IMPERIALIST EXPLOITATION AND THE GREEK CRISIS

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ABSTRACT

In previous works (e.g. Mavroudeas & Paitarides (2015b)) it has been argued that the post-2007 long duration crisis of Greek capitalism has two intertwined causes. The internal cause stems from the falling profitability trend caused by the increase of the organic composition of capital. The external cause stems from the economic imperialist exploitation of Greek capitalism by the more developed and hegemonic capitalisms of the EU. Economic imperialist exploitation implies the transfer of value from the exploited economy to the exploiting through broad unequal exchange (that is unequal exchange caused by the difference in the organic compositions of capital between the two economies). Mavroudeas & Paitaridis (2015b) offered an indirect proof of this exploitation mechanism by comparing Greece's terms of trade with those of two similar EU economies (one participating also in the EMU and the other participating only in the Common Market). This paper supplements that proof by measuring directly the value transfers between Greece and two other EU economies.

Keywords: Imperialism, Greece, Transfers of value, Unequal exchange

JEL Classification: B51, E11, F45, F54

Introduction

The existence of a mechanism of economic exploitation of Greece by other EU economies is a crucial issue for the analyses of the long lasting 2008 Greek crisis. Competing explanations of this crisis have offered different answers on this issue (Mavroudeas 2015a).

Mainstream explanations deny the existence of such a mechanism. Mainstream analyses had long ceased making even fleeting references to some form of exploitation mechanism operating in international economic relations. In the beginning of the 20th century neoclassical and Mainstream Economics referred to a theory of *imperialism* (defined as a form of international exploitation). However, as typically expounded by Schumpeter (1951), imperialism was considered a remnant of previous economic systems: an atavism that the onset of liberal capitalism and free trade would sooner or later extinguish. Thus, imperialism was considered a systemic leftover from previous socio-economic systems; soon to be liquidated by the surging capitalism.

Contemporary Mainstream theory has discarded even this suis generis conception of imperialism as atavism. It argues that fully developed capitalism favors free international trade and investment; and these are mutually beneficial for all participant economies (as paradigmatized in the case of international trade by the Comparative Advantages theory). Thus, the unhindered operation of the market forces leads to a long-run equilibrium in the international markets with no deficit and surplus economies. However, in the short-run disequilibria can arise (as the currently dominant New Macroeconomic Consensus[1] observes). These disequilibria have no systemic origin (i.e. they do not stem from the fundamental functions of the capitalist system) but are the result of erroneous conjunctural policy decisions by some economies. Only case they consider is that of conjunctural policy-created imbalances in international economic relations causing problematic trade and current account disequilibria. These conjunctural policy-created imbalances favor some economies at the expense of others but the trade and current account disequilibria they are causing are problematic and have to be smoothen in the long-run.

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[1] The New Macroeconomic Consensus represents the 1990s marriage between "soft" neoliberal approaches and conservative New Keynesianism that dominates contemporary Mainstream economic thinking (Arestis 2009).

In this vein, Mainstream analyses of the current Greek crisis bifurcate between EU-centric views and AngloSaxon-centric views[2]. The former argue that Greek current and trade account deficits have been created by faulty Greek policies that permitted unwarranted wage increases (as expressed in increasing nominal unit labour costs) and led to an unsustainable fiscal deficit and a subsequent equally unsustainable current account deficit. These imbalances were a hidden time-bomb that triggered Eurozone crisis. Thus, EU-centric views put the blame for international imbalances entirely on Greece (and the other euro-peripheral economies) and do not see any advantage for the euro-core economies. On the other hand, AngloSaxon-centric views put part of the blame on the EU by arguing that euro-core economies have benefited from these imbalances. The gist of their criticism is that the EMU is not an optimal currency area because it comprises of different types of economies and lacks sufficient equilibrating mechanisms (fiscal transfers etc.). Consequently, Greek profligacy was exacerbated by EMU's structural deficiencies leading to the Greek and EMU crisis. In particular, the non-optimality of the eurozone leads to several disequilibria between its member-states; and among them trade disequilibria between trade surplus and trade deficit economies. The lack of the exchange rate equilibrating mechanism (through devaluations of the trade deficit economies) and of a fiscal transfer mechanism (from the surplus to the deficit economies) causes dangerous current account imbalances. The latter may favor the euro-core economies but are not sustainable in the long-run and unless smoothened they would cause the collapse of the Eurozone.

