads is lessened.

### *Fiscal discipline*

Euroisation bereaves the central bank of its ability to resort to money-printing for the financing of budget deficits. It must be stressed that this advantage is not dependent on euroisation; the new organic central bank law has improved the BCV's independence and prevents it from extending credit to the government, except for a short-term credit facility which must be cleared each year at year's end. Nor is euroisation a quick fix for imposing fiscal discipline: money creation and inflation can still get out of hand if the government relies on other methods of financing, such as bank-financing of public debt. To cite a comparative example: in the aftermath of the oil crisis of the early seventies, Liberia ran continuous budget deficits which eventually led to the collapse of the currency regime.<sup>37</sup> Large fiscal deficits will put upward pressure on interest rates, undermining the gains from adopting the euro as legal tender; also, if default risk increases as a result of lax fiscal policy, the drop in interest rates resulting from a reduction in the exchange rate premium will be offset, partially or entirely, by a rise in the sovereign risk premium.

### *Other benefits*

A large number of other benefits exist which are not easily quantified. Through the adoption of a stable currency, the financial sector in Cape Verde would improve. This would further enhance the degree of financial integration with the euro area. Trade integration would also increase, not the least because of greater price transparency. Euroisation also completely gets rid of the monetary policy trilemma.

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<sup>36</sup> Prior to 2002 the Deutsche Mark was prominent in Kosovo.

<sup>37</sup> As will be explained below, Liberia had to rely on fiscal policy as a shock-absorber because neither a change in the monetary policy stance nor the exchange rate could offset the impact of excruciatingly high petrol prices. (Winkler et al, 2004)

Finally, a good reason for adopting the euro is because it simply is much easier to handle. The reliance on emigrants' deposits, which are a major contributor to broad money growth, will disappear; problems with foreign reserves will be much alleviated; transaction costs may also go down, which would further boost investment.

A full empirical assessment is obviously beyond the scope of this paper. Whether or not the euro should be adopted in part depends on the severity of the alleged costs that come with it; if these costs, which are discussed below, turn out to be negligible, the case against euroisation is weakened.

### *Loss of seignorage*

A recurring argument against euroisation is that it deprives authorities of a source of income. There are many ways in which to define and measure seignorage. The underlying idea is that central banks are monopoly suppliers of the non-interest bearing<sup>38</sup> monetary base which can be used to buy interest-earning foreign and domestic assets; a profit can be made in this fashion. Gross seignorage is the income that accrues to central banks from issuing currency; net seignorage subtracts the costs associated with issuing currency and keeping it in circulation.

Thus, seignorage is effectively a central bank's income. This income usually covers the bank's costs, and any surplus is passed on to the government. Since euroisation eliminates seignorage revenue on which both the central bank and the government may depend, it is important to at least get a rough estimate of the income that will be lost if the exchange rate regime is changed. If seignorage revenue is substantial, this provides an argument against abandoning the national currency.

Euroisation involves buying back the monetary base - just like when converting to a currency board system, outlined in the previous section, where it was demonstrated that current foreign reserves are in fact insufficient for a regime change. Unlike in a currency board system though, monetary authorities opting for the adoption of a foreign currency also forego future seignorage flows. This flow cost, which comes on top of the stock cost of buying back the monetary base, is often measured by multiplying the monetary base with some interest rate. This is obviously grossly simplified, and a more elaborate method of computation is proposed below.

Making an accurate estimate of the BCV's seignorage income places strong informational requirements on the researcher; in order to obtain such an estimate, one would require complete and accurate data on:

1. The counterparts of the monetary base (foreign assets, claims on government, etc.) and the interest earned on these assets
2. The currency composition of foreign reserves
3. Yields on long-term foreign bonds
4. The rates of depreciation of the bilateral exchange rates from the foreign currency portfolio
5. The break-down of the monetary base into currency in circulation, required reserves and excess reserves, and the related interest payments, if any, made to commercial banks
6. Additional costs arising from the printing of notes and the minting of coins, intervention in foreign exchange markets, etc.

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<sup>38</sup> This assumes that neither required nor excess reserves are remunerated. If reserves are remunerated, the cost this generates must be taken into account.

Central banks use the monetary base to acquire interest-earning assets such as foreign reserves, but also domestic assets such as bonds issued by local government. Turning to foreign assets first, data on the currency composition of these assets are essential in order to compute an accurate estimate of the return they generate. Thus, yield data are required in order to compute the interest earnings on the foreign currency portfolio. Once the yields are known, they must be expressed in terms of a common denominator, hence the need to adjust the yields by the respective rates of depreciation; all yields may then be expressed in terms of a common currency. For domestic assets the calculations are much easier since exchange rate issues do not arise with assets denominated in national currency. However, it may not be possible to obtain all the details on the break-down of domestic assets and the list may be quite large, making the task of identifying the respective yields a difficult one.

