

Currency Union: Analysis and Lessons From The Past

by

Adrien Jerome Echols, B.B.A.

A Thesis

In

ECONOMICS

Submitted to the Graduate Faculty
of Texas Tech University in
Partial Fulfillment of
the Requirements for
the Degree of

MASTER OF ARTS

Approved

Dr. Masha Rahnama
Chair of Committee

Dr. Eleanor Vonende

Peggy Gordon Miller
Dean of the Graduate School

May, 2011

Copyright 2011 Adrien Jerome Echols

Acknowledgements

I would like to thank my committee chair Dr. Masha Rahnama and member Dr. Terry Vonende for their helpful advice and for helping to make the Department of Economics at Texas Tech a wonderful place to learn.

I would also like to thank my parents John and Birgit Echols for their love and unwavering support. Without them I could never have achieved the honor of a Master's Degree.

Contents

Acknowledgements.....	iii
List of Tables	v
I. Introduction	1
II. Effects on Trade	3
2.1 Introduction.....	3
2.2 Overshooting.....	4
2.3 Gravity Model	5
III. Scandinavian Currency Union	13
3.1 Introduction.....	13
3.2 History.....	13
3.3 Price Stability	14
3.4 Transmittal of Shocks.....	19
3.5 Macroeconomic Indicators.....	20
3.6 Separation of the Union.....	23
IV. Latin Monetary Union	27
4.1 Introduction.....	27
4.2 France	27
4.3 Belgium.....	28
4.4 Switzerland.....	31
4.5 Monetary Convention of 1865	32
4.6 Collapse of the LMU.....	34
V. CFA Franc Area.....	36
5.1 Introduction.....	36
5.2 CFA performance Relative to Comparable Countries	40
5.3 Differing Interests	45
5.4 Integration	46
VI. United States.....	48
6.1 Background	48

6.2 Federal Reserve System History	48
6.3 Structure	50
6.4 Monetary Policy	54
6.5 Factor Mobility.....	55
VII. European Monetary Union	58
7.1 Background	58
7.2 The Treaty of Rome	59
7.3 Maastrich.....	62
7.4 Organizational Structure	64
7.5 Instruments of Monetary Policy	65
7.6 Transparency and Accountability.....	66
7.7 Issues	67
VIII. Conclusion	68
References.....	70

List of Tables

1. GLICK AND ROSE GRAVITY MODEL OUTPUT	7
2. GRAVITY MODEL WITH FIXED EFFECTS RESULTS	8
3. ROSE AND WINCOOP GRAVITY MODEL OUTPUT	11
4. MEASURES OF PRICE STABILITY	18
5. SHORT TERM PRICE FLUCTUATIONS	19
6. MACROECONOMIC TRENDS: OUTPUT GROWTH.....	21
7. MACROECONOMIC TRENDS: INFLATION.....	21
8. MACRO ECONOMIC TRENDS: LONG TERM INTEREST RATE.....	22
9. MACROECONOMIC TRENDS: MONEY GROWTH	22
10. MACROECONOMIC TRENDS: DISCOUNT RATE.....	23
11. MACROECONOMIC TRENDS: REAL INTEREST RATE.....	23
12. CHANGES IN MONETARY SYSTEM FOR KEY LMU COUNTRIES	33
13. MEMBERSHIP OF FINANCIAL COMMUNITY OF AFRICA ZONE	37
14. POLITICAL INSTABILITY IN FINANCIAL COMMUNITY OF AFRICA COUNTRIES	38
15. BREAKDOWN OF SECTORS IN FINANCIAL COMMUNITY OF AFRICA COUNTRIES.....	39
16. CFA MEMBER CHARACTERISTICS AS OF 2002	40
17. COMPARATIVE STATISTICS: REAL GDP GROWTH RATE	41
18. COMPARATIVE STATISTICS: TOTAL INVESTMENT PER GDP	41
19. COMPARATIVE STATISTICS: DEBT RELATIVE TO GDP	42
20. COMPARATIVE STATISTICS: ANNUAL INFLATION RATE	42
21. COMPARATIVE STATISTICS: REAL EXCHANGE RATE	43
22. COMPARATIVE STATISTICS: EXPORT GROWTH RATE.....	43
23. COMPARATIVE STATISTICS: GDP CHANGE BEFORE AND AFTER DEVALUATION	44
24. COMPARATIVE STATISTICS: INFLATION BEFORE AND AFTER DEVALUATION.....	45
25. RESERVE BANK BRANCHES AND LOCATIONS.....	52

List of Figures

1. IMPACT OF CURRENCY UNION AFTER DISSOLUTION	9
2. PRICE LEVEL MOVEMENTS IN SCU COUNTRIES 1815-2000.....	16
3. SMOOTHED PRICE LEVEL MOVEMENTS IN SCU COUNTRIES 1815-2000	16
4. DEVIATIONS FROM PAR WITH SWEDISH KRONER	26
5. FEDERAL RESERVE SYSTEM.....	51
6. PUERTO RICO AND PORTUGAL	56
7. PILLARS OF THE EUROPEAN UNION	63
8. TRANSMISSION MECHANISM.....	66

Chapter I

Introduction

Throughout history independent nations have entered into arrangements in which they agree to use the same currency. The general consensus is that currency unions will ultimately unite the nations to further their capacity for growth, especially as partners in trade. Despite the benefits a union can provide, most do not withstand the test of time. This thesis explores how a union affects trade, the creation and demise of two failed unions from a historical perspective, and three unions that continue to operate. To better understand unions we must first look to their money, the most fundamental component.

Money serves several functions in economics: unit of account, store of wealth, and medium of exchange (domestic and international). To serve as a legitimate store of wealth, it is necessary that money maintain its value over time. In international trade, exchange rate fluctuations can theoretically change the value of a country's money between every individual transaction. As a medium of exchange, money serves to facilitate trade when needs or wants of buyers do not coincide with the offers of sellers. This is especially true in international trade when it is neither practical nor profitable to barter due to transportation and transaction costs. To mitigate these issues, countries have entered into monetary unions. A monetary union is defined as an agreement under which two or more independent countries agree to adopt the same currency, or fix their currencies at a particular ratio.

Chapter 2 analyzes the effect that membership in a monetary union has on trade. Chapters 3 and 4 examine the multinational and politically independent Scandinavian

Currency Union and Latin Monetary Union. Both arrangements suffered from like issues and concluded similarly. Chapter 5 explores the organization and issues with the multinational, politically independent African CFA¹ zone whose monetary policy is centralized in the sense that it is dependent on France. Chapter 6 presents an overview of the U.S. monetary system, arguably the most successful union in the history of the world. Chapter 7 introduces the relatively short lived Euro Area and European Monetary Union. Chapter 8 summarizes the lessons to be learned from the past unions.

¹ *Communauté Financière Africaine* also Finacial Community of Africa

Chapter II

Effects on Trade

2.1 Introduction

A common justification for monetary union is the increase in trade sure to follow from the adoption of common currency. The risks involved with trading across borders are very substantial however and should factor heavily into any business decision to establish trading relationships abroad. To that extent it is important to ascertain how countries interested in growing their international trade portfolio could expect from joining a currency union.

Apprehension for the exposure to loss is without a doubt one of factors individuals and corporations must consider when determining the potential for an international deal. Some of this risk stems from the potential for exchange rates to vary in a manner that is detrimental to one party. Some basic factors that can affect exchange rates include but are not limited to:

1. Foreigners demanding home currency to purchase home country goods and services.
2. Foreigners demanding home currency to purchase home country assets.
3. Citizens of home country demanding foreign currency to purchase foreign goods/services.
4. Citizens of home country demanding foreign currency to purchase foreign assets.
5. Changes in real GDP.
6. Expectations of future inflation or deflation.
7. Interest rates varying across countries.
8. Change in home country money supply.

9. Changes in foreign country money supply.

2.2 Overshooting

Dornbusch's well cited paper features a modification of the Wendell-Fleming model and explains plainly the nature of exchange rate dynamics. On the subject of capital mobility and expectations he explains, "assets denominated in terms of domestic and foreign currency are assumed to be perfect substitutes given a proper premium to offset anticipated exchange rates. Accordingly, if the domestic currency is expected to depreciate, interest rates on assets denominated in terms of domestic currency will exceed those abroad by the expected rate of depreciation"²

The relationship between domestic interest rate r and world rate r^* with expected rate of depreciation of domestic currency Δse is expressed mathematically:

$$r = r^* + \Delta se$$

And expected rate of depreciation of domestic currency, Δse , is the difference between the long run rate and the current rate times an adjustment coefficient taken as a parameter:

$$\Delta se = \theta(\hat{s} - s)$$

Dornbusch describes further how exchange rate fluctuations affect the money market, goods market, equilibrium exchange. From its basic components Dornbusch's model makes clear the importance of expectations as they influence exchange rates, while also later incorporating lags like price stickiness that when all added together paint a picture

² Dornbusch 1976

of excessive volatility in exchange rates. Certainly there are ways to use volatility to an investor's advantage but for long term growth a country's "central planner" and monetary policy decision makers certainly favor stability. Monetary Unions can help to bolster trade by eliminating exchange rate volatility and its risk.

2.3 Gravity Model

Glick and Rose³ set out to determine how trade is affected when a country leaves a currency union. They use annual panel data set covering 217 countries from 1948 through 1997 to answer the question, "Does leaving a currency union reduce international trade?" This certainly has major implications for countries contemplating adoption of a common currency in the near future. They employ a standard gravity⁴ model with many binary variables to determine the extent of different effects on trade. Their model is specified:

$$\begin{aligned} \ln(X_{ijt}) = & \beta_0 + \beta_1 \ln(Y_i Y_j)_t + \beta_2 \ln(Y_i Y_j / Pop_i Pop_j)_t + \beta_3 \ln D_{ij} \\ & + \beta_4 Lang_{ij} + \beta_5 Cont_{ij} + \beta_6 FTA_{ijt} \\ & + \beta_7 Landl_{ij} + \beta_8 Island_{ij} + \beta_9 \ln(Area_i Area_j) + \beta_{10} ComCol_{ij} \\ & + \beta_{11} CurCol_{ijt} + \beta_{12} Colony_{ij} + \beta_{13} ComNat_{ij} + \gamma CU_{ijt} + \varepsilon_{ijt}, \end{aligned}$$

- X_{ijt} denotes the average value of real bilateral trade between i and j at time t
- Y is real GDP
- Pop is population
- D is the distance between i and j
- **Lang** is a binary variable which is unity if i and j have a common language
- **Cont** is a binary variable which is unity if i and j share a land border

³ Glick and Rose 2002

⁴ The basic gravity model equates trade flows (TF) to a constant(k) times the economic masses of each trade partner (M1 and M2) divided by their distance(D) from each other i.e. $TF = k(M1 * M2) / D$

- **FTA** is a binary variable which is unity if i and j belong to the same regional trade agreement
- **Landl** is the number of landlocked countries in the country-pair (0, 1, or 2),
Island is the number of island nations in the pair (0, 1, or 2),
- **Area** is the land mass of the country
- **ComCol** is a binary variable which is unity if i and j were ever colonies after 1945
with the same colonizer
- **CurCol** is a binary variable which is unity if i and j are colonies at time t
- **Colony** is a binary variable which is unity if i ever colonized j or vice versa
- **ComNat** is a binary variable which is unity if i and j remained part of the same nation during the sample (e.g., France and Guadeloupe, or the UK and Bermuda),
- **CU** is a binary variable which is unity if i and j use the same currency at time t
- β is a vector of nuisance coefficients
- ε represents the myriad of other influences on bilateral exports, assumed to be well behaved

Table 1. Glick and Rose Gravity Model Output

Gravity Model Output	
Currency Union	1.30 (0.13)
Log distance	-1.11 (0.02)
Log product real GDP	0.93 (0.01)
Log product real GDP/capita	0.46 (0.02)
Common language	0.32 (0.04)
Common land border	0.43 (0.12)
Regional trade agreement	0.99 (0.13)
Number landlocked	-0.14 (0.03)
Number islands	0.05 (0.04)
Log product land area	-0.09 (0.01)
Common colonizer	0.45 (0.07)
Current Colony	0.82 (0.25)
Ever Colony	1.31 (0.13)
Same nation	-0.23 (1.05)
Observations	219558
R^2	.64
RMSE	2.02

Source: Glick and Rose (2002)

Their interest is in γ , as it captures the effect of membership in a currency union (CU is binary 1 if member 0 if not). The model is estimated first using conventional ordinary least squares and returns an estimate of 1.3 for γ . The interpretation here is that since $e^{1.3}$ is roughly equal to 3.7, trade increases by a factor of 3.7 if two countries adopt the same

currency. This is substantially more impactful than other variables including proximity to one another, sharing a border, and even a common language.