Both these Mainstream perspectives suffer from critical analytical and empirical problems that incapacitate their explanatory ability and reduce them to simple ideological mouthpieces of dominant interests (see Mavroudeas and Paitaridis 2015a). They both accept the *twin deficits hypothesis*[3] which is not verified by the Greek data. And they also share a problematic wage cost theory of competitiveness that neglects both other costs (e.g. profit mark-ups) and structural aspects (e.g. productive models).

Heterodox explanations of the Greek crisis have serious differences but also covert similarities with the Mainstream views.

Contemporary Heterodoxy stems to a great extent from the Keynesian tradition and its off-shoots (post-Keynesianism etc.). Traditional Keynesianism rejected free trade theory and argued – rather similarly to Marxism - that there is nothing

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[2] For a detailed analysis and critique of the Mainstream analyses see Mavroudeas and Paitaridis (2015a).
[3] That is the New Keynesian hypothesis that the fiscal deficit is causing the current account deficit.

"peaceful" in the relations between capitalist economies. International economic competition is a "war" and uses political power for economic ends. This implies that those economies that have the necessary power might impose upon weaker economies conditions that benefit the former economically (at the expense of the latter). Keynes' (1936) rehabilitation of Mercantilism is characteristic of the inherent contradictions of the Keynesian position. On the one hand, contrary to neoclassical free trade theory, a mild form of protectionism might be beneficial for a developed country facing lack of effective demand as it would create a trade surplus that would subsequently feed demand. On the other hand, it would cause problems to other countries. If sustained for too long then it will derail international relations, increase conflicts and tensions and cause social-political upheaval. For these reasons, such tendencies have to be reigned through appropriate international agreements and institutional frameworks[4].

Therefore, traditional Keynesianism identifies international economic exploitation with Mercantilist policies (Barratt-Brown 1974). Mercantilist policies are understood not as systemic features of capitalism but simply as conjunctural political ploys. Whether an economy would employ such policies or not is a matter of political choice and not of systemic tendency.

Consequently, there is a fundamental difference between Keynesianism and Marxism regarding the way this war-like international competition is understood. For Marxism unequal politico-economic relations and the concomitant international economic exploitation is an inherent tendency of the capitalist system that necessarily occurs and not simply a policy choice. From this difference stem different views for capitalism's international system. Marxism opts for a theory of *imperialism*, that is of systemic war-like competition that is based on relations of economic exploitation. This is posited as a permanent characteristic of the capitalist system. Keynesianism focuses simply on conjunctural policy choices that might at some time produce relations of economic exploitation; however, there is nothing structural in them. These relations can be beneficial for a short term but if established permanently would sabotage international relations[5].

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[4] Keynes' views on this issue have started to form since his disagreement with the Treaty of the Versailles. In a nutshell, he argued that the transfers of value from the vanquished economies to their victors would produce such economic imbalances that would open the floodgates for socialist revolution.

[5] During Keynesianism's high era there were some Keynesian approaches that proposed a structural theory of unequal economic relations. Latin American Structuralism – stemming from the Singer-Prebisch hypothesis – is a prominent example. These approaches belonged to the Dependency Theory tradition and mixed with neo-Marxist perspectives (e.g. the Monthly Review tradition). However, nowadays these approaches have almost disappeared. Even their contemporary

Before the 1990s Heterodox theories usually oscillated towards Marxist or other theories of imperialism. Since the advent of the "globalization" fashion they have more or less abandoned the notion of imperialism and have turned towards more policy-oriented analyses. This turn is evident in Heterodox explanations of the Greek and the eurozone crisis as most of them adopt a Mercantilist explanations for the unequal relations between euro-periphery and euro-core economies (e.g. Lucarelli, 2011).

