No. 2304

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INTERNATIONAL MACROECONOMICS

Centre for Economic Policy Research

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CEPR Discussion Paper No. 2304

November 1999

ABSTRACT

Will the Euro Create a Bonanza for Africa?*

This Paper considers the impact of the Euro in Sub-Saharan Africa, looking at the transmission channels through which the Euro could affect the economies in the region and at the risks and opportunities for Sub-Saharan African countries. In particular, the Paper looks into effects from the trade channel through changes in the European economic activity and real exchange rate. Because of a relatively low-income elasticity with respect to primary commodities, which is what Sub-Saharan Africa primarily exports, any increase in activity in Europe is deemed to have an inferior impact on Africa. Exchange rate regimes and geographical trade patterns points to large differences in the exposure to changes in the real exchange rate. Capital flows to Sub-Saharan Africa can be affected via changes in foreign direct investments (FDI) or via portfolio shifts. The former is not expected to be under much influence from changes in competitiveness in Europe and therefore no significant effect on FDI is to be expected. Portfolio diversification can potentially increase by a large amount. Realization of the increased potential is not to be expected because of severely underdeveloped domestic capital markets, which underlines the necessity for Sub-Saharan African countries to strengthen their financial integration with global markets. Financial implications, such as affects on the banking system, and debt and reserve management, vary across countries but are in general expected to be of limited magnitude. Thus, at this stage it is difficult to conclude that the Euro will result in an important macroeconomic impact in Sub-Saharan Africa unless the launch of the Euro becomes a tool of a major policy shift, 'Euroization' of the continent, which is itself unlikely at the current stage.

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NON-TECHNICAL SUMMARY

1 January 1999, marked the beginning of a new era of European economic and monetary union (EMU) as 11 of the 15 members of the European Union (EU) adopted a single currency, the Euro. The 11 countries have a combined population of 290.5 million people and a total 1997 GDP of $5,890,291 million, making the Euro a dominant currency on world markets and a potential challenge to the leadership of the US dollar. Most analysts have focused on the Euro's impact on participating countries and their neighbours and on Latin American countries.

This Paper considers the impact of the Euro on Sub-Saharan Africa, looking at the transmission channels through which the Euro could affect the economies in the region and at the risks and opportunities for Sub-Saharan African countries. It examines economic relations between Sub-Saharan Africa and the European Union and the financial relations between them, looking especially at foreign direct investment, European interest rate volatility and portfolio diversification considerations. It also considers the financial implications for the banking system and foreign debt and reserve management.

The relevance of Europe to Africa can hardly be overstated. Some 43% of merchandise imports to Sub-Saharan Africa originate from the European Union. EU countries account for 24% of all merchandise exports from Sub-Saharan Africa. For some countries the share is much larger: 40% for the CFA countries, one-quarter of it going to France. The importance of EU trade for Sub-Saharan Africa means that any impact of the Euro on GDP growth within Europe can have spillover effects on economic activity in Sub-Saharan Africa. The effect of the Euro on economic activity in Europe is expected to be positive, as elimination of exchange rate risk and reductions in transaction costs result in increased economic integration and competition within the European Union. The spillover effects on economic activity in Sub-Saharan African countries depend however on the degree and nature of market integration between the two regions. Sub-Saharan African exports to EMU countries are almost exclusively primary commodities, such as cotton, fruits, nuts, fish, coffee, pearls, silver, platinum and crude petroleum: petroleum alone accounts for 35% of the value of Sub-Saharan African export to OECD countries. Since primary commodities, which generally have a low-income elasticity, account for the greatest share of exports from Sub-Saharan Africa, any increase in exports to EMU countries induced by economic growth in Europe will be limited. A more significant effect could arise from progress in reforming the EU Common Agricultural Policy. The common policy was

discussed recently, but none of the issues under discussion are likely to have any substantial effect on Sub-Saharan Africa countries.

The EMU can also potentially affect Sub-Saharan Africa countries through many different financial linkages: capital markets, foreign direct investment, interest rates and portfolio diversification. The importance of the various financial channels depends on the degree of financial integration of the two regions. The distribution of foreign direct investment (FDI) in Sub-Saharan Africa is very unequal: South Africa and Nigeria alone accounted for 68% of FDI in 1997. It is argued that one effect of the EMU would be to redirect European foreign investments back into the Euro area as lower transaction costs make investments in the Euro area more attractive. But investors will already have anticipated this decline in transaction costs earlier on and FDI has continued to flourish in Sub-Saharan Africa in recent years. FDI in Sub-Saharan Africa is unlikely to be affected much by changes in competitiveness in Europe because the geographically disbursed markets limit the degree of direct competition. European FDI in Sub-Saharan Africa is probably motivated not by relative cost considerations but by the desire to gain first-mover advantage in emerging markets and to diversify risk. Furthermore, a very large share of the FDI in Sub-Saharan Africa is in either natural resources, which is quite isolated from any effects arising from the EMU, or concentrated in South Africa where there is a significant domestic market. Again, although African countries will be affected by all of these factors, none is likely to be of macroeconomic importance to them. At this stage, it is indeed difficult to conclude that these changes will result in an important macroeconomic impact unless it becomes the tool of a major policy shift: 'Euroization' of the continent, which is unlikely at the current stage.

1. Introduction

January 1, 1999, marked the beginning of a new era of European economic and monetary union (EMU) as 11 of the 15 members of the European Union (EU) adopted a single currency, the euro. The 11 countries have a combined population of 290.5 million people and a total 1997 GDP of $5,890,291 million, making the euro a dominant currency on world markets and a potential challenge to the leadership of the U.S. dollar.[1] Most analysts have focused on the impact of the euro on participating countries and their neighbors and on Latin American countries[2].

This paper considers the impact of the euro in Sub-Saharan Africa, looking at the transmission channels through which the euro could affect the economies in the region and at the risks and opportunities for Sub-Saharan African countries. It examines economic relations between Sub-Saharan Africa and the European Union and the financial relations between them, looking especially at foreign direct investment, European interest rate volatility, and portfolio diversification considerations. It also considers the financial implications for the banking system and foreign debt and reserve management.

Although African countries will be affected by all of these factors, none is likely to be of macroeconomic importance to them.

2. Economic relations between the European Union and Sub-Saharan Africa

Given the size and economic influence of the euro area, the EMU has the potential to significantly influence Sub-Saharan Africa's external trade and economic activity.

2.1. The Sub-Sahara African market

The market potential of Sub-Saharan Africa is considerable. The region has a combined population of 628 million people and a GDP of $913 billion. (table 1).[3] Nigeria is by far, the single largest country in terms of population—at 121 million inhabitants it is more than

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[1] In current international dollars (purchasing power parity); excludes Luxembourg.
[2] See Desruelle et al. (1998); Feldman and Temprano-Arroyo (1998); and Verner (1999).

double the size of the second largest country. But most countries in the region are relatively small, including the 14 CFA countries, whose population totals 97 million.[4] In terms of total income, South Africa is the largest. Its share of the region's GDP is equal to that of all West and Central African countries combined. Income distribution in the region diverges widely, ranging from $510 (PPP) per capita in Ethiopia to $7,380 in South Africa and $9,310 in Mauritius (see table 1).

