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THE THEORY OF OPTIMUM CURRENCY AREA REVISITED: LESSONS FROM THE EURO/DOLLAR COMPETITIVE CURRENCY REGIMES”

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Abstract:

This paper presents an analytic paradigm of the Euro-Dollar competitive currency regimes and relates it to the concept of optimum currency area. It is argued that the competitive value of a currency in the global market depends on the shares of world output and trade it represents. In the post-WWII decades the dollar was the king as it represented competitively very large shares of world output and trade, no other currency regime coming close to it.. With the progression of the European Union, leading to Europeanization of Europe, one common economic unit with its well-defined micro-and-macro economic parameters has been placed on the continental geographic unit of Europe. Of course, only 12 of the original 15 EU member economies have voluntarily surrendered their monetary sovereignty to become members of the euro regime. The 3 out-members and the 10 new members have yet to join the euro club.

We begin our study with the EU-12 who have adopted euro as their common currency under one common central bank, THE EUROPEAN CENTRAL BANK (ECB), and extend our analysis to the EU-15 and the EU-25. The euro has progressively become a global currency as its shares of world output and trade have become competitively large. Thus, the euro-dollar competitive currency regimes present a choice of optimum currency areas for the global economy. The concept of geo-economics has replaced the Cold War concept of geo-politics. The European Union is based on the principle of competition and the euro-dollar competitive currency regimes will contribute to the optimization of economic gains for all micro units – households as well as business units - in the two currency regimes and also in the rest of the world.

Key words: Optimum Currency Area; Currency Regime; European Union (EU-12, EU-15 and EU-25), Geo-economics. Classification: F02

I PERSPECTIVE

Floyd Norris (The New York Times, January 03, 2005) writes about “a dollar with no muscle”. Jonathan Fuerbringer (The New York Times, November 6, 2004) drew our attention when: “The dollar skidded a record low against the euro...(The New York Times, January 5, 2005)...” “...The dollar fell as much as 0.8 percent during the day and was down 0.7 percent from Thursday in late trading in New York...” “...With the euro now at \$ 1.2962, the dollar has fallen 2 percent this year and 36 percent since its high against the euro in October 2000,” he adds. The dollar continues to “skid” with the euro at \$ 1.3483 as of January 3, 2005.

Ranking economists have joined the debate and they argue that the dollar á lá exchange rate fluctuations, will help correct the imbalance in the US current account. Other things being equal, the neo-classical theory of international trade based on one or another form of the theory of comparative advantage will eventually contribute to this desired outcome. However, other things are seldom equal. One important fact has been ignored: of the 191 sovereign nation state economies who are members of the United Nations, when one economy is too dominant in terms of its shares of world output and trade, the international market ceases to be competitive. Given that a large number of member economies enjoy only marginal shares of world output and trade and that a small number of countries enjoy a relatively larger share of world output and trade, the world market is tilted against the majority of the member economies. The economies with marginal shares of world output and trade are price-takers and they have no ability to be competitive in the world market. (Linnemann. H 1966; Dutta. M 1962, 1965, 1976)

One may consider yet another interesting aspect relative to the imbalance in the US current account. Will our domestic dollar consumers cut down their consumption of euro imports as they find the euro imports increasingly more expensive? American consumers may not be so responsive to the market because since WWII the dollar has been king and the US has become consumers of much of the world output. Of course, in the long run the theory is expected to prevail. Economists are familiar with the statement that in the long run we all are dead.

The presence of the twin deficits, the current account deficit and the budget deficit, certainly adds to the complexity of the economic situation. The huge budget deficit and the growing national debt, much of which is owned by foreigners, most certainly limit the potential of optimum operational success of exchange rate fluctuations. The situation is further aggravated by the fact that much of the US budget deficit and national debt can be attributed to our military efforts around the world. If the deficit was incurred to augment the productivity of the US economy, it would have a different impact and confidence in the US economy and its dollar would have remained unshaken. Given the economic relationship between USA and East Asian countries, Asian Central Banks will continue to hold, but limit acquisitions of new dollar reserves until the Euro market fully emerges.

Indeed, the dollar does have its muscle, defined in terms of its shares of world output and trade. Now a competing currency, the euro, with a relatively stronger muscle, as defined by its shares of world output and trade, offers a challenge. It is instructive to note that in 2003 the US share of world output at 26.07 percent compares with the EU-25 share of 29.06 percent. The latest figures for trade are quite revealing. In 2000, the US share of world imports was 15.85 percent while the EU-25 share was 43.60 percent. For

world exports the US share was 11.78 percent compares with the EU-25 share of 43.60 percent. (See Tables 2A, 3B and also Graph 1). Graphs 2, 3A, 3B, 3C and 3D limit the comparison of the dollar and euro currency regimes based on EU-12 who are now members of the Euro club. GDP ratios are based on price index as well as volume index. To relate the GDP ratios based on both price and volumes indices of the euro and dollar currency regimes to the euro-dollar exchange rate fluctuations, quarterly data 1991 through 2003.3 is an instructive exercise.

In the real world, the relationship between the two economic variables must be qualified by “other things” which seldom remain neutral. For the U S. dollar the most significant qualifying variable is the federal budget deficit and national debt in a war-time economic situation, plagued by so much international economic uncertainty. For the euro, the challenges of the 3 out-members, Denmark, Sweden, and the United Kingdom, plus the yet –to-be defined conditions for the new 10 incoming members of EU to become euro members are all too real. The resource gap for petroleum based energy is of course a general global challenge.

We need to take note of two important factors, contributing to the structural changes in the global market. The first factor occurred on August 15, 1971 when the fixed gold value of the dollar, US\$ 35 per ounce of pure gold, was discontinued. Charles Kindleberger (1985) made an eloquent exposition in his presidential address to the American Economic Association when he stated that it was too much for the dollar to bear the burden of military and economic security of the free world for an indefinite period.

Some of us wrongly argued that it would be an occasion to the return to a 100 percent gold exchange regime. What we got was the GROUP of 5, which then expanded

to the GROUP of 7 and on to the GROUP of 8. The interests of pre-industrialized and yet-to-be industrialized economies, factually 183 of 191 UN member nations, are not represented in these discussions.

The second factor to note: the traditional concept of sovereignty, both political and economic, has changed. (Dutta 1995). The Soviet Union collapsed and other sovereign nations in Western Europe progressed to map out one economy on one geography – the continent of Europe. The concept of continental or hemispheric economic regionalization may be the substantive basis for globalization, anchored in the concepts of free flow of trade, free flow of investment and free movement of labor. Ideally, each continental regional group will have competitive shares of world output and trade and will be competitive actors in the global market. Research on American Hemispheric Economic Cooperation, Asian Economic Cooperation, and African Economic Union has been extensively undertaken.

The collapse of the imperial economic groupings has occurred throughout history. The exclusive decision making authority of the imperial power provoked strong opposition (Dutta 1999). “NO TAXATION WITHOUT REPRESENTATION” was the battle cry of one colony as was the protest against the Salt Tax Law in another imperial colony at another time. The post-WWII regime - the free market economies led by USA and the communist economies led by USSR – has ceased to exist.

After prolonged debates and dialogues, the Asia-Pacific Economic Cooperation (APEC) became a formal institution in 1989 with nine members including the USA, Canada, Australia, New Zealand and Japan. APEC has since expanded to 21 members inclusive of Russia, and has become a forum of sovereign nation state economies on the Pacific rim. I have discussed that the two sets of economic forces, push and pull factors,

led to the formation of APEC (Dutta 1999). APEC has disappointed many researchers for three reasons.

First, as the Atlantic Ocean is a natural divide between Europe and the Americas, so is the Pacific Ocean a natural divide between Asia and the Americas. Not only that, one can argue that it is a much larger divide. Indeed, the case for belonging to a common geography observable on the map of the world is truly absent for APEC while the map of Europe is spectacularly observable for the European Union.

Second, APEC adopted the 10-20 formula, promising to deliver free trade amongst the industrialized members by 2010 and for all 21 member economies by 2020, but it will be a long wait for any specific delivery. Finally, the focus of deliberations at the two most recent APEC summit meetings in 2003 and 2004 was on global terrorism and security rather than on economic cooperation. It is true that without security no economic agenda can be operationally successful. Be it further noted that soon after the APEC summit in Chile last year, an economic summit for Asian Economic Cooperation was held in Asia to review economic cooperation amongst APEC member economies in Asia - China, South Korea, Japan, Thailand, Singapore, Malaysia, Indonesia, the Philippines plus non-APEC member economies - India, Myanmar, Laos, Cambodia, Brunei Darussalam, and Viet Nam.. Indeed, Asian economic cooperation based on the 3 (Japan, South Korea, and China) plus 5 (Thailand, Singapore, Malaysia, Indonesia, the Philippines) model has been regularly discussed since 1998. At the 2003 Asian Economic Summit in Jakarta, the 3 plus 5 model was expanded to 4 (China, Japan, South Korea, and India) plus 10 (the original 5 plus Myanmar, Cambodia, Laos, Vietnam and Brunei). Increasing economic cooperation is the necessary first step toward defining

intra-regional monetary and fiscal guidelines, and eventually building a free trade regime (Dutta, 1992, 2002 and 2000).