To compute net seignorage, costs must be deducted from the gross estimates. For this, the break-down of the monetary base into currency holdings and reserves must be known. This is because reserves, unlike notes and coins held by the public, can generate extra costs for the central bank. Reserves may or may not be remunerated; because the rate of return paid on required reserves differs from the rate paid on excess reserves, the informational requirement is even greater: the researcher needs to know the level of required versus excess reserves and the respective rates of interest applied at each point in time. Finally, there are other, not easily quantifiable costs such as the cost of printing and replacing notes, and the potentially substantial costs arising from direct intervention in foreign exchange markets.

Given these restrictions, the best the author can do is provide an approximating estimate of gross seignorage. The counterparts of the monetary base are foreign and domestic assets. The problem with foreign assets is that their currency composition is unknown. In order to circumvent this problem, three portfolios have been constructed; Table 7 reports the portfolios' weightings.

The foreign currency weightings of the foreign asset components of the respective portfolios are as follows: Portfolio 1 - 75% EUR, 25% USD; Portfolio 2 - 50% EUR, 50% USD; Portfolio 3 - 25% EUR, 75% USD.<sup>39</sup> These foreign currency weightings are then adjusted by the share of the BCV's foreign assets in the monetary base, which varies from year to year but not across portfolios. Appendix II derives these weightings in some detail.

**Table 7 - Portfolio weightings for the calculation of seignorage, 2000 - 2004**

		2000	2001	2002	2003	2004
<b>Portfolio 1</b>	<b>EUR</b>	0.22	0.31	0.40	0.35	0.43
	<b>USD</b>	0.07	0.10	0.13	0.12	0.14
	<b>NDA</b>	0.70	0.59	0.47	0.53	0.42
<b>Portfolio 2</b>	<b>EUR</b>	0.15	0.20	0.27	0.23	0.29
	<b>USD</b>	0.15	0.20	0.27	0.23	0.29
	<b>NDA</b>	0.70	0.59	0.47	0.53	0.42
<b>Portfolio 3</b>	<b>EUR</b>	0.07	0.10	0.13	0.12	0.14
	<b>USD</b>	0.22	0.31	0.40	0.35	0.43
	<b>NDA</b>	0.70	0.59	0.47	0.53	0.42

Source: IMF (2005f, 2005g); author's own calculations

The weightings are used in the computation of the final portfolio yields and, ultimately, the calculation of gross seignorage flows. As Table 8 below shows, the yields have decreased

<sup>39</sup> A meeting with the BCV in March 2005 has revealed that the USD component of the foreign asset portfolio may in fact be even lower than in Portfolio 1.

substantially since 2000 when the dollar was strong against the euro. Table 11 in Appendix II highlights the drop in yields and, more importantly, the dollar's fall against the euro, which has resulted in a very sharp decline in US yields (in euro terms). The yield on Portfolio 3 - which has a larger USD component than the other portfolios - is negative in 2003.

**Table 8 - Portfolio yields for seignorage, 2000 - 2004**

	2000	2001	2002	2003	2004
<b>Portfolio 1</b>	8.6%	7.7%	6.0%	2.9%	3.9%
<b>Portfolio 2</b>	9.6%	8.1%	5.2%	0.6%	2.5%
<b>Portfolio 3</b>	10.7%	8.4%	4.4%	-1.7%	1.1%

Source: various; author's own calculations

The drop in yields has a direct impact on seignorage revenue, which has risen with the dollar's appreciation in 2000 only to plummet in 2002 and especially in 2003. Table 9 reports gross seignorage in percent of GDP for the period 2000 - 2004.

**Table 9 - Gross seignorage in % of GDP, 2000 - 2004**

	2000	2001	2002	2003	2004
<b>Portfolio 1</b>	1.8%	1.6%	1.3%	0.6%	0.9%
<b>Portfolio 2</b>	2.0%	1.7%	1.1%	0.1%	0.6%
<b>Portfolio 3</b>	2.2%	1.7%	1.0%	-0.4%	0.2%

Source: various; author's own calculations

The decline in yields and the depreciation of the dollar are reflected in the pattern of seignorage revenue. Until 2002, gross seignorage revenue was substantial and hovered around the range of 1.0% - 2.2% of GDP. However, the recent picture that emerges is a very different one: seignorage in 2003 was very low, perhaps negative; although the situation in 2003 could be deemed exceptional in the period under consideration, the dollar continues to face a downside risk from severe global imbalances. Though in 2004 gross seignorage in percent of GDP improved somewhat, seignorage revenue is likely to deteriorate in 2005 if bond yields remain at their current low levels. It should be borne in mind that these are gross seignorage flows. Although required reserves were non-remunerated in 2003 (IMF, 2003j, p.8, footnote 12), excess reserves earned interest<sup>40</sup> and the various other costs alluded to above may well mean that the BCV was making a net loss.

A rise in bond yields and an appreciation of the dollar could boost seignorage revenue to previous levels though. Also, it should be borne in mind that these are just the flow costs involved in adopting the euro as legal tender; the section on currency boards has shown that stock costs can be substantial as well.

