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The Economic Role of the EU
in the Global Economy: A Comparative Analysis*

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ABSTRACT

The paper analyzes and evaluates the economic role of the EU-27 using cluster analysis. First, the most important forms of economic relations between the EU and the USA, the EU and Japan as well as the EU and China are investigated. Then it is shown that the creation, the evolution and the outcome of the economic relations determine, often with feedback effects, the content of the economic role. The emphasis is both on the economic outcome, i.e. the economic efficiency of these relations, and the economic role of the EU and the USA. This role is characterised by a series of crucial economic performance indices leading to the construction of a ranking of the relative importance of each performance index and is important mainly for two reasons: (a) it denotes the economic significance of each country in the global market and (b) it expresses their capabilities to impose and regulate the political and economic terms in the implementation of the new global division of labour.

The results indicate that Japan is dissimilar to the EU-27 and the USA as regards the importance of their economy, particularly to the USA economy. In 2011 the dissimilarity between the economies of the EU-27 and the USA on the one hand and the Japanese economy on the other is expected to be an outstanding characteristic feature. This dissimilarity is expressed in the form of strong opposite signs demonstrated mainly by the following performance indices: the current account balance as % of GDP, the annual % change in employment and the inflation.

For the three economic blocks, i.e. the EU, Japan and the USA, especially under the continuing severe global depression it is imperative to expand those external markets with lower cost inputs aiming at the efficient utilisation of both physical and human capital. This means that the external markets should function as a process that contradicts the tendency of a declining overall profitability of enterprises. Especially for the EU, the final result, i.e. its expected economic role, still lacks behind that of Japan and the USA. The political unification of Europe is still pending.

Contents

1.   Introduction

The external economic relations (EER) of the European Union of the 27 (hereafter EU) with the rest of the world can be perceived as included in a world economic system which, in its simplest form[1], constitutes the, so called, EU-Japan-USA triad.

The tracing and evaluation of the economic role of the EU relative to the other partners of the triad in general and the USA in particular requires, first, the analysis of the issue of the external economic relations and then the synthesis of those factors that determine its role in the new global division of labor. We adopt the following definition of the economic role which is widely acceptable: prescribed or expected economic behaviour (leading to a certain performance level) associated with a particular position or status in a group or organization. Status is meant as a relative rank in a hierarchy.

The theoretical background of the analysis is the international political economics and the economics of international unifications and more specifically the economics of the European integration[2]. These theoretical approaches, with abstraction from the complex total mesh of relations, have as object the analysis of economic relations and their tendencies for development.

Moreover, the search for reasons and factors that determine the economic importance of the EU in the external markets (e.g. to what extent the EU is a big supplier in the world market because of favorable conditions of production and marketing) and the regulating capabilities, i.e. the ability of the EU to impose political and economic terms with respect to the configuration of world division of labor, lead to the formulation of the following basic argument: the external economic relations of the EU determine the economic role the EU is expected to play in the world economic system.

At this point two remarks are worth making. Firstly, the creation and growth of external markets is imperative for all the members of the triad. This is because, through foreign trade, firms operating at home have the possibility to acquire factors

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[1] A more complex form, into which the triad in question tends to mutate, is the one that includes three trading blocks continuously strengthened: one block with base the NAFTA (Canada-Mexico-USA), another with axis the EU and the countries connected with this and a third one with Japan as an axis for the newly-industrialized countries (NICs) of Asia, i.e. the countries of the Association of Southeast Asian Nations (ASEAN), China, South Korea, Taiwan and Hong-Kong.

[2] A possible avenue through which the issue at hand could be approached is through the examination of the distribution of global economic activity. See for instance Quah (2010).

of production (for example raw materials and labor) at lower cost. This choice contributes to the relative efficiency of their capital. Thus foreign trade functions as a process opposite to the tendency of falling profitability of total capital. Foreign Direct Investment (FDI) accomplishes the same purpose as well.

Secondly, if the aforementioned relations and their development determine the expected role of the EU, it does not necessarily mean that their results are objectively predetermined. This happens for a variety of reasons. In my opinion, the main reason is that a single foreign policy of a Single European State has not as yet met with success. Consequently, the uncertainty and the fluidity are present in the international relations. This will be revisited.

The aim is to develop the argument by focusing on the factors of relative economic performance that strengthen and on those that weaken the economic role of the EU and then to evaluate this role. To achieve this aim, a multidimensional classification of the three countries is realized by the method of cluster analysis[3]. This method divides the countries into clusters according to their similarity/dissimilarity with respect to the economic importance of their economy in the global economy.

The structure of the paper is as follows: first a brief review and recording of the most important elements of the economic relations of the EU with the two other members of the triad, i.e. the USA and Japan, is provided. Also the relations between the EU, China and the NICs are briefly reviewed. These countries aim to develop closer relations with the EU as they create prospects for growth. Then the quantitative and qualitative elements are developed[4]. They express the economic potential of the three partners, i.e. the EU, Japan, and the USA as factors determining the partners' ongoing economic significance in the external markets, in other words as factors determining the relative role of the members of the triad.

2.   EU-USA trading relations

The main fields of conflict between the EU and the USA are on the trade policy aspects of the Common Agricultural Policy and the crisis in the steel industry. On the first issue, the EU and the USA had a long running dispute over the EU's

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[3] The SWOT analysis could be used as an alternative method of analysis. However, the cluster analysis is deemed more appropriate to solve complex classification problems when the analysis involves numerous interrelated variables, and questions on how to detect underlying patterns and trends in the data set arise.

[4] The study utilizes data from the European Commission, Spring 2010. However, by the time of submission the Autumn 2010 Statistical Annex of the European Economy was published.

banana imports. The two sides reached an agreement in 2001. On the steel industry issue, the USA imposed quotas on steel imports and the EU was under the regime of the European Community of Steel and Coal. The two sides accused one another of illicit commercial practices and trade restrictions (Featherstone and Ginsberg, 1996). In 2002, the USA imposed steel tariffs to protect its steel industry. The European Union and other countries took up the issue with the WTO, which ruled that such tariffs breach its regulations. Following an agreement by December 2003, the tariffs had been lifted by the USA administration and the issue was resolved.

Another field of juxtaposition was the persistence of the USA that the foreign individuals and companies, outside the USA, apply the laws that are in effect for the citizens of the USA. In the 1990's the USA, with powers outside its borders, threatened with sanctions the subsidiaries of the European companies in the USA if they invested in Cuba and traded with Iran and Libya. Ultimately, in April 1997, the two sides were led to an agreement that guaranteed the non-application of prohibitions for the countries of the EU.

Also, worth mentioning are the actions of the USA against countries violating the World Trade Organization (WTO). Although this policy was not in effect for the EU, it created a field of friction between the two parties since the EU supported solutions in the WTO frame.

Disagreements also exist with respect to genetically modified food and the regulations that impose standards in the sectors of health and diet, the safety and the environment. Certainly this important issue deserves further analysis. However it is beyond the scope of this study.

3.   EU-Japan trading relations

In the postwar period trade practices and, in many cases, extremely protective ones from both sides were followed. The Europeans adopted "hostile" attitudes because of the Japanese threat that concerns mainly industries like shipyards, steel, textile, cars, electronics and other equipment in the technology of information. In addition, in the Japanese market there exists restricted access to the European goods and services, mainly because of bureaucratic processes and a series of technical rules and regulations, impenetrable for the Europeans.

The trade surplus in favour of Japan experienced a reduction in the 1990's. However, the low rates of growth of the Japanese economy, which decreased the

demand for imports of the European products, and the depreciation of Yen, regenerated the surpluses in favour of Japan.

The Japanese markets for services and FDI are reopened for the European companies following bilateral agreements, such as the Program for the Promotion of Exports. However, the Europeans argue that the reduction of export costs via the removal of all the not-tariff obstacles is not enough for the growth of the bilateral trade in services. It is necessary for the European enterprises to be able to acquire satisfactory export profits. Current EU-Japan trade relations are characterised by cooperation and tackling trade barriers that go beyond tariffs, for example regulatory reform, investment promotion and non-tariff barriers.

4.   EU-China and EU-NICs relations

These relations are characterized by the increased EU interest in these countries as their share in the European market has expanded. In particular, the EU and China share common interests by developing trade and investment, replacing confrontation by cooperation, emphasising on international institutions and using dialogue and mutual interest to settle the conflicts. The institutional frame that allows the discussions of the problems stemming from the commercial and entrepreneurial relations between the three parties is the Asia-Europe Meeting (ASEM). In this context, priorities have been given to cooperation on reducing barriers to trade and investment, and on financial and social policy reform. A new area of common interest which emerged from the recent meetings is a reinforced dialogue on issues relating to the World Trade Organisation (WTO). The EU encourages the compliance with the WTO rules, in the case of the South Korea in particular, so that the access of European enterprises to the markets of these countries is possible. Also, it takes antidumping measures when necessary, and develops strategies to improve the commercial relations (Commission, 1998b).