The post-WWII global economic structure is collapsing and hopefully the Cold War is a part of history. To appreciate the emerging new paradigm of the international economic framework in the post-Cold War world, it is helpful to revisit the theory of Optimum Currency Areas. (see *The Economics of Monetary Integration*, Paul De Grauwe, 1997)

II. THE THEORY OF OPTIMUM CURRENCY AREA

Mundell taught us the theory of optimum currency area in his seminal work in 1961 (Mundell 1961, see also Mundell 1970, 1999, 2003). Of course, until 1971, the US dollar was the only global currency and it still remains the most valued international reserve currency. The concept of an optimum currency area can help explain the new continental economic regionalism. Okita (1989) sought to explain policy approaches in the framework of economic regional communities in the context of global economic cooperation, and thus responded to the question if we will have one world or several.

III. THE EUROPEAN UNION (EU)

In what follows, we review the present standing of the European Union. Politics is not just the art of the possible, but as Jean Monnet taught us, it is also the art of making possible tomorrow what cannot yet be done today. (Monnet, J 1978) MEMOIRS [English Translation] (See also Dutta, M 2004; Issing, Otmar 1996,1999,2001, 2002; Letiche John M 1993, 2000 ; Welsh, Michael 1999.; Vanthoor, Wim F. V. 2002; Hesse, Helmut 1993;Temperton, Paul 1998; Obstfeld, Maurice 1999).

The progression of European economic integration has been a unique process that began with the formation of the Benelux Customs Union in 1948. Following the signing of the Treaty of Brussels, the Treaty on Economic, Social and Cultural Cooperation and Collective Self-Defense was signed in 1948. The European Coal and Steel Community (ECSC) brought together Germany, France, and Italy with the 3 Benelux countries, Luxemburg, Belgium, and the Netherlands in 1952. These early steps toward economic cooperation were followed by: The Treaty of Rome, effective January 1, 1958, One Europe Treaty (1986), the Maastricht Treaty (1992), the European Central Bank and Euro, January 1, 1999, The Amsterdam Treaty and the Irish Referendum of 2002 and finally admission of ten new members in 2004. The Europeanization of Europe is now a reality. Indeed, the world is learning how to deal with a unified Europe on issues of economics and politics.

THE PRESENT EU ECONOMIC STRUCTURE

Table 1A presents the population base. In 2003, EU -25 with its 453.90 million people is the third largest economy, next to China and India, while USA with its 291.04 million people is now the fourth. EU-25 has 7.24 percent of the world population while the US share is 4.64 percent. Table 1A shows that the pattern of differences between EU -25 and US in terms of population remain about the same since 1960. Table 1B presents the change in the EU population base between EU-15 and the new 10. Historically, the EU-15 share has been at about 83 percent of the EU-25 total, while that of the new 10 has been at about 17 percent for the given time period. In 2003, the new 10 added 74.16 million people to EU-15's total of 379.74 million, bringing the EU 25 total to 453.90 million. Comparative rates of growth of population are not the focus of the present study.

Tables 2A and 2B present the relevant data for Gross Domestic Product (GDP) (constant 1995 US dollars in billions). As of 1980, total EU-25 GDP crossed over the US total, and has held the lead ever since. In 2003, EU-25 share of world GDP was 29.06 percent, while US share was 26.07 percent. This relative position has been about the same since 1980. Table 2B presents the comparative GDP base of EU-15 and the new 10. It is instructive to note that while the new 10 added some 17 percent to the total EU-25 population base, it added just 3.52 percent to total EU-25 GDP in 2000, the latest year for which data is available for all 10 new member countries.

Tables 3A and 3B present trade data, exports as well as imports. Table 3A tells us that Belgium, Denmark, France, Germany, Italy, the Netherlands, Sweden, Austria, and the UK are important trading nations, with the UK being the leading trading economy. Table 3B presents the comparative data of EU-25 and US. The shares of EU-25 for both world imports and exports over the years under review have been over 40 percent while US shares of world imports and world exports have persistently been at about 11 per cent. It should be noted that balancing the export-import account continues to be a problem for both EU and US.

Table 4A presents average monthly exchange rates for USD/Euro from January 1999 through December 2004. Fluctuations of the dollar/euro exchange rate have become a subject of great concern, impacting some 800 million people in the two economic units which have over 55 percent of world GDP and over 55 percent of world trade. It is needless to add that dollar/euro volatility impacts the economies of the rest of the world. Figure 1 describes the profile based on Table 4A. Table 4B covers the quarterly euro/dollar exchange rate fluctuations for 1999.I through 2004.IV. Figure 2 covers the profile of data presented in Table 4B.

Table 5 presents a profile of economic structures of the EU member economies. Of EU-15, the profile is one of mature industrialized economies excepting Greece. In 2000, each member economy has a marginal share from their respective agricultural sectors at a rate between 1 and 4 percent of GDP, while shares from their industry sectors are at about 30 percent and shares from their respective service sectors are at 60-70 percent.

IV. EURO/DOLLAR EXCHANGE RATE

Let us turn to the subject of euro/dollar exchange rate fluctuations. Table 6 presents share of official foreign exchange holdings for the selected years since 1999 when the euro became an international currency. For all countries, the US dollar, Japanese yen, and UK Pound Sterling continued to hold their respective shares of official world currency reserve. For the Industrialized countries as well as for the Developing countries, the picture in general remains similar. The point to be underscored is that for the new currency, euro, managed by the new central bank, European Central Bank (ECB) since January 1, 1999, it is a case of winning its market share. In the post-WWII and the Cold War regimes, the US dollar became the global currency. Given its shares of world output and trade, the euro is a challenge to the dollar's role in global commerce and investment. Japanese and British economies do not have competitive shares of world output and trade and, so, their currencies will not be a threat to the US dollar.

Three factors warrant careful review. First, while the euro is the official currency of the 12 members of EU-15, UK, Denmark, and Sweden continue to remain the 3 out-members. As members of the EU they enjoy advantages of a free flow of trade, free flow of investment and free movement of labor in the one integrated market which is the EU economy. Sooner or later the three will have to opt for euro or leave the EU. We have

reasons to believe that they will elect to join the euro regime. In the World Trade Organization (WTO), the EU is recognized as one member represented by one representative with one vote. One can argue that the three currencies of the 3 out-members of EU-15 are sheltered currencies and are not truly free floating currencies in the global market.

A suggestion to stabilize euro/dollar exchange rate will involve immediate approval of ECB's full membership of the IMF. However, the principle of competition between the euro and dollar economic regimes alone will optimize global economic gains, while a plan to establish a euro/dollar hegemony will be counterproductive. The concept of "Anglo-Saxon currencies (the British pound-sterling, the Canadian dollar, the Australian dollar, and the New Zealand dollar)" may provoke a new currency debate on race and caste. Will that be an optimal option? The Japanese yen will have a different framework until an Asian economic community is formally instituted.

The new 10 members of EU will have to go through a process to become full members of the euro regime. The new 10 will have an interest in joining the euro regime since that will facilitate free flow of investment from the rest of EU since such investments will be free from the risk of exchange rate fluctuations. The rest of EU will also be a market for their products and the free flow of trade with EU will facilitate the process. The Europeanization of Europe will essentially be an economic reality.

Once the process will have been completed, the EU -25 with its commanding shares of world output and trade will be a challenge for the US dollar. The Rest of the World will have to be engaged in economic activities, trade as well investment, with both the EU and the US and they will need to hold both currencies as their respective official

reserve shares. It seems likely that the share of official reserves held in dollars will decline, while the share invested in the euro will increase.

Secondly, ECB is not yet a member of the International Monetary Fund (IMF). True, ECB has “OBSERVER STATUS” at the IMF until EU becomes a political unit with one flag, one constitution, and one Chief Executive, it must continue to work with its OBSERVER status. The EU is engaged in adopting its own constitution and the process will ensure the EU’s political integration. There is already a great deal of functional integration for environment, public health, terrorism and security, and competitive market order has been accomplished. The EU has appointed an Executive Head with the European Parliament and the European Judiciary but the core issue is whether the governments of each member country will surrender its respective executive, legislative and judicial powers to the EU Government. One money will lead to one Europe as Otmar Issing forcefully argues. For the European Central Bank (ECB) in 1999, the twelve member countries of the euro regime voluntarily surrendered their monetary sovereignty under a pact of growth with stability so that fiscal policies could be effectively tailored to ECB’s monetary policy. The fact that they adopted the pragmatic design of divisibility of sovereignty is to be taken note of. This experience can be a learning model for voluntarily surrendering political sovereignty by the EU member countries to political integration. Once the process has been completed, say by 2007, the ECB will be a member of the International Monetary Fund and the World Bank with full voting power. Indeed with the EU’s share of world output higher than that of the USA, it will have a commanding status at the Bank since that will add to the demand for the Euro as an official reserve currency of other industrialized and developing economies.

Finally, I argue that the process of Europeanization of Europe and the competitive status of the euro cannot be reversed. One rational option under consideration for the US dollar is to sponsor the American Hemispheric Economic Union – the Americanization of the Americas. Indeed, since 2002, efforts to promote economic cooperation have increased. Several hemispheric economic summits with all sovereign nation state economies in the North and South Americas, excepting Cuba, have been held. A proposal to institute a Free Trade Area of the Americas (FTAA) by 2005 has been adopted.