In the United States, the International Monetary Stability Act (1999) enables officially dollarised countries to claim 85% of seignorage computed from a formula; however, the Act has never been implemented in practice. Although no European equivalent to the Act exists, such a measure would enable Cape Verde to reclaim a large share of the flow cost of euroisation.

### ***No lender of last resort***

The lender of last resort argument is essentially the same as before: by giving up control of monetary policy, monetary authorities cannot print money to finance a major bankruptcy in the

<sup>40</sup> The BCV has an overnight deposit facility, the taxa de absorção da liquidez (TAL).

financial sector. However, just like a currency board can, to some extent, act as a lender of last resort even without printing money, a euroised country can have its own central bank or monetary institution which takes over this responsibility. The Banco Nacional de Panama (BNP), for example, has occasionally "supplied emergency liquidity to banks" (Winkler et al., ECB, 2004, p.22) even though the country is dollarised since 1904. The trickier issue that has to be dealt with in the instance a national institution acting as lender of last resort is set up is how to fund it.

### *Difficult to reverse*

A drawback with euroisation is that it is very difficult to reverse; very few countries have introduced their own national currency after the adoption of a foreign currency. It should be apparent, however, that this is precisely why credibility rises after the euroisation process: if it were possible to revert back to a national currency with ease, to "de-euroise", the afore-mentioned credibility gains could not be accomplished since this rise in credibility derives in part from the fact that euroisation expresses a long-term commitment by the government or monetary authorities.

### *Loss of a symbol of national identity*

A powerful non-economic argument against euroisation is that a national currency and central bank are symbols of national identity and independence. Perhaps non-economic reasons are deemed insufficient for rejecting a regime change which, on economic grounds, may be very appealing. However, the argument is not easily dismissed, especially in the case of a country with a past as tumultuous as Cape Verde's which has only been independent since 1975.

It must be stressed that although euroisation does away with the national currency, a regime change does not necessarily imply that the country will have to remove its central bank; "institutional substitution" is not necessary and may indeed be disadvantageous. In fact, many euroised or dollarised economies have retained some form of monetary institution. Ecuador, El Salvador, Kosovo, Montenegro and Panama all have either a central bank or a regulatory institution which performs central bank-type duties such as supplying emergency liquidity or setting minimum reserve requirements. The Banking and Payments Authority of Kosovo (BPK), for instance, merges central banking and financial services supervisory functions; the BPK's main responsibilities not only comprise the development of the payments system, the supply and maintenance of euro notes and coins, and acting as banker for the government, but also include supervisory and enforcement activities in the financial sector. The Central Bank of Montenegro (CBM) even has the ability to conduct open market operations to inject liquidity into the economy.

### *Loss of an adjustment mechanism to asymmetric shocks*

Much more important than the previous two points is the argument that the adoption of a foreign currency will bereave the country of an important adjustment tool in the face of unexpected shocks, such as oil price hikes or natural disasters to which Cape Verde is prone. If an unexpected shock were to occur in a euroised economy, the shock could not be absorbed through a change in the monetary policy stance or by adjusting the exchange rate. In the present regime, it is at least possible to make short-term monetary policy adjustments, as the discussion on the monetary policy trilemma has highlighted; if all else fails, a devaluation - though harmful to the BCV's credibility - always remains a fallback. If the economy has been euroised, no such correction mechanisms will exist.

This raises the question whether there are any other correction mechanisms at the BCV's disposal. Traditional Optimum Currency Area (OCA) theory holds that in the absence of monetary policy or

the exchange rate as adjustment processes, alternate means of adjustment must exist if the economy is to prosper. In other words, the economy must exhibit a number of properties which act in a shock-absorbing fashion, so as to replace discretionary monetary policy and the exchange rate as shock-absorbing instruments.

It is both useful and important to address convergence issues in this context. The distinction between nominal and real convergence criteria is deemed trivial by some economists who believe that the latter criteria are not requisite, and in fact only nominal criteria are set out in the Treaty Establishing The European Community. The emphasis will be put on nominal convergence criteria, though the paper will also briefly consider real convergence issues.

### ***Nominal convergence criteria for economic and monetary union***

The Treaty Establishing The European Community spells out the nominal convergence criteria EU Member States must meet for the achievement of economic and monetary union; these criteria, reproduced in Box 3, are also known as the Maastricht criteria.

Strictly speaking, adopting the euro as legal tender, whether unilaterally or through a formal agreement, does not presuppose acceptance of the Maastricht criteria. However, since Cape Verde has accepted them, the author firmly believes that unilateral euroisation and/or wanton flouting of the measures set by the Treaty would be a policy mistake. The author is confident that formal euroisation (as opposed to unilateral euroisation) and evidence that authorities are genuinely pursuing policies which endorse and respect the Maastricht criteria would be looked upon favourably by the EU.