Next Glick and Rose utilize fixed effects to estimate the model. In this case the value of γ is estimated to be 0.65. The implication then, given $e^{.65} = 1.9$, is that countries using the same currency trade 90 percent more than with other countries of differing currency.

Table 2. Gravity Model with Fixed Effects Results

	Fixed Effects (within)	Random Effects GLS	Between Estimator	Maximum Likelihood
Currency union	0.65 (0.05)	0.70 (0.05)	1.52 (0.25)	0.69 (0.05)
Log distance	---	-1.35 (0.03)	-1.42 (0.03)	-1.35 (0.04)
Log product real GDPs	0.05 (0.01)	0.27 (0.01)	0.98 (0.01)	0.23 (0.01)
Log product real GDP/capita	0.79 (0.01)	0.52 (0.01)	0.46 (0.02)	0.57 (0.01)
Common language	---	0.18 (0.06)	0.38 (0.06)	0.16 (0.07)
Common land border	---	0.53 (0.16)	0.50 (0.17)	0.54 (0.19)
R² within	0.12	0.12	0.11	
R² between	0.23	0.52	0.63	
R² overall	0.22	0.47	0.58	

Source: Glick and Rose(2002)

They also estimate the effect on trade after currency union dissolution. This may be as important to a country considering joining such an agreement since history has shown they seldom last. The following chart illustrates a plotting of coefficients for countries trade changes for several years after the dissolution of a union.

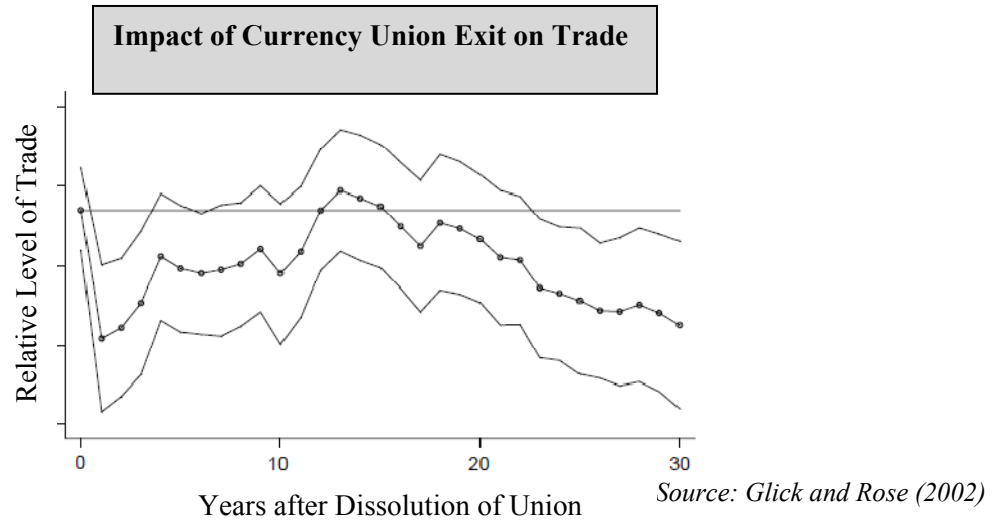


Figure 1: Impact of Currency Union after Dissolution

For this illustration they added a binary variables to their original OLS gravity model.

The first added variable is equal to one for currency union dissolution and zero otherwise, for observations exactly a year after dissolution. A similar binary variable was added for each additional year thereafter.

Glick and Rose’s results uphold the commonly held idea that currency union members should expect to experience an increase in trade with one another, potentially double, and conversely a halving⁵ in the event of union dissolution.

Additional work on this subject by Rose and Wincoop supports the notion that adopters of the Euro should expect to see their trade grow, and that benefits may “swamp

⁵ Halving is approximated based on Figure 1 where level of trade over time is contrasted against time in years after the dissolution of a currency union.

any costs of foregoing independent policy”. They apply a model developed by Anderson and Wincoop⁶:

$$x_{ij} = \left(\frac{y_i y_j}{y^w} \right) \left(\frac{t_{ij}}{P_i P_j} \right)^{1-\sigma}$$

- x_{ij} is the nominal value of exports from i to j ,
- y_i is the nominal GDP of country i , same for j
- y^w is the nominal value of world output,
- σ is the elasticity of substitution between the countries' goods,
- t_{ij} is the gross price markup due to trade costs,
- P_i is i 's multilateral trade resistance⁷

This model predicts to what extent currency union membership will increase trade while adjusting for pre existing conditions. The intuition of the model is sound: “the stronger the level of pre union trade among the members of a currency union, the smaller the percentage increase in trade (post union membership). If trade barriers are reduced among countries who already trade a lot with each other, multilateral trade resistance will drop a lot and relative trade resistance will fall little... Pre union trade levels can be high either because the countries have relatively low pre union barriers (e.g. close proximity or trade agreement⁸)”. The results of their estimation, in Table 3, are consistent with Glick and Rose in finding a positive and substantial impact on trade for union members⁹.

⁶ Anderson and van Wincoop 2001.

⁷ “a price index that depends positively on trade barriers between i and all of its trading partners (not just j). Multilateral resistance can be solved as a function of all bilateral trade barriers, $\{t_{ij}\}$ ”.

⁸ An example is the Cooperation Council for the Arab States of the Gulf Secretariat General, comprised of the United Arab Emirates, Bahrain, Saudi Arabia, Sultanate of Oman, Qatar, and Kuwait.
<http://www.gcc-sg.org/eng/indexfc7a.html?action=Sec-Show&ID=1>

Table 3. Rose and Wincoop Gravity Model Output

Gravity Model Output		
Scenario	Trade (percent increase)	Welfare (percent increase)
EMU + UK	44 (9)	13.8 (3.6)
Argentina dollarizes	132 (37)	1.7 (0.5)
Ecuador dollarizes	106 (26)	4.5 (1.4)
Mexico dollarizes	53 (13)	12.4 (3.8)
Canada dollarizes	38 (9)	15.3 (4.3)
Mexico and Canada dollarize	27 (8)	18.4 (5.3)
New Zealand + Australia	125 (35)	2.0 (0.6)
Isreal + Palestine	62 (12)	10.1 (2.9)
Existing currency unions	91 (22)	5.0 (1.2)
World monetary union	10 (2)	21.3 (5.1)

Source: Rose and Wincoop (2001)

⁹ Ecuador and Argentina could both expect to see a higher percentage increase in trade from adopting the dollar (dollarization) than Mexico or Canada for example, given their established trading relationship. It should be noted that these findings provide a relatively greater increase in percentage change for new partners over established partners from dollarization rather than a greater increase in volume.

The considerations of the model especially with respect to expected changes for European countries (pre union levels of trade relatively high due to lower restrictions on trade) presage a “smaller effect of EMU on bilateral trade flows than most other currency unions”. To that end, smaller currency unions like that of the East Caribbean Currency Area induce a larger effect on trade flows. They expect a smaller percentage increase should “Mexico or Canada dollarize than Argentina, as Argentina trades less with the United States than does Canada or Mexico”.

In international exchange, transaction costs and fears of currency fluctuation can turn what would be an otherwise successful deal into a missed opportunity by cutting into profit margins. One method of alleviating fears, reducing transaction costs, and making a smaller country more appealing to trade is the entry into a currency union. This effectively eliminates exchange rate fears for the long term investor and increases trade. Several papers have upheld the notion that joining a currency union has substantial positive effects on international trade.

Chapter III

Scandinavian Currency Union

3.1 Introduction

In northern Europe, above the Netherlands and extending north through the Arctic Circle lie a group of countries collectively referred to as Scandinavia. Several of these countries can trace their roots to a single empire and naturally share similar languages and customs. Given their close proximity geographically, and cultural similarity they are natural trading partners. Further, their economic development in agricultural practices and modernization of the industrial sector pushed inter-country trade and a subsequent increase in foreign currency transactions. With inter-country circulation came increased stores of foreign currency in banks and the problem of incompatibility between coins. While Denmark, Norway and Sweden all had systems based on a basic unit of silver called Thaler, they couldn't be more different in value and division. One Norwegian Thaler was equal to two Danish Thaler or four Swedish Thaler. The Norwegian Thaler was divided into 120 schilings, the Danish Thaler into 6 Marks (with each mark comprised of 16 schillings), and the Swedish Thaler into 100 oere.

3.2 History

The Scandinavian Monetary commission agreed in 1873 to form a union based on the Gold standard. Denmark and Sweden united to form the Scandinavian Currency on May 27 while Norway's parliament initially rejected the proposal. Norway did eventually agree to join the union in 1875. The treaty called for an adjustment period of eight years after which all old national currency would be replaced by the common unit referred to as krona or krone depending on the country. Their values in pure gold were set equally to

0.40323 gram per krone and so each had the same par value in gold and could be used interchangeably. Each country was allowed to mint gold coins of 10 and 20 Kr as well as subsidiary coins of 2 and 1 Kr., 50, 25 and 10 *Oere*. Additionally each member could mint a sufficient amount of the subsidiary currency, of silver or copper for example, that was valued less than the monetary unit Krone (Krona). Also referred to as token, these subsidiary coins would be accepted throughout the union but were to be redeemable for gold prevent over-issue by any national bank. Perhaps the most important aspect of this union, like the Latin Monetary Union, was the independence of the national central banks.

3.3 Price Stability

One goal of adopting a common currency is to increase price stability within and between the three countries. Grytten and Hunnes¹⁰ investigate whether own and/or cross-border price stability did in fact exist for the three Scandinavian Currency Union members during the period January 1874- July 1914. To do so they look at time series data from the three countries from 1815 to 2000 to determine if price stability was greater during the existence of the union. They, like Willis(2003), key in on two main statistical measures: “volatility, or how much inflation varies from quarter to quarter or year to year; and persistence, or the speed to which inflation returns to baseline after a shock”. Additionally, “less persistence leads to less variability. Lower persistence is associated with faster but smaller swings in inflation over time that, in statistical terms, reduce the overall variability of inflation.” Grytten and Hunnes provide graphs of

¹⁰ Grytten and Hunnes (2009)

consumer price indices from 1815-2000 for a general picture of price level movements in the three countries the latter being an algorithmically (HP filter) smoothed depiction of the same data as the first.¹¹

¹¹ HP smoothing breaks down price changes into cyclical and trend components.

