

## **Extraversion and Crisis of the Greek Economy: A Study**

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The Greek economy arose as the main 'weak link' in the global economic crisis because of the 'extraverted' model of Greek capitalism. It is this model that leads to systematic transfers of value to the imperialist countries forming the substratum of the current crisis. The crucial parameter of these transfers is the dissimilarity of trade-production structure between the Greek economy and the hard core of its commercial competitors (Eurozone), which is expressed in Greek terms of trade deterioration.

### **INTRODUCTION**

In this study it is claimed that the contemporary Greek economic crisis and bankruptcy are not primarily attributed to the high public debt, but to the fact that this high public debt is emerging in the view of development 'unevenness' within the European Union (EU) and Economic Monetary Union (EMU). In addition to the aforementioned, if the high public debt is the main cause of an economic crisis and bankruptcy, then other economies would have been bankrupt before Greece, e.g. the Japanese, whose gross public debt as a percentage of GDP is higher than 200% in 2011-12 and it is expected to reach 224.3% in 2013 (Bank of Greece, 2013, p. 32, Table III.1) (see also Economakis *et al.*, 2014a). The aim of this analysis is the investigation of the main aspects of this 'unevenness' of development in relation with the Greek economy.

The theoretical frame of this study will be addressed in the two following sections of the paper. The question of value extraction in the sphere of circulation will be examined in the second section of the study. This extraction means the imperialist exploitation of the less advanced

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countries by the more advanced ones and it is the consequence of the 'unevenness' observed in the global economy ('imperialist chain'). In the third section the distinction between an 'extraverted' and an 'autocentric' economy will be defined. In this distinction, the structural causes of low competitiveness (and thus of the 'unevenness' and the imperialistic exploitation) will be considered. In the fourth and the fifth section, the analysis focuses on the Greek economic crisis. In the fourth section of this study a brief explanation of the development of the Greek economic 'bubble', before the recent crisis, is presented. An empirical investigation of the factors that determine the low competitiveness of the Greek economy is attempted in the fifth section. According to the analysis, Greek capitalism follows an 'extraverted' model of development within the frame of EU-EMU. Consequently, the 'unevenness' of the Greek capitalism, as expressed in the 'extraverted' model of its development, comprises the basis of the current Greek economic crisis.

#### VALUE EXTRACTION: THEORETICAL ISSUES

'[T]he unevenness... in world economy' (Lenin, 2010, p. 118) is one of the factors counteracting on the manifestation of the Marxian 'law' of the tendential fall in the profit rate due to the rising organic composition of capital observed in more advanced countries.

According to Marx (1991, pp. 344-45):

*Capital invested in foreign trade can yield a higher rate of profit... because it competes with commodities produced by other countries with less developed production facilities, so that the more advanced country sells its goods above their value, even though still more cheaply than its competitors. In so far as the labour of the more advanced country is valorized here as labour of a higher specific weight, the profit rate rises, since labour that is not paid as qualitatively higher is nevertheless sold as such.*

Under these conditions,

*such a [less advanced] country gives more objectified labour in kind than it receives, even though it still receives the goods in question more cheaply than it could produce them itself.<sup>1</sup> In the same way, a manufacturer who makes use of a new discovery before this has become general sells more cheaply than his competitors and yet still sells above the individual value of his commodity, valorizing the specifically higher productivity of the labour he employs as surplus labour. He thus realizes a surplus profit (ibid, p. 345).*

This is a process of value (surplus value) extraction, i.e. imperialist exploitation in the sphere of circulation, as a consequence of uneven development in the 'imperialist chain'. Through value appropriation

the more advanced (imperialist) countries 'shed' their crisis trends to the less advanced ones. Correspondingly, the less advanced countries experience potential crisis trends that brake out as persistent trade deficits.

Therefore,

*[t]he imperialist centre grows at the expense of the dominated bloc through the appropriation of value inherent in the system of international prices*  
(Carchedi, 2001, p. 114).<sup>3</sup>

Value appropriation by the imperialist countries, *ceteris paribus*, is realized through international *intra-sectoral* competition and *the terms of trade changing*, against the less advanced countries, in international *inter-sectoral* competition. In the following analysis, the value appropriation is examined without the 'binding' assumption of an internationally uniform profit rate and international production prices.<sup>4</sup>

According to Busch (1987, pp. 59-60), the 'law of international equalization of profit rates' has not as its starting point the exports of capitals, but the international competition of unevenly developed capitals in commodity exports. The extent of international capital inflows-outflows and the international movement of labour do not create the conditions for the development of an international inter-sectoral competition; thus the conditions of an international uniform profit rate and of international production prices are not met.<sup>5</sup> However, the international trade of unevenly developed capitals creates a 'slight tendency' of equation of international differences in national profit rates. Because of this tendency, the lower national average profit rates of the more advanced countries compared to the less advanced ones<sup>6</sup> increase, and respectively the national average profit rates of the less advanced countries are negatively affected.

### **International Intra-sectoral Competition<sup>7</sup>**

The various productive sectors are faced as direct competitors per like product at the international level. Thus, the international intra-sectoral competition of national capitals resembles to the intra-sectoral competition at the national level. The international conditions of production and not the national ones determine the value of commodities of a sphere (or sector) of production in the world market. Consequently, as a rule, the international sectoral value of a commodity is different from its national sectoral value. At the national level the sectoral value or the 'market value'<sup>8</sup> 'is to be viewed... as the average value of the commodities produced in a particular sphere' (Marx, 1991, p. 279).<sup>9</sup> Correspondingly, at the international level the international

market value is to be viewed as the average value of the commodities produced internationally in a particular sphere. At the national sectoral level 'whatever the market value may be, demand and supply must balance out in order for this market value to emerge' (*ibid*, p. 293). This market value constitutes the 'market price' (*ibid*, pp. 291-292), while, this balance is expressed within the frame of the intra-sectoral competition: 'What competition brings about, first of all in one sphere, is the establishment of a uniform market value and market price out of the individual values of commodities' (*ibid*, p. 281). Correspondingly, at the international sectoral level, what international intra-sectoral competition brings about is the establishment of a uniform international market value and market price out of the national values of commodities.<sup>10</sup>

At the national level 'market price means that the same price is paid for all commodities of the same kind, even if these are produced under very different individual conditions and may therefore have very different cost prices'. This 'involves a surplus profit for those producing under the best conditions in any particular sphere of production' (*ibid*, pp. 300-301).

Assuming that at the international level there are no measures of trade protectionism (such as tariffs on imported goods and/or import quotas or export subsidies) and no distinct national currencies (i.e. a customs and monetary union exists) then the most productive national sectoral capitals of higher organic composition selling in the uniform international market price would be able to realize a surplus profit. Considering total national capitals (of a country), the (relatively) more advanced country could then realize a surplus profit in the world market. Thus, the international intra-sectoral competition will result in the increase of the profit rates of the more advanced countries and respectively in the reduction of the profit rates of the less advanced countries. Therefore, a 'slight tendency' of equation of international differences in profit rates emerges, in the frame of intra-sectoral competition.

In this process, the trend of destruction of less productive national capitals will result to capital 'centralization' (Marx, 1990, p. 777). This will eventually lead to the international dominance of the most productive capitals and to the trade deficits in less advanced countries.

Obviously, measures of protectionism (tariffs etc or national currency devaluation) could limit this process of destruction – provided that import prices raise and export prices diminish.

It should be emphasized however that as this capital destruction occurs, a trend towards dissimilar production structures between more and less advanced countries emerges to the same extent. For the less advanced countries, these structural dissimilarities will be expressed as deteriorating terms of trade (see below).

### **Terms of Trade: International Inter-sectoral Competition**

In his analysis of the trend toward the equalization of profit rates, Marx examines the 'constant movement of [... supply and demand] contradiction' (Marx, 1991, p. 291), considering the demand as stable and focusing on supply variations ('constant migration' of capital) (Marx, 1991, p. 297). However, demand variations have a particular importance in the formation of the terms of trade.

The more advanced countries compared to the less advanced ones fundamentally differ in the structure of production-trade. The more advanced countries mostly produce and export commodities of higher organic composition of capital, higher technological level<sup>11</sup> and higher income elasticity of demand, compared to those produced by the less advanced ones (Krugman, 1989; Economakis *et al.*, 2011; Economakis *et al.*, 2014b). Consequently, the more advanced countries compared to the less advanced ones differ in 'relative income elasticities' of demand (i.e., income elasticities of demand for an economy's exports against those for its imports) (Krugman, 1989). This is expressed as 'disequilibrium between the structure of supply and the composition of demand' (Furtado, 1964, p. 170) for the less advanced countries.