EU & ONE REGIONAL ECONOMY

The appreciation of EU warrants a comprehensive understanding of the core of the economic union in Europe. Irrespective of linguistic, religious, and life-style diversities, the people belonging to one common geography, Europe, will be citizens of EU. Historical experiences of war and destruction helped the new awareness of oneness and unity. The issue is one of learning from experience. The issue for the rest of the world is to learn from the EU experience and hopefully avoid wars and destructions amongst countries in a given region.

One economic unit in a geographic unit with total integration of the regional economy with well-specified micro-and –macro economic parameters –transparent and judicially enforceable must be in place. Today Europe is far beyond the traditional Free Trade Area (FTA) or Customs Union based on one or select items of trade. The FTA in EU ensures free flow of trade of all goods and services amongst all 15 (12 who have joined the euro regime and the 3 who have not joined the euro regime) of the EU member economies, with no trade barriers nor restrictions and they have a common set of restrictions vis-à-vis the rest of the world, with no excuses or exceptions. Goods and services traded in the EU are standardized by mutual accreditation by member countries.

Free flows of investment are immune from the risk of exchange rate fluctuations. Free movement of labor within EU has not caused any problem. No mass migration from one member country with relatively low income to another with relatively high income has taken place. Indeed, free flows of investments have helped to create jobs where the people, unemployed or under-employed, reside. Will the American Hemispheric Economic Union also be able to successfully address these crucial issues?

V. CONCLUSION

The euro-dollar exchange rate fluctuation is a critical issue and it must be addressed with a well specified agenda. Continental economic regionalization is expected to be the order of the new economic paradigm for economics of globalization. Two alternative models of Asian economic cooperation are being actively considered, the first one “3 plus 5” and the other “4 plus 10”. Since 2002, a preparatory committee for the African Economic Union consisting of all 53 African countries with the President of South Africa as its chairperson has been working since 2002. For the rest of the world, the future researcher must do the studies. Border definitions of a continent will be left to be answered. For a bi-continental economy, such as Russia, the decision will have to be made to opt for one continent for one common economy and one common currency.

Continental economic regions will have competitive shares of world output and trade, contributing competitive shares to the capital funds of international financial institutions, such as The World Bank and the IMF, and make economic decisions based on economic merits of the issues confronting each regional compact. Thus, the world economic order will be effectively competitive and the economies of the world at large, no longer grouped into one of price-takers and one of price-makers - will make economic gains (Dutta 2000).

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Table 1A: Population, total (in millions)						
	1960	1970	1980	1990	2000	2003
Austria	7.05	7.43	7.55	7.73	8.01	8.06
Belgium	9.12	9.64	9.85	9.97	10.25	10.35
Cyprus	0.57	0.62	0.61	0.68	0.76	0.77
Czech Republic	9.55	9.78	10.23	10.36	10.27	10.20
Denmark	4.58	4.93	5.12	5.14	5.34	5.39
Estonia	1.22	1.37	1.48	1.57	1.37	1.35
Finland	4.43	4.61	4.78	4.99	5.17	5.21
France	45.68	50.77	53.88	56.74	58.89	59.73
Germany	72.67	77.72	78.30	79.43	82.21	82.55
Greece	8.33	8.79	9.64	10.16	10.56	10.68
Hungary	9.98	10.34	10.71	10.37	10.02	10.12
Ireland	2.83	2.95	3.40	3.51	3.81	3.95
Italy	50.20	53.82	56.43	56.72	57.69	57.65
Latvia	2.13	2.37	2.54	2.67	2.37	2.32
Lithuania	2.78	3.14	3.41	3.70	3.51	3.45
Luxembourg	0.32	0.34	0.37	0.38	0.44	0.45
Malta	0.33	0.33	0.36	0.36	0.39	0.40
Netherlands	11.49	13.04	14.15	14.95	15.92	16.22
Poland	29.56	32.53	35.58	38.12	38.65	38.20
Portugal	8.94	9.04	9.77	9.90	10.13	10.19
Slovak Republic	3.99	4.53	4.98	5.28	5.39	5.38
Slovenia	1.58	1.73	1.90	2.00	1.99	1.96
Spain	30.46	33.78	37.39	38.84	40.50	41.10
Sweden	7.48	8.04	8.31	8.56	8.87	8.96
United Kingdom	52.37	55.63	56.33	57.56	58.88	59.28
Total EU Population	377.65	407.25	427.08	439.67	451.40	453.90
% of World	12.50%	11.08%	9.64%	8.37%	7.46%	7.24%
% Growth (10 Year Period)		7.84%	4.87%	2.95%	2.67%	0.55%
United States	180.67	205.05	227.23	249.44	282.22	291.04
% of World	5.98%	5.58%	5.13%	4.75%	4.66%	4.64%
% Growth (10 Year Period)		13.49%	10.81%	9.78%	13.14%	3.13%
World Population	3,020.38	3,675.59	4,430.07	5,252.77	6,051.50	6,271.70
% Growth (10 Year Period)		21.69%	20.53%	18.57%	15.21%	3.64%
Source: World Development Indicators, The World Bank						

Table 1B: EU Member Countries: Population, total (in millions)						
	1960	1970	1980	1990	2000	2003
Original 15						
Austria	7.05	7.43	7.55	7.73	8.01	8.06
Belgium	9.12	9.64	9.85	9.97	10.25	10.35
Denmark	4.58	4.93	5.12	5.14	5.34	5.39
Finland	4.43	4.61	4.78	4.99	5.17	5.21
France	45.68	50.77	53.88	56.74	58.89	59.73
Germany	72.67	77.72	78.30	79.43	82.21	82.55
Greece	8.33	8.79	9.64	10.16	10.56	10.68
Ireland	2.83	2.95	3.40	3.51	3.81	3.95
Italy	50.20	53.82	56.43	56.72	57.69	57.65
Luxembourg	0.32	0.34	0.37	0.38	0.44	0.45
Netherlands	11.49	13.04	14.15	14.95	15.92	16.22
Portugal	8.94	9.04	9.77	9.90	10.13	10.19
Spain	30.46	33.78	37.39	38.84	40.50	41.10
Sweden	7.48	8.04	8.31	8.56	8.87	8.96
United Kingdom	52.37	55.63	56.33	57.56	58.88	59.28
Total	315.95	340.53	355.27	364.56	376.68	379.74
% of EU25	83.66%	83.62%	83.19%	82.92%	83.45%	83.66%
New 10						
Cyprus	0.57	0.62	0.61	0.68	0.76	0.77
Czech Republic	9.55	9.78	10.23	10.36	10.27	10.20
Estonia	1.22	1.37	1.48	1.57	1.37	1.35
Hungary	9.98	10.34	10.71	10.37	10.02	10.12
Latvia	2.13	2.37	2.54	2.67	2.37	2.32
Lithuania	2.78	3.14	3.41	3.70	3.51	3.45
Malta	0.33	0.33	0.36	0.36	0.39	0.40
Poland	29.56	32.53	35.58	38.12	38.65	38.20
Slovak Republic	3.99	4.53	4.98	5.28	5.39	5.38
Slovenia	1.58	1.73	1.90	2.00	1.99	1.96
Total	61.70	66.71	71.81	75.11	74.72	74.16
% of EU25	16.34%	16.38%	16.81%	17.08%	16.55%	16.34%
Source: World Development Indicators, The World Bank						

Table 2A: GDP (constant 1995 US\$, in billions)						
	1960	1970	1980	1990	2000	2003
Austria	74.34	117.78	167.91	212.47	269.37	275.91
Belgium	94.28	150.46	209.59	255.75	316.69	324.83
Cyprus	..	..	3.88	7.11	10.67	11.77
Czech Republic	..	..	..	54.60	55.28	59.79
Denmark	74.67	115.65	139.90	163.49	205.89	213.99
Estonia	..	..	5.06	6.00	5.19	6.14
Finland	43.30	69.21	98.80	134.15	164.09	171.03
France	484.75	833.28	1,154.01	1,473.22	1,772.53	1,833.35
Germany	..	..	1,769.77	2,221.56	2,687.82	2,708.02
Greece	31.58	65.83	103.20	110.50	139.13	157.63
Hungary	15.11	28.46	44.96	50.35	54.39	60.14
Ireland	15.47	23.33	37.05	52.88	105.98	121.92
Italy	331.48	577.52	823.48	1,030.05	1,207.92	1,238.02
Latvia	..	4.28	6.94	9.64	6.19	7.61
Lithuania	..	..	..	12.64	9.16	11.08
Luxembourg	5.04	7.12	9.19	14.90	25.61	26.53
Malta	0.39	0.63	1.70	2.49	4.05	..
Netherlands	136.79	224.13	298.90	373.34	497.58	502.57
Poland	..	..	..	113.99	167.63	182.62
Portugal	24.30	45.04	71.56	98.55	129.93	131.58
Slovak Republic	..	..	..	22.49	23.25	26.25
Slovenia	..	..	..	..	23.15	25.07
Spain	139.22	284.32	405.96	542.10	705.15	756.29
Sweden	101.44	159.65	193.77	240.29	291.56	305.23
United Kingdom	498.64	659.70	799.28	1,040.25	1,309.07	1,390.69
Total EU GDP	2,070.79	3,366.39	6,344.91	8,242.79	10,187.29	10,548.07
% of World GDP	26.15%	25.00%	32.64%	31.23%	29.73%	29.06%
% Growth (10 Year Period)		62.57%	88.48%	29.91%	23.59%	3.54%
United States	2,376.78	3,464.00	4,771.90	6,520.50	8,955.10	9,463.10
% of World GDP	30.01%	25.72%	24.55%	24.71%	26.14%	26.07%
% Growth (10 Year Period)		45.74%	37.76%	36.64%	37.34%	5.67%
World GDP	7,919.60	13,467.38	19,439.11	26,391.74	34,263.97	36,294.28
% Growth (10 Year Period)		70.05%	44.34%	35.77%	29.83%	5.93%