GDP growth was relatively high in many African economies in 1997. Twenty-two of the 39 countries for which GDP growth is reported in table 1 had an average annual growth rate of 5 percent or higher. Growth has slowed considerably since then, however, and prospects are for continued slow growth, given the severe global recession brought on by weak demand, and large stockpiles. Further, prices for the region's key commodities (see next section) are the lowest in 30 years, and the outlook for long-term real prices is not favorable. Most prices are expected to stagnate at their current lows until 2010, with severe consequences for growth rates in Sub-Saharan Africa.[5]

2.2. Activity effects through EU-African trade

Some 43 percent of merchandise imports to Sub-Saharan Africa originate from the European Union, an amount equivalent to 0.6 percent of world merchandise trade. EU countries account for 24 percent of all merchandise exports from Sub-Saharan Africa, again equivalent to 0.6 percent of world merchandise trade (World Bank 1999b). For some countries the share is much larger— 40 percent for the CFA countries, one-quarter of it going to France (table 4).

EU merchandise imports from Sub-Saharan Africa grew nearly 6 percent during 1986–96, while EU exports to the region grew nearly 5 percent. These numbers are well below the 10 percent growth in world merchandise trade over the same period (World Bank 1999b), a reflection of the diminishing role of Sub-Saharan Africa in world trade over the last 40

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[3] All Sub-Saharan Africa countries with more than 1 mill. inhabitants are included in the analysis.
[4] CFA franc zone members are: Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Republic of Congo, Cote d'Ivoire, Equatorial Guinea, Gabon, Guinea-Bissau, Mali, Niger, Senegal, and Togo.
[5] *Source*: "Global Commodity Markets" World Bank quarterly publication, May 1999.

Table 1. Basic indicators for Sub-Sahara African countries, latest available year

Country	Population 1998 (millions)	GDP 1997 (millions of current PPP dollars)	GDP growth 1997 (percent)	GDP per capita 1997 (current PPP dollars)
West and Central Africa				
Benin	6.0	7,377.1	5.6	1,270
Burkina Faso	11.3	10,543.1	6.6	1,010
Cameroon	14.5	26,406.4	5.1	1,890
Central African Republic	3.5	4,546.1	5.1	1,330
Chad	6.9	6,918.1	6.5	970
Congo, Rep. Of	2.9	4,396.7	-1.9	1,620
Cote d'Ivoire	15.1	26,133.9	6.0	1,840
Equatorial Guinea	0.4	..	76.1	..
Gabon	1.2	8,703.8	4.1	7,550
Guinea-Bissau	1.1	..	5.0	..
Mali	10.6	7,637.2	6.7	740
Niger	10.0	8,291.6	3.5	850
Senegal	9.0	15,229.8	5.2	1,730
Togo	4.5	6,463.1	4.7	1,490
Gambia, The	1.2	1,730.9	5.4	1,470
Ghana	18.5	29,493.9	4.2	1,640
Guinea	7.1	13,015.6	4.8	1,880
Liberia	3.0	..	..	..
Mauritania	2.5	4,265.2	5.1	1,730
Nigeria	121.3	107,959.2	3.9	920
Sierra Leone	4.9	1,954.5	..	410
East and Southern Africa				
Angola	11.8	16,704.3	7.6	1,430
Botswana	1.5	11,796.2	6.9	7,690
Burundi	6.8	4,040.3	0.4	630
Congo, Dem. Rep.	48.1	40,881.8	-5.7	880
Eritrea	4.0	3,097.0	7.9	820
Ethiopia	62.1	30,193.8	5.6	510
Kenya	28.7	33,917.5	2.1	1,190
Lesotho	2.1	3,751.1	8.0	1,860
Madagascar	15.6	13,109.3	3.6	930
Malawi	10.5	7,277.7	5.1	710
Mauritius	1.2	10,688.9	5.0	9,310
Mozambique	19.0	12,324.1	12.4	740
Namibia	1.7	8,136.9	1.8	5,010
Rwanda	8.1	5,171.8	10.9	660
Somalia	10.5	..	..	..
South Africa	39.0	299,577.2	1.7	7,380
Sudan	28.5	43,388.8	4.6	1,560
Tanzania	32.2	18,091.0	4.1	580
Uganda	20.9	23,622.2	5.4	1,160
Zambia	9.7	9,086.6	3.5	960
Zimbabwe	11.7	26,930.6	3.7	2,350
CFA franc zone	**96.9**	**132,646.8**	**..**	**..**
West and Central Africa	**255.2**	**291,066.0**	**..**	**..**
East and Southern Africa	**372.5**	**621,787.2**	**..**	**..**
Sub-Saharan Africa	**627.6**	**912,853.3**	**..**	**..**

Note: Countries with fewer than 1 million inhabitants are not included (except for Equatorial Guinea, a member of the CFA franc zone).
Source: World Bank 1999b,c.

Table 2. Trade indicators for Sub-Saharan African countries, 1997

Country	Openness (exports as percentage of GDP)	Total trade (millions of US dollars)	Single most important export product to OECD		
			In value of trade	Millions of U.S. dollars	Percentage of total exports to OECD
West and Central Africa					
Benin	16.6	77.778	Cotton	32.830	42.2
Burkina Faso	6.5	67.725	Cotton	38.936	57.5
Cameroon	12.2	1,874.895	Crude petroleum	680.546	36.3
Centr.African Rep.	9.5	144.910	Pearl, prec-, semi-p stone	106.373	73.4
Chad	3.4	94.946	Cotton	82.070	86.4
Congo, Rep. of	64.5	1,370.287	Crude petroleum	700.809	51.1
Cote d'Ivoire	28.0	2,859.735	Cocoa	1,324.627	46.3
Equatorial Guinea	..	204.917	Crude petroleum	117.934	57.6
Gabon	49.5	2,917.452	Crude petroleum	2,486.791	85.2
Guinea-Bissau	..	14.492	Fish, fresh	11.178	77.1
Mali	18.2	117.389	Cotton	94.558	80.6
Niger	10.5	90.260	Medicinal etc. products	36.456	40.4
Senegal	8.4	371.742	Fish, fresh	176.746	47.5
Togo	22.6	126.592	Fertilizers, crude	55.820	44.1
Gambia, The	28.1	156.753	Pearl, prec-, semi-p stone	132.726	84.7
Ghana	17.0	1,215.887	Cocoa	422.629	34.8
Guinea	13.5	585.667	Non fer base mtl. ore, conc.	374.396	63.9
Liberia	..	1,029.487	Ships and boats	660.109	64.1
Mauritania	26.4	505.769	Iron ore, conc.	272.401	53.9
Nigeria	21.0	12,516.209	Crude petroleum	11,337.293	90.6
Sierra Leone	23.1	192.108	Pearl, prec-, semi-p stone	129.101	67.2
East and Southern Africa					
Angola	38.5	3,614.481	Crude petroleum	3,153.998	87.3
Botswana	..	..	..	..	..
Burundi	5.2	80.947	Coffee	64.557	79.8
Congo, Dem. R	5.7	1,120.675	Pearl, prec-, semi-p stone	635.127	56.7
Eritrea	..	9.158	Leather	2.571	28.1
Ethiopia	6.5	445.808	Coffee	316.822	71.1
Kenya	15.3	1,138.099	Coffee	329.787	29.0
Lesotho	..	..	..	..	..
Madagascar	10.5	595.869	Clothing not of fur	203.182	34.1
Malawi	20.0	371.890	Tobacco UNMFD	304.089	81.8
Mauritius	36.1	1,543.916	Clothing not of fur	903.458	58.5
Mozambique	11.9	182.571	Fish, fresh	89.032	48.8
Namibia	..	..	..	..	..
Rwanda	9.0	42.031	Coffee	33.102	78.8
Somalia	..	29.195	Fruit, nuts	14.139	48.4
South Africa	20.8	15,319.178	Silver, platinum,	1,990.128	13.0
Sudan	4.6	241.270	Cotton	52.004	21.6
Tanzania	14.8	369.521	Coffee	112.765	30.5
Uganda	6.0	476.552	Coffee	375.522	78.8
Zambia	24.6	459.326	Copper	176.498	38.4
Zimbabwe	19.9	1,276.976	Tobacco UNMFD	387.027	30.3
Sub-Saharan Africa	**17.8**	**53,986.029**	**Crude petroleum**	**18,711.169**	**34.7**