The different 'relative income elasticities' of demand between more and less advanced countries (Krugman, 1989) suggest that as the income increases, the demand for products from the more advanced countries is higher than that for products from the less advanced ones (as a consequence of the so-called 'Engel's law'). This results, *ceteris paribus*, in faster growing prices of products from the more advanced countries, i.e. the terms of trade change against the less advanced countries. Simultaneously, the price elasticity of demand for the imports of the less advanced countries is low. As a result, the economic growth is accompanied by increasing import payments, i.e. trade deficits for the less advanced countries (see Singer, 1950; Love, 1980; Ocampo, 1986; Hunt, 1989, pp.132-133; Economakis *et al.*, 2014b).

In value terms, the faster increase in the prices of products of the more advanced countries compared to those of the less advanced expresses a trend of rising of *international market prices* of the first over their *international sectoral values* and correspondingly a trend of

reduction of *international market prices* of the latter under their *international sectoral values* (see aforementioned analysis). It is a *trend* of inter-sectoral *non-equivalent exchange*, in which the less advanced country 'gives more objectified labour in kind than it receives', per unit of invested capital. Thus, value is transferred to the more advanced countries (and capitals of higher organic composition) against the less advanced ones in the sphere of circulation. This extraction is reflected as a trade surplus for the former and conversely as a trade deficit for the latter.

Because of international inter-sectoral non-equivalent exchange trend, a 'slight tendency' of equation of international differences in profit rates is further developed: inter-sectoral manifestation of the corresponding intra-sectoral tendency.

In the event of differentiation in the structure of production-trade between the more and less advanced countries any trade protectionist measures or national currency devaluation does not offer any protection for the less advanced countries. On the contrary, the latter will deteriorate the terms of trade of the less advanced countries.<sup>12</sup>

### **Income Elasticity of Demand, Terms of Trade and Current Account Balance**

Assuming that the real terms of trade remain unchanged and that there is no foreign borrowing, and given the fact that  $X = M$  (for simplification current account equilibrium), it follows that  $X/Y = M/Y$  and  $\Delta Y/\Delta X = \Delta Y/\Delta M$ , and therefore it is implicated that:

$$\frac{\Delta Y}{\Delta X} * \frac{X}{Y} = \frac{\Delta Y}{\Delta M} * \frac{M}{Y} \Rightarrow \frac{\Delta Y}{Y} = \frac{\frac{\Delta X}{X}}{\frac{\Delta Y}{Y}} \Rightarrow \frac{\Delta Y}{Y} = \frac{\Delta X/X}{e} \quad (1)$$

where  $Y$ : income and  $\Delta Y/Y$ : the rate of growth of income;  $X$ : exports and  $\Delta X/X$ : the rate of growth of export volume;  $M$ : imports;  $e$ : the income elasticity of demand for imports.

Equation (1) is the so-called '*simple growth rule*'. According to this, for unchanged the real terms of trade, in the long run economic growth should approximate to the ratio of the rate of growth of export volume to the income elasticity of demand for imports (equivalent  $y = x/e$ ), in order to be preserved the equilibrium of the current account balance (Thirlwall and Hussain, 1982). Equation (1) is confirmed empirically

in several developed countries over the post-war period. In these countries the actual growth has approximated to the rate of growth of export volume divided by the income elasticity of demand for imports (Thirlwall, 1979; Thirlwall and Hussain, 1982). From equation (1) it is inferred that 'the level and growth of income must of necessity be constrained in the long run to preserve a balance between exports and imports' (Thirlwall and Hussain, 1982, p. 499).

There are only two factors which may cause a country's growth rate to deviate from this rate: first, changes in the real terms of trade, and secondly capital flows allowing there to be a difference between domestic expenditure and income and a current account disequilibrium (*ibid*, p. 500).

In money terms the equilibrium of the current account balance is expressed as

$$P_d * X = P_f * E * M \quad (2)$$

where,  $P_d$ : the domestic price of output;  $P_f$ : the foreign price of imports;  $E$ : the exchange rate measured as the domestic price of foreign currency.

Consequently, in real terms it holds that:

$$X = \frac{P_f * E}{P_d} * M \quad (3)$$

where  $\frac{P_d}{P_f * E}$ : the relative prices measured in a common currency ('the real terms of trade') (*ibid*, p. 500).

Substituting equation (3) into (1) it holds that:

$$\frac{\Delta Y}{Y} = \frac{\frac{\Delta X}{X} * \frac{P_f * E * M}{P_d}}{\frac{P_d}{e}} = \frac{\Delta X * P_d}{e * P_f * E * M} \quad (4)$$

Considering equation (4) it follows that, *ceteris paribus*, the deterioration in (real) terms of trade due to a change in relative prices, either due to  $P_f$  increase or  $P_d$  reduction, requires reduced economic growth to maintain current account balance in equilibrium. Any deviation of an economy's growth from the equation (1) or (4) must be balanced by capital inflows. Therefore, under conditions of value extraction through deteriorating terms of trade, external debt will be created, if economic growth deviates from the 'simple growth rule'.

Stated otherwise, a national economy will be set in lower economic growth rates under deteriorating terms of trade, in order to achieve current account equilibrium. (See also Alleyn and Francis, 2008; Bagnai, 2010; Christopoulos and Tsionas, 2003; Thirlwall, 2011).

### **'EXTRAVERSION': THEORETICAL DETERMINATIONS<sup>13</sup>**

The competitiveness of a national economy on international level 'refers to the ability of a country to realise central economic policy goals, especially growth in income and employment, without running into balance-of-payments difficulties' (Fagerberg, 1988: 355).

It can be inferred that the international competitiveness of a national economy is not based on 'price' or 'cost' competitiveness but on a 'structural' one, which is determined by 'structural factors' – such as technological opportunities, technical infrastructure and production capacities, which comprise the productive structure and the related 'externalities' (Ilzkovitz *et al.*, 2008, p. 2; Nurbel, 2007, p. 65).

According to '*Kaldor's paradox*' there is 'a lack of empirical relationship between the growth in unit labor costs and output growth. ... Kaldor found, for the postwar period, that those countries that had experienced the greatest decline in their price competitiveness (i.e., highest increase in unit labor costs) also had the greatest increase in their market share' (Felipe and Kumar, 2011, pp. 3-4).

The foregoing analysis reveals that the relative income elasticities of demand are systematically connected with the growth rates of a national economy and trade deficits (see also Thirlwall, 1979; Krugman, 1989). The relative income elasticities of demand represent those 'structural factors' that determine the 'structural' competitiveness (and thus the international competitiveness), explaining the '*Kaldor's paradox*' (Fagerberg, 1996) and expressing the terms of trade of a national economy.

According to Krugman (1989), the high income elasticity of demand that characterizes the exports of more advanced countries reflects the greater diversification of the domestic production – toward the production of the countries with low income elasticity of demand for exports.

Greater diversification of the productive structure of a national economy means a more complete, articulated and interdependent economic structure, i.e. greater domestic sectoral productive linkages. The latter strengthen 'the positive impact of economic growth on overall productivity' (Peres, 2006, p. 68). Thus, greater domestic sectoral productive linkages are related to the spillover effects, 'in terms of



technology transfer and absorption' (Rios-Morales and O'Donovan, 2006, pp. 55-56).

Accordingly, the higher the income elasticity of export demand the more diversified is the production structure of a national economy, greater are the domestic sectoral productive linkages and consequently, higher is its international competitiveness (see Cimoli *et al.*, 2006, p. 92; European Commission, 2009, p.75).

The industries which depend primarily on their inter-industry transactions are in manufacturing. The development of manufacturing industry would generate productive linkages, spillover effects, capital accumulation and technological externalities (see Hirschman, 1958, pp.109-110; Cimoli *et al.*, 2006, p. 88; Pilat *et al.*, 2006, p. 26). On the contrary, if a national economy is highly dependent on primary economic activities and services, expresses a lower interconnection level (Fotopoulos, 1985, p. 178). Specifically, services are more independent from other sectors, in comparison to the manufacturing sector (Pilat and Wölfl, 2005, pp. 3 and 36; see also Karagiannis and Tzouvelekas, 2010).

Therefore, there is a *structural interrelation* between the degree of diversification of the productive structure of a national economy, the strength of its domestic sectoral productive linkages, the level of its industrial and technological development (and the resultant externalities) and its international trade profile – as it is depicted by the relative income elasticities of demand which express the terms of trade.