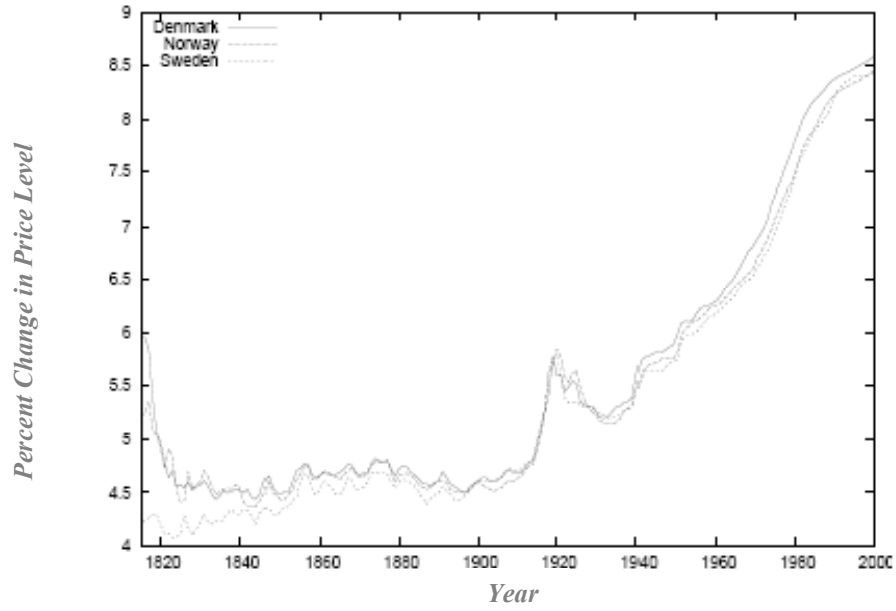
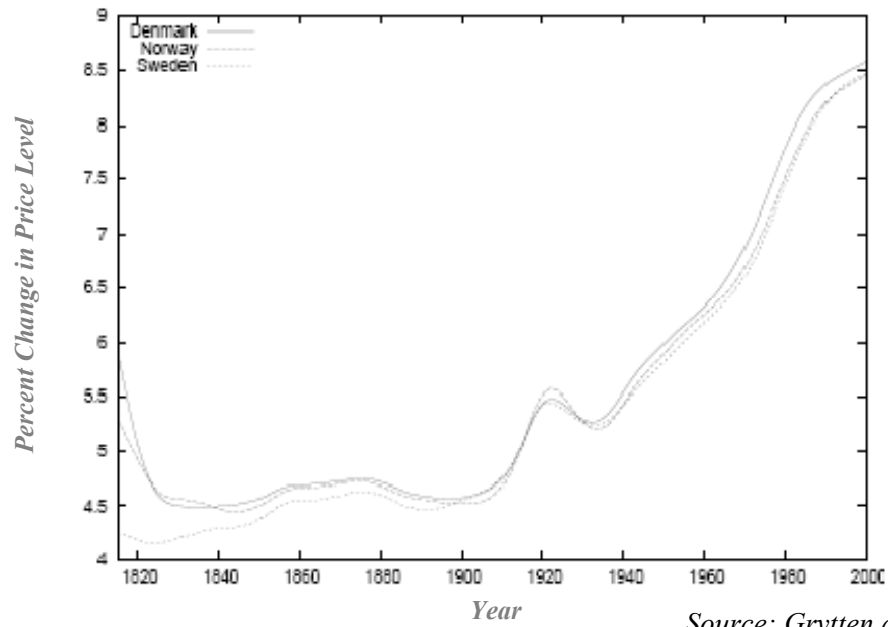


Figure 2: Price Level Movements in SCU Countries 1815-2000



Source: Grytten and Hunnes (2009)

Figure 3: Smoothed Price Level Movements in SCU Countries 1815-2000

They remark: “prices seem to have been quite stable from the mid-1850s until the outbreak of World War I...Prices were also relatively stable from the 1840s to the introduction of gold in 1874”. Of course these graphs provide only a broad view of the nature of change in price indices for the union members. Their parallel movements most likely reflect the similarities shared amongst the countries’ economies.

Grytten and Hunnes also use Mean Rate of Inflation (MRI) and exponential growth trend of prices or Log Likelihood Rate of Inflation (LLRI) to examine long term domestic price stability for Denmark, Norway and Sweden, shown in table 4.

Table 4. Measures of Price Stability

	1815-42	1843-73	1874-1913	1914-45	1946-2000	1815-2000
Denmark						
MRI	-0.053	0.008	0.000	0.032	0.050	0.014
LLRI	-0.041	0.008	-0.002	0.032	0.060	0.019
R²	0.560	0.541	0.062	0.240	0.974	0.696
Norway						
MRI	-0.033	0.012	0.000	0.031	0.050	0.017
LLRI	-0.027	0.010	-0.003	0.006	0.057	0.019
R²	0.646	0.635	0.158	0.047	0.976	0.712
Sweden						
MRI	0.006	0.011	0.002	0.027	0.051	0.023
LLRI	0.005	0.012	0.003	0.008	0.059	0.021
R²	0.229	0.630	0.102	0.098	0.975	0.808
<i>Source: Grytten and Hunnes(2009)</i>						
MRI= Mean rate of Inflation, LLRI=Log Linear Rate of Inflation						

From Table 4 we see that for the time period over which the currency union spanned, Mean Rate of Inflation and the trend rate, given by LLRI, were relatively small (close to zero regardless of sign).

To examine the short term fluctuations in prices the same pair use MRPC or mean rate of price change which measures the relative changes of prices in absolute terms. In this case they find that price stability was in fact greater during the currency

union. Table 5 also shows a value for SDHPT which they describe as the standard deviations of the observed price value from the corresponding HP-trend. Intuitively speaking, if this value is smaller during the currency union period, we could reasonably conclude that short term price stability was higher. This figure alone can however be misleading if used alone. The period after world war two, 1946-2000, returns a lower SDHPT value than the Gold standard period but that is actually a period of very high albeit stable inflation.

Table 5. Short Term Price Fluctuations

	1815-42	1843-73	1874-1913	1914-45	1946-2000	1815-2000
Denmark						
MRPC	0.081	0.044	0.032	0.075	0.051	0.054
SDHPT	0.099	0.058	0.051	0.106	0.026	0.069
Norway						
MRPC	0.096	0.044	0.030	0.081	0.050	0.057
SDHPT	0.097	0.057	0.048	0.120	0.029	0.072
Sweden						
MRPC	0.048	0.052	0.029	0.065	0.051	0.049
SDHPT	0.054	0.062	0.051	0.131	0.029	0.069
<i>Source: Grytten and Hunnes(2009)</i>						

3.4 Transmittal of Shocks

In addition to price stability, it is useful to evaluate the transmittal of shocks through currency union members to determine how well those countries are suited for such an agreement. Says Bergman,

“Countries with similar production structures will respond symmetrically to structural shocks, leaving the nominal exchange rate unaffected. If countries are facing asymmetric shocks, exchange rate and separate monetary policies could help stabilize nation-specific fluctuations in economic activity...However, if countries have strong trade and financial ties, idiosyncratic shocks will be transmitted immediately from one country to another and these shocks will effectively become common shocks. Strong linkages therefore allow disturbances to be transmitted to other countries which absorb the effect on the domestic economy. Thus, countries with strong linkages are also ideal candidates for a monetary union.”

3.5 Macroeconomic Indicators

Contrary to what we would expect of perhaps one the most successful currency unions in history, Bergman finds that with respect to macroeconomic variables (particularly nominal variables) there was little difference relative to England and Germany¹². That is to say that perhaps the gold standard, upheld in all five countries, imposed such strong restrictions on monetary policy that the addition of a single currency in the Scandinavian countries only marginally affected macroeconomic performance.

Bergman found output growth during the SCU was on average 1 percent higher in the Scandinavian countries than in England and Germany who were also on the gold standard at the time:

¹² Bergman 1996

Table 6. Macroeconomic Trends: Output Growth

Output Growth						
	Denmark	Norway	Sweden	Germany	Mean	Std Dev
Denmark	1.00				3.08	3.01
Norway	0.31*	1.00			4.65	3.59
Sweden	0.48*	0.10	1.00		2.60	2.37
Germany	0.28+	0.15	0.18	1.00	2.50	3.13
England	0.34*	0.21	-0.05	-0.03	1.80	2.51

Source: Bergman (1996)

Table 7. Macroeconomic Trends: Inflation

Inflation						
	Denmark	Norway	Sweden	Germany	Mean	Std Dev
Denmark	1.00				-0.21	2.33
Norway	0.56**	1.00			0.42	3.97
Sweden	0.68**	0.77**	1.00		0.32	3.56
Germany	0.51**	0.70**	0.58**	1.00	0.33	3.02
England	0.62**	0.64**	0.56**	0.69**	-0.15	2.24

Source: Bergman (1996)

Table 8. Macro Economic Trends: Long Term Interest Rate

Long Term Interest Rate						
	Denmark	Norway	Sweden	Germany	Mean	Std Dev
Denmark	1.00				4.25	0.37
Norway	0.89**	1.00			4.17	0.40
Sweden	0.63**	0.60**	1.00		4.75	0.66
Germany	0.78**	0.87**	0.36*	1.00	3.78	0.27
England	0.70**	0.66**	0.18	0.86**	2.92	0.21

Source: Bergman (1996)

Table 9. Macroeconomic Trends: Money Growth

Money Growth						
	Denmark	Norway	Sweden	Germany	Mean	Std Dev
Denmark	1.00				5.06	5.25
Norway	0.22	1.00			4.65	3.59
Sweden	0.39*	0.71**	1.00		5.48	5.35
Germany	0.20	0.15	0.15	1.00	4.94	4.81
England	0.22	0.55**	0.53**	0.10	1.77	2.06

Source: Bergman (1996)

Table 10. Macroeconomic Trends: Discount Rate

Discount Rate						
	Denmark	Norway	Sweden	Germany	Mean	Std Dev
Denmark	1.00				4.53	0.88
Norway	0.56**	1.00			4.79	0.74
Sweden	0.72**	0.80**	1.00		5.18	0.71
Germany	0.77**	0.45**	0.66**	1.00	4.16	0.64
England	0.60**	0.24	0.40*	0.77**	2.70	0.84

Source: Bergman (1996)

Table 11. Macroeconomic Trends: Real Interest Rate

Real Interest Rate						
	Denmark	Norway	Sweden	Germany	Mean	Std Dev
Denmark	1.00				4.46	2.41
Norway	0.59**	1.00			3.75	4.06
Sweden	0.67**	0.80**	1.00		4.43	3.61
Germany	0.53**	0.72**	0.61**	1.00	3.44	3.08
England	0.64**	0.64**	0.55*	0.70**	3.08	2.29

Source: Bergman (1996)

3.6 Separation of the Union

Much has been written on the reasons behind the collapse of the Scandinavian Currency union. The commonly held view of the break up concerns the effects of the First World War on the economies of the three countries.

Michael Bergman, Stefan Gerlach and Lars Jonung find Denmark and Norway experienced a sharp rise in foreign exports that was not shared by Sweden. The subsequent rise in money growth rates in Denmark and Norway would result in an influx of currency into Sweden¹³. This conclusion has been echoed in numerous papers since.

Despite taking a neutral stance with respect to combatants, the Scandinavian countries were greatly affected. Talia finds three primary reasons for the collapse¹⁴:

- Suspension of convertibility and export prohibition
- Divergence of exchange rate within the union
- The smuggling of token coins within the union

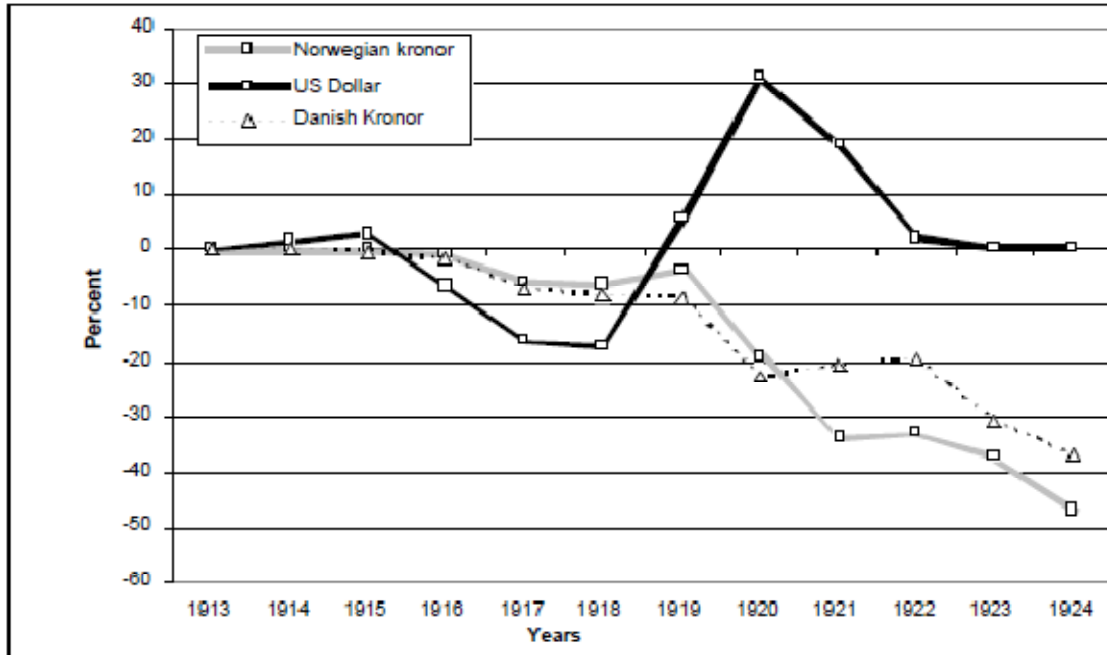
Since the Scandinavian National banks covered notes with their gold reserves, and a central condition of the Union was that notes were redeemable throughout, the sudden run on the Swedish Riksbank July 31 and August 1, 1914 alarmed all three members. Believing that the uptick in outflows of gold, roughly 2.6 percent in four days, and simultaneous news of a declaration of war signaled panic, the Swedish central Bank responded. They opted to suspend convertibility of notes as a precautionary measure on August 2, 1914. This protection of the reserve essentially signaled the departure of Sweden from the Gold Standard, and de facto withdrawal from the union. The Nationalbanken of Denmark and the Norges Bank of Norway chose also to suspend convertibility on August second and fourth respectively. In the coming months Central Banks also chose to prohibit the export of gold. This further strayed from a main concept

¹³ Bergman et al., 1993

¹⁴ Talia, 2004

of the union, that money should be free flowing from one union member to another to stabilize and harmonize exchange rates.