Source: World Development Indicators, The World Bank

Table 2B: EU Member Countries: GDP (constant 1995 US\$, in billions)						
	1960	1970	1980	1990	2000	2003
Original 15						
Austria	74.34	117.78	167.91	212.47	269.37	275.91
Belgium	94.28	150.46	209.59	255.75	316.69	324.83
Denmark	74.67	115.65	139.90	163.49	205.89	213.99
Finland	43.30	69.21	98.80	134.15	164.09	171.03
France	484.75	833.28	1,154.01	1,473.22	1,772.53	1,833.35
Germany	..	..	1,769.77	2,221.56	2,687.82	2,708.02
Greece	31.58	65.83	103.20	110.50	139.13	157.63
Ireland	15.47	23.33	37.05	52.88	105.98	121.92
Italy	331.48	577.52	823.48	1,030.05	1,207.92	1,238.02
Luxembourg	5.04	7.12	9.19	14.90	25.61	26.53
Netherlands	136.79	224.13	298.90	373.34	497.58	502.57
Portugal	24.30	45.04	71.56	98.55	129.93	131.58
Spain	139.22	284.32	405.96	542.10	705.15	756.29
Sweden	101.44	159.65	193.77	240.29	291.56	305.23
United Kingdom	498.64	659.70	799.28	1,040.25	1,309.07	1,390.69
Total	2,055.29	3,333.03	6,282.37	7,963.49	9,828.33	10,157.59
% of EU25	99.25%	99.01%	99.01%	96.61%	96.48%	96.30%
New 10						
Cyprus	..	..	3.88	7.11	10.67	11.77
Czech Republic	..	..	..	54.60	55.28	59.79
Estonia	..	..	5.06	6.00	5.19	6.14
Hungary	15.11	28.46	44.96	50.35	54.39	60.14
Latvia	..	4.28	6.94	9.64	6.19	7.61
Lithuania	..	..	..	12.64	9.16	11.08
Malta	0.39	0.63	1.70	2.49	4.05	..
Poland	..	..	..	113.99	167.63	182.62
Slovak Republic	..	..	..	22.49	23.25	26.25
Slovenia	..	..	..	..	23.15	25.07
Total	15.50	33.36	62.54	279.30	358.96	390.47
% of EU25	0.75%	0.99%	0.99%	3.39%	3.52%	3.70%
Source: World Development Indicators, The World Bank						

Table 3A: Trade, Imports and Exports of EU25, (Constant 1995 US\$, Billions)

		1960	1970	1980	1990	2000	2003
Austria	Imports of goods and services	18.19	34.64	64.01	81.68	136.84	0.00
	Exports of goods and services	17.52	35.54	60.42	84.05	135.20	0.00
Belgium	Imports of goods and services	36.99	74.09	127.75	176.25	260.60	0.00
	Exports of goods and services	36.26	77.72	120.70	181.07	270.78	0.00
Cyprus	Imports of goods and services	0.00	0.00	2.45	4.06	0.00	0.00
	Exports of goods and services	0.00	0.00	1.76	3.66	0.00	0.00
Czech Republic	Imports of goods and services	0.00	0.00	0.00	23.25	40.44	0.00
	Exports of goods and services	0.00	0.00	0.00	24.68	38.60	0.00
Denmark	Imports of goods and services	23.77	34.80	46.64	50.28	78.89	0.00
	Exports of goods and services	22.93	31.50	45.06	58.58	91.20	0.00
Estonia	Imports of goods and services	0.00	0.00	0.00	0.00	5.08	5.90
	Exports of goods and services	0.00	0.00	0.00	0.00	4.86	5.16
Finland	Imports of goods and services	9.69	17.99	32.58	32.46	55.33	0.00
	Exports of goods and services	9.28	16.95	31.55	30.25	70.49	0.00
France	Imports of goods and services	60.29	127.45	263.37	327.31	484.05	0.00
	Exports of goods and services	67.16	125.90	235.21	313.00	506.04	0.00
Germany	Imports of goods and services	0.00	0.00	449.02	558.78	897.11	0.00
	Exports of goods and services	0.00	0.00	360.95	557.54	907.49	0.00
Greece	Imports of goods and services	4.80	11.02	28.66	30.80	44.17	0.00
	Exports of goods and services	2.77	6.34	24.36	19.95	33.47	0.00
Hungary	Imports of goods and services	0.00	9.23	18.55	14.37	42.82	0.00
	Exports of goods and services	0.00	8.57	17.58	15.68	40.73	0.00
Ireland	Imports of goods and services	5.51	10.03	22.33	27.69	89.45	0.00
	Exports of goods and services	4.59	8.04	17.12	30.13	103.90	0.00
Italy	Imports of goods and services	43.80	92.24	201.83	202.94	329.85	0.00
	Exports of goods and services	42.15	92.88	177.79	203.36	341.68	0.00
Latvia	Imports of goods and services	0.00	0.00	0.00	4.73	3.36	4.33
	Exports of goods and services	0.00	0.00	0.00	4.60	2.82	3.58
Lithuania	Imports of goods and services	0.00	0.00	0.00	7.67	4.69	6.63
	Exports of goods and services	0.00	0.00	0.00	6.58	4.11	5.97
Luxembourg	Imports of goods and services	3.97	5.76	8.75	14.94	33.21	0.00
	Exports of goods and services	4.60	6.67	8.58	15.51	38.89	0.00
Malta	Imports of goods and services	0.27	0.50	1.64	2.46	4.60	0.00
	Exports of goods and services	0.23	0.31	1.54	2.12	4.16	0.00
Netherlands	Imports of goods and services	62.33	103.60	157.42	188.87	309.75	0.00
	Exports of goods and services	63.28	97.44	152.69	201.68	334.99	0.00
Poland	Imports of goods and services	0.00	0.00	0.00	24.52	57.63	48.12
	Exports of goods and services	0.00	0.00	0.00	32.66	46.67	38.28
Portugal	Imports of goods and services	4.93	11.93	25.79	38.88	55.67	0.00
	Exports of goods and services	3.76	9.72	17.34	32.46	41.09	0.00
Slovak Republic	Imports of goods and services	0.00	0.00	0.00	7.99	17.03	20.88
	Exports of goods and services	0.00	0.00	0.00	5.97	16.46	20.48
Slovenia	Imports of goods and services	0.00	0.00	0.00	0.00	13.92	14.96
	Exports of goods and services	0.00	0.00	0.00	0.00	13.09	14.96
Spain	Imports of goods and services	9.78	38.66	69.63	107.06	228.57	0.00
	Exports of goods and services	11.76	35.72	60.08	88.28	212.53	0.00
Sweden	Imports of goods and services	22.52	37.15	57.97	68.36	117.21	0.00
	Exports of goods and services	22.13	36.62	54.96	69.57	133.62	0.00
United Kingdom	Imports of goods and services	107.75	141.53	199.04	276.73	390.65	0.00
	Exports of goods and services	100.84	147.13	216.52	249.91	365.19	0.00

Source: World Development Indicators, The World Bank

Table 3B: Trade, EU, USA, and the World, (Constant 1995 US\$, Billions)							
		1960	1970	1980	1990	2000	2003
EU25 Trade	Imports of goods and services	414.60	750.64	1,777.44	2,272.06	3,700.93	100.83
	Exports of goods and services	409.27	737.06	1,604.21	2,231.29	3,758.05	88.43
	Net (X-M)	(5.33)	(13.58)	(173.23)	(40.77)	57.12	(12.40)
	% World Imports	0.43	0.42	0.46	0.45	0.44	n/a
	% World Exports	0.43	0.40	0.44	0.44	0.44	n/a
United States	Imports of goods and services	104.19	188.48	505.86	712.73	1,345.36	0.00
	Exports of goods and services	123.71	201.66	481.58	631.78	1,010.35	0.00
	Net (X-M)	19.52	13.17	(24.28)	(80.96)	(335.01)	0.00
	% World Imports	0.11	0.10	0.13	0.14	0.16	n/a
	% World Exports	0.13	0.11	0.13	0.13	0.12	n/a
World	Imports of goods and services	966.00	1,808.46	3,879.73	5,064.75	8,487.88	0.00
	Exports of goods and services	961.32	1,826.14	3,639.86	5,031.58	8,573.72	0.00
	Net (X-M)	(4.68)	17.68	(239.86)	(33.17)	85.84	0.00