According to Amin (1976, p. 237), an economy is characterized as 'extraverted' if it 'is made up of atoms that are relatively juxtaposed and not integrated, the density of the flow of external exchanges of these atoms being much greater, and that of the flow of internal exchanges very much less'. In contrast an advanced 'autocentric' economy 'is an integrated whole, a feature of which is a very dense flow of internal exchanges, the flow of external exchanges of the atoms that make up this whole being, by and large, marginal as compared with that of internal exchanges'.

On the basis of the aforementioned structural interrelation and taking into account Amin's argumentation, it could be supported that compared with an 'autocentric' economy an 'extraverted' economy is characterized by: relatively weak domestic sectoral productive linkages, and simultaneously by: strong specialisation; relatively low level of industrial and technological development; 'unfavourable' relative income elasticities of demand, and accordingly relatively low

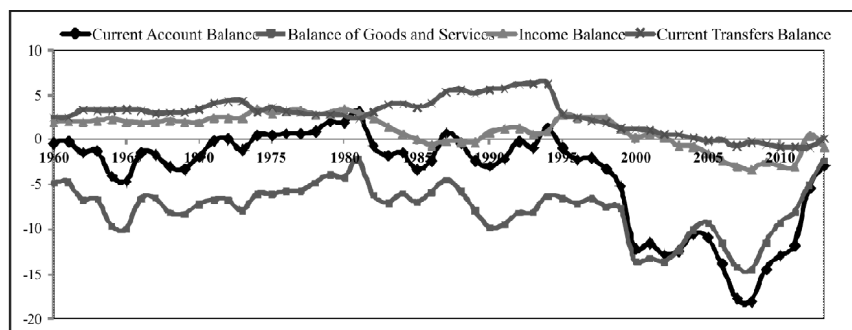
international competitiveness, which is expressed from unfavourable terms of trade and trade deficits.

From the above it is inferred that the international competitiveness of a national economy is mainly dependent on the 'structural characteristics' that compose the distinction between 'extraverted' (less advanced) and 'autocentric' (more advanced) economy. In accordance with 'Kaldor's paradox' 'extraversion' explains that the low international competitiveness of a national economy is not attributed to low 'cost' but to low 'structural' competitiveness.

Therefore, a relatively 'extraverted' national economy is the field of realization of surplus profit for the more advanced national economies in the context of international intra-sectoral competition – especially under conditions of absence of any form of protectionism. At the same time, a relatively 'extraverted' economy is a subject of value extraction through terms of trade changing – regardless of whether or not any form of protectionism exists. In conditions of absence of protectionism, the reproduction of 'extraversion' will enhance the increase of the relative weight of the second process of value extraction – due to the destruction of national capitals producing like products to those of more advanced through international intra-sectoral competition.

### COMPETITIVENESS AND CRISIS OF THE GREEK ECONOMY: INTRODUCTORY REMARKS

The current account balance of the Greek economy has been deteriorating from the mid-90s (see Figure 1), when on the one hand the single EU market was introduced (in 1993) and on the other hand



**Figure 1:** Current account balance and sub-balances of the Greek economy as a percentage of GDP (1960-2013)

\* Estimates for 2012 and projections for 2013

Source: AMECO

the drachma was revaluated in real terms in order to join the European single currency – i.e. Greece even before entering the Eurozone, lost its economic ability to use exchange rate policy as a means of addressing the competition of foreign goods (Economakis *et al.*, 2014a; Economakis *et al.*, 2014b).

The low international competitiveness of the Greek economy, as recorded by the balance of goods and services constitutes the determinant factor of the serious current account deficit.<sup>14</sup> As seen in Figure 1, the balance of goods and services is constantly negative for the entire period that spans from 1960 to 2013, indicating the long lasting competitiveness problem of the Greek economy.

The drastic reduction of the trade deficit because of the depression and the consequent reduction of import payments led a reduction of a current account deficit observed since 2008 (Economakis *et al.*, 2014a).<sup>15</sup>

### **Economic Growth with Deficits and Crisis**

The Greek economy displayed a high growth rate, as expressed by GDP's average growth rate, after Greece entered the Eurozone and before the global economic crisis. In constant prices (2005), net domestic product increased by 31.41% between 2000 and 2007 (OECD. Stat Extracts, own calculations). However, this period of 'over-growth' was also a period of high current account deficit (see Figure 1), which created needs for augmenting external borrowing (Economakis *et al.*, 2014a).

More precisely, after entering the Eurozone the Greek economy based its development on the growth of productive sectors that were not exposed to the international competition (non-tradable goods and services). Furthermore, this was even more pronounced compared to the EU-27 as a whole. Therefore, the type of economic growth of the Greek economy during 2000s neither presupposed nor led to the improvement of its international competitive position (Economakis *et al.*, 2014a; Economakis *et al.*, 2014b). That is why we term this development as a 'bubble'.

The rising incomes in the sectors of non-tradable commodities augmented the demand of tradable from abroad reproducing high deficits in the balance of goods and services (Economakis *et al.*, 2014a; Economakis *et al.*, 2014b). The significant reduction in the cost of domestic borrowing in the 2000s formed the basis of reproduction of this type of development (Economakis *et al.*, 2014a) which was based on 'over-consumerism' manifested primarily as 'high propensity to consume imported goods' (Bank of Greece, 2011, p. 8). This 'over-

consumerism' of imported goods is related to the 'intensely consumerist type of the Greek economy' (Fotopoulos, 2010, 51), and hence to the low level of domestic savings (see also Economakis *et al.*, 2014a).

The coverage of current account deficit should be financed with equal net capital inflows. The combined current account deficit and capital account deficit correspond to the external financing requirements of the economy. According to the Bank of Greece (2012, p. 91), in the case of Greece before the current crisis usually only a small part of current account deficit was financed by net unilateral capital transfers, which mainly included EU transfers. Thus, the bulk of current account deficit was financed by financial flows that were recorded in the financial account balance. The latter, together with the capital transfers balance, should always be equal to current account deficit. In 2000-2008, the financing of current account deficit relied on international capital market funding, mainly through the issuance of bonds and Treasury bills (Bank of Greece, 2012, p. 96) that eventually created debt. So, the financing of current account deficit did not rely on FDI that would create development instead of debt (Bank of Greece, 2012, p. 93; Lapavitsas *et al.*, 2010, pp. 9, 11-13; Economakis *et al.*, 2014a).

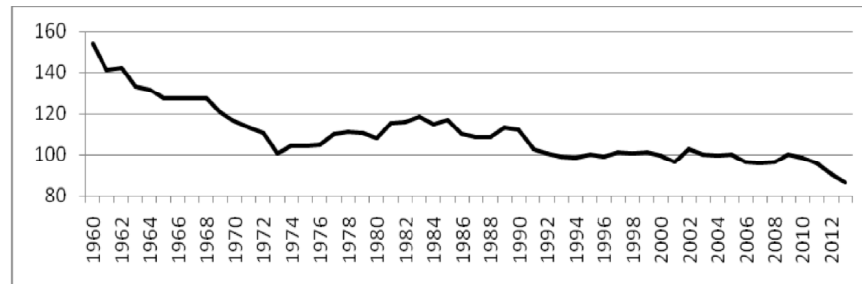
Economic growth with high current account deficits reached its limit in 2007 when the onset of global economic crisis blocked this type of development. In the conjuncture of global economic crisis, as the financial sphere entered a process of reassessment of credit risks, the transfer of 'savings' from the European 'centre' to the European 'periphery' stopped (see Milios, 2011) and the Greek economy emerged as the main 'weak link' of the EU-EMU. The consequent reduction of domestic and foreign demand marked the beginning of the deep depression that continues until today (see Economakis *et al.*, 2014a).

#### **EMPIRICAL INVESTIGATION: THE 'EXTRAVERSION' OF THE GREEK ECONOMY**

The main argument, as well as the research question, of our empirical investigation it is stated as follows: The Greek economic crisis, in the circumstances of the global economic crisis, is an expression of the 'unevenness' into the EU-EMU frame. Under these conditions, due to the 'extraverted' model of the Greek capitalism which leads to systematic transfers of value to the imperialist countries, the Greek economy emerged as the main 'weak link' in the EU-EMU 'imperialist chain'. Stated otherwise, the 'unevenness' of the Greek capitalism is expressed in its 'extraverted' model of development. Some aspects of this 'extraversion' will be examined in the following analysis.

### Labour Costs and Competitiveness

In the official neoliberal argumentation, the low economic competitiveness of the Greek economy is explained by the rigid labour market which leads to wage increases and losses in 'price competitiveness' (Bank of Greece, 2010, p. 28).