By 1916 the Riksbank decided to restore convertibility to gold albeit not for long. For reasons some attribute to natural resources instrumental to war, Sweden's balance of trade shifted dramatically and diverged from those of their Scandinavian counterparts. The currencies of Denmark and Norway fell in relation to that of Sweden and it became profitable for the Danes and Norwegians to hoard Swedish currency and use that of their home countries. The Swedish held surplus of Danish and Norwegian notes had risen from 44.9 million Kronor in 1914 to 72.3 million 1915. This continued until February 16, 1916 when the Riksbanks decided upon a formal gold blockage in which they were no longer responsible for redeeming notes or gold for their relatively more valuable coin. The two other central banks agreed to do the same in an agreement directly in contradiction of their union. This did not however stop arbitragers entirely



Source: Talia (2004)

Figure 4. Deviations from par with Swedish Kroner

The smuggling of coins within the union continued and ultimately the three countries found redemption of coins to be a nuisance. In 1924 Sweden made official that Scandinavian coins would no longer be accepted as legal tender and the Scandinavian Union officially ceased to exist.

Chapter IV

Latin Monetary Union

4.1 Introduction

The Latin Monetary Union was agreed upon in 1865 by France, Belgium, Italy, and Switzerland after the Monetary Convention of 1865 and took effect in August 1866. The foremost intent was to standardize the existing currencies due to issues with conversion that developed for different reasons within each country.

4.2 France

In 1803 France enacted legislation establishing the 15 ½ to 1 ratio of silver to gold based on the relative market values of the two metals, effectively ushering in the bimetallic standard. In maintaining this ratio the circulation of either metal within France would fluctuate based on their relative values being influenced by other countries. England adopted the gold standard in 1816 while Holland moved their silver to gold ratio to 15.873:1. Later, in 1834 the United States would raise the ratio to 16:1. With gold being valued more highly in the international market than at the French mint it could be hoarded or exported for a profit. In this situation arbitrage takes place as is explained by an adaptation of Gresham's Law¹⁵. Sometimes interpreted as, "bad money drives out good", one would observe that when two coins of different value have the same legal face value; the "bad" coins composed of the relatively less expensive metal will be used while the "good" others are hoarded or exported. From testimony given on this issue, furnished

¹⁵ Gresham's Law is more correctly stated: When two coins of differing intrinsic value are granted legal tender status the relatively inexpensive coin will be circulated and the relatively more expensive coin hoarded.

by the Rapport de la Commission charge d'Etudier la Question de l'Etalon monetaire
“According to the report of Gaudin, dated 26 Brumaire An. XI (1803) France at the time
had one third of its circulation in gold. By 1848 almost all of the gold had disappeared
because from 1808-1848 it had enjoyed a premium which reached, at times, 1.50 per
cent.”¹⁶

In the following decade, 1850-60, the trend of gold outflow ended and reversed in
fact. Attributed to new gold discoveries, France experienced a sudden influx of Gold
ultimately resulting in an observed mono-metallism only now with Gold being circulated.
Rumors of devaluing one of the currencies spawned a division in amongst the people;
those who favored gold versus those who favored silver. The relative abundance of gold
coined in the more valuable denominations created frictions with transactions and the
need for a less valuable gold coin. To address the issues facing France a commission was
established to determine what direction the country would move with respect to gold or
silver but no solution was agreed upon and so the status quo prevailed.

4.3 Belgium

Belgium separated from Holland in 1831 and subsequently abolished the Dutch
coinage in favor of the French currency unit. This was a seemingly natural transition as
the two countries had, over time, developed a strong industrial relationship. In 1932
Belgium became a satellite¹⁷ of France from a monetary perspective, adopting the

¹⁶ Willis 1901

¹⁷ A satellite in monetary terms, describes a country that by virtue of a hard external peg sacrifices
autonomy with respect to monetary policy.

entirety of the French monetary system which operated under the law of 1803 with the basic stipulations¹⁸:

1. Five grams of silver nine tenths fine constituting the Franc.
2. Subsidiary coins, also nine tenths fine, were to be the same as those of France.
3. The national gold coin was to be the twenty Franc piece.

Here the mention of gold coins was merely a formality since silver had effectively replaced gold in transactions, as noted earlier in discussion of the French history. And so, from 1832 to 1847 this new monetary “piggy-backing” operated in Belgium, under which more than twenty five million Francs were coined in silver while not a single gold coin was produced. A preference for gold surfaced in 1847 and a new law, enacted March 31 that year, called for ten and twenty five Franc gold pieces (nine tenths fine and 7.91556 grams). Of note is that this was the equivalent to a mint ratio of 1:15.83, a departure from the French standard 1:15.5. Dutch ten florin pieces were also accepted at equivalence of twenty one francs and sixteen centimes in silver¹⁹.

Further complicating the system, in 1848 they began to accept English sovereign and recognized it at a 1.1 percent premium leading naturally to speculation and an influx of gold in exchange for silver to the tune of roughly thirty million francs. By 1849 the gold-favoring monetary system of Belgium recognized²⁰:

¹⁸ Willis 1901

¹⁹ Willis 1901

²⁰ Willis 1901

1. French twenty and forty franc gold pieces minted under the 1:15.5 ratio.
2. English sovereign under the 1:15.69666 ratio.
3. Dutch ten florin gold piece at value 21 francs 16 centimes.
4. Belgian ten and twenty five franc gold pieces at 1:15.83 ratio

The world market at that time saw an increase in the price of silver relatively, after discoveries of gold in California and Australia increased the Global supply.

Compounding the problems of the Belgians were profiteers buying old and worn French silver coinage could be purchased for relatively cheaper gold then shipped to Belgium to carry out business transactions at a monetary savings. The Belgians in 1849 took measures to stymie the influx of Gold by depriving the English sovereign of legal tender quality. The same fate befell the Dutch currency the next year and subsequently French coinage. By that time however, little gold was in circulation and the country had returned to silver as the standard. In August 1854 native Belgian gold currency (produced in response to law of 1847) was demonetized by royal decree. This choice by the Belgian government fell in line with the decisions of Switzerland, Naples, Spain, and India to demonetize gold in the years immediately preceding. Bad French silver was driving out Belgian silver and in 1859 it was estimated that French coin made up seventy percent of the silver in Belgian circulation. With gold continuing to decrease in relative value the premium on silver increased to such an extent that Belgians were forced to turn to French gold as a medium of exchange, despite its not being recognized officially as legal tender(had no debt paying power). Further the coins proved to be impractical as the denominations were too large for small transactions. In 1861, in light of growing

discontent over new discrepancies in market value created by arbitragers in addition to the fore mentioned annoyances the Government enacted law once again granting legal tender quality to French gold pieces²¹. This was also hoped to end currency speculation but did little to that effect. Debtors to those international countries upholding the silver standard found themselves required to pay a premium sufficient to cover the loss on the worn (bad) silver coins left in Belgium. By 1965 Belgium had exported most of her silver and was in a state of constant flux with regard to monetary policy.

4.4 Switzerland

In Switzerland, the Bundesverfassung of 1848 joined the various cantons (states) under a single monetary system. Article 36 states: The exercise of all rights included in the regulation of the coinage belongs to the Union. Subsequently in 1850 law was passed effectively adopting the French monetary system, like Belgium, based on the silver piece “five grams, nine tenths fine under the name franc”. It was also specified that any foreign coin minted sufficiently close to the specifications of the French system would be granted legal tender status. This made coins from France, Belgium, Sardinia, Parma, Cisalpine Republic, and old Kingdom of Italy was legalized²².

From Articles 2 and 3 of the law of 1850²³

2. The franc shall be divided into 100 Rappes (centimes)

3. The Swiss denominations of coin shall be:

²¹ Willis 1901

²² Willis 1901

²³ Willis 1901

- a. In silver:
 - The five franc piece
 - The two franc piece
 - The one franc piece
 - The half franc piece

In essence, the law of 1850 was an extension of the law of 1803 in France. But, France still circulated Gold coin and so the Swiss naturally accepted French gold on the same basis as French silver. Like its neighbors Switzerland experienced a driving out of the silver in its cantonal treasuries and by the 1859 came to acknowledge the state of the monetary system:

“The national and cantonal treasuries can no longer withstand the urgency of circumstances; the gold standard has become matter of fact whereas the silver standard remains standing only on paper and one can without exaggeration assume that nine tenths of all transactions in Switzerland are performed by means of gold and especially through the agency of the 20 franc piece”.

Since it had become impossible to exclude gold from the Swiss marketplace, the Federal council adopted the view that it must be better to admit it officially and at a fixed rate. This effectively adopted the prevailing French bimetallic standard, “in submission to a necessity which springs from the history of modern civilization”. It was also decided that a lesser fineness would be standard on the Swiss coin, eight tenths fine, setting the stage for more issues of bad money supplanting good.

4.5 Monetary Convention of 1865

The dangers to monetary stability posed by arbitragers and recoinage were a burden felt most greatly by Belgium and in 1865 its leaders summoned the French to a

monetary conference. Shortly thereafter a similar proposition was made and accepted by Italy and Switzerland. Table 8 outlines key changes in LMU countries.

Table 12. Changes in Monetary System for Key LMU Countries

Changes					
	Bimetallism to Gold	Bimetallism to Silver	Silver to Gold	Other Events	Joined LMU
France	Nov 1873 Jan 1874 Aug 1876			Suspension of convertibility of notes July 1870-Dec 1877	23 Dec 1865
Belgium		Dec 1850	Dec 1872 Dec 1873 Jan 1874	De facto Bimetallism after permission of French coin to circulate 1861	23 Dec 1865
Italy	Jan 1874			Suspended convertibility May 1866, Feb 1894	23 Dec 1865
Switzerland	Dec 1871 Jan 1874				23 Dec 1865

Source: Bae and Bailey (2003)

The technical ease of the franc system made its continuance desirable to all parties and it was the goal of those nations involved to combat international speculation with regard to subsidiary silver especially. Each state would be accountable for its own currency, but

the bimetallic standard would be upheld throughout the union countries at a ratio of 15.5 to 1. The outcomes of the Convention were:

- Uniformity in the coinages of the member states, and limiting the amount of coin each nation could mint.
- Lowering of the fineness of subsidiary fractional coin to avoid a situation where recoinage would be profitable
- Greater International Circulation

Three years after the convention Greece and Spain joined the arrangement. The success of the LMU would depend on the willingness of members to maintain the market ratio of silver to gold.

4.6 Collapse of the LMU

In a way, the Latin Monetary Union was never really a union, but a currency band. Without any real agreement to honor notes of other banks the national banks were independent but responsible only to ensure the ratio of gold to silver was maintained. Like the Scandinavian Currency Union, LMU countries when faced with a decision juxtaposing union interests and national interests, the nation prevailed.