With few exceptions, Heterodox explanations of the Greek crisis posit some mechanism of economic exploitation of Greece by the dominant EU economies (see Mavroudeas 2015b). In doing so they take the lead from Mainstream AngloSaxon-centric views and emphasize the problem of trade account imbalances. The more radical of them (e.g. Flassbeck and Lapavitsas 2015) argue that Greece's debt problem (expressed in its current account deficit) emanates not from its fiscal deficit but from its trade account deficit. While they accept Mainstreamers' problematic theory of competitiveness, they invert its political implications. Mainstreamers argue that Greece's falling competitiveness emanates from unrestrained wage increases augmenting nominal unit labour costs. They implicitly maintain that competitiveness is determined simply by cost elements (and not all of them but only wage costs) and they neglect its structural aspects. Hence, they fall prey to the Kaldor paradox that has convincingly shown that the more competitive economies are not low wage economies[6]. Radical Heterodoxy accepts Mainstream's problematic competitiveness theory but reverses its causality. It argues that the Greek nominal unit labour costs (ULC) increased more than German ones because Germany adopted a neo-Mercantilist policy and showed unwarranted wage restraint (beginning with the 2002 Hartz reforms). Thus, for Heterodoxy, it is not Greek profligacy but German over-prudence that triggered the eurozone crisis. As a result of the relative increase of the Greek nominal ULCs Greek competitiveness and trade balance deteriorated. Concomitantly, German trade surpluses ballooned. These problems were sustained and exacerbated by the EMU as it precluded the equilibration of falling competitiveness via currency devaluations.

Thus, Radical Heterodoxy proceeds from a critique of the non-optimal character of EMU to a neo-Mercantilist theory of exploitation of euro-periphery by euro-core economies. This analysis is highly problematic. First, it is based in a flawed

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descendants (e.g. neo-structuralism) offer watered-down versions that emphasize policies rather than structural aspects.

[6] For a critique of both Mainstream and Radical explanations of competitiveness see Mavroudeas (2015a).

competitiveness theory. Second, it has a superficial understanding of international competition and exploitation within the eurozone that focuses upon conjunctural and wrongly identified factors (neoliberal and Mercantilist policies) and neglects the deeper systemic functions of the capitalist system.

This paper offers a different explanation of the economic exploitation mechanisms operating in the Greek crisis. The next section delineates a Marxist theory of imperialism. The third section integrates this theory in the explanation of the Greek crisis by arguing that apart from the internal causes (falling profitability) there are also external causes (transfers of value from Greece to euro-core economies). The last section concludes.

Basic elements of a Marxist theory of imperialism

Marxism organizes its understanding of international political and economic relations through its theory of imperialism. The cornerstone of this theory is that capitalism's international system is not a harmonious set but a field characterized by competition, conflicts and exploitation of groups of countries by other groups. Consequently, it does not result in mutually beneficial for all participants outcomes but instead it has winners and losers – where the gains of the former are the losses of the latter. This function is considered as a structural characteristic of capitalism and not as a conjunctural product of short-term policy choices.

It is beyond the scope of this section to review the long and winding course of the Marxist theory of imperialism. For reasons of brevity it will state the main pillars of a contemporary redefinition of it along the lines of classical debate on imperialism[7].

Imperialism is primarily an economic mechanism and not a political mechanism. That is its aim is not political dominance but economic exploitation. The former is a means to achieve the latter and not a cause. This thesis is derived from

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[7] This debate was conducted in the 1920s and 1930s and introduced the concept of imperialism in Marxist theory. One of its fundamental points was that imperialism begins as a conflict between developed capitalism (that is as intra-imperialist rivalries) that is played on the back of less developed economies (capitalist or not). This differentiated it from subsequent perspectives (as those of the various streams of Dependency theory) that posited that imperialism's main contradiction is between developed and less developed economies. Within the classical debate different theories were formed: the social-democratic understanding of imperialism as a policy choice (Hilferding, Kautsky), Luxemburg's underconsumptionist approach, Lenin's stages theory. Of particular importance, although neglected during that period, was H.Grossmann's theory of imperialism that integrated the latter with Marx's theory of the falling rate of profit (Kuhn 2007).

capitalism's fundamental difference from pre-capitalist exploitative systems: capitalist exploitation is not primarily based on direct (political) coercion but on indirect (economic) coercion. This economic mechanism organizes the exploitation at the international level (that is between economies). It is based on transfers of value from the exploited to the exploiting economies. Of course, particularly at this interstate level, political relations play a more significant role than within an economy.