In essence, the European as well as the USA argument is that the governments of these Asian countries use practices of effective competition rules, either uncovered or covered up, for their domestic enterprises.

5. Trade, foreign direct investments, financial markets and the global depression

Trade, FDI and the international financial markets (e.g. London, New York and Tokyo) are broadly recognized as mechanisms of interconnection of the members of the triad and at the same time fields of juxtaposition and antagonism. Powerful EER have been developed by these mechanisms between the EU and the USA and between Japan and the USA. The Japan-USA EER is the most powerful.

With respect to the share in total trade, the USA is a very important market both for the EU (ranks first), for China (ranks third) and for Japan (ranks fifth) with 19,5%, 14,5% and 5,7% of total trade in 2009, respectively (Commission, 2010a). In the case of Japan the American market is more important (ranks second after China) compared with the EU, because of the higher degree of commercial interdependence (USA 14,5% as against EU 12,2% of total trade in 2009). Moreover, regarding the FDI flows, the USA is the most important investment partner for the EU. In 2008, the USA investment flows to the EU amounted to 50,5 billion euros, whereas the EU investment flows to the USA amounted to 121,4 billion euros (Commission, 2010a).

Important factors, taken also as criteria, that determine the relative supremacy of each member of the triad in the international economic and political relations and at the same time, as a rule, also completely reflected into the EER, are: (a) the size of the economy expressed in terms of GNP and GNP per capita, the multinationals and their parental location, and the technological leadership, (b) the role, important or not, that the dollar and the Euro play in the world trade, in the exchange markets, in the capital markets and in the exchange reserves, (c) the good or bad performance of the economy (unemployment, inflation, growth rates) and (d) the political and military strength of each member.

The imbalances in the external relations between the EU, Japan and the USA (flows of merchandise, flows of FDI and portfolio capital investments, financial crisis 2007-2010) and the costs of large scale adaptations[5] are two important factors that potentially undermine also the most powerful institutional frames of global collaboration. According to Van Meerhaege (1998), these frames concern mainly the commercial relations and secondarily the flows of capital investments. To cope with

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[5] For a review that concerns the costs of adaptation see for instance Matusz and Tarr (1999). For the impacts of financial crisis on global imbalances see European Commission (2009) and for the impacts on the GDP and employment of the USA economy see BEA 'News Releases'. Bea. gov. (2010) and BLS 'Economic News Release'. Bls. gov. (2010).

the costs of large scale adaptations the members of the triad should aim at high and sustained income growth. However, under conditions of long-lasting depression due to financial crisis, this prospect is dramatically unrealistic.

Among the members of the triad, undoubtedly the USA and the EU have the most important economies with respect to size, as indicators of demographic and economic variables can testify: population (Figure 1), GDP (Figure 2) and GDP per head (Figure 3)[6].
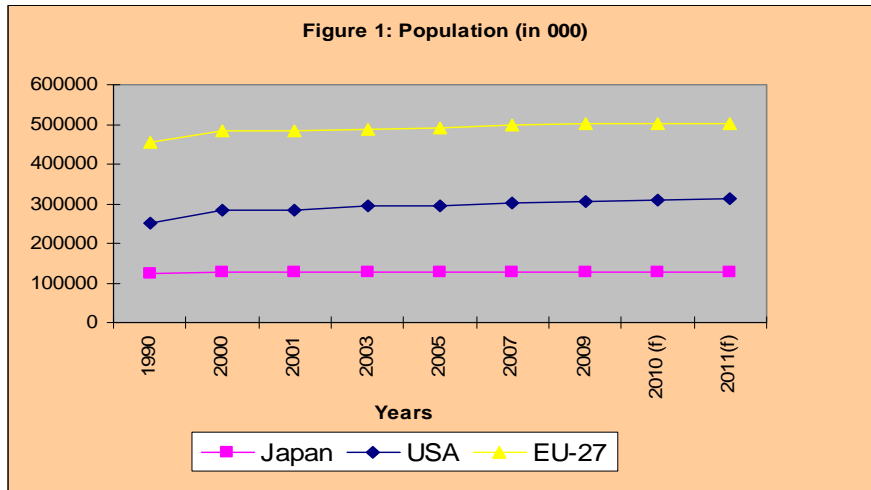
Figure 1: Population (in 000)

Source: European Commission, Statistical Annex of European
Economy, Spring 2010b, p. 31.

Figure 2: GDP (current market prices and billion PPS*)
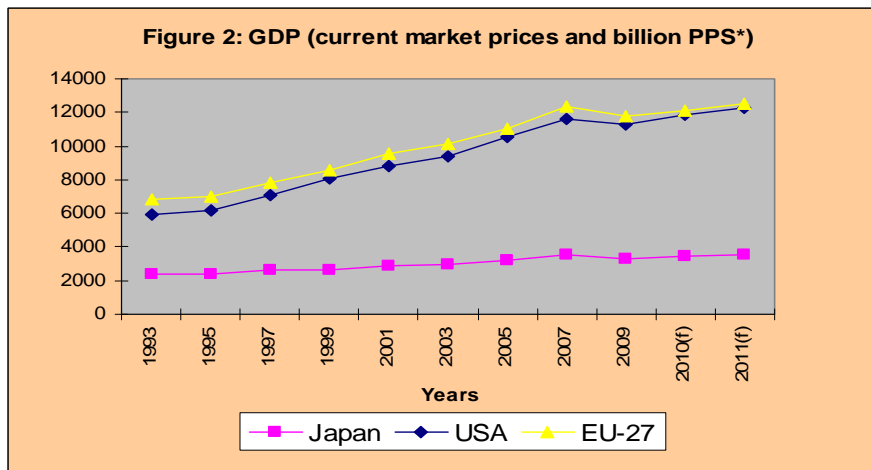
Source: European Commission, Statistical Annex of European
Economy, Spring 2010b, p. 41.
*PPS: purchasing power standards.

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[6] In Figure 2, the 2007-2009 Great Bend is evident, especially in the EU and the USA. In Figures 1, 2 and 3 the 2010 and 2011 figures are forecasts.
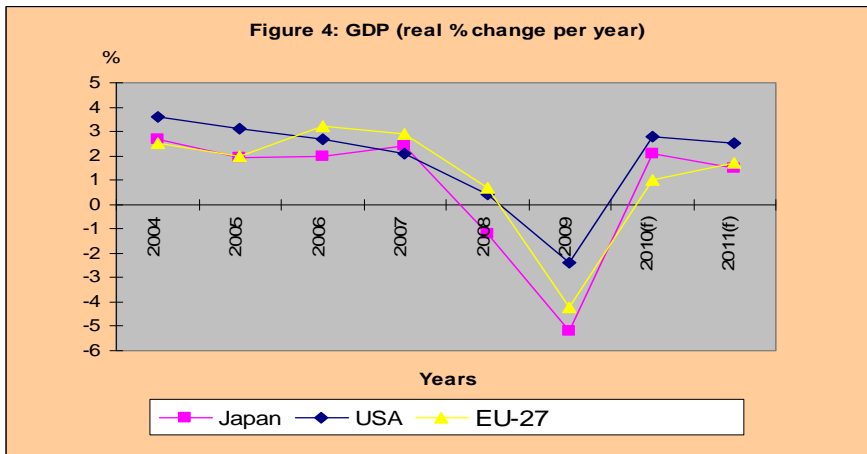
Figure 3: GDP per head of population (current market prices, PPS, EU-15 = 100)
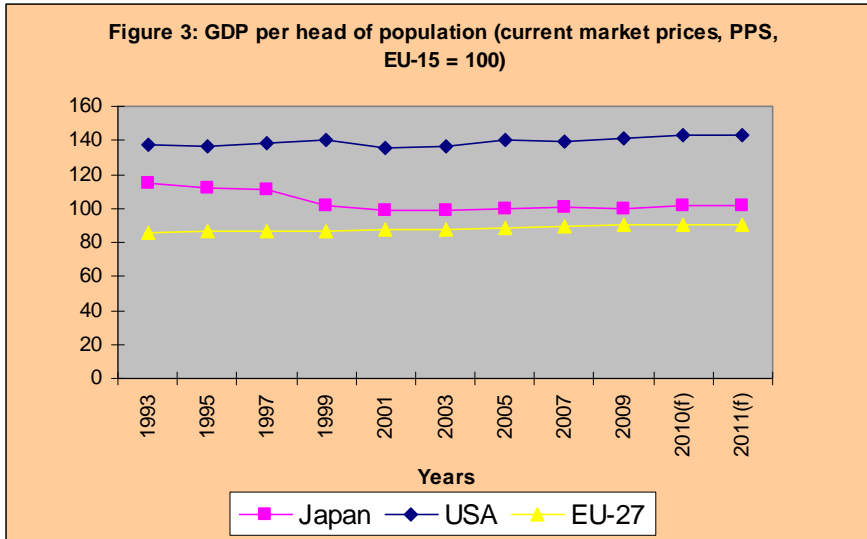
Source: European Commission, Statistical Annex of European
Economy, Spring 2010b, p. 47.