Note: OECD import data are used to get a picture of Sub-Saharan African exports because of problems with missing or unreliable data when the reporting country is from Sub-Saharan Africa.
*Source:* OECD; UN Comtrade; and World Bank 1999b,c.

years (Ng and Yeats 1997). The region's declining role in world trade is also evident in measures of trade openness (trade as a percentage of GDP) in Sub-Saharan Africa (chart 1). Trade openness fell from 30 percent of GDP in 1980 to 15 percent in 1985–86, where it has remained. Current differences across countries in trade openness are large, ranging from 3 percent of GDP in Chad to 65 percent in the Republic of Congo, even though both countries are members of the CFA zone (table 2).

Sub-Saharan African exports to EMU countries are almost exclusively primary commodities, such as cotton, fruits, nuts, fish, coffee, pearls, silver, platinum, and crude petroleum. Petroleum alone accounts for 35 percent of the value of Sub-Saharan African export to OECD countries (table 2).

The importance of EU trade for Sub-Saharan Africa means that any impact of the euro on GDP growth within Europe can have spillover effects on economic activity in Sub-Saharan Africa. The effect of the euro on economic activity in Europe is expected to be positive, as elimination of exchange rate risk and reductions in transaction costs result in increased economic integration and competition within the European Union. The spillover effects on economic activity in Sub-Saharan African countries will depend on the degree and nature of market integration between the two regions.

Since primary commodities, which generally have a low income elasticity, account for the greatest share of exports from Sub-Saharan Africa, any increase in exports to EMU countries induced by economic growth in Europe will be limited. Desruelle et al. (1998) estimate that the medium-term impact on CFA members of a 1 percent increase in euro-area GDP would be a 0.6 percent increase in exports and a 0.2 percent increase in GDP.

The improvements in euro-area competitiveness are likely to come, however, at least in part at the expense of exporters from other regions, including Sub-Saharan Africa. The elimination of exchange rate risk and transaction costs within Europe could result in trade diversion and a reduction of imports from outside the European Union. Since few Sub-Saharan African exports are in direct competition with goods produced in Europe,

Chart 1
Trade openness for different regions, 1975-1997
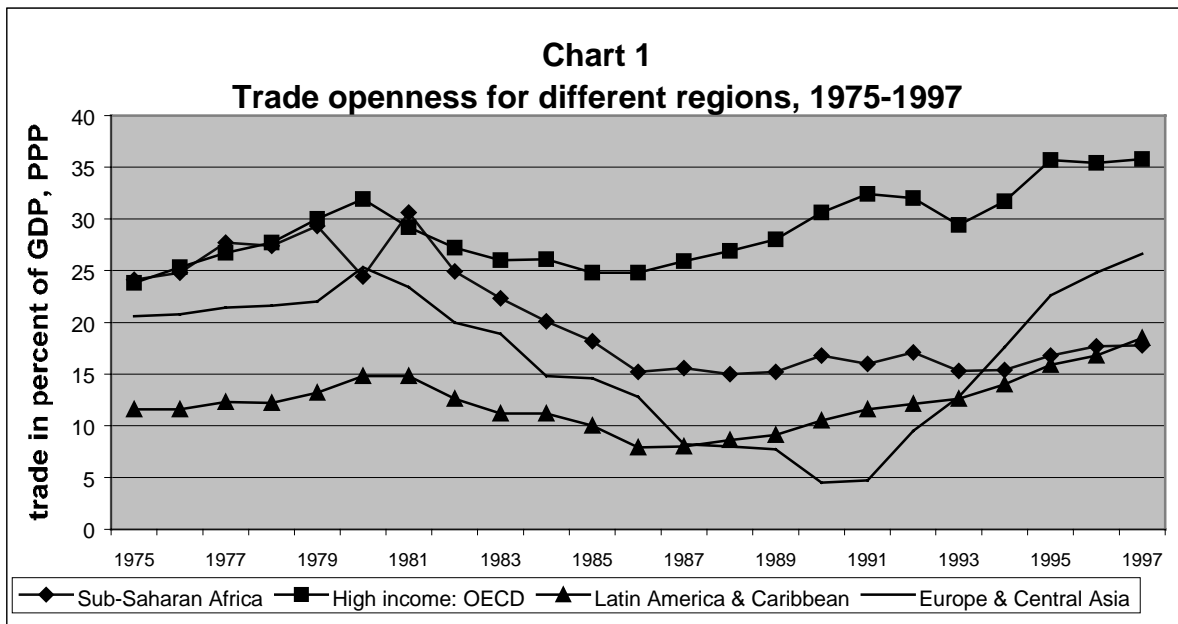
Source: World Bank1999b,c.

however, any adverse impact on African exports is likely to be slight. A more significant effect could arise from progress in reforming the EU Common Agricultural Policy. The common policy was discussed recently, but none of the issues under discussion is likely to have any substantial effects for Sub-Saharan Africa countries.

2.3. *Trade effects through changes in the euro real exchange rate*

The real exchange rate is another channel through which the euro could affect African exports to Europe. Again, the composition of exports from Sub-Saharan African countries is a central variable, but the lack of estimates for the elasticity of exports to changes in the real exchange rate makes it hard to estimate the sensitivity of exports to such changes.

The effect of changes in the real exchange rate depends on the exchange rate regime in each country (table 3) and on geographical trade patterns. Countries that peg their exchange rate to the euro would expect a loss of competitiveness relative to third parties if

Table 3. Exchange rate regimes, December 31, 1997 (or later)

Country	Exchange rate regime	Basket or target; remarks
West and Central Africa		
CFA franc zone	Fixed peg	Euro (formerly pegged to French franc)
Gambia, The	Independent float	
Ghana	Independent float	
Guinea	Independent float	
Liberia	Independent float	Pegged to the U.S. dollar
Mauritania	Managed float	Dual exchange rate structure
Nigeria	Managed float	Pegged to the U.S. dollar
Sierra Leone	Independent float	
East and Southern Africa		
Angola	Fixed peg	Pegged to the U.S. dollar since July 1, 1996
Botswana	Fixed peg	Basket of weighted currencies of regional trading partners and SDR
Burundi	Fixed peg	Basket of currencies of main trading partners
Congo, Dem. R.	Independent float	
Eritrea	Independent float	
Ethiopia	Managed float	
Kenya	Managed float	U.S. dollar is the principal intervention currency
Lesotho	Fixed peg	South African rand
Madagascar	Independent float	
Malawi	Managed float	Exchange rate is managed in a flexible manner with interventions limited to smoothing out of rate fluctuations and considerations of reserves levels
Mauritius	Managed float	
Mozambique	Independent float	
Namibia	Fixed peg	Pegged to the South African rand
Rwanda	Independent float	
Somalia	Independent float	Dual exchange rate structure. Official rate applies to goods and services and debt-service payments of the government. The U.S. dollar is the principal intervention currency
South Africa	Independent float	External value determined in the interbank market
Sudan	Managed float	
Tanzania	Independent float	
Uganda	Independent float	External value determined in the interbank market
Zambia	Independent float	Multible exchange rate structure. Market-determined official rate
Zimbabwe	Independent float	External value determined in the exchange market. The US dollar is the intervention currency.