Source: World Development Indicators, The World Bank

Table 3C: EU25, US, and the World						
Exports (Bn ECU/Euro)	1960	1970	1980	1990	2000	2002
EU (Extra EU)	24.4	52.0	212.1	355.2	942.0	993.8
USA	20.5	43.2	158.6	300.5	814.2	713.6
World	82.6	205.9	987.4	1,849.4	5,064.9	4,814.9
Exports (% Share)	1960	1970	1980	1990	2000	2002
EU (Extra EU)	29.5%	25.2%	21.4%	19.2%	18.5%	20.5%
USA	24.8%	20.9%	16.0%	16.2%	16.0%	14.7%
Imports (Bn ECU/Euro)	1960	1970	1980	1990	2000	2002
EU (Extra EU)	28.2	60.1	281.1	404.4	1,033.4	987.5
USA	16.2	42.7	184.6	387.7	1,303.0	1,235.9
World	90.1	221.7	1,046.2	1,943.7	5,364.5	5,289.9
Imports (% Share)	1960	1970	1980	1990	2000	2002
EU (Extra EU)	31.3%	27.1%	26.8%	20.8%	19.2%	18.6%
USA	17.9%	19.2%	17.6%	19.9%	24.2%	23.3%
Source: External and intra-European Union trade - Statistical Yearbook 2003, Eurostat						
Footnote: Exports and Imports of EU25, net of intra-EU exports and imports						

Table 4A: Average Monthly Exchange Rates: Euro and USD

DATE	USD to EUR	EUR to USD	DATE	USD to EUR	EUR to USD
Jan-1999	0.8626	1.1599	Jan-2002	1.1310	0.8847
Feb-1999	0.8935	1.1198	Feb-2002	1.1493	0.8705
Mar-1999	0.9197	1.0879	Mar-2002	1.1421	0.8759
Apr-1999	0.9334	1.0719	Apr-2002	1.1290	0.8862
May-1999	0.9417	1.0625	May-2002	1.0910	0.9171
Jun-1999	0.9625	1.0395	Jun-2002	1.0478	0.9552
Jul-1999	0.9666	1.0354	Jul-2002	1.0075	0.9931
Aug-1999	0.9425	1.0615	Aug-2002	1.0226	0.9784
Sep-1999	0.9535	1.0494	Sep-2002	1.0207	0.9801
Oct-1999	0.9340	1.0713	Oct-2002	1.0197	0.9812
Nov-1999	0.9681	1.0336	Nov-2002	0.9981	1.0023
Dec-1999	0.9894	1.0113	Dec-2002	0.9808	1.0202
Jan-2000	0.9879	1.0131	Jan-2003	0.9420	1.0621
Feb-2000	1.0164	0.9844	Feb-2003	0.9279	1.0780
Mar-2000	1.0355	0.9663	Mar-2003	0.9274	1.0788
Apr-2000	1.0568	0.9470	Apr-2003	0.9212	1.0862
May-2000	1.1011	0.9089	May-2003	0.8658	1.1559
Jun-2000	1.0534	0.9499	Jun-2003	0.8569	1.1677
Jul-2000	1.0636	0.9408	Jul-2003	0.8787	1.1387
Aug-2000	1.1044	0.9060	Aug-2003	0.8968	1.1159
Sep-2000	1.1469	0.8727	Sep-2003	0.8893	1.1253
Oct-2000	1.1699	0.8561	Oct-2003	0.8546	1.1706
Nov-2000	1.1712	0.8546	Nov-2003	0.8541	1.1716
Dec-2000	1.1115	0.9007	Dec-2003	0.8137	1.2296
Jan-2001	1.0647	0.9400	Jan-2004	0.7940	1.2601
Feb-2001	1.0843	0.9229	Feb-2004	0.7927	1.2621
Mar-2001	1.0990	0.9109	Mar-2004	0.8154	1.2269
Apr-2001	1.1207	0.8929	Apr-2004	0.8327	1.2015
May-2001	1.1411	0.8771	May-2004	0.8335	1.2003
Jun-2001	1.1716	0.8540	Jun-2004	0.8233	1.2151
Jul-2001	1.1623	0.8610	Jul-2004	0.8149	1.2278
Aug-2001	1.1103	0.9013	Aug-2004	0.8199	1.2201
Sep-2001	1.0964	0.9126	Sep-2004	0.8194	1.2208
Oct-2001	1.1041	0.9062	Oct-2004	0.7997	1.2511
Nov-2001	1.1255	0.8891	Nov-2004	0.7692	1.3006
Dec-2001	1.1213	0.8922	Dec-2004	0.7466	1.3399

Source: Oanda, <http://www.oanda.com/convert/fxhistory>

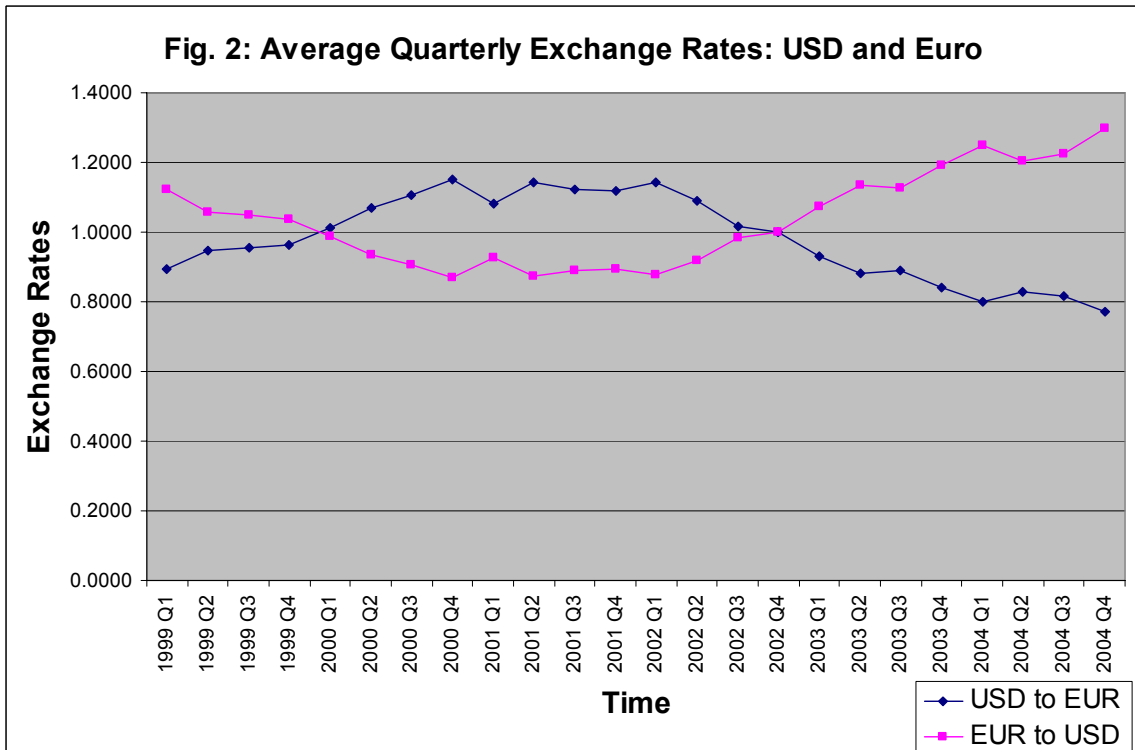
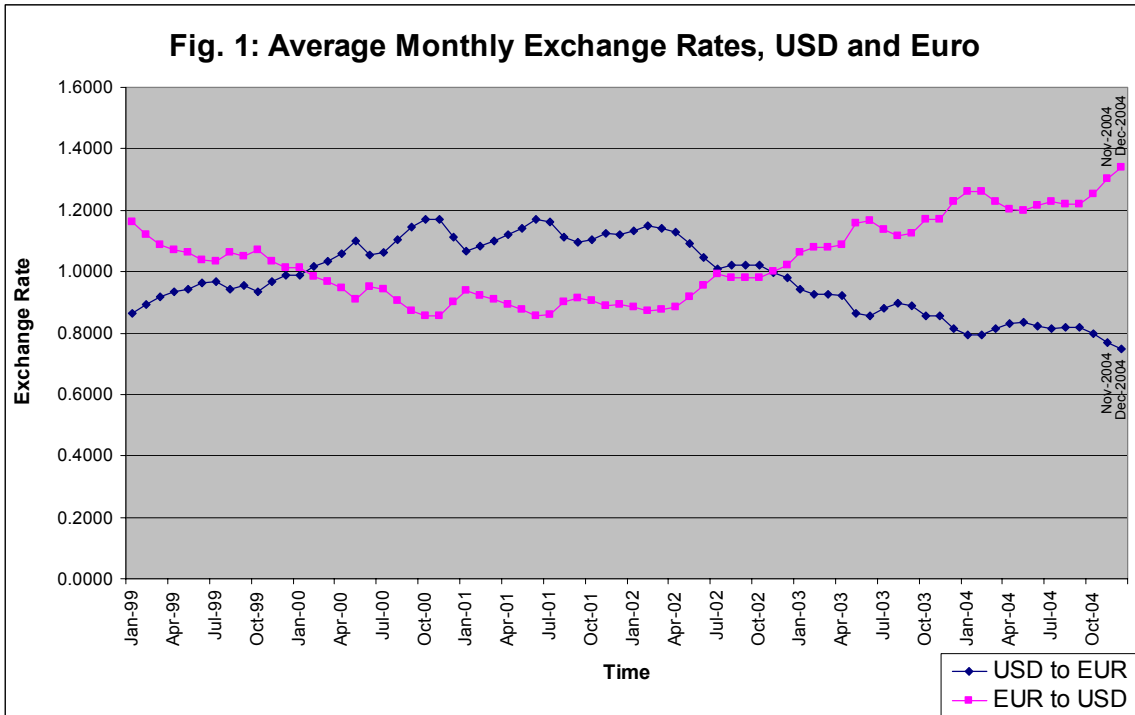