With respect to performance, the strong points of the USA are the rates of growth (Figure 4) and labor productivity (Figure 7) that are maintained, comparatively, at higher levels.

Figure 4: GDP (real % change per year)

Source: European Commission, Statistical Annex of European
Economy, Main economic indicators, Spring 2010b,
Tables: 108,113 and 114.

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Figure 5: Rate of unemployment (definition of the Eurostat)
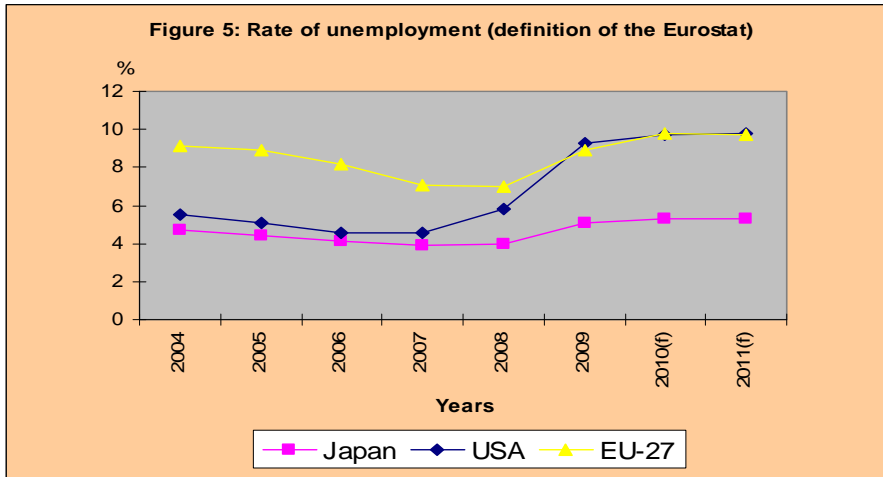
Source: as Figure 4.

On the other hand, Japan performs relatively better with respect to unemployment rates (Figure 5) and inflation (Figure 6).

Figure 6: Inflation (deflator of private consumption)

Source: as Figure 4.

Figure 7: Labour productivity (% change per year)
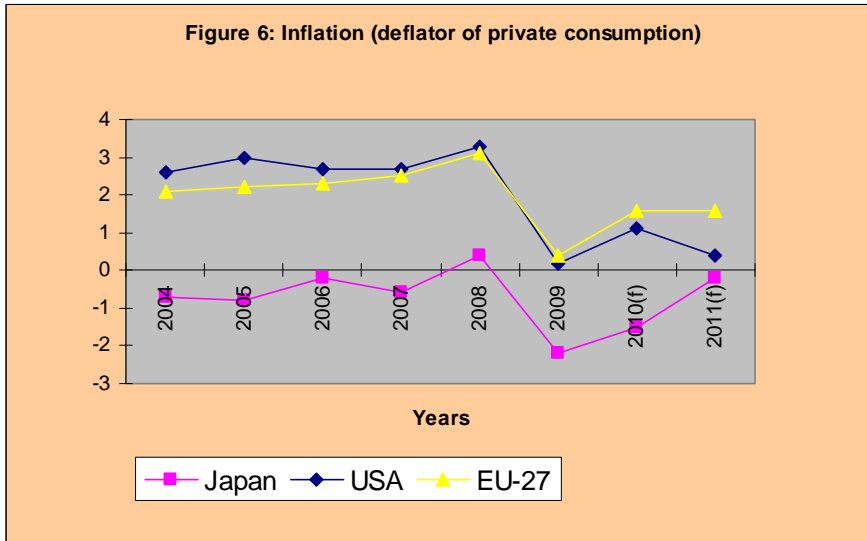
Source: as Figure 4.

More generally, with respect to the capability of countries to compete successfully in the world markets, certainly the USA, as an innovation driven economy, has been found in a leading course relative to Japan and the EU. In fact, according to the Global Competitiveness Index (GCI) of the World Economic Forum (2010), which is a globally reliable source of information, the GCI 2010-2011 of the USA scores 5,43 points as against 5,37 points of Japan and 4,53 points of the EU-27. On the othe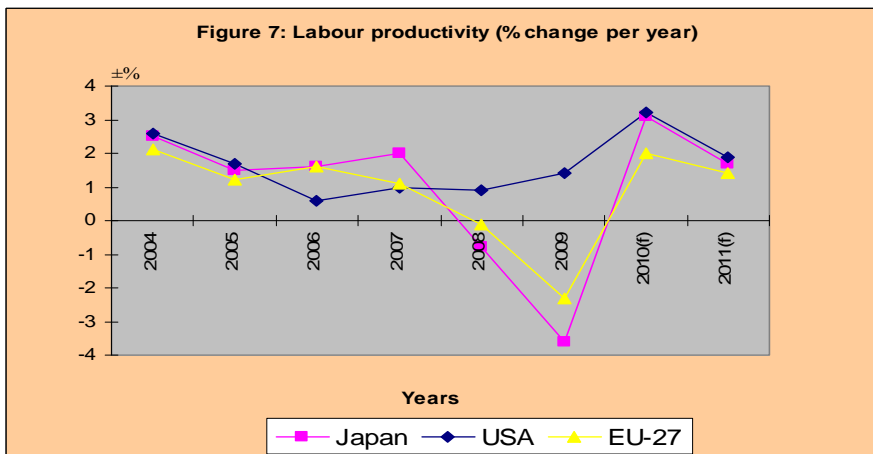r hand, the world sovereignty of the dollar is still there. The dollar is well known as a world reserve currency and for this reason its demand outside the USA is high. This role provides important gains to the USA economy: it is an interest-free borrower when the USA issues dollars. In a nutshell, mainly the growth of the new technologies such as telecommunications and biotechnology, the dollar and the multinational companies that are parentally located in the USA, provide the relative yardstick of performance of the USA.

However, the economic sovereignty of the USA as it is expressed by the economic indicators of size and performance, the multinational companies and the technological leadership, is often under question. Nevertheless, the USA remains the most productive country. Generally speaking, they are leading against other countries, in many sectors while in some sectors Japan or Germany are leading.

On the other hand, the EU, as Economic and Monetary Union (EMU) with a single currency in a world triadic multinational system, is the main competitor with the USA and influences the relations with the USA and Japan. Although the EU follows neo-liberal policies with a waning welfare state, the economic model it applies, generally speaking, differs from that of the USA.

Figure 8: Debt of the general government (as % of GDP, end of period)
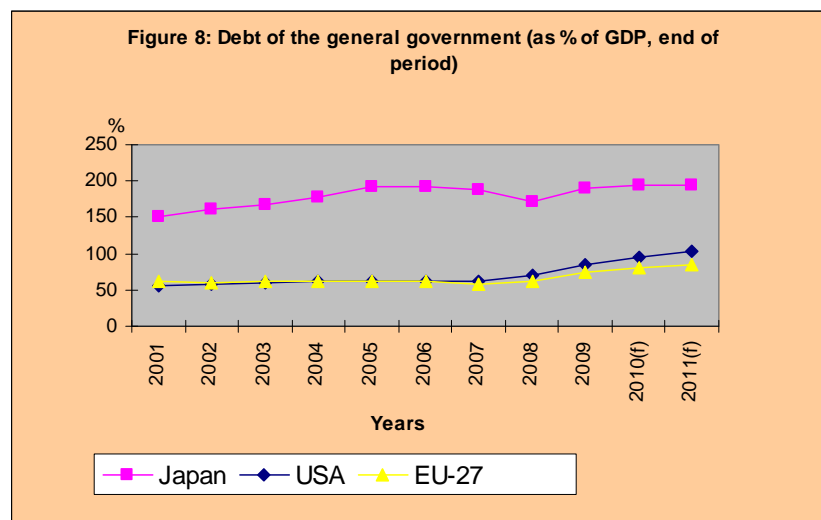
Source: as Figure 4.