Source: IMF 1998.

the euro appreciates, an effect that will be stronger the smaller is the euro area's share in total trade (see table 4). Countries that peg to a basket of currencies of their main trading partners will not be quite as exposed and vulnerable to fluctuations in the euro. CFA members are among the most exposed and vulnerable to a loss of competitiveness. If the euro appreciates relative to the U.S. dollar, countries with a relatively low share of exports going to the European Union would be the most affected. Among these are Benin (16.9 %), Togo (15.8 %), Senegal (14.7 %), Guinea-Bissau (14.4 %), and Gabon (12.8 %). Cameroon is the only CFA country with more than half its exports going to the European Union (73 percent).

Table 4. Destination of Sub-Saharan African Countries' exports, 1997 (percent)

Country	EEC	United States	Japan	African developing countries	Asian developing countries	Others
West and Central Africa						
Benin	16.9	3.2	0.6	12.6	27.3	39.6
Burkina Faso	30.7	0.5	2.1	30.8	23.2	12.7
Cameroon	73.0	0.7	0.7	8.4	12.4	4.7
Central African Rep.	47.5	0.5	0.3	10.0	3.5	38.2
Chad	45.2	2.8	1.6	9.7	24.3	16.3
Congo, Rep. Of	36.2	23.8	0.4	1.4	29.4	8.8
Cote d'Ivoire	52.4	6.7	0.3	25.4	4.7	10.6
Equatorial Guinea	37.1	10.3	15.0	10.7	26.6	0.3
Gabon	12.7	68.0	3.2	1.6	11.0	3.4
Guinea-Bissau	14.4	0.1	0.8	1.6	82.2	0.9
Mali	31.5	1.4	1.0	8.5	44.1	13.4
Niger	46.0	29.8	0.2	8.8	7.8	7.5
Senegal	15.8	0.2	0.3	36.6	27.8	19.3
Togo	14.7	2.4	0.0	22.1	31.2	29.7
Gambia, The	86.1	1.6	4.7	1.0	4.4	2.3
Ghana	49.4	8.4	4.4	17.6	8.5	11.6
Guinea	39.0	12.4	0.4	6.7	4.8	36.6
Liberia	48.0	0.4	0.0	1.3	7.3	43.0
Mauritania	59.9	0.1	24.5	10.9	1.8	2.8
Nigeria	29.0	38.1	1.1	10.5	11.1	10.1
Sierra Leone	69.7	8.0	0.9	4.0	0.7	16.7
East and Southern Africa						
Angola	14.6	64.9	0.1	1.5	15.4	3.5
Botswana	..	..	..	..	..	..
Burundi	48.8	0.9	0.0	2.7	0.7	46.9
Congo, Dem. R.	59.5	21.4	3.7	10.2	3.4	1.7
Eritrea	..	..	..	..	..	..
Ethiopia	50.8	12.0	11.2	5.8	2.5	17.7
Kenya	34.5	3.0	0.8	40.5	9.8	11.4
Lesotho	..	..	..	..	..	..
Madagascar	69.1	9.6	5.8	8.0	3.8	3.7
Malawi	27.9	11.8	4.5	25.1	6.3	24.4
Mauritius	74.0	14.3	0.6	5.7	1.8	3.6
Mozambique	35.5	12.0	8.0	25.1	12.0	7.4
Namibia	..	..	..	..	..	..
Rwanda	66.1	3.6	0.0	4.8	8.0	17.4
Somalia	13.3	0.1	0.0	1.6	2.1	83.0
South Africa	28.8	5.5	4.9	13.8	11.7	35.2
Sudan	35.3	2.3	4.2	2.4	11.6	44.1
Tanzania	33.1	3.6	7.5	16.9	28.4	10.5
Uganda	71.9	6.0	0.7	2.2	3.3	15.9
Zambia	23.1	4.4	10.7	20.8	28.9	12.1
Zimbabwe	31.8	5.2	6.7	37.7	8.9	9.6
Sub-Saharan Africa	**33.5**	**18.1**	**3.3**	**13.3**	**11.6**	**20.2**

Source: IMF, Direction of trade data base and authors' calculations.

3. Capital flows between the European Union and Sub-Saharan Africa

The EMU can potentially affect Sub-Saharan Africa countries through many different financial linkages: capital markets, foreign direct investment, interest rates, and portfolio diversification.

3.1. Country risk ratings and access to international capital markets

The importance of the various financial channels depends on the degree of financial integration of the two regions. Similar studies for other regions use credit ratings from *Standard & Poors* and *Moody's* to assess domestic financial markets.[6] Few Sub-Saharan African countries are rated by either of these companies, however, because of poor performance (South Africa is an exception). *Euromoney* and *The Institutional Investor* measure a broader range of countries, including those in Sub-Saharan Africa, and rank them against each other in terms of risk (table 5). All Sub-Saharan African countries are ranked very low, except for Botswana, Mauritius, and South Africa. The general picture that emerges is of severely underdeveloped domestic capital markets (see table 5), with access to capital markets limited, according to *Euromone*y, to the same three countries that are ranked relatively better in terms of risk ratings (Botswana, Mauritius, and South Africa).

3.2. Foreign direct investment

The distribution of foreign direct investment (FDI) in Sub-Saharan Africa is very unequal: South Africa and Nigeria alone accounted for 68 percent of FDI in 1997 (chart 2). It is argued that one effect of the EMU would be to redirect European foreign investments back into the euro area as lower transaction costs make investments in the euro area more attractive. But investors will already have anticipated this decline in transaction costs earlier on, and FDI has continued to flourish in Sub-Saharan Africa in recent years (chart 2).

FDI in Sub-Saharan Africa is unlikely to be affected much by changes in competitiveness in Europe because the degree of direct competition is limited by the geographically

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[6] See Feldman and Temprano-Arroyo (1998) for countries in Eastern and Central Europe and the

disbursed markets. European FDI in Sub-Saharan Africa is probably motivated not by relative cost considerations but by the desire to gain first-mover advantage in emerging markets and to diversify risk. Furthermore, a very large share of the FDI in Sub-Saharan Africa is in either natural resources, which is quite isolated from any effects arising from the EMU, or concentrated in South Africa where there is a significant domestic market.