**Figure 2:** Real unit labour costs of the Greek economy (1960-2013), 2005=100

Source: AMECO

Figure 2 depicts the decrease of real unit labour costs of the Greek economy during the period 1960-2013, according to AMECO's estimates. This decline was only temporally intercepted, mainly during the first post-junta period (1974-1981) and during the first period of the social democratic (PASOK) government (1981-1985). The Memoranda's (Economic Adjustment Programs) austerity measures of 'internal devaluation' accelerate the downward trend of real unit labour costs. Moreover, considering 'Kaldor's paradox', while 'Greece belongs to a group of countries with low labour costs per unit of output [...] the more competitive countries (...) are those with higher labour costs and vice versa' (Ioakeimoglou, 2011, pp. 50-53). Therefore, the neoliberal argument which links the low competitiveness of the Greek economy with employees' increased requirements is rejected by the evidence. The low competitiveness of Greek economy is attributed to the low 'structural' competitiveness (Economakis *et al.*, 2014b).

### Trade Structure: Technological Level, Specialisation and Capital Composition

As shown above, the neoliberal argument attributing the low competitiveness of the Greek economy to the employees' increased requirements contradicts with international post-war reality ('Kaldor's paradox'). Simultaneously we argued that, the 'structural' competitiveness is not determined by the labour costs, but by the

'structural characteristic' defining the distinction between an 'extraverted' and an 'autocentric' economy.

The neoliberal argumentation, however, recognizes that '[t]he widening of the trade deficit... reflects... *the inability of domestic supply to meet domestic and foreign demand in terms of both composition and growth*' (Bank of Greece, 2009, p. 121). In fact, this is an expression of the differentiation in the structure of production-trade, in Greece compared to its international trade competitors (mainly EU countries), stated otherwise as 'disequilibrium between the structure of supply and the composition of demand' (see above).

**Table 1**  
**Technological Level of Imports and Exports, Eurozone Countries,**  
**Selected Years**

	Rate of HT exports to total exports (%)				Rate of HT and MHT exports to total exports (%)				Rate of HT (A) - (B) and MHT imports to total imports (%)	
	1995	2000	2005	2011	1995	2000	2005	2011	2011	2011
Austria	9.46	14.30	13.31	13.18	46.97	53.08	55.12	54.22	53.11	1.11
Belgium	9.26	13.43	18.91	17.85	52.38	55.80	61.01	57.75	58.83	-1.09
Estonia	10.95	31.20	21.02	15.45	32.55	48.58	44.31	41.91	45.99	-4.08
Finland	15.00	27.33	25.43	11.12	40.23	51.08	53.53	43.52	55.34	-11.82
France	18.98	25.09	23.08	25.82	59.81	65.06	64.47	62.73	56.90	5.84
Germany	15.06	19.99	19.82	18.56	68.31	71.33	70.85	69.02	58.32	10.70
Greece	4.30	9.58	13.09	8.72	16.54	23.78	29.99	21.98	44.23	-22.24
Ireland	40.67	49.95	52.22	53.56	62.09	81.09	84.19	82.56	58.09	24.47
Italy	9.78	11.78	10.68	10.39	48.40	50.41	50.18	49.50	53.14	-3.65
Luxemburg	n.a.	13.84	10.18	9.26	n.a.	35.59	35.52	32.05	46.65	-14.60
Netherlands	21.31	32.60	31.51	22.97	52.15	59.94	60.85	53.88	55.04	-1.16
Portugal	8.11	10.30	11.22	7.80	33.95	41.86	40.59	38.88	51.56	-12.68
Slovakia	n.a.	5.19	11.56	18.75	n.a.	49.92	53.19	61.77	61.27	0.50
Slovenia	9.28	10.45	10.96	13.73	45.79	50.85	56.56	58.85	47.53	11.32
Spain	8.63	10.14	11.24	11.15*	56.08	57.05	56.25	53.55*	55.57*	-2.03*
Cyprus	9.99	8.54	41.92	37.01	24.13	26.96	60.71	52.62	35.14	17.48
Malta	64.78	68.73	55.25	34.45	72.31	75.45	71.33	41.28	36.12	5.16

Source: OECD. Stat Extracts, own calculations

Note: HT: High Technology, MHT: Medium-High Technology. n.a.: not available

In Table 1 external trade data of goods of Greece and other Eurozone countries are depicted for comparisons. Among Eurozone countries, Greece occupies one of the lowest positions, in the percentage share of HT and MHT exports to total exports for all selected years. For instance in 2011 Greece was at the penultimate position, with Portugal being at the last, in the percentage share of HT exports to total exports. In addition, among Eurozone countries Greece occupied the last position in the percentage share of HT and MHT exports to total exports. This is a clear evidence of the differentiation in the structure of production-trade, between Greece and the other Eurozone countries.

For the year 2011 this differentiation is also apparent in Table 1, seeing the difference between the percentage share of HT and MHT exports to total exports (is displayed by A) and the percentage share of HT and MHT imports to total imports (is displayed by B). Greece displays the maximum (negative) difference among the Eurozone countries, which underlines the significant mismatch between the Greek structure of production-export and import's demand, for HT and MHT products.

Fotopoulos (2010, p. 59) notes that the machinery and means of transport that always constituted the biggest part of the exports of advanced capitalist countries constitute only a small portion of Greek exports. In 2008, the share of manufacturing exports in the total exports of Greece was 54%, while that of manufacturing exports in the total exports of the Euro Area 16 was 77% (The World Bank, 2010, pp. 238-240, Table 4.4).

In 2011, as shown in Table 2, the main export sectors of goods of the Greek economy where: 'Coke, Refined Petroleum Products and Nuclear Fuel' (Medium-High Technology), 'Food Products, Beverages and Tobacco' (Low Technology), 'Basic Metals' (Medium-Low Technology), 'Chemical and Chemical Products' (Medium-High Technology), 'Agriculture, Hunting, Forestry and Fishing' (Low Technology) and 'Textiles, Textile Products, Leather and Footwear' (Low Technology).<sup>16</sup> Therefore, Greek exports are mainly dominated by sectors of low and medium technological level (see also Bank of Greece, 2013, p. 129).<sup>17</sup>

Given the above and on the basis of our theoretical assumptions, we come to the conclusion that the Greek economy, in comparison with other Eurozone economies, mainly produces and exports products of lower organic composition of capital and of lower income elasticity of demand (see also Bank of Greece, 2003, p. 32; Athanoglou, 2010, p. 175; Gibson, 2010, p. 344). In other words, the differentiation in the structure of production-trade, between Greece and other Eurozone

**Table 2**  
**Export's Structure of Greece (%), 2011**

1	Agriculture, Hunting, Forestry and Fishing	7.99
2	Mining and Quarrying	0.98
3	Food Products, Beverages and Tobacco	11.66
4	Textiles, Textile Products, Leather and Footwear	5.87
5	Wood and products of Wood and Cork	1.45
6	Coke, Refined Petroleum Products and Nuclear Fuel	29.61
7	Chemical and Chemical Products	9.11
8	Rubber and Plastics Products	2.47
9	Other Non-Metallic Mineral Products	1.34
10	Basic Metals	12.07
11	Fabricated Metal Products	1.87
12	Machinery and Equipment not elsewhere classified	2.99
13	Office, Accounting and Computing Machinery	0.22
14	Electrical Machinery and Apparatus, not elsewhere classified	2.25
15	Radio, Television and Communication Equipment	1.73
16	Medical, Precision and Optical Instruments	0.75
17	Motor Vehicles, Trailers and Semi-Trailers	0.96
18	Other Transport Equipment	1.32
19	Manufacturing not elsewhere classified; Recycling	0.97
20	Electricity, Gas and Water Supply	0.6
21	Waste	0.92
22	Confidential and Unallocated	2.88

Source: OECD. Stat Extracts

countries, is documented as an important imbalance between the structure of supply (products of low: technology, composition of capital and income elasticity of demand) and the composition of demand (products of high: technology, composition of capital and income elasticity of demand). Therefore, Greece is facing unfavourable terms of trade within the hard core of the EU (i.e. the EMU). The fact that the economic growth of the period 2000-2010 resulted mainly from the production of non-tradable goods and services – i.e. from sectors not exposed to the international competition – is another expression of this structural situation, which is condensed as dominance in the domestic market of imported goods.

At the same time, the 'unfavourable' income elasticities of demand for imports and exports are accompanied by exports that are not sufficiently differentiated (Athanasoglou *et al.*, 2010, p. 179). This reflects the strong specialisation profile of the Greek economy, compared with the other EU national economies. Greece is a small country and it is among the top five countries of EU exhibiting 'a strong specialisation profile' – the others being Malta, Bulgaria, Romania and



Latvia (European Commission, 2009, p. 61; see also Economakis *et al.*, 2014b).