Table 4B: Quarterly Exchange Rates: Euro and USD		
DATE	USD to EUR	EUR to USD
1999 Q1	0.8919	1.1226
1999 Q2	0.9458	1.0395
1999 Q3	0.9542	1.0494
1999 Q4	0.9638	1.0113
2000 Q1	1.0132	0.9663
2000 Q2	1.0707	0.9499
2000 Q3	1.1045	0.8727
2000 Q4	1.1506	0.9007
2001 Q1	1.0826	0.9109
2001 Q2	1.1444	0.8540
2001 Q3	1.1233	0.9126
2001 Q4	1.1168	0.8922
2002 Q1	1.1405	0.8759
2002 Q2	1.0893	0.9552
2002 Q3	1.0169	0.9801
2002 Q4	0.9996	1.0202
2003 Q1	0.9326	1.0788
2003 Q2	0.8811	1.1677
2003 Q3	0.8882	1.1253
2003 Q4	0.8407	1.2296
2004 Q1	0.8009	1.2269
2004 Q2	0.8298	1.2151
2004 Q3	0.8180	1.2208
2004 Q4	0.7719	1.2972
Source: Oanda, http://www.oanda.com/convert/fxhistory		

Table 5: Value Added, Sectoral Shares (% of GDP)					
Original 25		2000	New 10		2000
Austria	Agriculture	2.33	Cyprus	Agriculture	..
	Industry	32.72		Industry	..
	Services, etc.	64.94		Services, etc.	..
Belgium	Agriculture	1.42	Czech Republic	Agriculture	4.47
	Industry	27.84		Industry	40.92
	Services, etc.	70.74		Services, etc.	54.61
Denmark	Agriculture	2.78	Estonia	Agriculture	6.23
	Industry	26.86		Industry	29.01
	Services, etc.	70.36		Services, etc.	64.76
Finland	Agriculture	3.78	Hungary	Agriculture	4.30
	Industry	34.49		Industry	33.10
	Services, etc.	61.74		Services, etc.	62.60
France	Agriculture	2.80	Latvia	Agriculture	4.86
	Industry	25.48		Industry	25.35
	Services, etc.	71.72		Services, etc.	69.79
Germany	Agriculture	1.21	Lithuania	Agriculture	8.01
	Industry	30.41		Industry	30.86
	Services, etc.	68.38		Services, etc.	61.13
Greece	Agriculture	7.57	Malta	Agriculture	..
	Industry	21.81		Industry	..
	Services, etc.	70.62		Services, etc.	..
Ireland	Agriculture	3.77	Poland	Agriculture	3.57
	Industry	42.72		Industry	33.88
	Services, etc.	53.51		Services, etc.	62.55
Italy	Agriculture	2.87	Slovak Republic	Agriculture	4.17
	Industry	29.04		Industry	30.31
	Services, etc.	68.08		Services, etc.	65.52
Luxembourg	Agriculture	0.75	Slovenia	Agriculture	3.52
	Industry	19.55		Industry	37.21
	Services, etc.	79.69		Services, etc.	59.27
Netherlands	Agriculture	2.78			
	Industry	27.06			
	Services, etc.	70.15			
Portugal	Agriculture	3.67			
	Industry	30.38			
	Services, etc.	65.95			
Spain	Agriculture	3.66			
	Industry	30.23			
	Services, etc.	66.11			
Sweden	Agriculture	1.93			
	Industry	29.51			
	Services, etc.	68.56			
United Kingdom	Agriculture	1.05	United States	Agriculture	1.61
	Industry	28.49		Industry	24.45
	Services, etc.	70.46		Services, etc.	73.94

Source: World Development Indicators, The World Bank

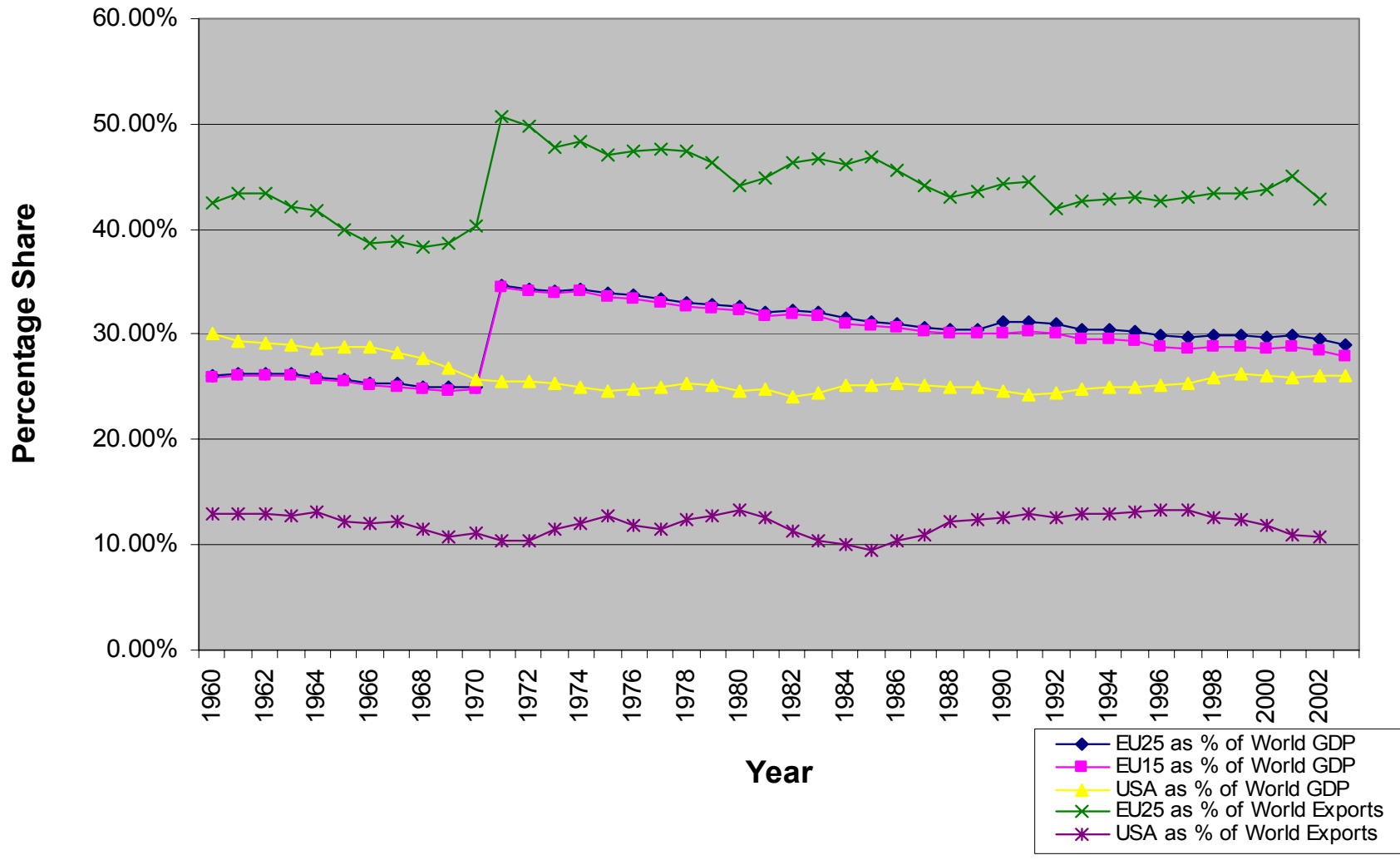
Table 6: Share of Official Foreign Exchange Holdings in Selected Currencies (End of Year)					
Currency	1999	2000	2001	2002	2003
All Countries					
US Dollar	64.9%	66.6%	66.9%	63.5%	63.8%
Japanese Yen	5.4%	6.2%	5.5%	5.2%	4.8%
Pound Sterling	3.6%	3.8%	4.0%	4.4%	4.4%
Euro	13.5%	16.3%	16.7%	19.3%	19.7%
Industrialized Countries					
US Dollar	72.7%	72.5%	72.7%	69.1%	70.8%
Japanese Yen	6.5%	6.3%	5.6%	4.6%	4.0%
Pound Sterling	2.3%	2.0%	1.8%	2.2%	1.7%
Euro	10.8%	17.2%	17.5%	21.3%	20.9%
Developing Countries					
US Dollar	59.0%	62.2%	62.9%	59.8%	59.3%
Japanese Yen	4.6%	6.1%	5.4%	5.5%	5.2%
Pound Sterling	4.6%	5.1%	5.4%	5.8%	6.2%
Euro	15.6%	15.6%	16.2%	17.9%	18.9%
Source: IMF Annual Report 2004, IMF					