Chart 2
Foreign Direct Investments to SSA, net inflows (mill. US $) 1970-1997
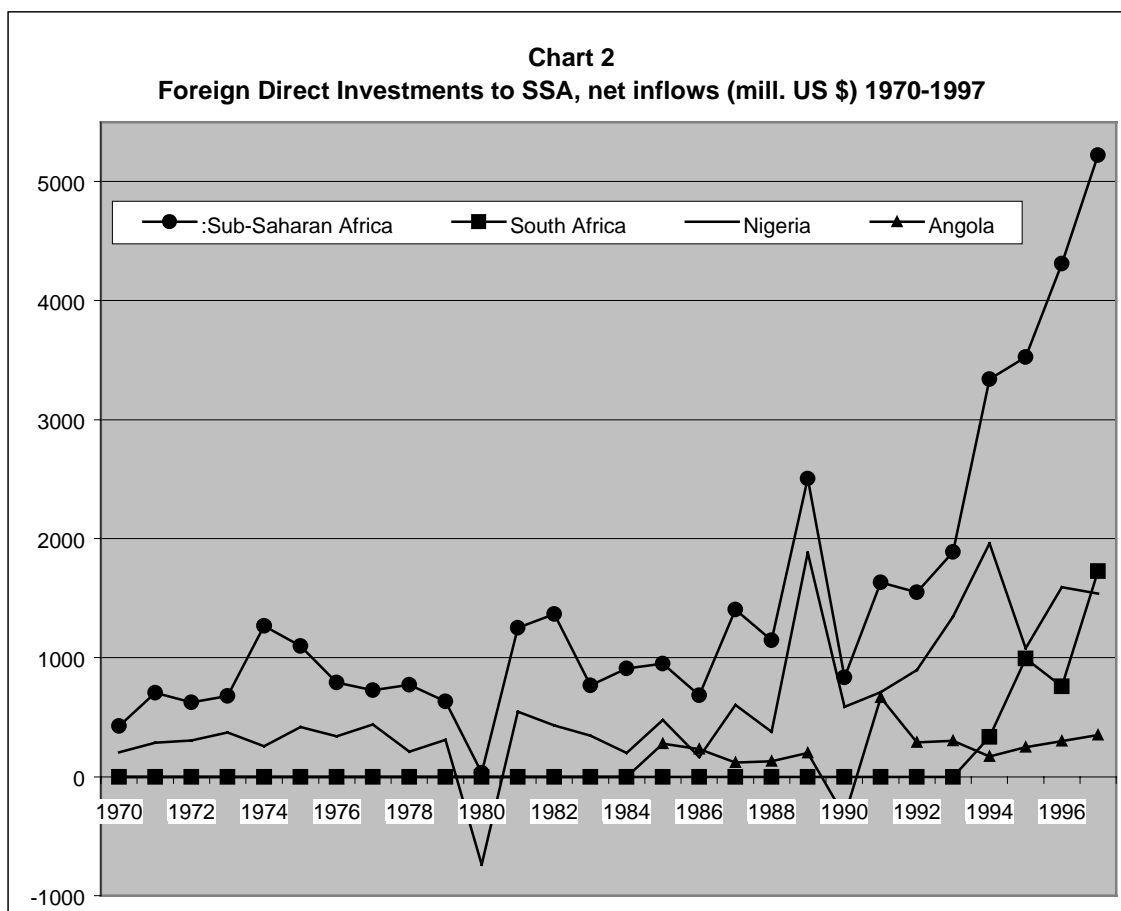
Source: World Bank 1999c.

Mediterranean and Yeyati and Sturtznegger (1999) for countries in Latin America.

Table 5. Country risk rankings, March 1999

Country	Risk rankings		Access to capital markets[1]
	Euromoney	*The Institutional Investor*	*Euromoney*
West and Central Africa			
Benin	144	115	0.13
Burkina Faso	105	106	0.13
Cameroon	135	110	0.13
Central African Republic	158	..	0.00
Chad	157	..	0.00
Congo, Rep. of	140	128	0.00
Cote d'Ivoire	121	96	0.17
Equatorial Guinea	155	..	0.00
Gabon	99	98	0.00
Guinea-Bissau	163	..	0.00
Mali	108	119	0.00
Niger	129	..	0.00
Senegal	90	100	0.33
Togo	119	114	0.00
Gambia, The	103	..	0.00
Ghana	86	78	0.00
Guinea	133	118	0.00
Liberia	173	131	0.00
Mauritania	154	..	0.00
Nigeria	128	113	1.00
Sierra Leone	170	134	0.00
East and Southern Africa			
Angola	149	124	0.00
Botswana	61	40	0.75
Burundi	..	..	..
Congo, Dem. Rep.	168	136	0.00
Eritrea	..	..	..
Ethiopia	148	116	0.00
Kenya	97	97	0.17
Lesotho	116	..	0.00
Madagascar	162	...	0.00
Malawi	131	102	0.00
Mauritius	46	39	2.50
Mozambique	150	111	0.00
Namibia	151	66	0.50
Rwanda	165	..	0.00
Somalia	172	..	0.00
South Africa	56	50	2.67
Sudan	160	132	0.00
Tanzania	145	109	0.00
Uganda	95	103	0.00
Zambia	147	117	0.00
Zimbabwe	101	91	0.50
Sub-Saharan Africa (unweighted average)	**130**	**103**	**0.22**

a. The maximum score is 5.00, which is obtained by most OECD countries.

Source: Euromoney and *The Institutional Investor*

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3.3. European interest rate level and volatility

The impact of the euro on Sub-Saharan Africa through its effect on European interest rates depends on the actual affects on the level and volatility of interest rates in Europe and the channels through which these impacts affect countries outside of Europe. This section seeks answers to these questions but leaves consequences for foreign debt management for section 4.2.

The effects of the euro on the level and volatility of the interest rate in Europe are hard to predict and isolate. The current real interest rate level is at a historical low, which more or less excludes any significant decrease as a result of the euro launch. Likewise, the initial months of the euro launch have, to some extent, reinforced the expectation that the European Central Bank will pursue a relatively strict anti-inflationary policy in order to gain credibility (and in pursuit of its primary goal, price stability). In the longer run, however, the central bank may find it feasible to loosen monetary policy. The positive growth effect expected from the EMU should stimulate investment demand and pull up interest rates, though whether that comes to pass depends to some extent on whether the structural reforms widely deemed necessary, especially labor market reform, take place.

The bottom line is that the future level and volatility of European interest rates depend on a range of factors whose effects work in different directions. No matter what the net effect turns out to be, however, the impact on Sub-Saharan Africa through capital flows is likely to be minor. Theory predicts that countries that peg their currency to the euro will be more exposed to volatility in the European interest rate than countries with flexible exchange rate regimes, whose real exchange rates can absorb some of the volatility. Again, a key determining feature is underdeveloped capital markets, which to a large extent insulate Sub-Saharan African economies from the events that influence international capital flows.

3.4. Portfolio diversification effects

The basic idea behind portfolio management is to find a balance between risk and return. The launch of the euro has decreased much of the risk, and hence also the return, in many

EMU countries, particularly those in southern Europe. For example, the interest rate spread on long-term government bonds between Germany and Spain, Portugal, and Italy nearly vanished between 1995 and 1998 as the three countries followed a strict fiscal policy to comply with the Maastricht Treaty's fiscal requirements. Now that the euro is a reality, exchange rate risk has disappeared among EMU participants. What's left are the perceived differences in country risks related to such factors as differences in liquidity. Even though the famous "no-bailout" clause (Maastricht Treaty, article 104b) makes clear that countries will have to handle budgetary crises without help from other EMU countries, these differences in risk are perceived to be very low and are expected to remain so.