#### **Box 3 - The Maastricht convergence criteria**

Article 121 (ex Article 109j) § 1 of the Treaty Establishing The European Community defines the nominal convergence criteria as follows:

- "the achievement of a high degree of price stability; this will be apparent from a rate of inflation which is close to, at the most, the three best performing Member States in terms of price stability;"
- "the sustainability of the government financial position; this will be apparent from having achieved a government budgetary position without a deficit that is excessive as determined in accordance with Article 104(6);"
- "the observance of the normal fluctuation margins provided for by the exchange-rate mechanism of the European Monetary System, for at least two years, without devaluing against the currency of any other Member State;"
- "the durability of convergence achieved by the Member State and of its participation in the exchange-rate mechanism of the European Monetary System being reflected in the long-term interest-rate levels."

These criteria are further elaborated in protocols annexed to the Treaty.

*Source: Treaty Establishing The European Community, especially Article 121(1)*

There is also the obvious question as to whether nominal convergence is a prerequisite to currency substitution. The Maastricht criteria exist to a large extent to protect Member States against improper economic policies by other EU members. But from Cape Verde's point of view there are also good reasons for observing the Maastricht criteria: euroisation comes at the cost of losing monetary policy and exchange rate adjustments as shock absorbers; therefore, the higher the

degree of nominal convergence with the euro area, the more appropriate the ECB's monetary policy decisions will be for the Cape Verdean economy.

In order to apply the Maastricht criteria in practice, a number of constraints must be considered. Firstly, the criteria place stringent data requirements on the researcher by restricting the price stability and interest rate criteria to "a period of one year before the examination"; the author relaxes this requirement for practical reasons and instead uses data for the period January to December 2004.<sup>41</sup> Second, the criteria leave some room for interpretation, as the discussion below will demonstrate.

Protocol 21 annexed to the Treaty elaborates on the actual Treaty and provides additional information that is essential for a sound interpretation of the criterion on price stability; price stability means "that a Member State has a price performance that is sustainable and an average rate of inflation, observed over a period of one year before the examination, that does not exceed by more than 1.5 percentage points that of, at most, the three best performing Member States in terms of price stability." The ECB's quantitative interpretation of price stability does not actually figure in the Treaty, nor is it as such the focus of convergence reports; rather, the interpretation set out in these reports seems to refer to the three lowest inflation rates in the EU, barring outliers in order to handle distortions in some Member States' inflation developments. If this interpretation is correct, "the three best performing Member States in terms of price stability" in 2004 were Finland, Denmark and Sweden with respective inflation rates of 0.1, 0.9 and 1.0 percent. This yields a

reference value of  $\frac{0.1+0.9+1.0}{3} + 1.5 = 2.2$  .<sup>42</sup>

In 2004, Cape Verde had an inflation rate of -1.9%, as given by the annual percentage change in the CPI; this is below the reference value of 2.2%. However, negative inflation is not generally considered desirable. In the ECB's Convergence Report 2004, only Lithuania has a negative rate of inflation; the country is excluded as an outlier due to "a combination of specific factors". It is thus not straightforward to determine whether Cape Verde meets the price stability criterion in 2004. The year before, however, inflation equaled 1.2% in Cape Verde, below the 2003 reference value of 2.5%.

The criterion on long-term interest rates implies that the same countries serve as yardsticks for determining whether interest rate convergence has been achieved. According to Article 2 from Protocol 21, countries must have an average nominal long-term interest rate that does not exceed by more than 2 percentage points that of, at most, the three best performing Member States in terms of price stability. The yields on 10-year government bonds in 2004 were, respectively, 4.11% (Finland), 4.3% (Denmark) and 4.42% (Sweden). This produces a reference value of

$\frac{4.11+4.3+4.42}{3} + 2 = 6.28$  .

Problems surface with the interpretation of interest rates being measured "on the basis of long-term bonds or comparable securities". It is common practice to use 10-year government bonds to determine interest rates; such bonds do not exist in Cape Verde, and it is questionable whether T-bills with a one-year maturity (the longest maturity available) qualify as "comparable securities",

<sup>41</sup> All data are from Eurostat, New Cronos.

<sup>42</sup> The reader is referred to Convergence Report 2004 which quotes a reference value of 2.4% for the period September 2003 to August 2004, i.e. an increase in the twelve-month average HICP of 2.4% as compared to the previous twelve-month average (September 2002 to August 2003); this compares to a Cape Verdean inflation rate of -2.11% in the same period.

especially since longer term bonds are meant to capture inflation expectations which one-year T-bills may not reflect appropriately. Nevertheless, for lack of a better basis of comparison, one-year T-bills will be used in assessing the interest rate criterion. The 2004 "long-term" interest rates in Cape Verde, given by the rate of interest on one-year T-bills, averaged 6.9%. This is above the reference value of 6.28%.<sup>43</sup>

Next, let us turn to the criterion on the government's financial position. The reference values from Article 104 (ex Article 104c) §2 are given a quantitative interpretation in Protocol 20 annexed to the Treaty. Deficits may be deemed excessive if the ratio of the planned or actual government deficit to GDP exceeds the reference value of 3%, or if the ratio of government debt to GDP exceeds 60%.<sup>44</sup> However, the article also states that a budgetary position may not be deemed excessive if the ratio of the planned or actual government deficit to GDP "has declined substantially and continuously and reached a level that comes close to the reference value" or if "the excess over the reference value is only exceptional and temporary and the ratio remains close to the reference value". The same holds if the ratio of government debt to GDP is sufficiently diminishing and approaching the reference value at a satisfactory pace.