On May 1, 1866 the Italian finance minister was granted extraordinary powers to declare notes non-redeemable after war was declared between Italy and Austria. Further, the Italian National bank would issue more silver coin to pay for war and restore its coffers. Further exacerbating issues with silver in Italy was the decision by Giacomo Cardinal Antonelli, overseer of the Papal treasury to begin minting silver coins with less fineness than the union agreed upon ratio.

Ultimately, the outbreak of the First World War would signal the end of the Latin Monetary Union after suspending circulation of silver and adopting a de facto gold standard. It was simply a case of individual national interests prevailing over that of keeping a currency agreement. Suffice it then to say that without political unity, a monetary agreement generally will not withstand a major shock to any individual nation as that nation will almost definitely pursue monetary policy in its own interest regardless of the agreement.

Chapter V

CFA Franc Area

5.1 Introduction

The CFA Franc zone is comprised of two separate monetary unions in Africa whose separate currencies are at fixed parity. Their individual countries share a history of French colonization, and were united under the Franc after World War II by decree of the French government to further their interests. For many years since its establishment, the CFA franc was fixed to the French Franc then more recently its euro equivalent. The CFA francs are legal tender in their respective zones. Instrumental to the stability of the currency, the French central bank guarantees convertibility into Euros and maintains influence on the governing boards of each region's central bank boards. To ensure the convertibility guarantee, the two zonal central banks must deposit 65% of exchange reserves into account with the French treasury. With involvement of the French as a custodian of sorts for the CFA area serves to effectively centralize the CFA monetary system and further provides a degree of similarity to the EURO to make some conjectures.

Table 13. Membership of Financial Community of Africa Zone

CFA Franc Zone				
	Acronym	Members	Exchange Rate	
			Before 94 Devaluation	After 94 Devaluation
West African Economic and Monetary Union	UEMOA	Burkina Faso, Benin, Guinea, Ivory Coast, Mali, Niger, Senegal, Togo	50 CFA : 1 French	100 CFA : 1 French
Central African Economic and monetary Union	CEMAC	Cameroon, Chad, Congo, Gabon, Equatorial Guinea, Central African Republic	50 CFA : 1 French	100 CFA : 1 French

Source: Healy (2003)

Healy outlines some key differences between the euro area and CFA: The external peg, economic and political differences, centrality of commodity production and levels of integration supporting the union. An external peg constrains the ability of a central bank to pursue and enact monetary policy according to its own goals. The Euro or dollar can fluctuate on the currency markets allowing central bankers to enact measures to pursue their own targets. Contrastingly CFA bankers are tasked with carrying out monetary policy with the purpose of maintaining the hard peg. In the 1980's and 90's economic shocks in commodities markets were magnified in the CFA zone since their currency experienced a sharp appreciation, in keeping with the French franc, to the detriment of CFA export's competitiveness. On the positive side, the convertibility of the CFA Franc does provide the same degree of stability as the Euro making CFA countries more desirable to foreign investors than their non CFA neighbors. Also, the convertibility

feature of the CFA franc ensures the money's function as a store of wealth that may not have existed to the same degree without a hard peg.

Economic and politically, development is a glaring difference between the EMU and CFA countries. Below we see the stark differences in economic well being and politically the African countries exhibit less transparency and overall convey a significantly lower sense of stability. The union has lasted longer than most other monetary regimes so there are lessons to be taken from it.

Table 14. Political Instability in Financial Community of Africa Countries

Political Instability									
	Number of Coups			Cabinet Changes			Commodity Index Change		
	60-73	80-85	86-93	60-73	80-85	86-93	60-73	73-85	86-93
UEMOA	0.033	0.077	0.048	0.35	0.42	0.43	-0.7	1.3	-1.2
CEMAC	0.102	0.000	0.000	0.41	0.38	0.00	1.5	8.2	-3.7
Ivory Coast	0.000	0.000	0.000	0.31	0.07	0.33	0.8	5.1	-12.5
Cameroon	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0.8	5.2	-11.0

Source: Hadjimicheal and Galy (1997)

With respect to production the African countries are heavily dependent on raw materials exports. It follows then that the value of their products rise and fall with the demands of international commodities markets. Individual nations within the CFA area tend to have a primary raw export but cannot adjust their monetary policy to reflect the performance of their respective products in the markets. Again individual CFA nations are hampered in their freedom to pursue their individual interests.

Table 15. Breakdown of Sectors in Financial Community of Africa Countries

	Sectors			
	Given as % of total			
	Primary	Crude Oil (primary)	Secondary	Tertiary
Benin	33.9		13.9	52.2
Burkina Faso	37.9		18.2	43.9
Cameroon	40.8	6.4	15.8	43.4
Central Af. Rep.	54.5		16.8	28.7
Congo	45.3	34.1	11.6	43.0
Ivory Coast	31.5		18.4	50.1
Gabon	53.8	42.4	11.0	35.2
Eq. Guinea	71.7	23.1	8.3	20.0
Mali	46.4		14.1	39.5
Niger	36.6		15.6	47.8
Senegal	20.3		30.5	49.2
Chad	37.1		22.1	40.8
Togo	34.8		22.7	42.5

Healy (2003)

Table 15 shows the percentages of total output provided by the primary secondary and tertiary sectors. The primary sector includes raw materials, secondary includes manufactured goods, and the tertiary represents services. Most of the African countries are very reliant on the Primary sector with most customers being foreign. It follows that, the value of their currency in international terms then, factors largely into their relative competitiveness in the global market and subsequently their livelihoods. Comparatively the United States tertiary sector is roughly 77%, secondary is 22%, and primary sector is 1%²⁴.

²⁴ CIA World factbook:

<https://www.cia.gov/library/publications/worldfactbook/fields/2012.html?countryName=United%20States&countryCode=us®ionCode=na&#us>

Table 16. CFA Member Characteristics as of 2002

WAEMU	Population	GDP/Capita	Pop. Below Poverty Line	Regime Type	Freedom Rating
Benin	6,788,000	\$1,040	37%	DEM	F
Burkina Faso	12,603,000	1,040	45	AR	PF
Ivory Coast	16,805,000	1,550	--	AR	PF
Guinea	1,345,000	900	--	DEM	PF
Mali	11,340,000	840	64	DEM	F
Niger	10,640,000	820	63	DEM	PF
Senegal	10,590,000	1,580	54	RDP	PF
Togo	5,286,000	1,500	32	DEM	PF
CEMAC					
Cameroon	16,185,000	\$1,700	48%	RDP	NF
C.A.Republic	3,643,000	1,300	--	DEM	PF
Chad	8,997,000	1,030	80	RDP	NF
Rep. Congo	2,958,000	900	--	AR	PF
Eq. Guinea	498,100	2,100	--	AR	NF
Gabon	1,233,000	5,500	--	AR	PF

Source: Healy(2003)

5.2 CFA performance Relative to Comparable Countries

Devarajan and Melo compared a number of indicators from the CFA countries and comparables from Subsaharan Africa and Low income countries²⁵.

²⁵ Devarajan and Melo 1990

Table 17. Comparative Statistics: Real GDP Growth Rate

Real GDP Growth rate		
	1973-81 avg	1982-89 avg
CFA (11)	3.7 %	2.6%
SSA (20)	2.7%	2.0%
Low Income (41)	4.4%	2.9%
<i>Source: Devarajan and Melo(1990)</i>		

Table 18. Comparative Statistics: Total Investment Per GDP

Total Investment/ Real GDP		
	1973-81	1982-89
CFA (11)	24.3	18.9
SSA (20)	20.3	17.8
Low Income (41)	21.6	19.8
<i>Source: Devarajan and Melo(1990)</i>		

Table 19. Comparative Statistics: Debt Relative to GDP

Debt/ GDP		
	1973-81	1982-89
CFA (11)	30.6	62.5
SSA (20)	28.6	70.5
Low Income (41)	26	58.4
<i>Source: Devarajan and Melo(1990)</i>		

Table 20. Comparative Statistics: Annual Inflation Rate

Annual Inflation Rate		annual
	1973-81	1982-89
CFA (11)	12.0	4.3
SSA (20)	24.3	29.7
Low Income (41)	18.4	33.3
<i>Source: Devarajan and Melo(1990)</i>		

Table 21. Comparative Statistics: Real Exchange Rate

Real Exchange Rate 1980=100		
	1973-81	1982-89
CFA (11)	107.0	108.0
SSA (20)	115.0	121.0
Low Income (41)	103.0	119.0
<i>Source: Devarajan and Melo(1990)</i>		

Table 22. Comparative Statistics: Export Growth Rate

Export Growth Rate		Avg annual
	1973-81	1982-89
CFA (11)	6.8	1.5
SSA (20)	1.9	2.6
Low Income (41)	4.9	5.0
<i>Source: Devarajan and Melo(1990)</i>		

CFA zone countries experienced an average real GDP growth rate better than their neighbors in sub Saharan African in the 1970's and to a slightly lesser extent the 1980's.

It is worth noting however that their performance in this indicator still trailed the average for low income countries. Real Total Investment relative to Real GDP was highest for CFA countries in both periods although the margin closed substantially in the latter period. With regard to inflation the CFA zone shined since their peg kept their French influenced monetary policy relatively conservative. Their inflation rate was half that of neighboring SSA countries 33% less than comparable low income countries. This desirable disparity was even more pronounced in the latter period where CFA zone countries experienced less than five percent inflation compared to nearly thirty percent in SSA countries. The real exchange rate did not change substantially from one period to the next for CFA countries while comparable countries experience significant devaluations. This significant difference was a direct result of their inability to control their monetary policy and was detrimental to CFA competitiveness in trade.

Table 23. Comparative Statistics: GDP Change Before and After Devaluation

	GDP	
	Avg annual % change	
	1980-94	1995-2008
CFA (14)	2.27	5.36
SSA (26)	2.41	4.60
CFA 14 includes Mali beginning 1984, Equatorial Guinea 1985, and Guinea Bissau 1997 forward SSA includes remaining 30 Sub-Saharan Africa countries less Zimbabwe, Namibia, Liberia, and Eritrea due to lack of information		
<i>Source: IMF(2010)</i>		

Table 24. Comparative Statistics: Inflation Before and After Devaluation

	Inflation	
	Avg annual % change	
	1980-94	1995-2008
CFA (14)	4.50	3.58
SSA (26)	113.0	34.91
CFA 14 includes Mali beginning 1984, Equatorial Guinea 1985, and Guinea Bissau 1997 forward SSA includes remaining 30 Sub-Saharan Africa countries less Zimbabwe, Namibia, Liberia, and Eritrea due to lack of information		
<i>Source: IMF(2010)</i>		

Tables 23 and 24 reflect the GDP and Inflation changes in the 14 CFA countries relative to 26 Sub Saharan African countries. The more recent figures reflect the not only the relative stability provided by the CFA in terms of controlling inflation but also the importance of the 1994 currency devaluation with respect to GDP growth.

5.3 Differing Interests

The differences between the individual economies in the CFA zone are vast, as are the political regimes. The goal of expanding trade and smoothing shocks is one that is attainable only through integration both political and economic. In fixing their exchange rate to that of the French Franc and subsequently the Euro, the Zone countries experience the effects of that currency's performance in the international market. The French, acting in the interest of stemming domestic inflation could pursue policy that shrinks the money supply driving up interest rates. In doing so they would also be causing the CFA zone

currencies to appreciate, which could have positive effects in terms of purchasing power but to the detriment of CFA countries export market. This became the case in the 1994 when the CFA currency was devalued from .02 French francs to .01 French Francs. The intuition here would be to protect those relatively poorer exporters of raw goods who cannot sell as easily, rather than enabling the richer purchasers of end goods who can purchase more.

For a monetary union to benefit its members integration is necessary. Politically, integration achieves a level of mutual benefit by ensuring that policies work together rather than counter to one another. Further it is critical to maintaining the union when faced with shocks. Economic integration ensures that policies do not affect one member disproportionately for it is that case that drives countries to pursue their own interest to the detriment of the union.