Imperialism is not a particular stage of capitalism (although it flourishes in some of them) but the mode through which capitalism organizes its international system from its very birth. Thus, imperialism should not be associated with some form of capitalist competition (e.g. monopolies) – although some of them enhance imperialist relations more than others – but it is a general attribute of the system. Thus, its economic exploitation mechanism – i.e. international value transfers – works via normal capitalist competition and not only in cases of monopolist competition. In other words, imperialist surplus extraction exist irrespectively of the existence of monopolist super-profits. Marxism, contrary to the other main economic theories, has an elaborate dialectical theory of competition. Free competition, oligopoly and monopoly are not distinct cases but expressions of the same mechanism. Competition is the mechanism from which oligopoly and monopoly arise but also in which they subsequently collapse. This dialectical understanding can realistically grasp the tides and ebbs of mergers and acquisitions waves of modern capitalism.

The global system of imperialism is a complex structure comprised not by two groups (imperialist and not imperialist economies) but by more. Particularly since the middle 20th century we have witnessed the emergence of several economies that can be at the same time victims of imperialist exploitation by some economies and agents of imperialist exploitation for others. Thus, the global imperialist system is a *pyramid-like structure* comprising of several levels. Those middle-level economies fall in the category of *sub-imperialism*.

Imperialism is not identical with the notion of *finance capital* (i.e. Hilefrding's influential thesis about the merge between banking and productive capital under the dominance of the former). It has been adequately proved that this fusion was not dominant neither during the early 1900s nor today (Bond 2010). On the contrary other forms of money capital (e.g. those in capital markets) can play a more influential role.

Finally, contrary to the now receding "globalization" fashion, the basic unit of the global system of imperialism remains the national economy. *Bucharin* (*1976*) had accurately pointed out that capitalism is characterized by a permanent

contradiction between nationalization and internationalization. Nationalisation denotes capitalism's foundational unit. Internationalisation expresses capital's inherent tendency to expand its accumulation. This permanent and unresolvable contradiction is expressed in tidal waves of internationalization and re-nationalisation (i.e. return to the foundational basis). On the basis of this contradiction antagonistic blocs of capitalist economies are being formed.

Following from the above-mentioned considerations, the primary task for a modern redefinition of the Marxist theory of imperialism is to designate the economic mechanism of imperialist exploitation. More specifically, it must specify how more developed capitalist economies can obtain transfers of value form less developed economies in all three main forms of international economic activities: (a) trade, (b) direct investments and (c) portfolio investments.

a) International Transfers of Value due to Trade

International trade theory is the cradle of international economics for good reasons. International trade was the first activity that vigorously surpassed national borders in capitalism's history[8]. Both Classical Political Economy and Mainstream economics are dominated by the Comparative Advantages doctrine; originally suggested by D. Ricardo (in labour value terms) and redefined by *Heckscher and Ohlin (in relative prices terms). The gist of this doctrine is the following. Suppose that there are two economies (A and B) producing two internationally tradable goods (1 and 2) and that economy A produces both of them more productively. If it does so then economy A would acquire a trade surplus at the expense of the trade deficit of economy B. However, the optimal choice for both economies is, according to this doctrine, for economy A to specialize in the production of the one good that it is more productive and leave the production of the other to economy B (although its productivity is inferior). The conclusion is that free international trade is mutually beneficial, no unwarranted value transfers take place and that there would be equilibrium in international trade.*

The opposite views are held by A. Smith and K. Marx (and the Marxist tradition henceforth). The Absolute Advantage thesis argues that any individual country that holds advantages in production costs at the beginning of the trade transactions will seek to maintain them in the same way as an individual capital struggles to prevail over its competitors in the domestic market (Shaikh 1980a, 1980b, 2016). This is a realistic conception of international

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[8] Particularly during the Mercantilist era of gestation of capitalism within the crumbling post-feudal economies, the surpluses from international trade were a crucial lever for capital accumulation.

economic relations that grasps accurately the existence of persistent disequilibria in international trade, uneven development and geopolitical antagonisms in stark contrast to the fictional world of free trade liberalism.