Under the Euro the EU acquires more cohesion, lower costs of transactions and it demonstrates considerable flexibility as well as resistance in the financial markets (Jackson 2010). In recent years, relative to the USA, it scores lower levels in the public debt (Figure 8), despite a worse trade balance in 2007, 2008 and 2009 (Figure 9) and a smaller gap in the current account balance (Figure 10).

Figure 9: Trade balance (net exports) contribution to GDP changes (% per year)
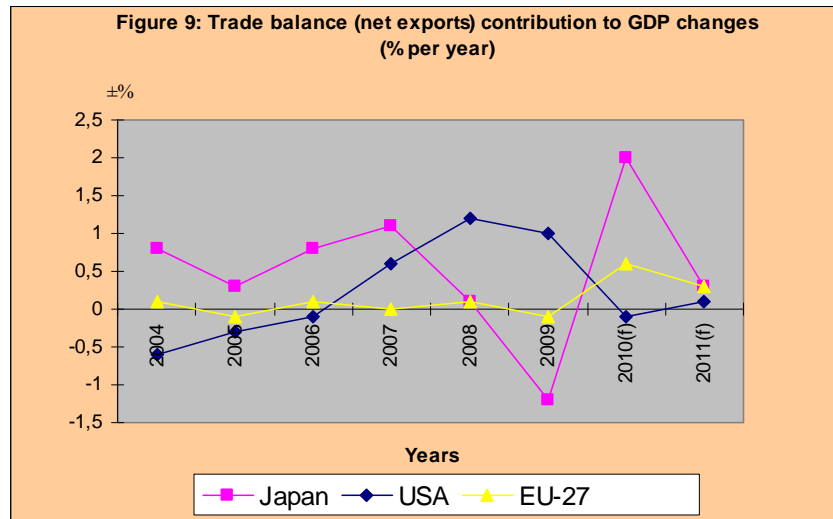
Source: as Figure 4.

The Euro, as a world player, has strengthened the economic role of the EU, has become a component of certainty and threatens the sovereignty of the dollar mainly in the medium-run to long-run.

Figure 10: Current account balance with the rest of the world (% of GDP at market prices)
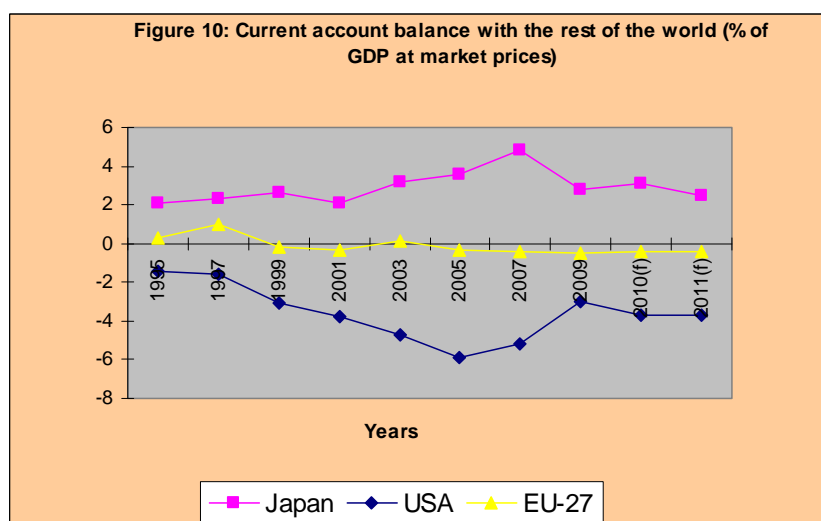
Source: European Commission, Statistical Annex of European Economy, Spring 2010b, p.117.

6.   A general analytical framework

The economic and technological performances of the USA, together with their military and political power, to a large extent determine the repercussions for the relations in the triad, i.e. they generate a new division of labor in the world market that corresponds to the specialization of the basic centers of production with sectors that produce and use high technology. The question for the EU is how it can act as an enabler to promote the prosperity of its citizens competing successfully in the global market. Within this framework, what is the expected role of the EU in the global division of labor?

The argument is that the economic results of each member of the triad, in the final analysis, determine the expected role they play in the global economy[7]. Therefore, the first question is which factors economic outcomes depend on. However, this relationship is not yet complete if some other important contributors or cofactors to the above expected role are not taken into account. In this case the *ceteris paribus* assumption must hold. The second question, put in a more general framework, is what these factors and their dynamics are.

The answer to the first question is that the economic outcomes of any of the three blocks depend on factors such as: natural and human resources, the level of economic development, the technology, the mechanisms of their interconnections such as trade, FDI and financial markets and finally the random events. The functional form of the relation is as follows:

$$EO = f\,(NR,\ HR,\ ED,\ T,\ MI,\ R) \tag{1}$$

Where

EO denotes economic outcomes

NR denotes natural resources

HR denotes human resources

ED denotes economic development

T denotes technology

MI denotes mechanisms of interconnection

R denotes random events.

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[7] Admittedly there are other important factors that play a crucial role in the determination of the expected role of the members of the triad in the global economy, such as the dynamics of the global business cycles [see for instance Duarte et al. (2003), Kose et al. (2003), Stoke et al. (2003) and Osborn et al. (2005)] or the spillover effects [see for example Dées et al. (2007)].

The economic outcomes (EO) of each block consist of a data matrix with elements the various comparable performance indicators including the size of the economy (GNP and GNP per head), productivity, unemployment, inflation, growth rates, trade and current account balance and the debt of general government.

With the aid of the above indicators the EO of each block can be evaluated both on grounds of the domestic economy and on grounds of external economic performance. *The comparative evaluation* of the EO means (a) selecting a set of performance criteria to determine which block performs best in achieving its goals and (b) grouping blocks of similar kind into respective categories using a multi-dimensional classification. Cluster analysis[8] is the appropriate method to do this i.e. to organize our observed data into meaningful structures and put our blocks (the members of the triad studied) into clusters according to well defined rules of similarity. Logically each block should have as its objective the achievement of an optimal value of the EO subject to the constraints imposed by the natural and human resources, economic development, the technology and trade, FDI and financial markets. The objective is:

Optimize EO

Subject to NR, HR, ED, T and MI   (2)

The EO, in the relations (1) and (2), determine which block is leading economically and is termed as an economic power.

The answer to the second question is that in the real-world conditions two other factors, together with economic outcomes and economic power, also codetermine the final result, i.e. the role a certain block can play in the global division of labor. These factors are the political power[9] and the military strength. These terms mean the ability of a nation or of a supranational entity to influence the behavior of others by political and military means, respectively.

On the other hand, the external economic relations generate and at the same time reflect the *interrelationship of power* among the three socioeconomic and political blocks *with respect to their external economic activity*. More generally, the interrelationship of power among the blocks generates the three types of strength, i.e.

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[8] http://www.statsoft.com 'Area of Application'… "whenever we need to classify a 'mountain' of information into manageable meaningful piles, cluster analysis is of great utility".
[9] One dimension of the political power is expressed in terms of a policy vector with elements the various policies of a block, e.g. fiscal and monetary policies, energy, regional and environmental policies, the policies of the EU, foreign and defence policies, etc.

the economic, political and military strengths. They, in turn, determine the role in the new global division of labor (NGDL)[10].

Therefore, taking all these parameters into account, a proposed general schema, in a dynamic sense with feedback effects, can be the following:

Having set the above general analytical framework, in the present paper we limit ourselves to the study of the economic strength-economic role relationship by the cluster analysis method.

7. Clusterization of the blocks by indices of economic performance

To perform cluster analysis we use the Neural Network Software (NNS) for classification of observed data. We study the period 2006-2009 and the forecast years 2010 and 2011. The aim is to divide our three blocks into separate groups so as each group contains countries that share similar characteristics following a similarity rule. Using the Classifierxl menu (http://neuroxl.com) we specify the range of input data to be classified as well as the output of the classified data. Generally, in applications 3 clusters are usually set into which to divide the data. In this paper NNS, detecting relationships and trends in our data over the whole period, categorizes these data into 2 clusters or groups: cluster 1 contains the EU-27 and the USA and cluster 2 contains Japan. In this case cluster weights are 2/3 for the EU-27 and the USA and 1/3 for Japan. Important is now similarity in cluster 1.

In Table 1 the data matrix 2006, with 8 crucial indices of performance as elements, is as follows:

Table 1
Data matrix, 2006

Countries	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
EU-27	3,2	1,6	1,6	8,2	2,3	61,4	-0,4	0,1
JAPAN	2,0	0,4	1,6	4,1	-0,2	191,3	3,9	0,8
USA	2,7	1,9	0,8	4,6	2,7	61,2	-6,0	-0,1

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[10] NGDL is an outcome of globalization and has led to a trend of transference or to what is known as the global industrial shift and generally as the global economic shift. See Dicken (2010).