Cape Verde had an overall budget deficit (excluding grants) of 8.5% in 2004; with grants, the deficit was only 1.8% of GDP. Only the former is above the reference value of 3% and the two distinct deficit values highlight the fact that grants remain a substantial component of the government's revenue; it will be extremely difficult to respect the 3% reference value without further foreign assistance. However, there has been a "substantial and continuous" decline in Cape Verde's budget deficit. Moreover, the excessive deficit from 2000 can be seen as "exceptional and temporary", given that the expenditure increase in that period is largely attributable to a drought which called for appropriate spending measures.

Total debt (excluding TMFs) amounted to 80.9% of GDP (preliminary, IMF, 2005g), above the reference value of 60% of GDP. Cape Verdean debt data vary substantially across data sources; however, IMF data suggest that the ratio of government debt to GDP has been "sufficiently diminishing and approaching the reference value at a satisfactory pace" as the ratio fell from 87.3% in 2002 to just over 80% in 2004.

This leaves the final criterion, that is the exchange rate requirement, which has been subject to some controversy. According to Article 3 of Protocol 21 the criterion for ERM participation "shall mean that a Member State has respected the normal fluctuation margins provided for by the Exchange Rate Mechanism of the European Monetary System without severe tensions for at least the last two years before the examination. In particular, the Member State shall not have devalued its currency's bilateral central rate against any other Member State's currency on its own initiative for the same period." ERM has been replaced with ERM II on January 1 1999. Moreover, a European Council decision from November 8 2000 states that the following regimes are incompatible with ERM II: floating regimes, crawling pegs, pegs against currencies other than the euro, and unilateral euroisation.

The Cape Verde escudo's hard peg to the euro since January 1999 has not resulted in any devaluations and the question regarding the magnitude of the fluctuation margins does not arise with a hard peg. The question that remains to be addressed, on the other hand, is whether the current level of the peg is in fact the correct parity; obviously, this issue goes beyond the scope of a paper as vast as this one.

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<sup>43</sup> The corresponding average rate of interest in Cape Verde for the period September 2003 to August 2004 is 7.04% and compares to a reference value of 6.4%.

<sup>44</sup> GDP is calculated at market prices.

In any case, euroisation should not take place unless the equilibrium exchange rate has been determined, since the consequences of an over- or undervaluation could be serious. In the context of Central European Countries and the EMU, the IMF notes that an undervaluation "would feed overheating and stoke inflation, both directly, via import prices, and indirectly, via demand pressures. An overvalued exchange rate would lead to some combination of large current account deficits and slack in the economy stemming from low profitability in the traded goods sector and its adverse effects on activity and employment." (IMF, 2004a, p.58) An undervalued exchange rate would also have a negative impact on export prices given the high import-content of Cape Verdean exports.

### *Real convergence*

Real convergence can be assessed through a comparison of real incomes and by ascertaining whether or not so-called Balassa-Samuelson effects are present.

Cape Verdean real GDP grew by roughly 4.5% in 2004, way above the average EU12 real growth rate of 2.1%.

Balassa-Samuelson effects arise due to differentials in productivity gains between the tradables and non-tradables sectors. Countries with lower real incomes tend to have lower wages and production costs, which gives them a competitive advantage. However, wages in the tradables sector will go up with increased productivity (in a fixed regime, the price of tradables in terms of domestic currency is fixed). This will also bid up wages and prices in the non-tradables sector: since productivity in this sector is usually much lower, the gains in productivity from the tradables sector translate into higher prices in the non-tradables sector in order to accommodate the rise in wages. This is the Balassa-Samuelson effect. Ascertaining its presence or absence on the basis of a non-technical (viz. non-econometric) assessment is possible through inspection of Figure 7 on page 21: with a fixed exchange rate, Balassa-Samuelson effects should translate into a real exchange rate appreciation, but there is no evidence of this.

Other measures of real convergence include: the similarity in economic structures; integration (trade, fiscal, financial and institutional); and price and wage flexibility. These criteria are especially important in the context of alternative adjustment mechanisms in the face of idiosyncratic shocks arising from the loss of the monetary policy instrument after euroisation.

Concerning economic structures, it is helpful to contrast the relative size of the respective sectors in the economy. In Cape Verde, the tertiary sector is the most important, followed by industry and construction and then by agriculture.<sup>45</sup> The primary sector (10.3% of GDP in 2001) is much more significant than in the euro area (2% of GDP in 2002). The secondary sector was 16.9% of GDP in 2001, which contrasts with 27% of GDP for the euro area in 2002. Services make up 72.8% of GDP, which is higher than the 71% of the tertiary sector in the euro area.

Integration at several levels (trade, fiscal, financial and institutional) is also important in partially alleviating the loss of an adjustment instrument to exogenous shocks.