**Table 3**  
**Net Capital Stock Per Employee in EU Countries, Whole Economy**  
**(average of 1960-2013)**

<i>Belgium</i>	<i>France</i>	<i>Germany</i>	<i>Greece</i>	<i>Ireland</i>	<i>Italy</i>	<i>Portugal<sup>f</sup></i>	<i>Spain</i>
0.1379	0.1434	0.1406	0.1031	0.1532	0.1327	0.0636	0.1147

Source: AMECO, own calculations\* 1977-2013

An indication of the claim that the Greek economy mainly produces products of lower (technical) composition of capital is given in Table 3. The technical composition of capital of the Greek economy (expressed as the average ratio of net capital stock per employee for the total economy for about the last five decades) is lower than that of the largest industrial countries of the Eurozone and EU (Germany, France, Italy), as well as of countries of similar or smaller size (Belgium, Ireland) and also, comparing with Southern European countries, lower than that of Spain and higher than that of Portugal.

#### **Income Elasticities of Demand for Imports**

In Table 4 are recorded the income elasticities of demand for imports of the Greek economy for the period 1990-2011, arranged by technological level.

Income elasticity of demand is expressed by the slope of the line (i.e. the  $\beta$ ) of the equation (5):

$$\ln M = \ln a + \beta * \ln Y \quad (5)$$

where M: import's demand and Y: net national income.

All data are expressed in million dollars and 2005 constant prices (Source: OECD. Stat Extracts).

**Table 4**  
**Income Elasticities of Demand for Imports by Technological**  
**Level, Total Economy, Greece, 1990-2011**

Total Imports	1.442
Imports from High Technological Sectors	2.409
Imports from ICT* Sectors	1.885
Imports from Medium-High Technological Sectors	0.851
Imports from Medium-Low Technological Sectors	1.756
Imports from Low Technological Sectors	0.821

Source: OECD. Stat Extracts, own calculations

\* Information and Communication Technology (OECD, 2005)

Table 4 indicates that income elasticities of demand for imports are: (i) positives for all technological levels and, (ii) positively related with the technological level of the imported goods (with the exception of Medium-High technological level) goods).<sup>18</sup> Following the typical microeconomic distinction, it is obvious that all imported goods are 'normal', i.e. goods for which demand increases when income increases and vice versa (see also Milios *et al.*, 2000, pp. 84-85 and 98).

Simultaneously, the high income elasticity of demand for imported (industrial in general) goods is combined with low price elasticity of demand for these goods. As a result, the high growth rates of the Greek economy were accompanied by increased imports payments (see Bank of Greece, 2000, p. 209). It is a process of extraction of value in the sphere of circulation due to the terms of trade deterioration.

#### 'Simple Growth Rule'

With the current account balance deteriorating since the mid-90s until 2008, it is expected that the growth of the Greek economy deviates from the 'simple growth rule'. Thus, the question under investigation is how much it deviates. To this end, we express equation (1), as an econometric equation:

$$\frac{dY}{Y} = \beta_0 + \beta_1 \frac{dX}{X} + \beta_2 e \quad (6)$$

According to equation (6) net (national) income's growth rate ( $dY/Y$ ) depends on the growth rate of exports ( $dX/X$ ) and the income elasticity of demand for imports ( $e$ ). If the Greek economy's growth rate follows the 'simple growth rule' the independent variables of equation (6) should explain satisfactorily the dependent one.

At first we estimated the value of  $e$  (the  $\beta$  of equation 5) for periods of  $k$  years. Statistical tests showed that all results are significant when  $k=13$  years. The values of  $e$  for  $k=13$ , are presented in Table 5.

**Table 5**  
**Income Elasticities of Demand for Imports (Greece)**

1990-2002	1991-2003	1992-2004	1993-2005	1994-2006	1995-2007	1996-2008	1997-2009	1998-2010	1999-2011
0.013	0.434	0.845	1.191	1.498	1.716	2.120	2.313	2.462	2.718

As it can be seen from Table 5, there is a continuous increase in income elasticities of demand for imports of Greek economy inhibited only slightly the last period. The increased income elasticities of

demand for imports indicate that the Greek economy is augmenting exposed in value transfers abroad during the last two decades, with a significant deterioration after 1993, when the income elasticities of demand for imports increased sharply and overcame the unit. As noted above, Greek current account balance deteriorates seriously since the mid-90s, after the establishment of the single internal market (in 1993) and drachma's revaluation in real terms.

To continue, we estimate the variables  $\frac{dY}{Y}$  and  $\frac{dX}{X}$  for the same periods. Data on Y and X are available in million dollars (constant 2005 prices) for the period 1990-2011 (Source: OECD. Stat Extracts).

**Table 6**  
**Econometric Results**

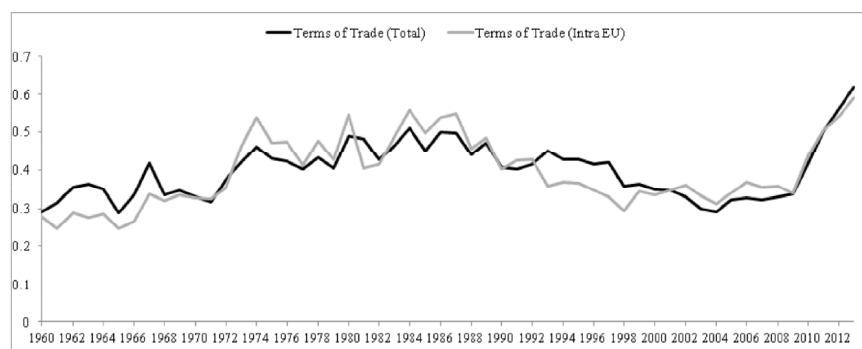
<i>Coefficients</i>	
$\beta_0$	-0.81182
$\beta_1$	0.08463
$\beta_2$	-0.55451
Multiple R-squared: 0.3223	

The econometric results, depicted in Table 6, are statistically significant, according to the relevant tests, and the signs of coefficients  $\beta_1$  and  $\beta_2$  are consistent with equation 6 (export growth is positively related and income elasticity of demand for imports is negatively related with income growth). However, as expected, Greek economy's growth doesn't follow the 'simple growth rule' (as the very low R-squared indicates). Therefore, based on the theoretical framework developed above, we confirm that the growth of the Greek economy was mainly based on external borrowing, i.e. on the creation of external debt.

### **Terms of Trade and International Trade Relations**

On the basis of the problem of external debt-borrowing stands the significant rise in income elasticities of demand for imports, particularly from 1993 and onwards (income elasticities of demand for imports greater than one) (see equation 1). This rise suggests that the increase in income led to a greater percentage of increase in imports. Given that, Greek exports are characterized by low income elasticity of demand, the increasing income elasticities of demand for imports suggest deteriorating 'unfavourable' relative income elasticities of demand, thus leading to deteriorating terms of trade. The terms of

trade deterioration, expresses the low 'structural' competitiveness of the Greek economy, and, *ceteris paribus*, exacerbates its deviation from the 'simple growth rule' (see equation 4).

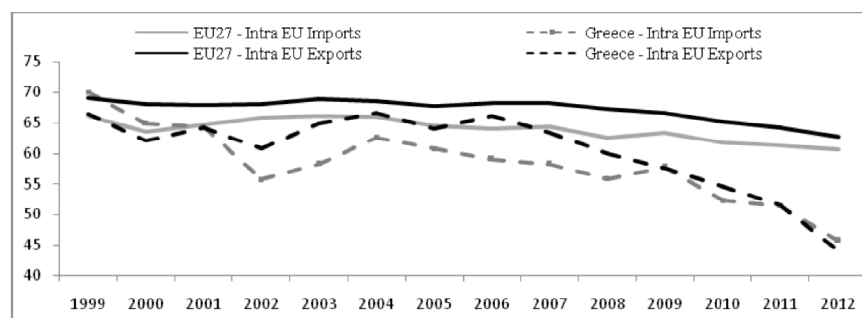


**Figure 3:** Terms of trade of the Greek economy, total and intra EU trade, 1960-2013

Source: AMECO

\* 1960-1998: Former ÄU15

Figure 3 shows the terms of trade of the Greek economy both globally and intra EU as a ratio of exports of goods (in fob prices) to imports of goods (in cif prices). The two ratios follow similar trends, expressing the trade binding of Greece in the context of intra EU trade of goods, at least until 2009 (see also Figure 4).