For Marxism, the Absolute Advantage thesis implies the existence of a mechanism of unequal exchange that results in value transfers from some countries to others. Needless to say, this haemorrhage impedes the formers' economic development. Beginning with Emmanuel's (1972) seminal contribution there is a heated debate within Marxist Political Economy on the form of this unequal exchange mechanism. Setting aside Emmanuel's problematic "strict unequal exchange" (i.e. unequal exchange due to differences in wage rates and consequently to rates of surplus-value) we will argue that the proper mechanism is that of "broad unequal exchange" (i.e. unequal exchange due to different organic compositions of capital, that is levels of development).

The gist of the "broad unequal exchange" argument lays in a basic tenet of Marx's transformation process of labour values to prices: the equalization of the rates of profit transfers surplus value produced from capitalists with lower organic composition of capital (OCC) to those with higher OCC. This holds both within a national economy and within a multi-national common market like the EU (Carchedi 1991). The conclusion is that when developed economies compete with less developed economies a transfer of value would occur from the latter to the former; thus constituting a mechanism of international economic exploitation.

b) International Transfers of Value due to Foreign Direct Investments

Foreign Direct Investment (FDI) is a different case. Although existing from the very beginning of capitalism, it increased significantly from the middle 20th century and onwards. Contrary to Dependency Theory's empirical flawed empirical belief, FDI does not flow only from developed to less developed economies but also within these two broad categories. FDI means that a national capital makes a productive investment in another economy in order to extract surplus value. The predominant form of such investment is through multinational corporations (MNCs) which however has distinct national bases (metropole). The profits from an FDI can either be re-invested in the recipient economy or repatriated to the metropole. Only in the latter case they do constitute an international transfer of value. Both practices are common although there are characterized by significant historical variations. As Mandel (1978) accurately points out, there are various ways and accounting devices through which MNCs realise such international value transfers (e.g. transfer pricing).

c) International Transfers of Value due to Portfolio Investment

International Portfolio Investment involves financial transactions through banks (international loans) and capital markets (playing in foreign stock exchanges). In the case of international loans the international value transfer from the debtor to the lender is obvious: loans are repaid plus interest. In the case of stock exchange gains the case is less obvious (as they can be "played" again in the same capital market), but a usual practice – particularly since global financial deregulation - is to move them around the world.

Greek capitalism's imperialist exploitation within the EU

Contrary to both Mainstream and Heterodox explanations of the Greek crisis, Marxist ones have sought to incorporate the theory of imperialism in the analytics of the Greek crisis. Mavroudeas & Paitarides (2015b) have argued that it has two intertwined causes: (a) an internal primary cause stemming from falling profitability (caused by increased OCC) which was aggravated by (b) the external hemorrhage caused by Greece's economic exploitation by the euro-core economies. The latter took place through two channels:

    (a) A structural channel: Greek capitals compete the more developed euro-core capitals resulting in "broad" unequal exchange type of value transfers. This channel is reinforced by the dominance of euro-core oligopolies in the Common Market that reap also monopolist extra-profits.

    (b) A policy channel: By directly or indirectly ceding the control of monetary, fiscal and trade policy to the EU Greek capitalism lost critical means for supporting its competitiveness.

They verified the existence of economic exploitation of Greece by comparing its Terms of Trade (ToT) with those of two fairly similar EU economies, Austria and Sweden (the first participating also in the EMU and the second participating only in the Common Market).

This paper supplements that proof by measuring directly the value transfers between Greece and two other EMU economies (Spain and Finland).