In Section 2, which gives an overview of the Cape Verdean economy, Cape Verde's trade links with the euro area were highlighted. If trade integration with the euro zone is high, the same does not hold for financial integration. Financial integration comprises "the similarity of financial structures, institutions and legislation, because similar structural features [...] are seen to increase and synchronise the effectiveness by which monetary policy is transmitted to the real economy" (Backé

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<sup>45</sup> The source for Cape Verde data is the Economist Intelligence Unit Country Report 2004; euro area data are from Eurostat.

and Thimann et al., 2004, p.39). Thus, institutional and financial integration go hand-in-hand. Financial markets in Cape Verde are incomplete, and there are only four commercial banks,<sup>46</sup> three off-shore banks, two insurance companies and five non-banking financial institutions (IMF, 2005f, p.43). In 1997, Sociedade Interbancaria e Sistemas de Pagamentos, SARL (SISP) was created, an institute whose task it is to improve and modernise the financial system. By February 2003, 30 ATMs had been installed since the creation of SISP and the institute continues to manage activities pertaining to electronic payments and banking (World Bank, 2003). Foreign purchase of Cape Verdean bonds and equity is very low, as evidenced by the near-zero portfolio investment. The stock exchange in Cape Verde has only been in existence for a short period. Interest rate and spread differentials with the euro area continue to be substantial: in June 2005, loan and deposit rate differentials were 9.57 and 3.36 percentage points respectively; loan-deposit spread differentials amounted to 6.21 percentage points.<sup>47</sup> Foreign direct investment is quite low: in 2003, the inward FDI to GDP ratio was 1.46%. Emigrants' remittances continue to be the most important component of private capital flows, there are no taxes or subsidies on sales and purchases of foreign exchange and there is no forward cover against exchange rate risk (IMF, 2003j, esp. p.28).

Another form of integration takes place through fiscal transfers. Cape Verde is highly dependent on bilateral and multilateral aid; foreign aid can act as a cushion in the face of idiosyncratic shocks and provides vital resources for further integration.

Price and wage flexibility are more difficult to measure. In 2003, unemployment stood at 16.7% (BCA, 2004) in Cape Verde. Labour mobility is very high, as evidenced by the significant amount of emigrants' remittances: it is estimated that roughly one million Cape Verdeans live abroad. Emigration constitutes an adjustment mechanism to asymmetric shocks in the sense that it is a way of absorbing excess labour supply.

Lastly, there is some support for the view that the OCA properties are in fact endogenous, that is to say that they will improve once currency substitution has taken place. This implies that the above criteria need not be met beforehand: the economy's shock-absorbing capacity will, according to proponents of the new OCA theory, improve once the common currency has been adopted; the debate about old versus new OCA theory is still unresolved though.

Beside these convergence issues, there is also a simple indicator of how much confidence there is in the domestic currency, namely the level of unofficial euroisation. A common way of measuring unofficial euroisation is given by the ratio of foreign currency deposits to broad money. Measured in this fashion, de facto euroisation has gradually and continuously declined from 5.76% in 1999 to 3.92% in 2003; this suggests that the credibility of the BCV's monetary policy, and of the national currency inasmuch as it is dependent on the monetary policy stance, have increased. However, de facto euroisation has increased slightly to 4.27% in 2004.

This decline in unofficial euroisation somewhat weakens the case for de jure euroisation; it suggests that the measures adopted by Cape Verdean authorities have indeed increased faith in the CVE. It is worth noting, though, that the BCA is paying lower interest rates on foreign currency deposits, which most certainly contributed to a decline in demand for such deposits relative to domestic currency deposits, lowering - ceteris paribus - the measure for de facto euroisation.

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<sup>46</sup> As noted previously, the market structure is effectively a duopoly.

<sup>47</sup> Deposit rates are deposits from households with an agreed maturity of up to one year (euro area, 1.95%) and interest rates on deposits of 181 - 364 days (Cape Verde, 5.31%). Loan rates are loans to non-financial corporations with a floating rate and up to one year by initial rate fixation (euro area, 3.87%) and credit rates of 181 - 364 days (Cape Verde, 13.44%).

Inasmuch as a low degree of de facto euroisation is tantamount to high credibility in the national currency, there is not much support for adopting the euro.

#### **4.4 Section summary**

This section has explored the costs and benefits of giving up the exchange rate anchor. The author was quick to dismiss a floating regime, not the least because excess exchange rate volatility poses too great a risk to the country's macroeconomic stability. Next, intermediate regimes were briefly considered, most of which were deemed inappropriate. Adjustable and crawling pegs could damage the BCV's credibility; moreover, if these regimes are used to converge to a lower equilibrium exchange rate (i.e. through a devaluation), debt burdens will also rise. In any case, the benefits of a devaluation are likely to be modest since Cape Verdean exports have such a high import-content. Intermediate regimes where no adjustments take place (such as pegs with fixed exchange rate bands) do not have such side-effects, though the problem with exchange rate bands is that they presuppose the existence of sufficiently high levels of foreign reserves to defend the peg if the exchange rate moves too close to the lower band. Moreover, if the bands cannot be maintained, this system is just as dangerous as the intermediate regimes which are closer towards the more flexible end of the spectrum.