5.4 Integration

Integration both politically and economically is rather limited in the CFA countries. Since its creation, trade amongst members has not grown to a significant level. Instead, foreign secondary markets are the destination for most exports in CFA countries. Politically, individual nations have made little progress toward any semblance of cohesive policy goals. France as served as an overseer of sorts for the union given its substantial role in the monetary system. It may be plausible to compare France's role to that of Germany in the E.U. initially, keeping in mind this weakness.

A serious moral hazard exists in the CFA due to the lack of integration and arguably is a result of their long history of colonization and inherent dependence. Since

France serves as their central administrator but withholds all information regarding reserves and profitability thereof from the individual nations, there is an incentive for countries to pursue fiscal monetary policy that benefits them individually with no regard for their union members.

Chapter VI

United States

6.1 Background

The United States today lays claim to 3.79 million square miles and more than 300 million citizens. With an estimated GDP of approximately \$14.3 trillion she is a superpower to which all other countries are compared, and to which many can learn from. Of interest to this paper is, naturally, the fact that the United States is the most successful currency union in the history of the world, albeit a national union (or federation). It differs from others in the sense that all of the union members or states compose a singular central political arrangement. Further, monetary policy is executed by the centralized Federal Reserve System. Interstate exchange is free as is capital mobility. The success of this system has encouraged many in Europe to explore the idea of mimicking such a union in which monetary policy is centralized along with political authority to effectively unite Europe into a singular politico-economic entity. While the political unification of Europe is a long way off, the idea of Europe moving forward as a single interdependent economic power is being played out as we speak. It's prudent then to identify the underlying elements instrumental to the US's success and to what extent it can be copied. Monetary union has certainly spurred trade among European nations but there are still frictions that will stall further efforts toward a union the likes of USA unless perhaps a central bank is created.

6.2 Federal Reserve System History

United States monetary policy is conducted by the Federal Reserve which was founded in 1913 amid international turmoil and with the interest of providing the United

States with a safer and more stable financial and monetary system. Its duties to day incorporate these key elements²⁶:

- Conducting the nation’s monetary policy by influencing the monetary and credit conditions in the economy in pursuit of maximum employment, stable prices, and moderate long-term interest rates.
- Supervising and regulating banking institutions to ensure the safety and soundness of the nation’s banking and financial system and to protect the credit rights of consumers.
- Maintaining the stability of the financial system and containing systemic risk that may arise in financial markets.
- Providing financial services to depository institutions, the U.S. government, and foreign official institutions, including playing a major role in operating the nation’s payments system.

The need for a centralized authority stemmed from financial panics during the metallic currency standards of the late nineteenth and early twentieth centuries including the Bank Panic of 1907. Consumers at the time, acting out of fear due in part to a retraction of liquidity by banks, withdrew their deposits from the banks resulting in widespread failure²⁷. In 1908 congress passed the Federal Reserve Act establishing Federal Reserve banks “to provide for the establishment of Federal reserve banks, to furnish an elastic currency, to afford means of rediscounting commercial paper, to establish a more effective supervision of banking in the United States, and

²⁶ http://www.federalreserve.gov/pf/pdf/pf_1.pdf

²⁷ <http://www.bos.frb.org/about/pubs/begin.pdf>

for other purposes.” President Wilson signed the act in 1913. Since its inception, additional legislation has shaped the role played by the Federal Reserve including:

- Banking Act of 1935
- Employment Act of 1946
- Bank Holding Company Act of 1956
- International Banking Act of 1978
- Full Employment and Balanced Growth Act of 1978
- Depository Institutions Deregulation and monetary Control Act of 1980
- Financial Institutions Reform, Recovery, and Enforcement Act of 1989
- Federal Deposit Insurance Corporation Improvement Act of 1991
- Gramm-Leach-Bliley Act of 1999

Each legislative emendation served to promote the economic and monetary objectives of the nation including sustained economic growth, a high level of employment, price stability and consistent purchasing power of the dollar, and temperate long term interest rates. Further, the Federal Reserve, although a government entity, has a responsibility to act independently of political influence.

6.3 Structure

The Federal Reserve is overseen in Washington D.C. by a seven member board of governors (including the chairman) appointed by the president and confirmed by the Senate to staggered fourteen year terms. The board is charged with setting monetary policy as well as supervising and regulating its banks. Monetary policy is conducted via the federal open market committee comprised of the seven board members in addition to

five of the twelve regional bank presidents. Below them in the structure sits the Federal Advisory Council, a twelve member committee made up of a member from each district. In addition to the twelve regional banks there are twenty five branch banks and several thousand subsidiary member banks.



Source: <http://econperspectives.blogspot.com/2008/11/structure-of-federal-reserve-system.html>

Figure 5. Federal Reserve System

The member banks are those that agree to maintain reserves with the Federal Reserve Bank system in addition to being regulated to some degree by the Fed to ensure strength and stability.

Table 25. Reserve Bank Branches and Locations

Federal Reserve District Banks and Branches			
Number	Letter	Bank	Branch
1	A	Boston	
2	B	New York	Buffalo NY
3	C	Philadelphia	
4	D	Cleveland	Cincinnati OH Pittsburgh PA
5	E	Richmond	Baltimore MD Charlotte NC
6	F	Atlanta	Birmingham AL Jacksonville FL Nashville TN New Orleans LA
7	G	Chicago	Detroit MI
8	H	St. Louis	Little Rock AR Louisville KY Memphis TN
9	I	Minneapolis	Helena MT
10	J	Kansas City	Denver CO Oklahoma City OK Omaha NE
11	K	Dallas	El Paso TX Houston TX San Antonio TX
12	L	San Francisco	Los Angeles CA Portland OR Salt Lake City UT Seattle WA
Source: http://www.federalreserve.gov/branches.htm			

The chairman of the board is under constant watch of the public eye and certainly must endure a great deal of scrutiny. He is in regular contact with the white house and can be called upon by congress to testify on behalf of the Federal Reserve²⁸.

To help guide decision making the Board of Governors relies on the advice of several committees:

- Federal Advisory Council- advises on all matters within federal reserve jurisdiction
- Consumer Advisory Council- advises on matters of interest to, and on behalf of consumers, communities, and the financial services industry
- Thrift Institutions Advisory Council- advises on behalf of savings and loan institutions, mutual savings banks, and credit unions that have a relationship with the Federal Reserve.

There are certainly a number of interests working to promote their views of the direction of the federal reserve with respect to decision making but a degree of openness in carrying out policy is instrumental to maintaining the trust of the American and worldwide public. To that end the Board shares publicly statistics and economic information in its *Federal Reserve Bulletin, Statistical Supplement, and Monetary Policy Report to Congress*. To ensure the veracity of the Boards claims, an audit is performed by

²⁸ Ben Bernanke has served as Chairman of the board since 2006

a private accounting firm each year in addition to periodic reviews by the Government Accountability Office²⁹.

6.4 Monetary Policy

The Federal Reserve, under guidance from the board of directors, formulates and executes their Monetary Policy through the federal open market committee. The FOMC utilizes different instruments to achieve its goals for the monetary system:

- Open market operations—the purchase or sale of securities, primarily U.S. Treasury securities, in the open market to influence the level of balances that depository institutions hold at the Federal Reserve Banks
- Reserve requirements—requirements regarding the percentage of certain deposits that depository institutions must hold in reserve in the form of cash or in an account at a Federal Reserve Bank
- Contractual clearing balances—an amount that a depository institution agrees to hold at its Federal Reserve Bank in addition to any required reserve balance
- Discount window lending—extensions of credit to depository institutions made through the primary, secondary, or seasonal lending programs

Through use of these measures the Federal Reserve has been able smooth shocks to the economy, though there are naturally some who debate their effectiveness and even despise the system publicly³⁰.

²⁹ Source: <http://www.federalreserve.gov>

³⁰ Ron Paul gained a substantial following advocating for the dissolution of the fed reserve system

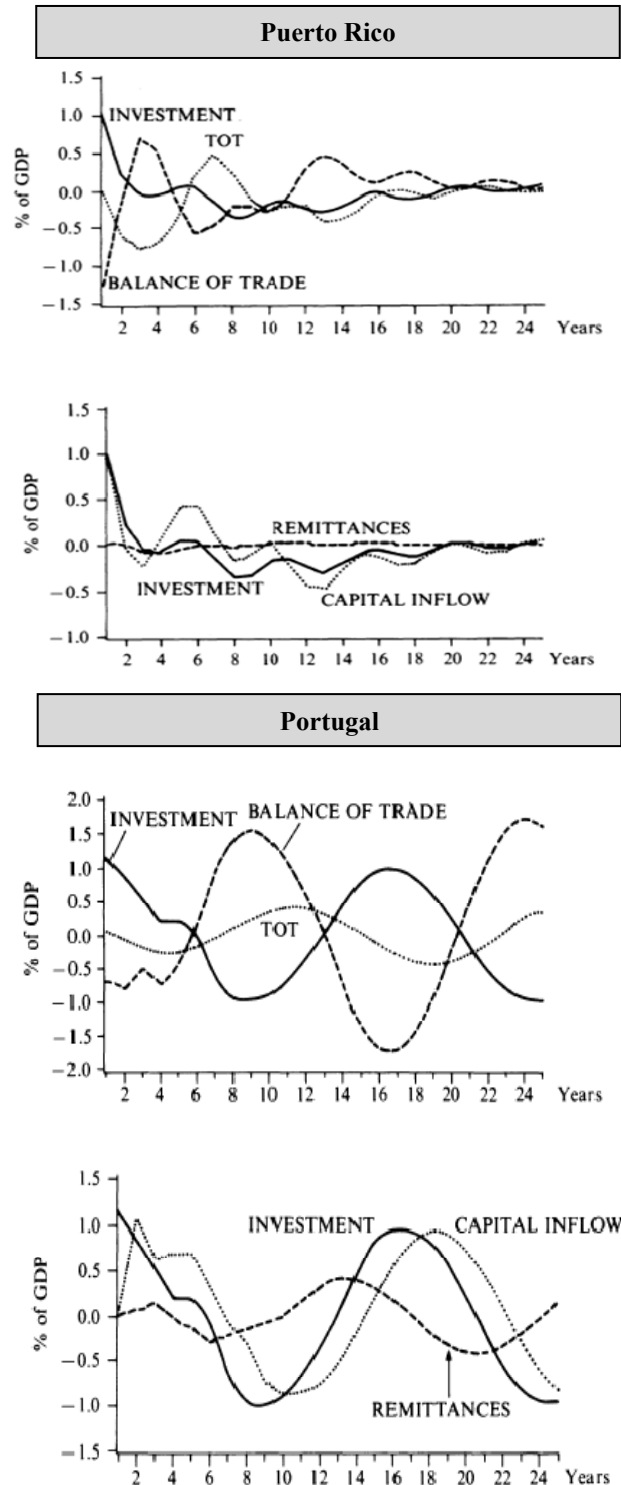
6.5 Factor Mobility

Monetary movement across borders within the United States is virtually unlimited especially with today's technology. Transactions can be completed in seconds by consumers and businesses regardless of home state and without any thought of The U.S. monetary system enjoys complete integration but that will require the abolition of capital controls in Europe which serve to prevent the spillover of shocks financial contagion³¹. Says Eichengreen, "The implication is that the single market and the EMS of the 1980s are fundamentally incompatible and that if exchange rate stability is to be maintained, national policies within Europe will have to be more closely harmonized"³². Eichengreen uses an example contrasting Portugal and Puerto Rico while finding their economic attributes, relative to the European Community and United States respectively, analogous with their difference being their monetary systems. Puerto Rico uses the dollar while Portugal was on her own escudo³³. He finds that a one standard deviation shock introduced to the model affected the countries differently, seen in Figure 6.

³¹ Franklin Allen, Douglas Gale *The Journal of Political Economy*, Vol. 108, No. 1 (February 2000), pp. 1-33

³² Barry Eichengreen (1997a)

³³ The euro began to circulate in 1999 and the escudo was removed from circulation in 2002.