[1] GDP growth rate (real % change per year)
[2] Employment (annual % change)
[3] Labour productivity (% change per year)
[4] Rate of unemployment (definition of the Eurostat)
[5] Inflation (deflator of private consumption)
[6] Debt of the general government (as % of GDP, end of period)
[7] Current account balance with the rest of the world (% of GDP at market prices)
[8] Trade balance (net exports) contribution to GDP changes (% per year)
 (Countries in alphabetical order).

Clusters profiles are presented in Figure 11. In this Figure, cluster weighted average figures (as %) determine the characteristics of each cluster i.e. of each country, in terms of the relative importance of each performance index on the average.

Figure 11: Multidimensional classification of the countries by performance indices, 2006
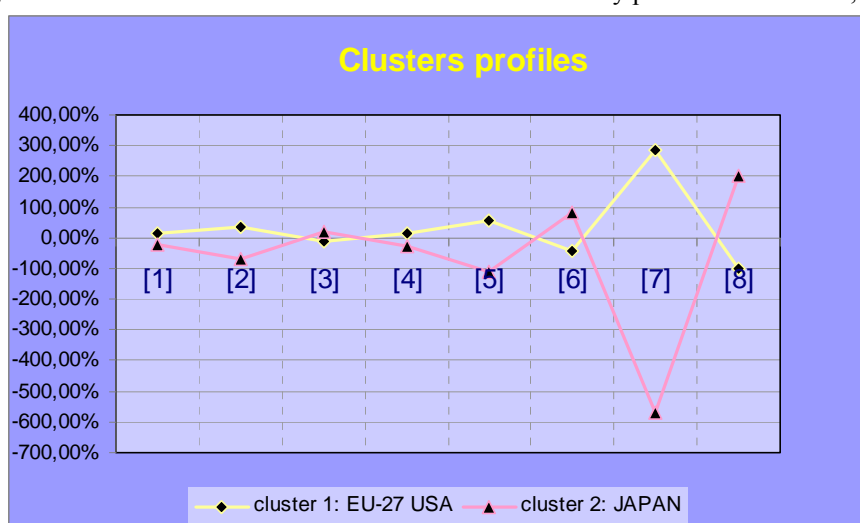
We follow the same process for 2007, 2008, 2009 and the two next forecast years 2010 and 2011, as forecast data are available by Statistical Annex of the European Commission. In Tables 2, 3, 4, 5 and 6 the data matrices 2007, 2008, 2009, 2010 and 2011, with the same indices of performance as elements, are as follows:

Table 2
Data matrix, 2007

Countries	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
EU-27	2,9	1,8	1,1	7,1	2,5	58,8	-0,4	0
JAPAN	2,4	0,4	2,0	3,9	-0,6	187,3	4,8	1,1
USA	2,1	1,1	1,0	4,6	2,7	62,2	-5,2	0,6

Table 3
Data matrix, 2008

Countries	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
EU-27	0,7	0,9	-0,2	7,0	3,1	61,6	-1,1	0,1
JAPAN	-1,2	-0,3	-0,9	4,0	0,4	172,0	3,2	0,1
USA	0,4	0,5	0,9	5,8	3,3	70,7	-4,9	1,2

Table 4
Data matrix, 2009

Countries	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
EU-27	-4,2	-1,9	-2,3	8,9	0,4	73,6	-0,5	-0,1
JAPAN	-5,2	-1,6	-3.6	5,1	-2,2	189,2	2,8	-1,2
USA	-2,4	-3,8	1,4	9,3	0,2	84,5	-3,0	1,0

Table 5
Data matrix, 2010(f)

Countries	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
EU-27	1,0	-1,0	2,0	9,8	1,6	79,6	-0,4	0,6
JAPAN	2,1	-1,0	3,1	5,3	-1,5	193,5	3,1	2,0
USA	2,8	-0,4	3,2	9,7	1,1	94,1	-3,7	-0,1

(f) Forecasts made by Commission based on data available up to 20 April 2010.

Table 6
Data matrix, 2011(f)

Countries	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
EU-27	1,7	0,3	1,4	9,7	1,6	83,8	-0,4	0,3
JAPAN	1,5	-0,2	1,7	5,3	-0,2	194,9	2,5	0,3
USA	2,5	0,6	1,9	9,8	0,4	103,0	-3,7	0,1

(f) Forecasts made by Commission based on data available up to 20 April 2010.

Clusters profiles for 2007, 2008, 2009, 2010(f) and 2011(f) are presented in Figures 12, 13, 14, 15 and 16, respectively.

Figure 12: Multidimensional classification of the countries by performance indices, 2007
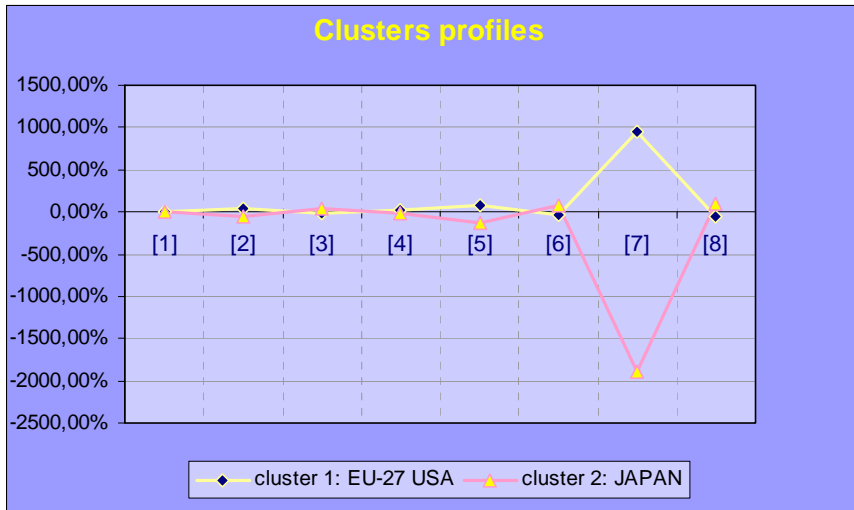
Figure 13: Multidimensional classification of the countries by performance indices, 2008
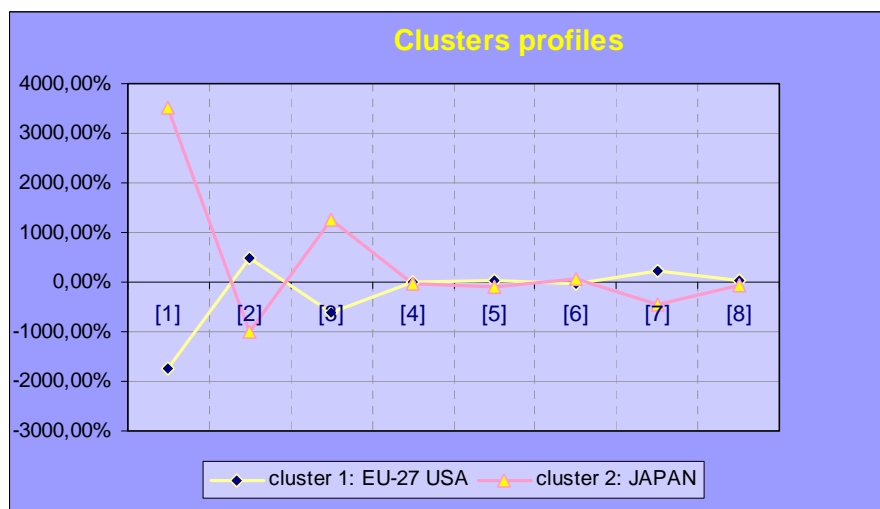
Figure 14: Multidimensional classification of the countries by performance indices, 2009

Clusters profiles

cluster 1: EU-27 USA   cluster 2: JAPAN
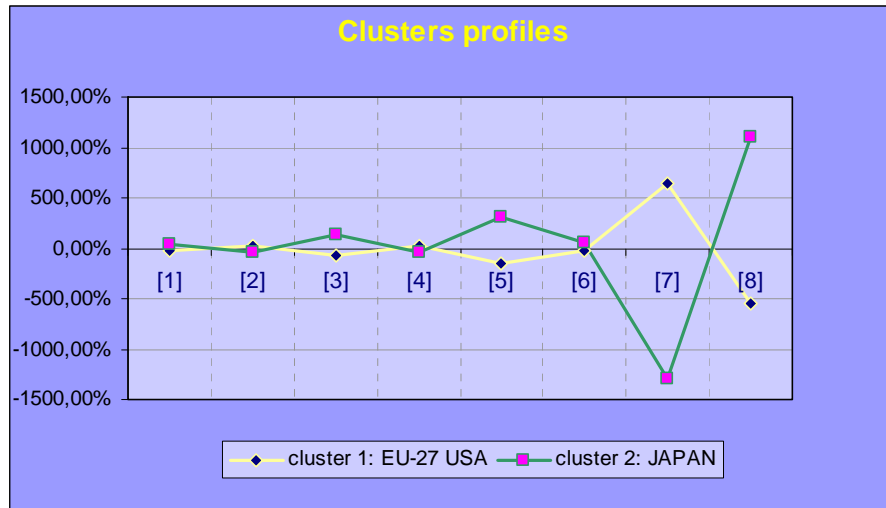
Figure 15: Multidimensional classification of the countries by performance indices, 2010(f)