Table 7: Quarterly USD/Euro Exchange Rates and US/EU GDP Based on Volume and Price Indices, 1999.1-2004.4

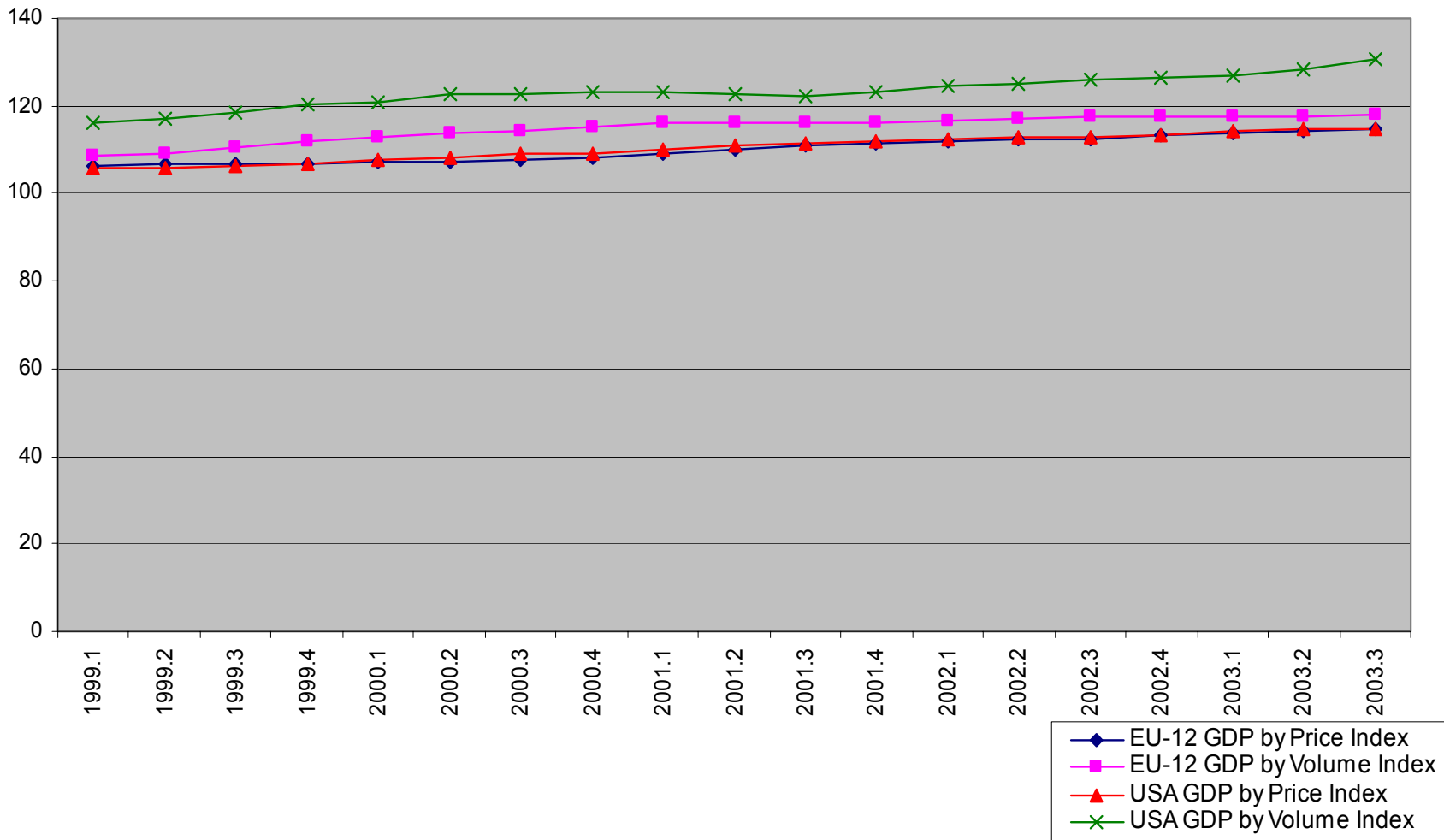
Quarter	USD to Euro Exchange Rate	USA GDP Volume Index	EU GDP Volume Index	USA/EU GDP Ratio Based on Volume Index	USA GDP Price Index	EU GDP Price Index	USA/EU GDP Ratio Based on Price Index
1999.1	0.8919	116	108.5	1.069124424	105.7	106.5	0.992488263
1999.2	0.9458	116.9	109.2	1.070512821	106	106.6	0.994371482
1999.3	0.9542	118.3	110.5	1.070588235	106.4	106.7	0.997188379
1999.4	0.9638	120.4	111.7	1.077887198	106.9	106.8	1.00093633
2000.1	1.0132	120.7	112.9	1.069087688	107.8	107.3	1.004659832
2000.2	1.0707	122.6	113.9	1.076382792	108.3	107.4	1.008379888
2000.3	1.1045	122.5	114.4	1.070804196	108.9	107.8	1.010204082
2000.4	1.1506	123.1	115.1	1.069504778	109.3	108.3	1.00923361
2001.1	1.0826	123	115.9	1.061259707	110.1	109.3	1.007319305
2001.2	1.1444	122.8	116	1.05862069	111	110.2	1.007259528
2001.3	1.1233	122.4	116.2	1.053356282	111.5	110.8	1.00631769
2001.4	1.1168	123.1	116.2	1.059380379	112	111.4	1.005385996
2002.1	1.1405	124.5	116.6	1.067753002	112.2	111.7	1.004476276
2002.2	1.0893	125.1	117.2	1.067406143	112.7	112.3	1.003561888
2002.3	1.0169	126.1	117.4	1.074105622	113	112.6	1.003552398
2002.4	0.9996	126.5	117.5	1.076595745	113.5	113.1	1.003536693
2003.1	0.9326	127.1	117.5	1.081702128	114.2	113.6	1.00528169
2003.2	0.8811	128.4	117.4	1.093696763	114.5	114.2	1.00262697
2003.3	0.8882	130.6	117.8	1.108658744	114.9	114.8	1.00087108
2003.4	0.8407						
2004.1	0.8009						
2004.2	0.8298						
2004.3	0.8180						
2004.4	0.7719						

Sources: Quarterly National Accounts, OECD, 2003, No.4
<http://www.oanda.com/convert/fxhistory>

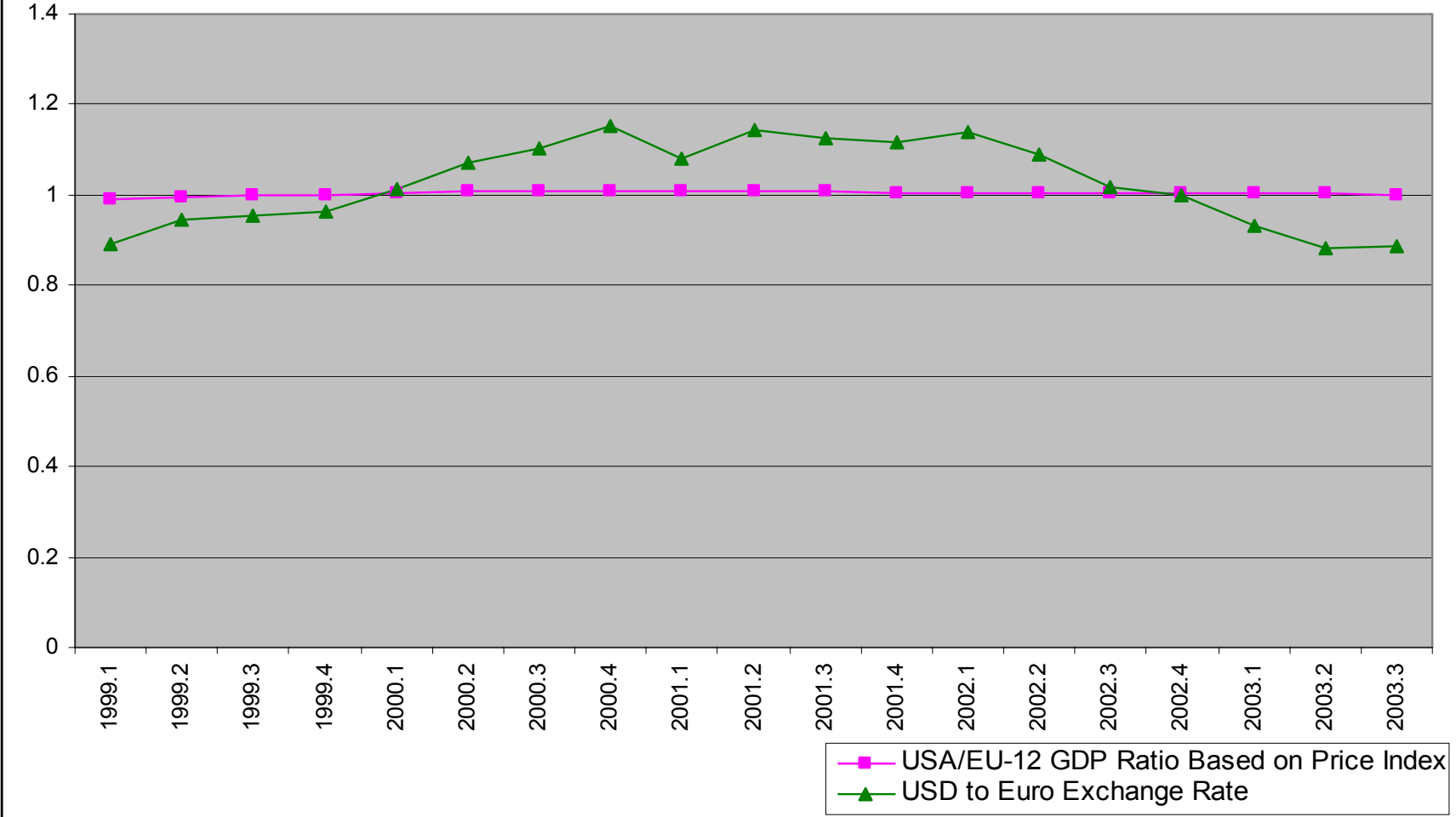
Graph 1: Comparative Shares of World GDP and Exports