With the disappearance of most differences in risk among EMU members, a rebalancing of the risk-return mix now requires diversification outside of the EMU. In addition, the volume of funds seeking investment opportunities has increased, as the aging of populations in Europe swells the size of pension funds. Likewise, the expected increase in economic activity in Europe should also lead to increased savings.

Where will the portfolio shift occur? Are Sub-Saharan African countries likely candidates? Not over the short and medium terms. For the most part, Sub-Saharan African countries lack the basic features needed to attract foreign private investors (especially pension funds), such as a long history of macroeconomic stability, good credit ratings (by Moody's, Standard & Poors, and others), and reasonably well developed domestic security markets and stock exchanges. In addition, some regulations affecting European institutions, such as the requirement for OECD membership (OECD 1996) for countries to receive investments, also make it unlikely that there will be any significant portfolio shift toward Sub-Saharan Africa countries.

In the long term, however, the euro has opened the door for portfolio investments for countries that pursue rigorous fiscal and monetary policies and that develop their capital markets. To tap into these funds, however, African countries will need to strengthen their financial integration with global markets.

4. Financial implications

The introduction of the euro could have financial implications for Sub-Saharan Africa in the banking system and in foreign debt and reserve management.

4.1. Banking system

The euro will work as a catalyst for the development of integrated money and bond markets in Europe, increasing competition among banks and between banks and other sources of funds. The greater competition between banks and financial systems in general should lead to efficiency gains in terms of resource allocation and ultimately stimulate investment and job creation.

Foreign exchange trading, corporate banking, and government-bond trading account for over half the profit of a typical large commercial bank. It is expected that European bank reserves will be reduced by 20 percent over the next decade in these three business areas. The corporate banking sector is in for difficult times. The introduction of the euro and the creation of a single market in euro-dominated corporate bonds will make it even harder to lend money profitably to bigger firms. There will also be difficulties for the deposit and money market business. Corporate customers will no longer need accounts in various European currencies, so volumes will shrink. Banks will also lose profits from the money market as interest rate differentials between euro area currencies are eliminated.

While these are areas in which business is expected to be eliminated or reduced, in other areas the EMU should create profitable new businesses. The market for euro-denominated bonds and bank profits from bond and equity trade could increase, for example.

How will these developments in banking systems in Europe affect Sub-Saharan Africa? The short- and long-term effects are likely to diverge. In the immediate future, the euro may encourage nationally based banks, in Germany and elsewhere, to attach top priority to expanding their base across Europe. In the longer term, however, as the competitive situation within Europe heats up and margins are competed downward, a renewed

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expansion into more profitable non-European markets, including Sub-Saharan Africa, may again look more appealing.

4.2. Management of foreign debt

The euro can affect Sub-Saharan African countries' management of foreign debt through changes in European interest rate levels or changes in the real exchange rate of the euro, especially relative to the dollar.

The effect on debt service depends on the size and composition of the debt. For the region as a whole, the external debt in 1997 was 202 percent of exports of goods and services and the debt service was 13 percent of exports (table 6). These numbers suggest that any change in the European interest rates could have significant effects on the debt-service and so on development in Sub-Saharan Africa, especially in countries where the debt service is highly exposed to changes in European interest rates.

The volatility of the debt burden depends on several factors: Many countries in Sub-Saharan Africa have a very large share of their external debt issued at concessional terms—38 percent for the region as a whole in 1997.[7] For some of the poorest countries, more than 90 percent of their debt is on concessional terms. When a large share of external debt is on concessional terms at below market rates of interest, the face value of the external debt stock is not a good measure of a country's debt burden. A better measure is the present value of debt.[8] The present value of debt is extremely high for almost all Sub-Saharan countries—above 100 percent of exports for most countries and above 300 percent for 13 out of 39 Sub-Saharan countries.

The impact of a rise in European interest rate levels on the debt service to export ratio depends on the size of the debt, the share of debt denominated in euros (or euro-equivalent

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[7] Concessional debt is defined as loans with an original grant element of 25 percent or more. The grant equivalent of a loan is its commitment (present) value, less the discounted present value of its contractual debt service.

[8] The net present value (NPV) of debt is a measure that takes into account the degree of concessionality. It is defined as the sum of all future debt-service obligations (interest and principal) on existing debt, discounted at the market interest rate. Whenever the interest rate on a loan is lower than the market rate, the resulting NPV of debt is smaller than its face value, with the difference reflecting the grant element.

currencies; see table 7), the share of foreign debt that is short term or variable-rate long term, and the degree of openness in the economy (see Feldman and Temprano-Arroyo 1998).[9] For the region as a whole, a 1 percentage point increase in euro interest rates has a moderately low, though not insignificant, impact of 0.17 percentage point on the debt service to export ratio (table 8). But there are very large differences among countries in exposure to European interest rates. The impact is 0.62 percentage point for Cameroon, 0.55percentage point for the Republic of Congo, 0.69 percentage point for Cote d'Ivoire, 1.11 percentage points for the Democratic Republic of Congo, and 2.26 percentage points for Sudan. The impact is so large for Sudan because it has an extremely large external debt to exports ratio, relatively large shares of short term and variable-rate long-term debt, and a large share (30 percent) of its debt denominated in EMU currencies. The high exposure for the CFA countries—Cameroon, Republic of Congo, and Cote d'Ivoire—stems primarily from their large share of debt denominated in French francs, an EMU currency.

The exchange rate regime (see table 3) and the share of euro-denominated debt in total foreign debt (table 7) should be harmonized in order to insulate a country's debt service burden from changes in the euro exchange rate. Several CFA members seem to be more vulnerable to euro exchange rate changes than others because the CFA members peg their currency to the euro. If the euro depreciates these countries will see a rise in debt service costs, the size of which will be negatively related to the share of euro-denominated debt; the opposite will occur if the euro appreciates. Countries with no "mismatch" between share of euro-denominated debt and exchange rate regime will be less vulnerable to changes in the euro exchange rate.

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[9] Let DSX denote the debt-service-to-export ratio, i_{euro} denote the European interest rate, and Δ denote a change. Then, algebraically the calculation can be illustrated with the following expression:

$\Delta DSX = \Delta i_{euro} \times Share_{EMU} \times Share_{ST+Var-LT} \times (D/GDP)/(X/GDP)$

where the last factor boils down to the debt to exports ratio. The calculations depend on a number of assumptions, but can still give an indication of the magnitude of the effect that changes in interest rates in Europe will have on debt servicing. On top of the assumptions mentioned in the notes to table 7 and 8 of this paper, Feldman and Temprano-Arroyo also assume that all fixed-rate long-term debt matures within 10 years, with one-tenth of it falling due each year and being refinanced at an interest rate 1 percent higher than the original rate. This allows them to calculate the effects in the longer term, and they show that the effect increases in the longer term. A similar increase can be expected for Sub-Saharan Africa, but the effect is likely to be of a lower magnitude since the average maturity of loans to Sub-Saharan Africa is 20-25 years, while it is 10-15 years for Central and Eastern European countries. Thus, for Sub-Saharan Africa countries a much smaller percentage falls due every year. The dynamic effects also depends on how the matured debt is