**Figure 4:** Intra EU trade as a percentage (%) of total trade, EU27 and Greece, 1999-2012

Source: OECD. Stat Extracts

The terms of trade of the Greek economy had been improving, with some fluctuations, until the mid-1980s. Since then, and especially

during the 90s, they exhibit a continuous deterioration, reaching 2008. Since 2008, the reduction of import expenditures (due to the depression) has led to their improvement.

Therefore, the admission into the European Economic Community (EEC) in 1981 as well as the establishment of the single market in 1993 and the real revaluation of drachma during the 90's brought a negative impact on the terms of trade – the former, however, with some time lag.

It must be noted that, although the above developments aggravate the low 'structural' competitiveness of the Greek economy – as it is reflected in the deteriorating terms of trade – the low 'structural' competitiveness of the Greek economy preexists to these developments. This is evident from the steadily negative balance of goods and services for the period 1960-2013 (see Figure 1). On the other hand, the low 'structural' competitiveness of the Greek economy does not seem to be related with its admission in the EMU, given the fact that during 2000-2008 the terms of trade (total and intra EU) remained rather stable (see also Mavroudeas and Paitaridis, 2014). In any case, as the 'simple growth rule' indicates, under conditions of deteriorating terms of trade, the Greek economy should have been tied down at low growth rates, in order to avoid current account deficits and external debt.

Figure 4 shows the intra EU27 trade and its importance for EU27 and Greece. We should note that until the mid-2000s Greek intra EU27 imports and exports follow the average trend of the EU27 countries (although at a lower percentage than that of the EU27 average). After the mid-2000s there is a trend of partial de-Europeanization of the Greek trade, which intensified after 2009. However, the EU27 still remains the main competition field for the Greek economy.

Concerning imports, this development could be attributed to the depression, since the income reduction causes the demand reduction for European products of higher income elasticity of demand (see in Table 5 the reduction of income elasticity of demand for imports in the last period and in Figure 3 the improvement in the terms of trade after 2008).

Interpreting the reorientation of Greek exports to non-EU27 countries (such as the United States, Russia, Turkey, North Africa and Middle East countries, Japan, China and India) for the period 2008-2012, the Bank of Greece (2013, p. 129) emphasizes as important factors the shift of exporters in countries with higher growth rates compared to the EU, as well as the depreciation of Euro and the falling freights.

We have supported that the destruction of less productive national capitals through intra-sectoral competition could lead to dissimilar production structures between more and less advanced countries, which will be expressed as deteriorating terms of trade for the less advanced ones. The deterioration of Greek terms of trade until the current crisis probably indicates such a development. The same development is indicated by the dominance of imported products in the domestic market. Therefore, in the Greek case the relative weight of value extraction through the deterioration of the terms of trade tends to be increased. In this framework, through the reduction of intra EU imports and the increase of extra EU exports (to countries of lower development level), Greek capitalism appears to be in a spontaneous searching process of 'escape' from the unfavourable terms of trade within EU-EMU. The terms of trade improvement after 2008 probably also reflects this partial reorientation.

### **Inter-sectoral Linkages**

Assuming that the main export sectors of a country include, *ceteris paribus*, the relatively more productive ones (compared to the international sectoral competitors), a country's export structure provides a – more or less – basic picture of its production structure, at least in the sectors of tradable commodities.

From this point of view, in order to investigate the relative strength of inter-sectoral linkages of the Greek economy within EU27, the inter-sectoral linkages of the main Greek export sectors are examined and compared with the corresponding inter-sectoral linkages of 9 selected EU27 countries (the largest industrialized countries of EU27 and countries with similar or smaller size than Greece), for the year 2010.

Strong productive inter-sectoral linkages of a national economy can be expressed, in the input-output (I-O) analysis framework, by relatively high backward linkages or backward multipliers (Economakis *et al.*, 2014b; Miller and Blair, 2009, pp. 555-558). In this analysis, the backward linkages of the Greek main export sectors are compared to the minimum, average and maximum backward linkages of the examined countries for the same sectors.

Table 7 contains the main results of the I-O analysis.

The following conclusions are drawn from the above results: Backward linkages of the Greek economy i) are the lowest among the selected countries in 'Agriculture, Hunting, Forestry and Fishing', 'Food Products, Beverages and Tobacco' and ii) in the other sectors, they are lower than or close to the average backward linkages of the

**Table 7**  
**Backward Linkages of the Main Export Sectors of the Greek Economy and of Selected Countries (2010)**

<i>Sector</i>	<i>Backward Linkages (Greece)</i>	<i>Minimum Backward Linkages, Selected Countries</i>	<i>Average Backward Linkages, Selected Countries</i>	<i>Maximum Backward Linkages, Selected Countries</i>
1	1.566	1.566	1.854	1.988
3	1.747	1.747	2.019	2.234
4	1.600	1.525	1.660	2.084
6	1.411	1.204	1.314	1.422
7	1.685	1.505	1.701	1.841
10	1.875	1.526	1.704	1.971

*Source:* Eurostat Input-Output Tables for the year 2010, own calculations

*Note:* Includes the countries: Austria, Belgium, Finland, France Germany, Greece, Italy, Netherlands, UK. The selection of the countries was based on data availability.

selected countries, with the exception of 'Coke, Refined Petroleum Products and Nuclear Fuel' which is near to the maximum.

Consequently, Greek main export sectors exhibit linkages far below the maximum and rather close to the average and in some cases to the minimum backward linkages of the examined EU countries. From this point of view Greek economy is highly dependent on imported intermediate goods, a dependence which causes systematic value leakages abroad.

## CONCLUSIONS

From the analysis is concluded that the Greek economy is an 'extraverted' economy of EU, since it displays all the 'structural characteristics' of 'extraversion', i.e.: relatively weak domestic sectoral productive linkages; strong specialisation; relatively low level of industrial and technological development; 'unfavourable' relative income elasticities of demand; relatively low international competitiveness, which is expressed from unfavourable terms of trade and trade deficits (see also Economakis *et al.*, 2014b).<sup>19</sup>

This confirms our basic argument that the Greek economy emerged as the main 'weak link' in the EU-EMU 'imperialist chain' in the settings of the global economic crisis, due to its 'extraversion'. It is this 'extraversion' that leads to systematic transfers of value to the imperialist countries – expressed as trade deficits – that formed the substratum of the current crisis (: activation of potential crisis trends

owing to imperialist exploitation in the conjuncture of global economic crisis). Crucial parameter of these transfers is the dissimilarity of production-trade structure between the Greek economy and the hard core of its trade competitors (Eurozone), which is expressed in the deterioration of Greek terms of trade until 2008. This development seems to have been crystallized by the reproduction of 'extraversion' within EU-EMU. The spontaneous partial de-Europeanization of the Greek trade is an indication of the contradictions of Greek economy's 'extraversion' within EU-EMU.

Memoranda's policy measures and the following depression that collectively led to a drastic improvement in the current account balance comprise a violent process of adapting the Greek economy to the 'simple growth rule'. This confirms that under conditions of deteriorating terms of trade the Greek economy should be stuck at low growth rates to avoid current account deficits and external debt.

The dissimilarity of production-trade structure between the Greek economy and the hard core of its trade competitors (Eurozone), means that the Greek economy is a subject of value extraction mainly through the deterioration of its terms of trade. According to the theoretical framework of our analysis, under these conditions an irreversible by measures of protectionism (tariffs etc or national currency devaluation) value extraction has been established. Therefore, the exit of Greece from EMU or/and EU per se would not overcome 'extraversion' and imperialist exploitation. Specifically, currency devaluation could lead to intensification of imperialist value appropriation through the further deterioration of the terms of trade.

Although the national currency and the exit of Greece from EU are necessary conditions for the disengagement of the Greek economy from the 'unevenness' within EU-EMU, in order to overcome the 'extraversion' radical productive reorganization is also required. The latter, however, presupposes the overthrow of capitalist power, since it is this power that historically created the 'extraverted' model of Greek capitalist development (see also Fotopoulos, 2010). From this point of view the (economic) opposition against this model of capitalist development could converge to (revolutionary-class) demand of the overthrow of capitalist exploitative relation.