This leaves two of the so-called "extreme corner solutions" as possible candidates: currency boards and euroisation. Currency boards remove the monetary authorities' discretionary control of monetary policy, which raises credibility and lowers inflation and interest rates. However, there usually is no lender of last resort in a currency board system; given the duopoly and maturity mismatches in the banking sector, it is advisable that an institution which takes on this role be set up. Another problem with currency boards is their deflationary effect on the economy if balance-of-payments deficits are large and/or frequent.

Euroisation, the other extreme corner solution, is a more prominent solution. But even under this exchange rate regime the costs can be substantial: seignorage estimates are perhaps higher than expected; replacing the lender of last resort raises questions of funding; and there are other, less elaborate arguments which cannot be ignored (de-euroisation is difficult; domestic currency is a symbol of national identity). Though the benefits of euroisation could well outweigh these costs, the most powerful argument against euro adoption is the loss of a shock absorber in the face of asymmetric shocks. Here, the signal from the convergence analysis is mixed at best, making it difficult to reach a conclusion on this matter. In addition, as suggested by the Kosovar experience, euroisation as such is not likely to reduce the large lending spreads substantially; the problem with widening spreads is of a structural nature and should be tackled accordingly.

## **5. Concluding remarks and scope for further research**

The nature of this paper is such that it is virtually impossible to provide an in-depth analysis of every issue considered relevant to the choice of the exchange rate regime. However, it is not impossible to provide a meaningful discussion of the main arguments and cross-reference them to empirical evidence where such evidence is available; this is the approach adopted in this paper.

Because of the scope of the paper, some important issues could not be addressed. Of particular relevance in the context of an "extreme corner solution" (should authorities find this an attractive option) is the parity at which the exchange rate will be fixed. Determining the central parity is difficult but critical, and a regime change in the form of a currency board or outright currency substitution should not be implemented unless the equilibrium exchange rate has been worked out, such that over- or undervaluation can be avoided. Another area which needs to be investigated is the foreign currency composition of external debt so as to be able to determine the impact of a devaluation. The foreign currency composition of international reserves is also a matter of interest.

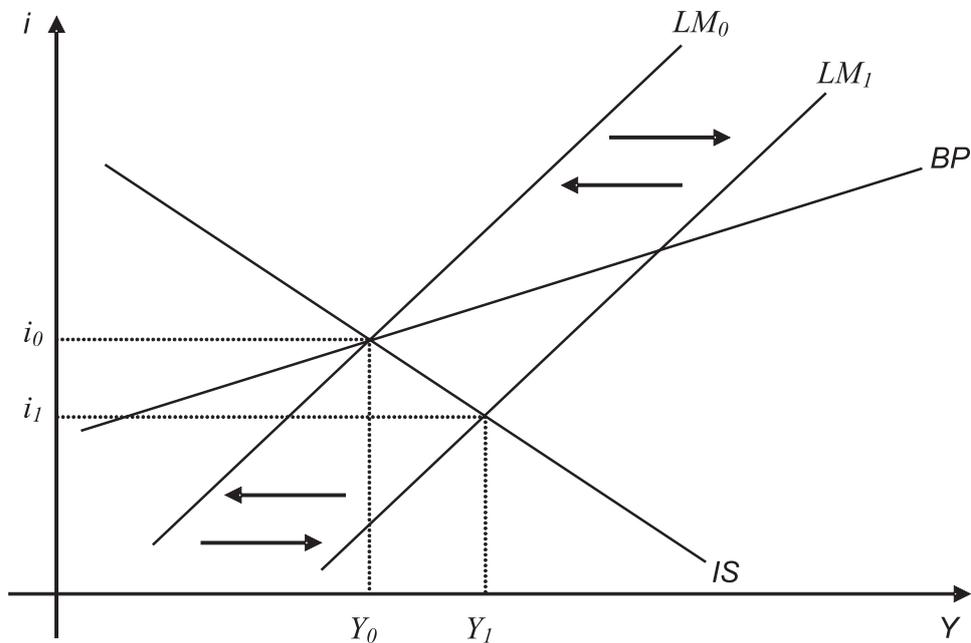
The discussion about the benefits and costs arising from a regime change indicates that the risks of abandoning the present system could be substantial. The uncertainty surrounding the actual impact of a regime change is reason enough to think twice about giving up the current strategy; though the latter is not without its problems, a powerful argument for keeping the existing regime is that authorities are familiar with it, and that the Achilles heel is not so much the exchange rate regime itself, but other elements external to the peg. Further to this, the analysis of the existing regime suggests that a regime change may not be necessary, provided that public spending is kept in check, loan-deposit spreads are reduced and credibility is enhanced further. But these are not overnight solutions, and in fact no quick fixes exist, other than unilateral euroisation which can be completed within a matter of weeks provided that funding for buying back the monetary base is made available. Such hurried unilateral euroisation, however, is usually implemented as an emergency measure, nor is it likely to reduce loan-deposit spreads substantially. The pressing question is not so much whether euroisation will bring down interest rates, but whether a regime change is required for this purpose; the paper's conclusion is that the answer to this question is no.