Clusters profiles

cluster 1: EU-27 USA   cluster 2: JAPAN
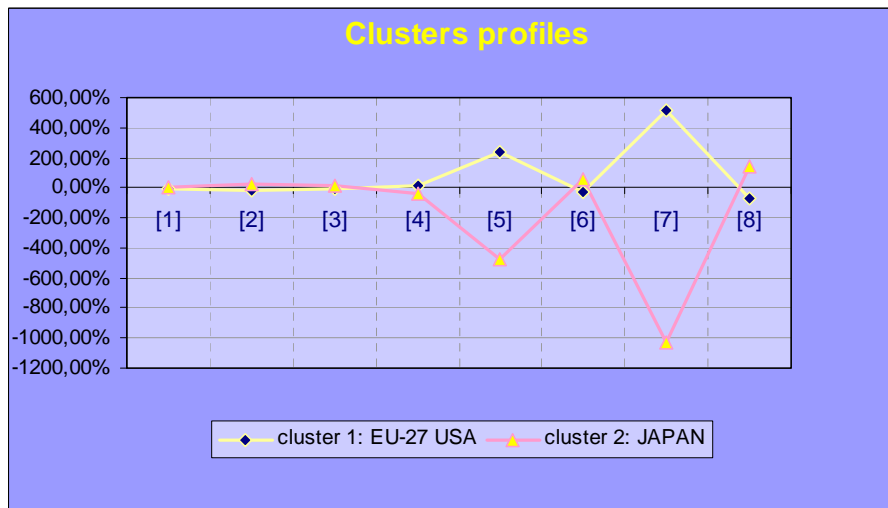
Figure 16: Multidimensional classification of the countries by performance indices, 2011(f)

Clusters profiles

cluster 1: EU-27 USA   cluster 2: JAPAN
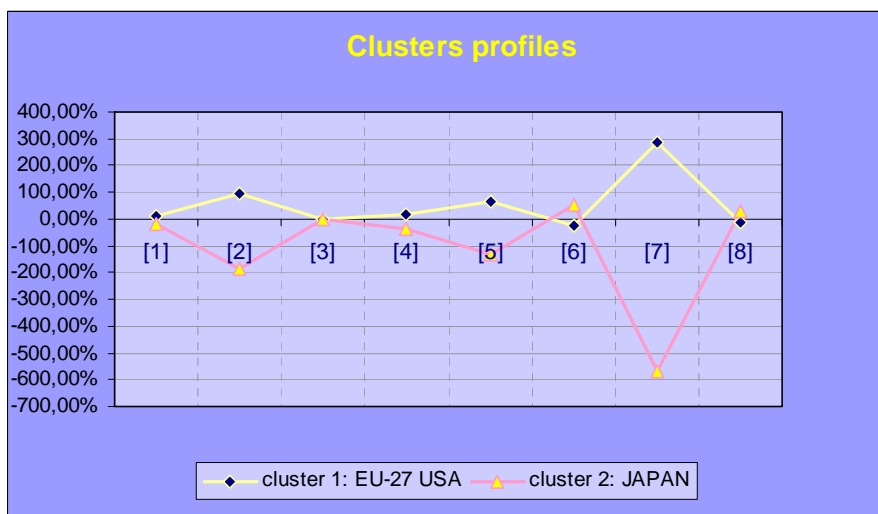
8.   Results and discussion

The results of the classification process can be evaluated for each year on the basis of certain vital information provided by the output parameters of the classified data by similar clusters. These parameters are (a) the clusters' averages or centroids and (b) the weighted averages of each performance index. These results, covering the period 2006-2011, are presented by each year below.

<div align="center">

2006

</div>

In 2006, the year before the beginning of the Great Bend, Clusters 1 and 2 were characterized, according to their centroids, as follows:

Cluster 1 contains the EU-27 and the USA. They are similar in respect of performance indices levels on average: higher positive annual growth rates, higher positive annual % change in employment, lower annual labor productivity % change, higher unemployment and higher inflation rates, lower debt of general government % of GDP, negative current account balance as % of GDP and zero trade balance contribution to GDP changes.

Cluster 2 contains Japan. This country is dissimilar to the EU-27 and the USA in respect of performance indices levels on average: lower positive annual growth rates, lower positive annual % change in employment, higher annual labor productivity % change, lower unemployment rates and deflation, higher debt of general government % of GDP, positive current account balance as % of GDP and positive trade balance contribution to GDP changes.

The question at issue now is how the economic performance indices are associated with a particular status of performance in the group of the three countries. In other words we are seeking a relative rank of performances in a hierarchy, i.e. a ranking of the relative importance of each performance index by cluster with strong, less strong and weak effects. To do this the weighted averages of each performance index are used. *The purpose is to evaluate the net balance of factors reinforcing and factors weakening the economic role of the countries in each cluster.*

To determine the net balance for Cluster 1 and Cluster 2, first we perform the ranking of the weighted averages of each performance index by descending order of magnitude; using cluster profiles for 2006 in Figure 11 (see the 8 figures in Table 1):

Cluster 1: Current account balance with the rest of the world, trade balance contribution to GDP changes, inflation, debt of the general government, labour productivity, rate of unemployment, GDP growth rate and employment growth rate.

Cluster 2: Current account balance with the rest of the world, trade balance contribution to GDP changes, inflation and debt of the general government, GDP growth rate, rate of unemployment, labour productivity and employment growth rate.

The ranked performance indices of the two clusters by positive and negative effects are presented in Table 7 below.

Table 7
Ranked performance indices 2006

clusters	Positive effects			Negative effects		
	Strong	less strong	weak	strong	less strong	weak
1		[6] [2] [1]		[7] [8]	[5] [4][3]	
2	[7] [8] [5]	[4][3]			[6] [2] [1]	

[1] GDP growth rate (real % change per year)
[2] Employment (annual % change)
[3] Labour productivity (% change per year)
[4] Rate of unemployment (definition of the Eurostat)
[5] Inflation (deflator of private consumption)
[6] Debt of the general government (as % of GDP, end of period)
[7] Current account balance with the rest of the world (% of GDP at market prices)
[8] Trade balance (net exports) contribution to GDP changes (% per year)

From Table 7 it is clear that in Cluster 1 (the EU-27 and the USA) the debt of the general government, the labour productivity and the GDP growth rate indices are factors that affect positively though less strongly the overall performance. Current account balance and trade balance indices affect it negatively and strongly, inflation and the rate of unemployment negatively and less strongly and finally the employment growth index has weak and negative effects. *As a result, in 2006 Cluster 1 marked negative effects that outweighed positive effects.*

Moreover, in Cluster 2 (Japan) the current account balance, the trade balance and the inflation indices affect performance positively and strongly, the rate of unemployment index positively and less strongly while the employment growth index has weak effects. Finally, the debt of the general government, the GDP growth rate and the labour productivity indices has negative and less strong effects.

Overall, and taking into account positive and negative effects, the net balance for Cluster 1 is negative and for Cluster 2 is positive.

In 2006 therefore, there are factors that weaken the economic role of the EU-27 and the USA while at the same time other factors strengthen Japans' economic role in the global economy.

More specifically, factors that *weaken the economic role of the EU-27 and the USA* in order of significance and by strength of impact on each country are the following: first, the current account balance and trade balance performances that reveal strong negative effects. The USA in particular is the major culprit, as it records deficits. Second, inflation and productivity are also in the same vein: inflationary higher growth and lower productivity in the USA and deflation with lower growth and unemployment rates in Japan. All these negative factors outweigh the fewer positive factors that have lower impact: the debt of the general government, the employment growth rate and the GDP growth rate.

Factors that *strengthen Japans' economic role* are grounded in the antipode of those of the EU-27 and the USA. On the contrary Japan scores an outstanding debt of the general government which weights more on the negative side.