Source: Eichengreen (1997)

Figure 6. Puerto Rico and Portugal

While the shocks had similar effects in terms of direction the Puerto Rican model shows that Remittances, Investment, and Capital inflow all resumed their natural path after twenty four years while those in Portugal experienced sustained volatility.

The Euro area appears to be using the United States model with a centralized bank with full integration as the idyllic system to strive toward. Further, if countries are more integrated, like the United States, an understanding of the basic H-O model would tell us that specialization would occur consequently leading to better efficiency. Those most efficient in each industry would produce and trade with one another, corporations rather than countries. The United States has certainly experienced this phenomenon in different areas of the country with mixed effects. The manufacturing sector as a whole redistributed its facilities from the rust belt of the northeast to Midwest states down into the south and western states for tax breaks and relatively cheaper labor. While this has helped to stem rising costs of manufactured products in the name of remaining competitive, it has also created pockets of structural unemployment.

Chapter VII

European Monetary Union

7.1 Background

After World War II, Europe was left in shambles with crumbling infrastructure and volatile economies. The continent was divided into East and West with the beginning of the cold war. To prevent the destruction of World War II Western Europeans took strides toward harmonization with the 1949 Council of Europe but six countries decided to pursue a more concrete union.

The Schuman Plan of 1950 called for cohesion amongst the previously opposing forces France and Germany. He proposed French and German solidarity in the production of coal and steel under a common authority. Such an agreement concerning the primary resources for waging war, he opined, would make a future war between the nations materially impossible:

“By pooling basic production and by instituting a new High Authority, whose decisions will bind France, Germany and other member countries, this proposal will lead to the realization of the first concrete foundation of a European federation indispensable to the preservation of peace... In contrast to international cartels, which tend to impose restrictive practices on distribution and the exploitation of national markets, and to maintain high profits, the organization will ensure the fusion of markets and the expansion of production.”-French Foreign Minister Robert Schuman³⁴

³⁴ From the proposal presented by the French Foreign minister. Full text available at http://europa.eu/abc/symbols/9-may/decl_en.htm

This alliance would further modernize production and supply coal and steel to both countries as well as any markets for member countries of a European federation to come³⁵.

7.2 The Treaty of Rome

In 1957 heads of state from Belgium, Germany, France, Italy, Luxembourg and the Netherlands met in Rome to discuss their economic state and what could be done to promote the interests of each. Subsequently, they agreed to join together in forming the European Economic Community with the objectives³⁶:

- lay the foundations of an ever-closer union among the peoples of Europe
- ensure the economic and social progress of their countries by common action to eliminate the barriers which divide Europe,
- constant improvement of the living and working conditions of their peoples,
- concerted action in removal of existing obstacles in order to guarantee steady expansion, balanced trade and fair competition,
- strengthen the unity of their economies and to ensure their harmonious development by reducing the differences existing between the various regions and the backwardness of the less favored regions,
- contribute, by means of a common commercial policy, to the progressive abolition of restrictions on international trade,

³⁵ Treaty Establishing The European Coal and Steel Community is also referred to as the Treaty of Paris

³⁶ From Text of *Treaty of Rome* available at http://ec.europa.eu/economy_finance/emu_history/documents/treaties/rometreaty2.pdf

- confirm the solidarity which binds Europe and the overseas countries and desiring to ensure the development of their prosperity, in accordance with the principles of the Charter of the United Nations,
- pooling their resources to preserve and strengthen peace and liberty, and calling upon the other peoples of Europe who share their ideal to join in their efforts.

The goals of the original European Economic Community reflect the common philosophy that integration is mutually beneficial and to achieve it barriers must be reduced.

The EEC made another stride in the name of integration in 1962 with its common agricultural policy, essentially combining control over food production. To that extent farmers in different countries are paid the same price for their production. In an effort to further unite the European nations with more centralized authority, the Merger Treaty in 1965 combined the executive bodies of the European Coal and Steel Community, European Atomic Energy Community, and European Economic Community into a singular body.

As the European community grew so too grew unease at the potential for discord in the member countries. The Werner report in 1970 expressed some of these concerns³⁷:

- Given the marked differences existing between the member countries, “there is grave danger of disequilibria arising if economic policy cannot be harmonized effectively”.
- “Increasing interpenetration of the economies has entailed a weakening of autonomy for national economic policies. Control of economic policy has become

³⁷ Full text for the Werner report can be found at:
http://ec.europa.eu/economy_finance/emu_history/documentation/chapter5/19701008en72realisationbystage.pdf

all the more difficult because the loss of autonomy at the national level has not been compensated by the inauguration of community policies”

- The efforts expended have achieved partial progress but have not led to the coordination or effective harmonization of economic policies in the Community, the way the Treaty of Rome intended
- The extension of the liberation of movements of capital and realization of the right of establishment has not progressed far enough.

This report highlighted the concerns of national level interests being distorted without recourse and called for centralization of responsibility to ensure cohesion of economic and monetary union.

The Single European in 1986 brought together the ten³⁸ heads of state of the Community to transform relations of the European Communities into a European Union. Their primary concern was to bring the idea of the European Monetary System³⁹ to fruition. Members had grown increasingly dissatisfied with the lack of trade among them and desired a greater push toward the harmonized single market:

“For this purpose the Council shall issue directives, acting by a qualified majority. It shall endeavour to attain the highest possible degree of liberalization.

Unanimity

shall be required for measures which constitute a step back as regards the liberalization of capital movements⁴⁰ ... Member States shall endeavour to avoid

³⁸ Denmark, Ireland and U.K. joined in 1973, Greece joined in 1981, Portugal and Spain joined in 1986.

³⁹ The EMS was introduced by the resolution of the European Council in Brussels on December 5, 1978.

⁴⁰ Amendment to Treaty of Rome which read: “Where the measures taken in accordance with paragraph 1 do not permit the elimination of differences between the exchange rules of Member States and where such differences could lead persons resident in one of the Member States to use the freer transfer facilities within the Community which are provided for in Article 67 in order to evade the rules of one of the Member States concerning the movement of capital to or from third countries, that State may, after consulting the other Member States and the Commission, take appropriate measures to overcome these difficulties. Should

introducing within the Community any new exchange restrictions on the movement of capital and current payments connected with such movements, and shall endeavour not to make existing rules more restrictive. They declare their readiness to go beyond the degree of liberalisation of capital movements provided for in the preceding Articles in so far as their economic situation, in particular the situation of their balance of payments, so permits.”

Amendments to the Treaty of Rome sought to advance the process of harmonization and formally announced the adoption of actions to be taken with the goal of establishing a single market by the end of 1992. The single market system in this case implied absence of obstacles to the free movement of money, people, and goods. To reach that goal measures would be taken to coordinate monetary policy of the members effectively paving the way for monetary union.

7.3 Maastricht

In 1992 Member leaders signed The Treaty on European Union effectively creating the political union E.U. in response to five goals:

- strengthen the democratic legitimacy of the institutions;
- improve the effectiveness of the institutions;
- establish economic and monetary union;
- develop the Community social dimension;
- establish a common foreign and security policy⁴¹

the Council find that these measures are restricting the free movement of capital within the Community to a greater extent than is required for the purpose of overcoming the difficulties, it may, acting by a qualified majority on a proposal from the Commission, decide that the State concerned shall amend or abolish these measures.” Available at

http://ec.europa.eu/economy_finance/emu_history/documents/treaties/rometreaty2.pdf

⁴¹http://europa.eu/legislation_summaries/economic_and_monetary_affairs/institutional_and_economic_framework/treaties_maastricht_en.htm

To accomplish those objectives the structure of the E.U. would be divided into three components or pillars:

1. The three European communities: EC, ECSC, EURATOM.
2. Common Security and Foreign Policy: CFSP
3. Field of Justice and Home Affairs: FJHA

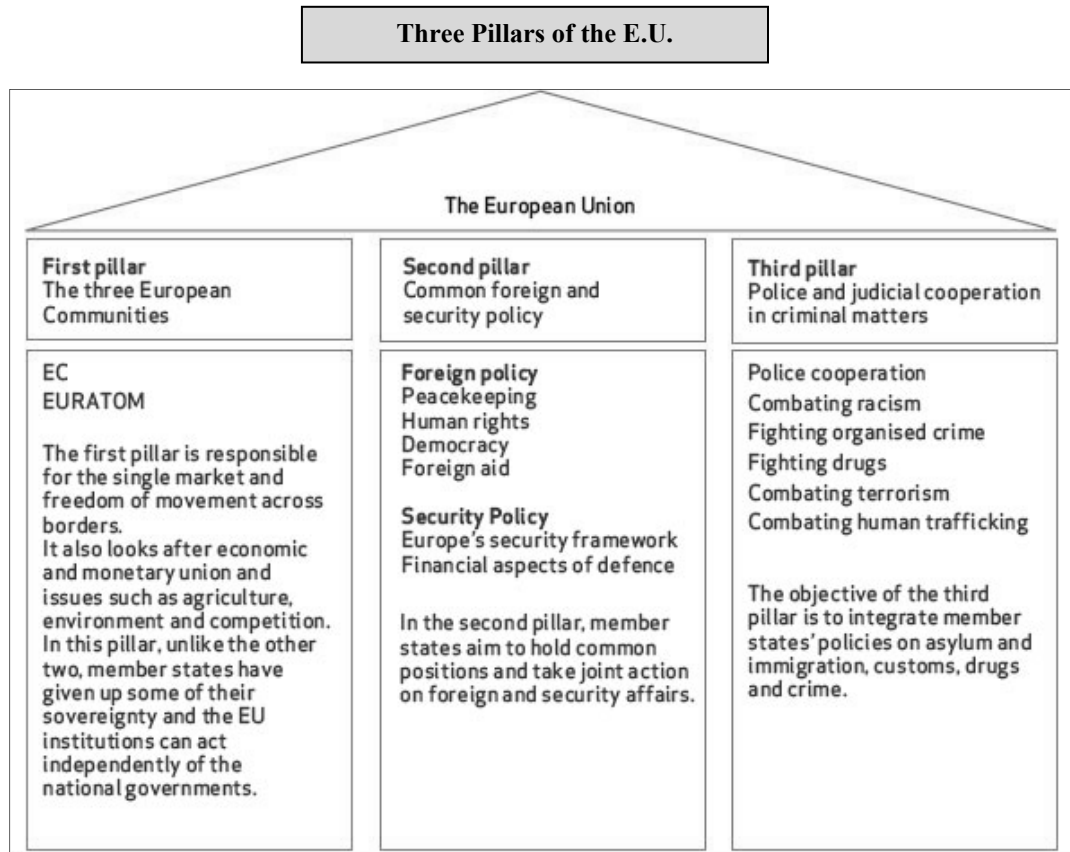


Figure 7. Pillars of the European Union

Source http://open.jorum.ac.uk/xmlui/bitstream/handle/123456789/1072/Items/W100_4_section12.html?sequence=13

The Maastricht Treaty also made plain the decision to venture forth with a new currency, to be established in three stages:

1. Further liberalizing the movement of capital, begun in 1990
2. Convergence of Member States' economic policies, to be begun in 1994

3. Creation of a new currency unit and the establishment of a European Central Bank (ECB or sometimes CEB)⁴²

Treatises in Amsterdam and Nice in years after Maastricht were signed with the purposes of making the union function more smoothly in addition to outlining social and political policy goals⁴³.

With respect to monetary policy the Maastricht treaty made clear the aim of the ECB should be to maintain price stability but no target or standard for measuring was declared. In 1998 the ECB's governing council announced that its goal would be to keep inflation in the Eurozone under 2%. Their standard for the inflation measure would be "year-on-year increase in the Harmonised Index of Consumer Prices (HICP)"⁴⁴.

7.4 Organizational Structure

The European Central Bank located in Frankfurt Germany serves as the center of operations for the Eurosystem. The Eurosystem is then comprised of the ECB and the National Central Banks of those nations that have adopted the Euro. The European System of Central banks (ESCB) includes the fore mentioned Eurosystem and the Banks of those countries that have not yet adopted the Euro.