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### *Notes*

1. Here Marx refers to the Ricardian 'comparative advantage'. For a critique of the Ricardian 'comparative advantage', and especially of how it should be defined, in its general form, see Steedman and Metcalfe (1973).
2. In this analysis, international prices are not production prices (see below).
3. For the purpose of the present analysis we accept in principle a general distinction in the 'imperialist chain' between the more advanced (imperialist) countries and the less advanced (dominated) countries. The focal point of this general distinction in economic terms – that encapsulates the 'unevenness' of development – is the appropriation of value (surplus value) by the more advanced (imperialist) countries to the detriment of the less advanced (dominated) countries.
4. Arghiri Emmanuel's (1972) 'unequal exchange' is fundamentally based on the assumption of an internationally uniform profit rate and international production prices; therefore, in this analysis value appropriation does not fall under Emmanuel's theory. For a critique of Emmanuel's theory, see among other works Mainwaring (1980). Mainwaring disputes the validity of Emmanuel's 'unequal exchange' at the expense of the low wage - less developed countries in conditions of international equalization of profit rates. He is arguing that 'in circular production systems, that is, systems involving the use of intermediate goods, it is necessary to "net out" that part of the gross (labour) value of a commodity which is contributed by imported means of production in order to obtain the true (labour) value-added in any one country. Once that is done, it is seen that a net transfer may occur in either direction' (*ibid*, p. 30).
5. Marx (1991, p. 298) states as to the specific conditions that accelerate the process of equalization of profit rates and the formation of production prices: 'This constant equalization of ever-renewed inequalities is accomplished more quickly, (1) the more mobile capital is, i.e. the more easily it can be transferred from one sphere and one place to others; (2) the more rapidly labour-power can be moved from one sphere to another and from one local point of production to another. [...] The second condition presupposes the abolition of all laws that prevent workers from moving from one sphere of production to another or from one local seat of production to any other'. In addition, this equalization is prevented by the existence of non-capitalist spheres of production at the international level, particularly in the sphere of agricultural production. According to Marx, 'equalization comes up against major obstacle if several substantial spheres of production are pursued non-capitalistically (e.g. agriculture by small peasant farmers), these spheres being interposed between the capitalist enterprises and linked with them' (*ibid*, p. 298).
6. Due to the higher level of the organic composition of capital they face.
7. The analysis that follows is based on 'the theory of the modification of the law of value in the world market'. In this connection see among other works Busch (1983, 1987, 1992; Busch *et al.* 1985; Milios, 2000).
8. The market value is the 'social value of the mass of commodities – the necessary labour-time they contain' (Marx, 199, pp. 283-284).

9. Marx (1991, p. 279) clarifies that: 'Only in extraordinary situations do commodities produced under the worst conditions, or alternatively the most advantageous ones, govern the market values'. In this analysis, the hypothesis of averages conditions has been accepted for simplicity reasons. The issue, however, of the conditions governing the market value is set as a question for future research within the theoretical proposal that is developed here. For an interesting study on this issue, in a different Marxist theoretical framework, see Seretis and Tsaliki (2012).
10. This price is modified when we take into account the inter-sectoral competition (see below).
11. 'Technological innovations reduce variable capital and increase constant capital (i.e. increase the OCC [organic composition of capital]) per unit of capital invested' (Carchedi, 2001, p. 94).
12. National currency devaluation means that the exporters of more advanced countries 'appropriate more international value in its money form for each unit exported (disregarding... whether exports are discouraged or not)' (Carchedi, 2001, pp. 100-101).
13. For a detailed analysis see Economakis *et al.* (2014b).
14. According to Lapavitsas *et al.* (2010, p. 16), current account deficits of 'peripheral' EU countries (Greece, Portugal and Spain) had mainly to do with their low competitiveness relative to the 'core' and not with their public sector, which did not create systematic financial deficits, although it has been repeatedly described by the official rhetoric as prodigal and ineffective.
15. The further reduction of current account deficit after 2012 is moreover due to the improvement of income balance because of the decrease in net interest payments on the public debt – by virtue of private sector involvement (PSI) implementation – and to the time shift in interest payments on the support mechanism's loans, as a result of interest rates readjustment. Deficit reduction also reflects a recovery in exports of goods, owing to the improvement in cost competitiveness (i.e. labour costs reduction) (see Bank of Greece, 2013, pp. 107 and 113). On the other hand, the current transfers balance has shown a declining trend over time. According to AMECO's data, depicted in Figure 1, it becomes negative from 2005 to 2012, subsequently surcharging the current account balance in recent years. See also Economakis *et al.* (2014a).
16. For a sectoral classification with respond to the technological level see OECD, (2005); di Mauro *et al.* (2010, p. 40, Table 10).
17. Greek firms have the smallest average size (number of employees) in the EU (Liargovas, 1998, p. 203; European Commission, 2010/11). The Greek small enterprises have limited access to capital, thus limited possibilities for research and development (R&D), incorporation and utilization of new foreign technology (Liargovas, 1998, pp. 203, 206-07 and 210).
18. It must be noted that in intermediate and capital goods imports the higher income elasticity of demand is appeared in Medium-Low and Low Technology imports. This finding indicates that the domestic production tends to develop towards the production of low technology and income elasticity

- of demand products (under the assumption that the technological level of a sector's intermediate and capital goods inputs is reflected in its final output).
19. Thus, 'over-consumerism' is an expression of 'extraversion'. In this connection see Fotopoulos (2010, pp. 50-54).

### References

- Athanasoglou, P. P. (2010), 'Imports: the role of trade structure and domestic supply' in Oikonomou, G., Sabethai, I. and Simigiannis, G. (eds) *Current Account Balance of Greece: causes of unbalances and proposals of policy* [in Greek]. Athens: Bank of Greece.
- Athanasoglou P. P., Georgiou, E. and Bakinezou, C. (2010), 'Export performance of the Greek economy: the impact of competitiveness and of trade composition' in Oikonomou, G., Sabethai, I. and Simigiannis, G. (eds) *Current Account Balance of Greece: causes of unbalances and proposals of policy* [in Greek]. Athens: Bank of Greece.
- Alleyne, D. and Francis, A. A. (2008), 'Balance of payments-constrained growth in developing countries: a theoretical perspective', *Metroeconomica* 59: 189-202.
- Amin, S. (1976), *Unequal Development: An Essay on the Social Formations of Peripheral Capitalism*, Hassocks, Sussex: The Harvester Press.
- Bagnai, A. (2010), 'Structural changes, cointegration and the empirics of Thirlwall's Law', *Applied Economics* 42: 1315-29.
- Bank of Greece (2000), *Annual Report 1999*, Athens: Bank of Greece.
- Bank of Greece (2003), *Annual Report 2002*, Athens: Bank of Greece.
- Bank of Greece (2009), *Annual Report 2008*, Athens: Bank of Greece.
- Bank of Greece (2010), *Annual Report 2009*, Athens: Bank of Greece.
- Bank of Greece (2011), *Summary of Annual Report 2010*, Athens: Bank of Greece.
- Bank of Greece (2012), *Annual Report 2011*, Athens: Bank of Greece.
- Bank of Greece (2013), *Annual Report 2012* [in Greek], Athens: Bank of Greece.
- Busch, K. (1983), 'The discussion in F.R. of Germany about the global market' [in Greek], *Theseis* 5: 93-108.
- Busch, K. (1987), *The Crisis of European Community* [in Greek], Athens: Erato.
- Busch, K. (1992), *Europe since 1992: economic, ecological and social perspectives of the single market* [in Greek], Athens: Kritiki.
- Busch, K., Grunert, G., Tobergte, W. (1985), 'The internationalization of capital' [in Greek], *Theseis* 12: 47-54.
- Carchedi, G. (2001), *For Another Europe: A Class Analysis of European Integration*, London and New York: Verso.
- Christopoulos, D. K. and Tsionas, E. G. (2003), 'A reassessment of balance of payments constrained growth: results from panel unit root and panel cointegration tests', *International Economic Journal* 17: 39-54.