2007

In 2007, the year when, as is now generally accepted, the origins[11] of the Great Bend appeared for the first time, GDP growth rates decelerated but remained positive. The EU-27 and the USA on the one hand and Japan on the other are characterized, according to their centroids, as follows:

The EU-27 and the USA are similar in respect of performance indices levels on average: higher positive annual growth rates, higher positive annual % change in employment, lower annual labor productivity % change, higher unemployment and higher inflation rates, lower debt of general government % of GDP, negative current account balance as % of GDP and lower trade balance contribution to GDP changes.

Japan is dissimilar to the EU-27 and the USA in respect of performance indices levels on average: lower positive annual growth rates, lower positive annual % change in employment, higher annual labor productivity % change, lower unemployment rates and deflation, higher debt of general government % of GDP, positive current account balance as % of GDP and higher positive trade balance contribution to GDP changes.

The ranked performance indices of the two clusters by positive and negative effects are presented in Table 8 below.

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[11] Since 2006 already, early warnings were made about risks threatened by a potential decline of prices in the real estate market of the USA and bubbles in the subprime loans market. In the next few months of 2007 subprime crisis took the form of an avalanche and at the beginning of 2008 the impacts of the crisis upon the 'real economy' were already evident.

Table 8
Ranked performance indices 2007

clusters	Positive effects			Negative effects		
	strong	less strong	weak	strong	less strong	weak
1		[6][2]	[1]	[7]	[5][8][3][4]	
2	[7][5]	[8][3][4]			[6][2][1]	

From Table 8 it is clear that in 2007 the net balance for Cluster 1 is negative and for Cluster 2 is positive. Factors that *weaken the economic role of the EU-27 and the USA* in order of significance and by strength of impact on each country are the following: first, the current account balance and inflation reveal strong negative effects. Again, the USA is the major culprit. Second, trade balance, productivity and unemployment are also in the same vein: lower productivity (USA) combined with higher unemployment (EU-27) under lower trade balance contribution to GDP (EU-27). All these negative factors outweigh the fewer positive factors that have lower impact: the debt of the general government, the employment growth rate and the GDP growth rate (weak impact).

Factors that *strengthen Japans' economic role* are grounded in the antipode of those of the EU-27 and the USA. As in 2006, again Japan scores an outstanding debt of the general government which weights more on the negative side.

2008

In 2008 GDP growth rates of the triad decelerated further (in particular Japan's were negative). The EU-27 and the USA are similar in respect of performance indices levels on average (centroids): higher positive GDP annual growth rates, positive average annual % change in employment (USA negative), positive annual labor productivity % change (EU-27 negative), higher unemployment and higher inflation rates, lower debt of general government as % of GDP, negative current account balance as % of GDP and higher positive trade balance contribution to GDP changes.

Japan's results are dissimilar to those of the EU-27 and the USA: negative annual growth rates, negative annual % change in employment, negative annual labor productivity % change, lower unemployment and inflation rates, higher debt of general government % of GDP, positive current account balance as % of GDP and lower positive trade balance contribution to GDP changes.

The ranked performance indices of the two clusters by positive and negative effects are presented in Table 9 below.

Table 9
Ranked performance indices 2008

clusters	Positive effects			Negative effects		
	strong	less strong	weak	strong	less strong	weak
1	[1][3][2]	[8][6]		[7]	[5][4]	
2	[7]	[5][4]		[1][3][2]	[8][6]	

From Table 9 it is clear that in 2008 the net balance for Cluster 1 is positive and for Cluster 2 is negative. Factors that *strengthen the economic role of the EU-27 and the USA* in order of significance and by strength of impact on each country are the following: first, strong impacts come from GDP growth rates (still positive), productivity % change and employment growth rate. Second, trade balance contribution to GDP and debt of the general government has less strong positive effects on performance. All these positive factors outweigh the fewer negative factors that have lower impact: current account balance as % of GDP, inflation and unemployment.

Factors that *weaken Japans' economic role* are grounded in the antipode of those of the EU-27 and the USA. In particular, GDP growth rates, productivity % change and employment growth rate reveal strong negative effects. Trade balance contribution to GDP and debt of the general government as % of GDP has less strong negative effects.

Therefore, in 2008 there is evidence of a weakening of Japan's economic role as world economy is further sunk into depression.

2009

In 2009 GDP growth rates of the triad were negative. According to the centroids, the EU-27 and the USA scored smaller decreases in GDP annual growth rates, higher negative average annual % change in employment, lower negative annual labor productivity % change (USA positive), higher unemployment and higher inflation rates, lower debt of general government as % of GDP, negative current account balance as % of GDP, and higher positive trade balance contribution to GDP changes.

Japan's results are dissimilar to those of the EU-27 and the USA: negative annual growth rates, negative annual labor productivity % change, higher debt of

general government as % of GDP, negative trade balance contribution to GDP changes, lower decrease in the annual % change in employment, lower unemployment and deflation and positive current account balance as % of GDP.

The ranked performance indices of the two clusters by positive and negative effects are presented in Table 10 below.

Table 10
Ranked performance indices 2009

clusters	Positive effects			Negative effects		
	strong	less strong	weak	strong	less strong	weak
1	[8]	[3][6][1]		[7][5]	[4][2]	
2	[7][5]	[4][2]		[8][3]	[6][1]	

From Table 10 it is clear that in 2009 the net balance in Cluster 1 is negative and in Cluster 2 is positive. Factors that *weaken the economic role of the EU-27 and the USA* in order of significance and by strength of impact on each country are the following: first, strong negative effects are produced by current account balance as % of GDP and inflation rates. Second, less strong negative effects are produced by unemployment rates and annual % change in employment. All these negative factors outweigh the positive factors that have lower impact: trade balance contribution to GDP, labor productivity % change, debt of the general government as % of GDP and GDP annual growth rates.

Factors that *strengthen Japans' economic role* are grounded in the antipode of those of the EU-27 and the USA: current account balance as % of GDP, inflation rate (deflation), unemployment rates and annual % change in employment. In 2009, Japan's trade balance contribution to GDP weights more on the negative side.

2010

In the forecast year 2010, GDP growth rates of the triad are expected to be positive (average rate 1,97). The expected centroids of the EU-27 and the USA are: below average GDP annual growth rate, below average decrease in employment growth, below average productivity growth rate, above average unemployment and inflation rates, below average debt of general government as % of GDP, negative current account balance as % of GDP and below average trade balance contribution to GDP.

Japan's expected results are dissimilar to those of the EU-27 and the USA according to the expected centroids: above average GDP annual growth rate, above

average decrease in employment growth, above average productivity growth rate, below average unemployment and inflation rates, above average debt of general government as % of GDP, positive current account balance as % of GDP and above average trade balance contribution to GDP.

The ranked performance indices of the two clusters by positive and negative effects are presented in Table 11 below.

Table 11
Ranked performance indices 2010(f)

clusters	Positive effects			Negative effects		
	strong	less strong	weak	strong	less strong	weak
1		[6][2]		[7][5]	[8][4]	[3][1]
2	[7][5][8]	[4][2]	[1]		[6][2]	

From Table 11 it is clear that in 2010 the expected net balance for Cluster 1 is negative and for Cluster 2 is positive. Factors that are expected to *weaken the economic role of the EU-27 and the USA* in order of significance and by strength of impact on each country are the following: first, strong negative effects are expected to be produced by current account balance as % of GDP and by inflation rates. Second, less strong negative effects are expected to come from trade balance contribution to GDP changes and from the unemployment rate. Finally, weak negative effects are expected from productivity growth rates and from GDP annual growth rates. All the above negative factors outweigh the positive factors that have lower impact: debt of the general government as % of GDP and annual % change in employment.

Factors that are expected to *strengthen Japans' economic role* and are grounded in the antipode of those of the EU-27 and the USA are the following: current account balance as % of GDP, inflation rate (deflation) and trade balance contribution to GDP. In 2010, Japan's debt of the general government is expected to weight more on the negative side.

2011

In the forecast year 2011, GDP growth rates of the triad are expected to be positive (average rate 1,9). The expected centroids for the EU-27 and the USA are: above average GDP annual growth rate, above average increase in employment growth, below average productivity growth rate, above average unemployment and inflation rates, below average debt of general government as % of GDP, negative

current account balance as % of GDP and below average trade balance contribution to GDP.

Japan's expected results are dissimilar to those of the EU-27 and the USA according to the expected centroids: below average GDP annual growth rate, decrease in employment growth, above average productivity growth rate, below average unemployment and inflation rates, above average debt of general government as % of GDP, positive current account balance as % of GDP and above average trade balance contribution to GDP.

The ranked performance indices of the two clusters by positive and negative effects are presented in Table 12 below.