The ECB is managed by a Governing Council and consists of the six members of the executive board, and the governors of the 17 national central banks of Euro Area Countries. The governing council is charged with two primary tasks⁴⁵:

- to adopt the guidelines and take the decisions necessary to ensure the performance of the tasks entrusted to the Eurosystem;

⁴² The U.K. and Denmark were granted provisions allowing them to opt not to adopt the currency (third stage)

⁴³ At this point there were 15 member nations.

⁴⁴ European Central Bank Website http://www.ecb.int/ecb/educational/facts/monpol/html/mp_002.en.html

⁴⁵ <http://www.ecb.int/ecb/orga/decisions/govc/html/index.en.html>

- to formulate monetary policy for the euro area. This includes decisions relating to monetary objectives, key interest rates, the supply of reserves in the Eurosystem, and the establishment of guidelines for the implementation of those decisions.

The ECB, as expressed in the treaty, is to concern itself with conducting prudent monetary policy to maintaining price stability but neither take nor seek instructions from European Community institutions or from any government of an EU Member State or otherwise. To that end, The ECB's finances are kept independent from those of the European Community. The ECB has its own budget and capital is paid in by the Euro area National Central banks.

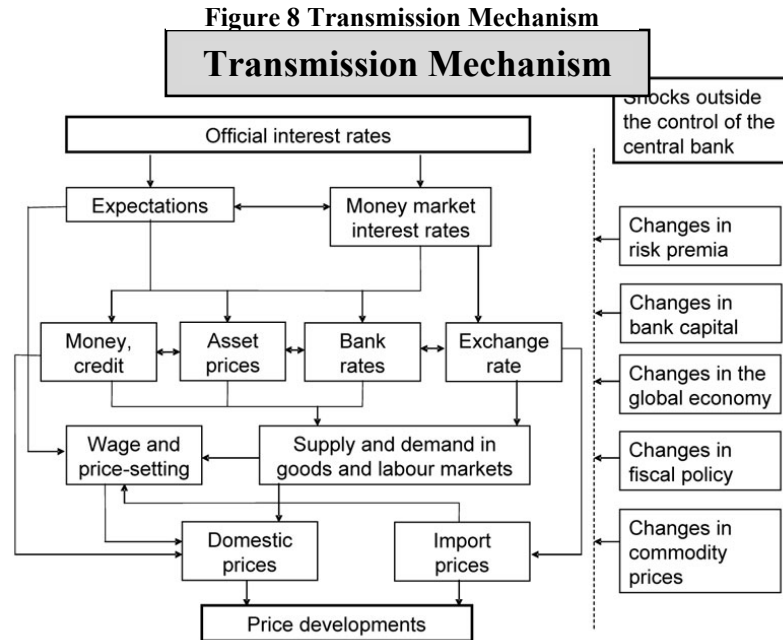
7.5 Instruments of Monetary Policy

To achieve their desired target for price stability (under 2%) the ECB uses several different instruments to affect price levels:

- Open market operations: short and long-term refinancing to provide liquidity to the market, fine tuning operations e.g. reverse transactions and foreign exchange swaps, and structural operations including reverse transactions and issuance of debt certificates.
- Standing facilities: marginal lending facilities and deposit facilities to absorb liquidity
- Minimum reserve requirements for credit institutions: reserve requirements aid in stabilizing money market interest rates.⁴⁶

Essentially the ECB manipulates interest rates through a transmission mechanism seen below.

⁴⁶ <http://www.ecb.europa.eu/mopo/implement/intro/html/index.en.html>



Source: <http://www.ecb.int/mopo/intro/transmission/html/index.en.html>

7.6 Transparency and Accountability

As important to market confidence as interest rates and price stability are the concepts of transparency and accountability of a governing body. To ensure the community of the ECB's commitment to its goals, it publicly announces monetary policy strategy. Its commitment to consistency helps the market predict its responses and as a result allows for smoother implementation of monetary policy changes into financial instruments. This is essential to effective monetary policy.

Accountability in a Central bank is paramount to maintaining confidence in the markets and smoothing shocks especially those generated by fear. To ensure accountability the ECSB requires external auditors in addition to the European Court of Auditors.

7.7 Issues

In the European Monetary Unions relatively brief existence it has made strides to create a singular economic union to compete with the super-economies of North America and Asia. Their Central Bank is hampered in making effective monetary policy by a relative lack of Political Unity. That is to say monetary policy is made at the community level but fiscal policy is delegated to individual member nations. Asymmetric shocks, then, could lead to disagreements over the EMU's macroeconomic framework⁴⁷ and result in a change in commitments and policies. Better coordination of fiscal and monetary policy would certainly be a significant step toward better durability for the Union. As history reveals, a Union's strength should be measured relative to the magnitude of shocks it can endure.

⁴⁷ Bordo and Jonung 2000

Chapter VIII

Conclusion

The Scandinavian and Latin Unions were both established in the late 19th century and met their demise due in large part to World War I. They are similar not only in their decline but also in their de facto adoption of gold standard (though LMU was initially based on bimetallic standard. With a monetary agreement but no political interdependence their unions were vulnerable to conflicting national interests in the event of international crises like global war. The introduction of such a major shock drove nations to circle the wagons per se, backing out of their respective agreements as a dominant strategy. National policies were not coordinated and so interests were not aligned. Lack of political interrelationship should then be viewed as the paramount reason for the collapse of these Unions.

The CFA zone, despite having survived wars, political instability and large scale devaluation, has a glaring weakness. Dependence on a Foreign Currency subjects the CFA zone to shocks that cannot be transmitted smoothly across the countries and so some are disproportionately affected due to their respective economies. When the value of their currency raises due to international currency market fluctuations, the African countries whose economies are based primarily on raw exports suffer as their goods demanded less. Without any instrument to adjust to these changes the African CFA countries must take a passive role in their monetary policy. This in turn, drives them to pursue other avenues of bettering their individual interests, namely fiscal policy, and so it is there they all diverge.

The lack of interdependence and inability to devalue their exchange rates through the 1980s would lead to a necessary major devaluation in 1994 to regain competitiveness.

With differing economies and little political integration after more than fifty years, the CFA zone teaches that monetary union is not robust against shocks. Instead, it is important to move toward political integration as it is a fundamental component to longevity.

The United States Federal reserve has endured through global war, rampant inflation and civil dissension. Through all issues the Fed has remained independent and stalwart. Its political union in the U.S. must be given its due credit for its success as well. States interests must, in every instance with regard to monetary matters, take a back seat to national interests. This lesson is especially critical to the long term outlook for the European Monetary Union. The differences in member countries today will manifest themselves into asymmetric shocks at the onset of adverse macroeconomic events. With increased political integration the EMU will be able to grow and member countries will experience its positive effect on trade for many years to come.

References

- Anderson, James E. and van Wincoop, Eric. "Gravity with Gravitas: A Solution to the Border Puzzle." National Bureau of Economic Research (Cambridge, MA) Working Paper No. 8079, January 2001.
- Bae, Kee-Hong and Bailey, Warren: "The Latin Monetary Union: some evidence on Europe's failed common currency", Cornell University, Working Paper, 2003.
- Bartel, Robert J: "International Monetary Unions: The XIXth Century Experience." *Journal of European Economic History* 3, no. 3 (1974): 689-704.
- Bergman, Michael: "Do Monetary Unions Make Sense? Evidence from the Scandinavian Currency Union 1873-1913", SNS Occasional Paper, No 77, 1996.
- Bergman, Michael, Stefan Gerlach and Lars Jonung: "The Rise and Fall of the Scandinavian Currency Union 1873-1920." *European Economic Review*, vol. 37, 1993.
- Bordo, Michael D, and Lars Jonung: *Lessons for EMU from the History of Monetary Unions*. London: Institute of Economic Affairs, 2000.
- Bordo, Michael D. and Jonung, Lars "The Future of EMU: What does the History of Monetary Unions Tell Us?" *Monetary Unions: Theory, History, Public Choice* edited by Forrest H. Capie and Geoffrey E. Wood. London: Routledge, 2003.
- Capie, Forrest. "Monetary Unions in Historical Perspective: What Future for the Euro in the International Financial System." *Ideas for the Future of the International Monetary System*, edited by Michele Fratianni, Dominick Salvatore, and Paolo Savona, 77-95. Boston: Kluwer Academic Publishers, 1999.
- Cohen, Benjamin J: "Beyond EMU: The Problem of Sustainability." *The Political Economy of European Monetary Unification*, second edition, edited by Barry Eichengreen and Jeffrey A. Frieden, 179-204. Boulder: Westview Press, 2001.
- Cohen, Benjamin. "Monetary Unions". EH.Net Encyclopedia, edited by Robert Whaples. February 10, 2008.

- Cohen, Benjamin J: *The Geography of Money*. Ithaca, NY: Cornell University Press, 1998.
- Davis, Lance: "The Investment Market, 1970-1914: The Evolution of A National Market." *Journal of Economic History*, Vol.25 No. 3 (1965): 355-369.
- De Cecco, Marcello: "European Monetary and Financial Cooperation before the First World War." *Rivista di Storia Economica* 9 (1992): 55-76.
- Demery, Lionel and Squire, Lyn: "Macroeconomic Adjustment and Poverty in Africa: An Emerging Picture." *The World Bank Research Observer*, Vol. 11, Feb, (1996): 39-59.
- Devarajan, S, de Melo, J: "Membership in the CFA zone: Odyssean journey or Trojan Horse?" World Bank Policy Research and External Affairs WP Series No. 482190, 1990.
- Dornbusch, Rudiger: "Expectations and Exchange Rate Dynamics", *Journal of Political Economy*, 84, (1976): 1161-1176.
- Eichengreen, Barry: "One Money for Europe? Lessons from the U.S. Currency Union." *European Monetary Unification: Theory, Practice and Analysis*. Cambridge Mass: MIT Press, 1997.
- Fraas, Arthur: "The Second Bank of the United States: An Instrument for Interregional Monetary Union." *Journal of Economic History*. Vol. 34, 1974.
- Frankel, Jeffrey and Rose, Andrew: "The Endogeneity of the Optimum Currency Area Criteria." *Economic Journal* 108, (1998): 1009-25.
- Friedman, Milton and Schwartz, Anna J: *A Monetary History of the United States 1867-1960*. Princeton: Princeton University Press, 1963.
- Franklin, Allen and Gale, Douglas: "Financial Contagion". *The Journal of Political Economy*, Vol. 108, No. 1, February (2000): 1-33.
- Graboyes, Robert F: "The EMU: Forerunners and Durability." *Federal Reserve Bank of Richmond Economic Review* 76, no. 4 (1990): 8-17.

- Glick, Reuven and Andrew K. Rose: "Does a Currency Union Affect Trade? The Time Series Evidence", *European Economic Review*, 46, (2002): 1125-1151.
- Grytten, Ola Honningdal and Hunnes, Arngrim: "Price Stability and Inflation Persistence During the International Gold Standard: The Scandinavian Case". NHH Dept. of Economics Discussion Paper No. 6/2009. Available at SSRN: <http://ssrn.com/abstract=1554811>
- Healy, Conor: "EMU: lessons from the CFA zone". Draft conference paper for EUSA 8th International Biennial Conference, 2003.
- Helleiner, Eric: *The Making of National Money: Territorial Currencies in Historical Perspective*. Ithaca, NY: Cornell University Press, 2003.
- Perlman, M: "In Search of Monetary Union." *Journal of European Economic History* 22, no. 2, 1993.
- Rose, Andrew K. and van Wincoop, Eric: "National Money as a Barrier to International Trade: The Real Case for Currency Union." *The American Economic Review* Vol. 91, No. 2, Papers and Proceedings of the Hundred Thirteenth Annual Meeting of the American Economic Association, May, 2001.
- Talia, Krim: "The Decline and Fall of the Scandinavian Currency Union 1914-1924: Events in the Aftermath of World War I." SSE/EFI Working Paper Series in Economics and Finance no. 609, 2004.
- Vanthoor, Wim F.V: *European Monetary Union Since 1848: A Political and Historical Analysis*. Brookfield, VT: Edward Elgar, 1996.
- Willis, Henry P: *A History of the Latin Monetary Union: A Study of International Monetary Action*. New York: Greenwood, 1901.