Table 6. Debt, Sub-Saharan Africa, 1996 and 1997

Countries	Total external debt (percentage of exports of goods and services) 1997	Debt service (percentage of exports of goods and services) 1997	Concessional debt (percentage of total external debt) 1997	Present value of debt (percentage of exports of goods and services) 1996
West and Central Africa				
Benin	268.9	9.1	77.9	135.4
Burkina Faso	295.5	11.8	83.0	152.3
Cameroon	368.7	20.4	42.6	358.1
Central African Republic	410.1	6.1	82.0	264.0
Chad	364.8	12.5	78.3	185.1
Congo, Rep. of	280.9	6.2	36.6	265.8
Cote d'Ivoire	314.6	27.4	28.9	379.4
Equatorial Guinea	65.7	1.4	48.8	117.9
Gabon	129.6	13.1	22.7	109.5
Guinea-Bissau	1,645.2	17.3	72.2	2,204.6
Mali	395.4	10.5	89.0	282.0
Niger	509.4	19.5	66.9	287.8
Senegal	226.6	15.3	65.2	139.9
Togo	198.0	8.1	71.3	134.6
Gambia, The	184.8	11.6	91.5	104.3
Ghana	349.4	29.5	66.5	226.3
Guinea	469.7	21.5	70.6	277.9
Liberia	..	..	29.1	..
Mauritania	553.8	25.6	69.2	287.2
Nigeria	156.6	7.8	4.6	187.6
Sierra Leone	1,235.2	21.1	63.8	590.4
East and Southern Africa				
Angola	191.4	15.9	21.9	165.4
Botswana	..	..	51.6	16.5
Burundi	1,062.3	29.0	92.8	939.3
Congo, Dem. Rep.	845.7	0.9	25.2	648.9
Eritrea	19.1	0.1	96.1	5.2
Ethiopia	962.9	9.5	85.7	971.6
Kenya	214.9	21.5	57.5	168.3
Lesotho	93.5	6.4	69.1	155.8
Madagascar	522.2	27.0	65.3	391.6
Malawi	351.3	12.4	88.2	226.9
Mauritius	95.4	10.9	13.9	62.5
Mozambique	1,066.0	18.6	56.5	757.3
Namibia	..	..	..	..
Rwanda	673.3	13.3	88.7	561.8
Somalia	..	..	58.7	..
South Africa	67.8	12.8	0.0	61.4
Sudan	1,459.8	5.1	28.4	1,608.7
Tanzania	576.5	13.0	70.9	390.9
Uganda	429.6	22.1	79.5	264.5
Zambia	501.3	19.9	56.2	447.1
Zimbabwe	159.2	21.7	28.2	136.4
Sub-Saharan Africa 1996	**215.4**	**14.2**	**36.7**	**182.1**
Sub-Saharan Africa 1997	**201.7**	**12.8**	**38.0**	**..**

Source: World Bank 1998a,b and 1999b.

assumed re-financed (short term or long term fixed-rate).

Table 7. Currency composition of long-term debt, 1997

Country	Deutsche mark	French franc	Yen	Multi	Pound	SDR	Swiss franc	US dollar	EMU	Other
West and Central. Africa										
Benin	0.2	9.2	1.0	15.0	0.3	2.0	0.0	55.3	18.2	17.5
Burkina Faso	0.1	3.5	0.0	19.0	0.0	2.0	0.0	62.4	10.1	13.0
Cameroon	14.5	31.0	0.3	9.2	0.6	0.2	0.8	25.8	55.2	17.7
Centr.Afr.Rep.	0.3	4.8	0.6	18.0	0.0	7.1	2.4	58.8	11.7	8.4
Chad	0.0	5.9	0.0	23.0	0.0	0.2	0.0	56.8	12.9	13.9
Congo, Rep. of	2.7	41.4	0.2	1.7	6.3	0.5	0.3	26.0	54.9	21.0
Cote d'Ivoire	3.5	27.1	1.1	16.0	0.8	0.2	0.2	40.9	35.7	9.8
Eq. Guinea	5.0	7.1	0.0	15.0	0.0	0.0	0.0	43.3	26.8	29.3
Gabon	7.3	45.2	0.8	8.7	6.0	0.0	0.7	11.2	63.4	20.3
Guinea-Bissau	0.3	1.0	0.0	24.0	0.0	0.0	12.2	31.9	28.8	30.5
Mali	0.1	18.9	2.7	19.0	1.9	0.0	1.7	25.9	35.8	30.2
Niger	0.0	30.9	1.8	0.0	1.4	3.2	0.0	40.2	42.1	22.4
Senegal	1.6	15.3	2.9	12.0	0.2	0.9	0.3	41.3	29.8	25.1
Togo	1.4	7.4	5.8	7.1	1.7	1.1	10.4	49.7	26.9	15.3
Gambia, The	0.1	1.5	0.0	21.0	5.8	0.1	0.0	50.7	11.8	20.4
Ghana	3.6	1.6	11.8	6.2	4.8	0.8	0.0	61.2	10.3	10.1
Guinea	0.6	8.3	2.6	7.4	0.9	1.2	0.3	51.6	22.8	27.1
Liberia	9.7	1.0	6.6	20.0	1.3	1.5	0.0	53.5	13.9	6.4
Mauritania	0.3	7.2	3.4	1.5	0.6	2.4	0.0	38.1	30.8	46.5
Nigeria	10.9	10.2	11.9	11.0	13.0	0.1	0.5	31.9	27.1	11
Sierra Leone	1.5	2.6	6.8	13.0	0.7	11.0	2.6	42.3	16.6	19.8
East and Southern Africa										
Angola	0.3	3.9	0.8	0.9	1.0	0.9	0.3	86.8	7.1	5.2
Botswana	3.3	0.6	9.6	45.0	4.2	1.9	0.0	12.5	15.6	23.3
Burundi	0.1	5.3	2.5	22.0	0.0	1.8	0.0	56.4	11.2	11.6
Congo, Dem. R.	6.0	14.9	3.2	4.1	1.0	0.4	0.2	44.5	33.9	25.6
Eritrea	0.0	0.0	0.0	0.0	0.0	1.6	0.0	48.9	24.7	49.4
Ethiopia	1.8	0.1	0.1	8.8	0.2	0.2	0.1	27.5	32.6	61.2
Kenya	2.9	4.5	17.2	10.0	3.4	0.4	2.5	43.0	17.8	15.7
Lesotho	0.0	6.6	0.0	21.0	1.0	6.4	0.0	23.7	27.1	41.0
Madagascar	1.8	13.4	7.5	9.1	0.1	2.7	1.1	49.0	23.9	15.2
Malawi	0.2	0.8	9.3	19.0	8.2	6.3	0.1	54.3	2.2	2.1
Mauritius	1.3	18.0	4.2	11.0	1.4	0.0	0.1	52.5	25.0	11.2
Mozambique	3.9	8.4	1.6	8.2	2.1	1.1	.0.	63.2	18.1	11.6
Namibia	..	..	..	..	..	..	..	..	..	..
Rwanda	0.0	7.5	1.0	11.0	0.0	3.8	0.0	50.8	20.8	26.5
Somalia	0.0	4.2	2.6	7.2	0.1	1.3	0.0	51.8	20.6	32.8
South Africa	2.5	0.0	4.8	0.0	0.0	0.0	0.0	92.6	2.6	0.1
Sudan	0.8	3.0	2.5	1.6	3.8	0.5	16.9	50.8	30.8	20.1
Tanzania	1.9	1.9	10.1	6.7	10.0	4.9	0.0	45.7	13.2	18.7
Uganda	0.2	0.3	1.5	11.0	1.9	7.6	0.0	66.4	6.0	11.0
Zambia	13.1	2.6	9.4	7.0	6.9	0.3	0.1	46.7	22.8	13.9
Zimbabwe	10.8	4.8	3.4	27.0	5.9	0.4	0.7	26.6	26.7	20.7
Sub-Saharan Africa	**4.6**	**10.6**	**4.9**	**8.9**	**3.8**	**1.1**	**1.4**	**46.9**	**25.6**	**17.9**

Note: EMU currencies include the Deutschemark, French franc, and Swiss franc and 50 percent of "other" currencies. Long-term debt is defined as debt with a maturity above one year.
Source: World Bank 1999c.