Table 12
Ranked performance indices 2011(f)

clusters	Positive effects			Negative effects		
	strong	less strong	weak	strong	less strong	weak
1		[2][6][1]		[7]	[5][4][8]	[3]
2	[7][5]	[4][8]	[3]	[2]	[6][1]	

From Table 12 it is clear that in 2011 the expected net balance for Cluster 1 is negative and for Cluster 2 is positive. Factors that are expected to *weaken the economic role of the EU-27 and the USA* in order of significance and by strength of impact on each country are the following: first, strong negative effects are expected to be produced by the current account balance as % of GDP. Second, less strong negative effects are expected to come from the inflation rates, the rates of unemployment and the trade balance contribution to GDP. Finally, weak negative effects are expected from the productivity growth rates. All the above negative factors outweigh the positive factors that have lower impact: annual % change in employment, debt of the general government as % of GDP and GDP annual growth rate.

Factors that are expected to *strengthen Japans' economic role* and are grounded in the antipode of those of the EU-27 and the USA are as follows: current account balance as % of GDP and the inflation rate (deflation). In 2011, Japan's decrease in the employment growth rate is expected to weight more on the negative side.

The analysis has shown that, over the whole period 2006-2011, each cluster demonstrates both negative and positive results with prevalent features of a rather permanent character. In particular, the prevalent characteristic of Cluster 1 is on the negative side and is the considerable current account deficit of the USA with the rest of the world as % of GDP and the moderate one of the EU-27. On the other hand, the prevalent characteristic of Japan is the higher debt of the general government as % of GDP and deflation combined with considerable current account surplus.

Therefore, as far as the EU-Japan-USA triad as a system is concerned, we can talk about 'triadic imbalances' reflected in an "unbalanced distribution of surpluses and deficits" and finally about an "asymmetric globalization".

Beyond our role-generating performance findings of the above analysis, which in isolation formulate a rather narrow basis of concrete conclusions on the role of the three blocks in the global division of labor, a more general discussion seems to be constructive. A broader object of the research should be the shifting of the balance of power, in the various fields of juxtaposition, in favor of the EU, so that the particular role of the EU in the international economic relations becomes more important. This role is expressed in the form of prescribed political choices and political interventions. The political choices are made by a concrete and cohesive block of power with a concrete structure, a clearly determined political system that, above all, regulates and imposes the economic relations upon the other side or sides. This important element is by now absent in the case of the EU. It does not happen by chance that the USA, very often, imposes its will over the world in a rather 'world ruling way', mainly over the EU (e.g. the case of the genetically modified foods, the agreement on extradition of the European citizens in the USA) and over Japan. It looks as if they do not want the political unification of Europe[12]. Moreover, an aggravating factor to the EU is the internal conflict and the disagreements among the member-states, e.g. between the 'Natoists' and the 'Europeanists' and on issues such as Iraq, the European Constitution, the European Defense, the European Financial Stability Facility (EFSF) and the relations between the EU and the USA.

On the issue of the relations of collaboration and/or conflict, the hierarchy of political choices and their possibility of imposition on the other members of the triad determine the outcome (gains or losses). However, they are not objectively

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[12] Some small-minded believe that the USA limit the role of the EU to the level of a 'spluttering stooge'.

predetermined because of the uncertainty (Suijs 1999) and the fluidity of the relations among the members of the triad. The rationale for the activities of the hierarchy of political choices, for example the choice of a completely free trade, can be evaluated with respect to whether the interests of the consumers[13] are placed at a more inferior level than the interests of enterprises.

In the WTO the European Commission has a common political expression. However, in other international institutional bodies, such as the IMF, OECD and the Group of Eight (G8), there does not yet exist any common political expression of the EU. This means that, to a large extent, there is absence of political unification by which solutions of collaboration (e.g. Driessen 1988, Curiel 1997, Peleg and Sudholter 2003) and the reduction of conflicts are desirable that are dictated by opposite economic and political interests. Nevertheless, empirical analyses of the gains that result from liberalization policies, as for example in the Tokyo Round (e.g. Deardorff and Stern 1981, Whalley 1985) and in the Uruguay Round (Francois et al. 1996) in the context of the WTO, have shown that the welfare effects are positive for all the trade partners, such as the EU, the USA, the NICs etc.

Problems generated by the relations of the triad, like those of free-riding (e.g. Japan) and of the adoption of inflexible attitudes whenever the principle of strict reciprocity is applied in the international relations of the EU, intensify the behavior of conflict in the three fields of juxtaposition. Moreover, they necessitate the seeking of ways that lead the members of the triad to solutions of collaboration. To become successful, this outcome requires that an effective management of the problem be handled by international institutional mechanisms of control as well as loose forms of reciprocity are applied into practice[14].

The principle of *loose forms of reciprocity* can enjoy application in two cases of great importance for the future of the EU: the one is the case of the Common Agricultural Policy and the other is that of the Enlargement[15]. It is well known that the further opening of the markets of the EU-25 (already the EU-27, after Bulgaria and

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[13] According to the traditional theory of international economic integration the consumers obtain gains from the entire removal of trade barriers of any kind.

[14] As an example, liberalizing the financial services market the EU could grant access to this market of American enterprises, in return of concessions, from the USA, regarding the issue of the trade of agricultural products (the known old conflict between the EU and the USA on the Common Agricultural Policy).

[15] On the process of the enlargement, informative material can be drawn from the web page of the Commission: http://europa.eu.int.comm.enlargement/index.htm.

Romania joined the Union in January 1, 2007) to the competition of products and services with the two other members of the triad and the NICs will be followed by structural (restructuring of sectors) as well as regional (relocation of centers of production) effects upon the enlarged EU members. In the long-run this outcome is expected to be advantageous for the citizens of the EU as consumers, and detrimental not only to uncompetitive sectors of production (small to medium-sized enterprises and agricultural holdings) but even to European sectors of high technology. The adaptation of enterprises to the new conditions of competition is imperative. On the question of adaptations, the EU has already created the Single Internal Market, the EMU and the Euro. A version of the concept of adaptation is the enactment and acceptance, by the other members of the triad, of the "transitory periods of adaptation" that are included in a frame of concessions of "provisional protection" provided to the European enterprises by the aforementioned institutional bodies.

The activation of the role of the EU within these international institutional mechanisms is a vital condition for the application into practice of the loose forms of reciprocity that can lead to solutions of collaboration with the potential enactment of a non-hegemonic International Monetary System (IMS). This condition is partly real under the process of economic unification of the EU, i.e. the creation of a single internal market, the EMU and a single currency, provided that no significant and abrupt changes were taking place in the €, $ and yen exchange ratios. Problems with large scale adaptations as well as with instability were not expected in the IMS until the breaking out of the global financial crisis in 2007. The crisis complicated further the political unification of the EU and is now entering a new and more dangerous phase, that of the war of the two currencies, i.e. the € and the $, which is the modern form of trade wars. Collateral damage of this war seems to be the countries of the euro region, the infamous PIGS, as the fear of bankruptcies in the euro-zone maintaining enough uncertainty in the markets would be the main reason to avoid, under debt crisis conditions, the uncontrolled appreciation of the € and remain competitive internationally[16].

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[16] That's why, to some, Germany and France opened, not randomly, the taboo subject of 'test failures' in the euro-zone with a focus on establishing institutional capacity for 'haircuts' of creditors. This has already caused a storm of pressure on bonds of the infamous PIGS (Greece is a potential victim).

9.   Conclusion

The aim of the paper is to provide a particular analytical framework suitable for both an analysis and an evaluation of the weighted impacts of the factors that strengthen or weaken the economic role of the EU in the global economic system. The background of such a framework is the external economic relations of the EU that determine their economic role in the global economy. It was found that the economic role of the EU is more or less similar to that of the USA though undermined by various factors such as the current account deficit with the rest of the world. However, beyond economic similarities, what makes the two blocks dissimilar is that there exist explicit tendencies of sovereignty - mainly ideological and political - of the USA over the rest of the world, meant in a socioeconomic rather than nationalistic sense. On the other hand, the global importance of the EU is generally rising. However, it happens under conditions of uncertainty. Factors of uncertainty are the war of the two currencies as the modern form of trade war, the lack of political unification, the military supremacy of the USA as producing instability, and the non-existence of common European policies, particularly common foreign and security policies.

The analysis of the relations developing within the process of the world economic unification revealed that these are external economic relations of disagreement and of unequal potential. All these elements, together mainly with the political power, determine the role of the EU in the global division of labor.

To the extent that the condition of the European political unification has not met yet, the economic role of the EU in the global economic system still remains uncertain. Overcoming this uncertainty is the big challenge for the EU.

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