- Cimoli, M., Primi, A. and Pugno, M. (2006), 'A low-growth model: Informality as a structural constraint', *Economic Commission for Latin America and the Caribbean / ECLAC, CEPAL Review* 88: 85-102.
- Gibson, H. D. (2010), 'Sectoral growth of the Greek economy for the period 1995-2003' in Oikonomou, G., Sabethai, I. and Simigiannis, G. (eds) *Current Account Balance of Greece: causes of unbalances and proposals of policy* [in Greek]. Athens: Bank of Greece.
- Economakis, G., Androulakis, G. and Markaki, M. (2014a), 'Profitability and crisis in the Greek economy (1960-2012): an investigation' in Mavroudeas, S. (ed.) *Greek capitalism in crisis: Marxist Analyses, London and New York: Routledge*.
- Economakis, G., Markaki, M. Anastasiadis, A. and Papalexioiu, G. (2011), 'Competitiveness of the Greek economy: a sectoral investigation' in Vlachou, A., Theocharakis, N. and Milonakis, D. (eds.) *Economic Crisis and Greece* [in Greek], Collective volume of Scientific Society of Political Economy, Athens: Gutenberg.
- Economakis, G., Markaki, M. and Anastasiadis, A. (2014b – online version), 'Structural Analysis of the Greek Economy', *Review of Radical Political Economics*, DOI: 10.1177/0486613414542779, <http://rrp.sagepub.com/content/early/2014/08/22/0486613414542779>.
- Economakis, G. Sakellaropoulos, S. and Xenaki, A. (2006), 'Foreign Direct Investments: A Theoretical and Empirical Investigation of Foreign Capital Investment Trends in Greece during 1990-2002' in Aggelis, V. and Maroudas, L. (eds) *Economic Systems, Development Policies and Business Strategies in the Era of Globalization: Essays in Honor of Professor Stergios Babanasis* [in Greek], Athens: Papazisis / University of the Aegean - Department of Business Administration.
- Emmanuel, A. (1972), *Unequal Exchange: A Study of the Imperialism of Trade*, New York and London: Monthly Review Press.
- European Commission (2009), *EU industrial structure 2009: Performance and Competitiveness*. Luxembourg: European Communities.
- European Commission (2010/11), Enterprise and Industry – SBA Fact Sheet: Greece: [http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/performance-review/files/countries-sheets/2010-2011/greece\\_en.pdf](http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/performance-review/files/countries-sheets/2010-2011/greece_en.pdf).
- Fagerberg, J. (1988), 'International Competitiveness', *The Economic Journal* 98: 355-74.
- Fagerberg, J. (1996), 'Technology and Competitiveness', *Oxford Review of Economic Policy* 12 (3): 39-51.
- Felipe, J. and Kumar, U. (2011), 'Unit Labor Costs in the Eurozone: The Competitiveness Debate Again', Working Paper 651 – Levy Economics Institute of Bard College: [http://www.levyinstitute.org/pubs/wp\\_651.pdf](http://www.levyinstitute.org/pubs/wp_651.pdf).
- Fotopoulos, T. (1985), *Dependent Development: the Greek case* [in Greek], Athens: Exantas.
- Fotopoulos, T. (2010), *Greece as a protectorate of the supernational elite: The Need for Direct Exit from the EU and for A Self-Reliant Economy* [in Greek], Athens: Gordios.

- Furtado, C. (1964), *Development and Underdevelopment*, Berkley: University of California Press.
- Hirschman, A. (1958), *The Strategy of Economic Development*, New Haven and London: Yale University Press.
- Hunt, D. (1989), *Economics Theories of Development: An Analysis of Competing Paradigms*, N. York-London-Toronto-Sydney-Tokio: Harvester Wheatsheaf.
- Ilzkovitz, F., Dierx, A., Galgau, O. and Leib, K. (2008), Trade performance and Structural competitiveness. Developments in the Euro Area: are member states equipped to meet the globalization challenges of the 21<sup>st</sup> century?: <http://research.stlouisfed.org/conferences/integration/Galgau-paper.pdf>.
- Ioakeimoglou, E. (2011), *Labour Cost. Profit Margins and Competitiveness in Greece 1995-2009* [in Greek], Athens: Labour Institute GSEE/ADEDY.
- Karagiannis, G. and Tzouvelekas, V. (2010), 'Sectoral linkages and industrial efficiency: a dilemma or a requisition in identifying development priorities?', *The Annals of Regional Sciences* 45: 207-33.
- Krugman, P. (1989), 'Differences in income elasticities and trends in real exchange rates', *European Economic Review* 33: 1031-54.
- Lapavitsas, C. and Kaltenbrunner, A. , Lambrinidis, G., Lindo, D., Meadway, J., Michell, J., Paineira, J. P., Pires, E., Powell, J. Stenfors, A., Teles, N. (2010), *The Eurozone between Austerity and Default*, RMF occasional report: <http://www.researchonmoneyandfinance.org/media/reports/RMF-Eurozone-Austerity-and-Default.pdf>.
- Lenin, V. I. (2010), *Imperialism: The Highest Stage of Capitalism*, London: Penguin.
- Liargovas, P. (1998), 'The White Paper on Growth, Competitiveness and Employment and Greek Small and Medium Sized Enterprises', *Small Business Economics* 11: 201-14.
- Love, J. L. (1980), 'Raul Prebisch and the origins of the doctrine of unequal exchange', *Latin American Research Review* 15(3): 45-72.
- Marx, K. (1990), *Capital*, Vol. 1, London: Penguin Classics.
- Marx, K. (1991), *Capital*, Vol. 3, London: Penguin Classics.
- di Mauro, F., Forster, K. and Lima, A. (2010), The global downturn and its impact on euro area exports and competitiveness, ECB Occasional Paper Series 119.
- Mainwaring, L. (1980), 'International trade and the transfer of labour value', *The Journal of Development Studies* 17 (1): 22-31.
- Mavroudeas S. and Paitaridis, D. (2014), 'The Greek crisis: A dual crisis of overaccumulation and imperialist exploitation' in Mavroudeas, S. (ed.) *Greek capitalism in crisis: Marxist Analyses*, London and New York: Routledge.
- Miller, R. E. and Blair, P. D. (2009), *Input-Output Analysis: Foundations and Extensions*, New York: Cambridge University Press.
- Milios, J. (2000), *The Greek Social Formation* [in Greek], Athens: Kritiki.
- Milios, J. (2011), The Greek crisis as a version of the global economic crisis and EMU crisis. Paper presented at the International Conference 'Public debt and austerity policies in Europe: The response of the European Left' [in Greek].

- Organization: The European Left Party, Coalition of the Left and Nicos Poulantzas Institute: <http://www.rednotebook.gr/details.php?id=2075>.
- Milios, J., Economakis, G. and Lapatsioras, S. (2000), *Introduction to Economic Analysis* [in Greek], Athens: Ellinika Grammata.
- Nurbel, A. (2007), 'The Global Competitiveness Of The Nation: A Conceptual Discussion', *Journal of Business & Economics Research* 5 (10): 63-72.
- Ocampo, J. A. (1986), 'New Developments in Trade Theory and LDCs', *Journal of Development Economics* 22: 129-70.
- OECD (2005), *Directorate for Science, Technology and Industry: Stan Indicators. 1980-2003*, Paris: OECD: <http://www.oecd.org/dataoecd/3/33/40230754.pdf>.
- Peres, W. (2006), 'The slow comeback of industrial policies in Latin America and the Caribbean', *Economic Commission for Latin America and the Caribbean / ECLAC, CEPAL Review* 88: 67-83.
- Pilat, D. and Wölfl, A. (2005), 'Measuring the interaction between manufacturing and services', OECD STI Working Paper 5, Paris: OECD: <http://dx.doi.org/10.1787/882376471514>.
- Pilat, D., Cimper, A., Olsen, K. B. and Webb, C. (2006), The Changing Nature of Manufacturing in OECD Economies, OECD STI Working Paper 9, Paris: OECD: <http://dx.doi.org/10.1787/308452426871>.
- Rios-Morales, R. and O'Donovan, D. (2006), 'Can the Latin American and Caribbean countries emulate the Irish model of FDI attraction?', *Economic Commission for Latin America and the Caribbean / ECLAC, CEPAL Review* 88: 49-66.
- Seretis, S. A. and Tsaliki, P. V. (2012), 'Value transfers in trade: an explanation of the observed differences in development', *International Journal of Social Economics* 39 (12): 965-982.
- Singer, H. W. (1950), 'The Distribution of Gains between Investing and Borrowing Countries', *The American Economic Review* 40 (2): 473-85.
- Steedman, I. and Metcalfe, J. S. (1973), 'On Foreign Trade, *Economia Internazionale*. Reprinted in Steedman, I. (ed.) (1979) *Fundamental Issues in Trade Theory*, London: Macmillan.
- The World Bank (2010), *World Development Indicators*, Washington. D. C.: The World Bank.
- Thirlwall, A. P. (1979), 'The Balance of Payments Constraint as an Explanation of International Growth Rate Differences', *Banca Nazionale del Lavoro Quarterly Review* 32 (128): 45-53.
- Thirlwall, A. P. (2011), 'Balance of payments constrained growth models: history and overview', *PSL Quarterly Review* 64 (259): 307-51.
- Thirlwall, A. P. and Hussain, M. N. (1982), 'The Balance of Payments Constraint, Capital Flows and Growth Rate Differences between Developing Countries', *Oxford Economic Papers* 34 (3): 498-510.

#### **Online Sources**

- AMECO: [http://ec.europa.eu/economy\\_finance/ameco/user/serie/SelectSerie.cfm](http://ec.europa.eu/economy_finance/ameco/user/serie/SelectSerie.cfm).
- Eurostat: [http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search\\_database](http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database).
- OECD. Stat Extracts: <http://stats.oecd.org/>.