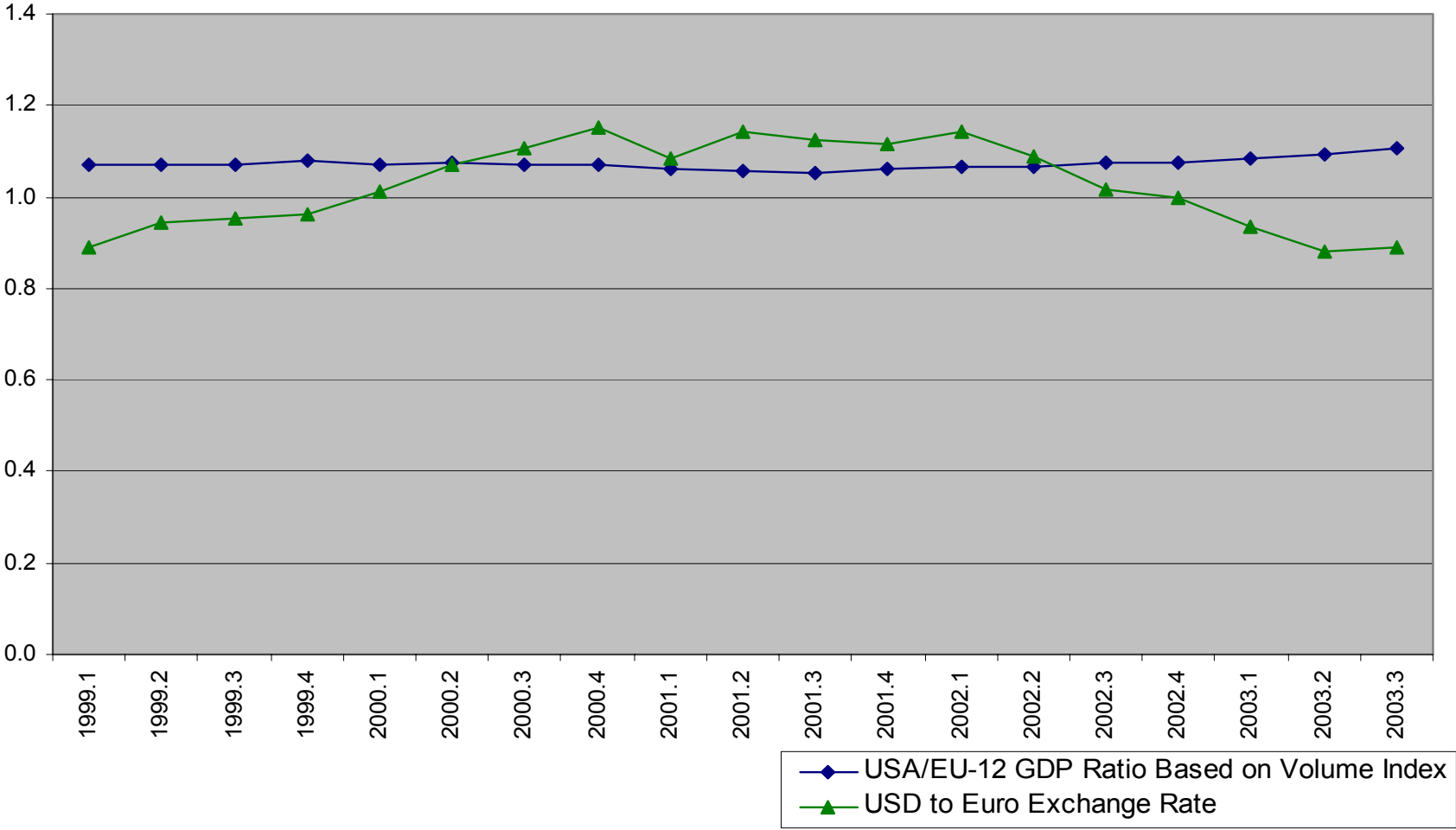
Graph 2: Quarterly GDP - USA & EU-12, 1999.1-2003.3



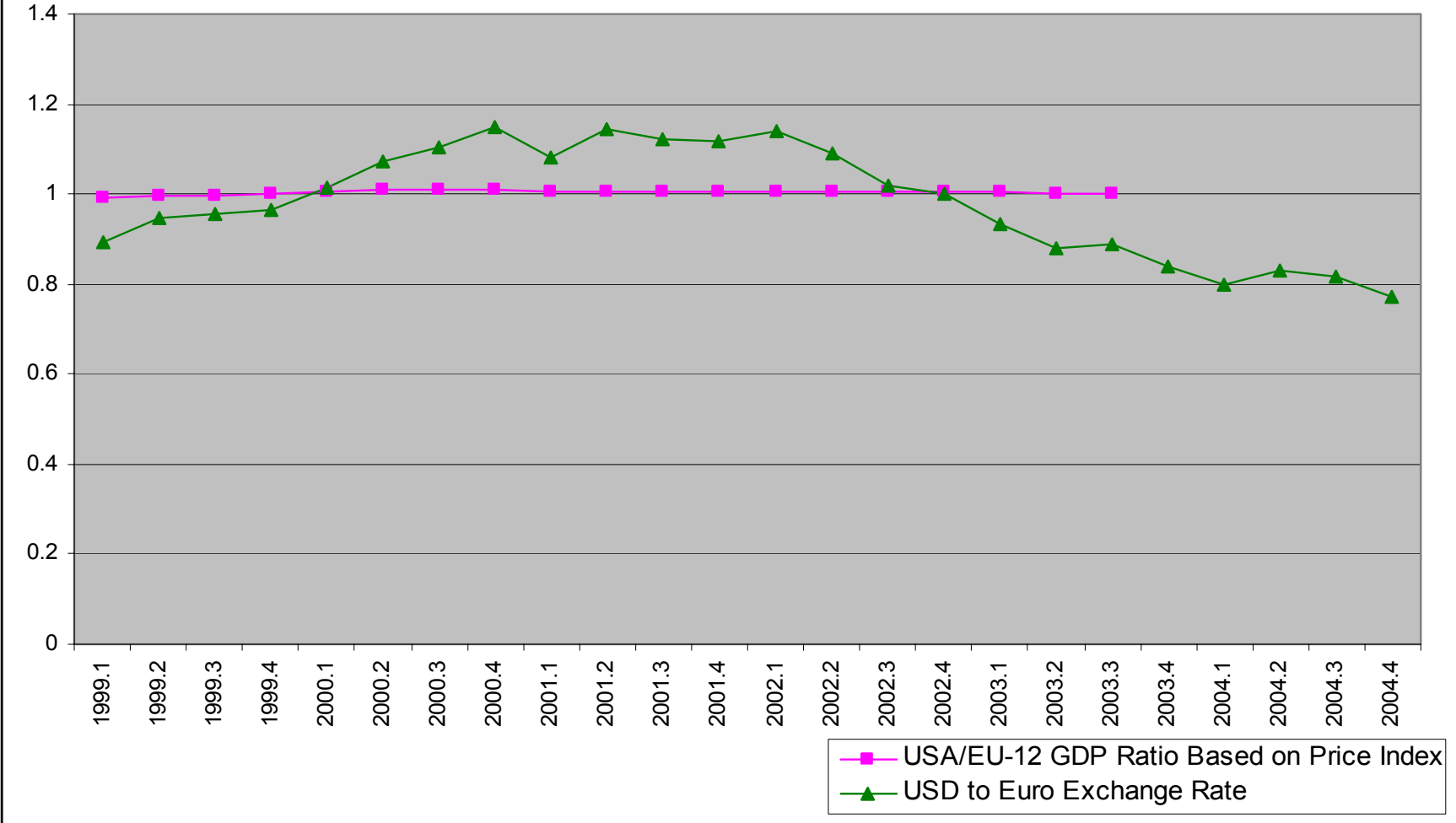
Graph 3A: US/EU-12 GDP Ratios and USD/Euro Exchange Rates, 1999.1-2003.3



Graph 3B: US/EU-12 GDP Ratios and USD/Euro Exchange Rates, 1999.1-2003.3



Graph 3C: US/EU-12 GDP Ratios and USD/Euro Exchange Rates, 1999.1-2004.4



Graph 3D: US/EU-12 GDP Ratios and USD/Euro Exchange Rates, 1999.1-2004.4