### Appendix I - ISLM analysis: Monetary policy under fixed exchange rates

The classical ISLM diagram very well illustrates the monetary policy trilemma. A monetary expansion shifts the LM curve to the right and brings down interest rates. With full convertibility (i.e. the complete absence of any exchange controls whatsoever), lower interest rates will lead to an outflow of capital as emigrants cut down private transfers; the monetary expansion will also increase demand for imports. This leads to a fall in the exchange rate unless authorities step in to redress the situation by neutralising the monetary injection: interest rates rise back to  $i_0$ , output contracts to  $Y_0$  and authorities effectively break even.

Of course, it is very well possible to achieve a higher level of output and lower interest rates temporarily. However, any long-term policy objectives will hit constraints and monetary policy therefore cannot be effective in the long run if the exchange rate is anchored.

**Figure 21 - Monetary policy is ineffective under fixed exchange rates**



## Appendix II - Seignorage: portfolio weights and interest rates

Table 10 below reports the weightings used in the calculation of the overall portfolio weights which are required in order to determine the yields for the computation of gross seignorage.

**Table 10 - Details on portfolio weightings**

	EUR	USD			
<b>NFAs in Portfolio 1</b>	0.75	0.25			
<b>NFAs in Portfolio 2</b>	0.50	0.50			
<b>NFAs in Portfolio 3</b>	0.25	0.75			
	2000	2001	2002	2003	2004
<b>NFA weight</b>	0.30	0.41	0.53	0.47	0.58
<b>NDA weight</b>	0.70	0.59	0.47	0.53	0.42

Source: IMF (2005f, 2005g) ; author's own calculations

To obtain the weightings in Table 7, proceed as follows. The net foreign asset (NFA) weight from the bottom half of Table 10 is multiplied by the respective currency weighting (0.25, 0.50 or 0.75) for each year and each portfolio component. For example, the 2001 Portfolio 1 in Table 7 comprises 31% ( $0.75 * 0.41$ ) euro-denominated bonds, 10% ( $0.25 * 0.41$ ) US dollar-denominated bonds and 59% net domestic assets (NDAs). Note that the currency weightings vary across portfolios but are time-invariant, whereas the ratio of NFAs and NDAs to the monetary base M0 varies over time but not across portfolios.

The next step is to calculate the yields on the basis of these weights. With three components to each portfolio, three sets of yields are involved in the calculation of seignorage revenue. Furthermore, these yields must be expressed in terms of a common currency, say the euro.

Table 11 below lists the data used for the computation of the yields in Table 8. The yields on long-term euro- and US dollar-denominated bonds have been used to determine the interest earned on the NFA component. However, the yield on US dollar-denominated bonds is adjusted by the rate of depreciation of the dollar against the euro, allowing the yields to be expressed in euro terms. For NDAs, the picture is too complex to calculate an interest portfolio and the author chose the rate on T-bills as a proxy for domestic interest rates.

**Table 11 - Data for the determination of yields for seignorage, 2000 - 2004**

	2000	2001	2002	2003	2004
<b>Yield on USD bonds</b>	6.0%	5.0%	4.6%	4.0%	4.3%
<b>Euro depreciation against the dollar</b>	13.3%	3.0%	-5.6%	-19.7%	-9.9%
<b>Yield on USD bonds in EUR terms</b>	19.3%	8.0%	-1.0%	-15.7%	-5.6%
<b>Yield on EUR bonds (proxied by Bund)</b>	5.3%	4.8%	4.8%	4.1%	4.1%
<b>Rate on NDAs (T-bills)</b>	8.5%	9.2%	9.0%	6.2%	6.9%

Source: Bloomberg, BCV; author's own calculations

In order to get the yields from Table 8, it suffices to take the weighted average of the rates in the table above; the weights have been determined as outlined above and are reported in Table 7. For instance, the 10.7% on Portfolio 3 in 2000 is obtained as follows. Multiply the weight of the EUR

component (0.07) with the yield on euro-denominated bonds (6.0%); next, multiply the weight of the USD component (0.22) with the adjusted yield on US dollar-denominated bonds (19.3%); finally, multiply the weight on the NDA component (0.7) by the rate on T-bills (8.5%) and add up the three weighted yields to get the 10.7% on the portfolio.

In a final step, the yields in Table 8 are multiplied by the percentage share of the monetary base in GDP reported in Table 12 below to obtain the gross seignorage estimates in Table 9.

**Table 12 - Share of M0 in GDP, 2000 - 2004**

	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
<b>Total assets (M0), % of GDP</b>	21.0%	20.7%	21.5%	21.0%	22.4%

*Source: IMF (2005f, 2005g); author's own calculations*

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