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Table 8. Maturity composition of debt and estimated short-term effects of a 1 percentage point increase in euro-area interest rates.

Country	Short term debt as a percentage of total foreign debt	Variable-rate long-term debt as a percentage of total foreign debt	Total external debt as a percentage of exports of goods and services	Increase in 1999 debt service to exports ratio, (percentage points)
West and Central Africa				
Benin	8.9	0.9	268.9	0.047
Burkina Faso	5.5	0.0	295.5	0.016
Cameroon	14.3	16.1	368.7	0.618
Central African Republic	7.3	0.6	410.1	0.038
Chad	2.7	0.1	364.8	0.013
Congo, Rep. of	15.0	20.8	280.9	0.551
Cote d'Ivoire	17.6	43.5	314.6	0.686
Equatorial Guinea	22.7	1.5	65.7	0.043
Gabon	11.6	13.5	129.6	0.206
Guinea-Bissau	7.8	1.7	1,645.2	0.450
Mali	3.0	0.1	395.4	0.043
Niger	6.0	7.5	509.4	0.290
Senegal	6.3	7.0	226.6	0.090
Togo	3.5	10.4	198.0	0.074
Gambia, The	3.1	0.0	184.8	0.007
Ghana	12.0	5.2	349.4	0.062
Guinea	12.1	0.1	469.7	0.135
Liberia	37.8	7.2	..	..
Mauritania	13.0	5.6	553.8	0.316
Nigeria	19.4	17.1	156.6	0.155
Sierra Leone	9.0	1.1	1,235.2	0.208
East and Southern Africa				
Angola	12.6	6.4	191.4	0.026
Botswana	7.1	12.0	..	..
Burundi	1.5	0.0	1,062.3	0.018
Congo, Dem. R.	27.7	11.1	845.7	1.112
Eritrea	0.0	0.0	19.1	0.000
Ethiopia	5.7	0.2	962.9	0.186
Kenya	12.9	9.9	214.9	0.087
Lesotho	1.2	9.2	93.5	0.027
Madagascar	4.1	5.9	522.2	0.125
Malawi	1.3	0.3	351.3	0.001
Mauritius	20.1	53.9	95.4	0.176
Mozambique	5.6	8.4	1,066.0	0.270
Namibia	..	..	..	..
Rwanda	7.2	0.0	673.3	0.100
Somalia	23.1	0.8	..	..
South Africa	44.1	24.2	67.8	0.012
Sudan	38.9	11.47	1,459.8	2.257
Tanzania	12.1	4.9	576.5	0.129
Uganda	3.4	2.3	429.6	0.015
Zambia	6.7	7.2	501.3	0.158
Zimbabwe	21.4	21.0	159.2	0.180
Sub-Saharan Africa	**19.3**	**0.14**	**201.7**	0.173

Note: A number of assumptions underlie the calculations: (1) Euro-area interest rates increase by 1 percent in 1999; (2) there are no changes in domestic interest rates, exchange rates, debt stocks, or exports as a result of the change in euro-area interest rates; (3) the currency composition of short-term and variable-rate long-term debt is the same as that of total long-term debt; (4) the interest rate of the Swiss franc follows that of the euro; (5) 50 percent of the "other" currencies are from the euro-area.
Source: World Bank 1999c and authors' calculations.

4.3. Reserve management

The European Union expects the euro to become a major reserve currency in competion with the U.S. dollar. Whether or to what extent this will occur has been a subject of considerable controversy among observers. Will countries in Sub-Saharan Africa substantially diversify their reserve holdings? If Europe succeeds in making the euro competitive, the euro could cut into part of the seigniorage currently accruing to the United States (this gain would, however, have to be balanced against domestic policy considerations, such as employment levels). The forces of inertia (and uncertainty about the new currency) will at first act to maintain the status quo. But if the euro proves to be a stable currency, some reserve holders in Sub-Saharan Africa may increase their euro holdings.

Reserve holdings of Sub-Saharan African countries totaled $18.2 billion in 1998, with average reserves of 1.8 months of imports. Countries that peg their exchange rate or wish to limit exchange rate fluctuations hold reserves to provide a cushion against negative net external cash flows on current or capital accounts. Dornbusch (1999) explains why countries hold reserves and the resulting complications as follows. Reserves are a substitute for adjustment when shocks are temporary and so justify financing rather than adjustment. In the case of persistent disturbances, reserves can help the economy get through the period before appropriate adjustment takes hold. In a world where there is only a single outside currency, say the dollar, the only relevant issue is to determine the appropriate level of reserves, taking into account the scale of the economy, the volatility of net cash flows, and the opportunity cost of holding reserves as measured by the differential between the return on reserves and the cost of capital. The costs of disruptive adjustment or unwanted exchange rate movements also effect the optimal level of reserves.

But since the world has more than one outside currency, the composition of reserves is also a critical part of the discussion. Not surprisingly, the answer is to hold a diversified portfolio of reserves whose composition reflects the shares of each currency in the country's trade pattern. The extensive indexation required for this exercize is too cumbersome in practice, however. Small partner countries' currencies or the currencies of

countries with underdeveloped or unstable capital markets are likely to have high transaction costs associated with holding and managing a reserve position and therefore are replaced by a proxy currency. As previously argued, the management of external reserves should also take into account the currency composition of scheduled debt service payments.

Over time, the introduction of the euro will result in the creation of a deep and liquid capital market in Europe. The very size of the market will attract competition, reduce spreads, and hence offer holders of euro assets higher returns and better transactions potential. The euro will become, as a result, an equal to the U.S. dollar as a reserve asset. In other words, reserve management will be able to get closer to its target, enjoy higher returns, and for a more diversified portfolio (in terms of risk exposure) still have a more liquid position than was possible before. All this because of the emergence of a single European capital market. That implies that, over time, as the capital market develops and becomes more attractive, reserve holdings will shift from dollars toward the euro.

5. Conclusion

This paper provides an overview of the potential channels through which the euro could influence African economies. European growth, trade creation and trade diversion, the euro's volatility, financial diversification by European investors, banking integration—all these factors will undoubtedly influence the decisions and strategies of the many actors that will directly or indirectly affect Africa. At this stage, however, it is difficult to conclude that these changes will result in an important macroeconomic impact unless it becomes the tool of a major policy shift: "euroization" of the continent, which is unlikely at the current stage.

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