Methodology

In what follows, we empirically test three Eurozone countries (Greece and Spain from Europe's South, and Finland from Europe's North) focusing on differences in productivity between capitals that persist over time. These countries, as members of the European Union, are organized by sharing several common institutional, political, social, etc. characteristics, whereas as Eurozone members share common economic policies. Nevertheless, these countries differ substantially in their economic performance as is ascertained by the way the current economic crisis has affected them; Greece and Spain suffer from high unemployment and deep recession, whereas Finland performs better by far (Seretis and Tsaliki 2015). As a consequence, these countries become an ideal testing ground for the hypothesis of absolute advantage. In order to approximate absolute cost, we estimate labour values by applying the vertical integration method (Pasinetti 1977; Shaikh 1984; Tsaliki and Tsoulfidis 2013).

Thus far, we have: labour values $\lambda = a[I - A]^{-1}$, where λ is a row vector of the total (direct and indirect) abstract labour time required for a product, a is a row vector adjusted for differences in skills labour coefficients, and $[I - A]^{-1}$ is the Leontief inverse matrix. The vector of direct labour coefficients, a, is estimated using the wage bill of each sector (the product of annual wage times the number of employees). The problem with this estimation is that the self-employed population is not accounted for. For this purpose, we created an index of self-employment calculated by the ratio of the total employed population (the number of employees plus the self-employed) to the number of employees. In order to account for the differences in skills across sectors, we divided the annual wage of each sector by the economy's minimum wage; the so-derived ratio is in turn multiplied by employment and so we derive the adjusted-for-skills sectoral employment (Seretis 2013; Seretis and Tsaliki 2015). This reduction, of course, is only meaningful when the relative wages express (ideally with precision) the differences in skills and intensity of labour that is employed in each sector of the economy (Tsoulfidis and Paitaridis 2009). The division of the adjusted-for-skills total employment (employees plus self-employed) by the industry total output gives the homogenized employment coefficients, that is, the vector a.

The data employed in the analysis refer to input-output tables for the years 2000, 2005 and 2011 and are available from the OECD STAN data base at the 37 industry detail. The information on employment in thousands for the 108 sector detail is also available in the OECD STAN database. In order to make the data compatible, we had to rearrange the production and employment data and finally

to arrive at input-output tables of 37x37 dimensions. The 22 sectors employed in the empirical analysis are provided in Table 1.

Table 1: The 22 Sectors of the Analysis	
Sector 1	Agriculture, hunting, forestry and fishing
Sector 2	Mining and quarrying
Sector 3	Food products, beverages and tobacco
Sector 4	Textiles, textile products, leather and footwear
Sector 5	Wood and products of wood and cork
Sector 6	Pulp, paper, paper products, printing and publishing
Sector 7	Coke, refined petroleum products and nuclear fuel
Sector 8	Chemicals and chemical products
Sector 9	Rubber and plastics products
Sector 10	Other non-metallic mineral products
Sector 11	Basic metals
Sector 12	Fabricated metal products except machinery and equipment
Sector 13	Machinery and equipment n.e.c
Sector 14	Office, accounting and computing machinery
Sector 15	Electrical machinery and apparatus n.e.c
Sector 16	Radio, television and communication equipment
Sector 17	Medical, precision and optical instruments
Sector 18	Motor vehicles, trailers and semi-trailers
Sector 19	Other transport equipment
Sector 20	Manufacturing n.e.c; recycling
Sector 21	Electricity, gas and water supply
Sector 22	Construction

The 22 sectors of our analysis have been selected on the grounds that they produce industrial and internationally tradable goods in the world market. We may safely assume the formation of an international sector for each specific product, in which all capitals (independently of their nationality) compete for the expansion of their market share in their attempt to survive in the world arena. Using the vertical integration method, we estimate the Domestic Labour Content (DLC) per unit of output for each of the 22 sectors for the three European countries (Seretis 2013); subsequently, we estimate the average labour content which represents the International social value-Direct Price (IDP) of each sector and we compare it with the DLC of each country (Seretis and Tsaliki 2015).

According to (Marx 1894) the average labour time spent directly and indirectly on the production for a good determines its market price in the national market, the same principle should also hold true in the international market. This international price may be adequately approximated and represented by the international socially necessary labour time needed per unit of output which is established by competitive forces in the world arena. Based on the results of studies on price value deviations which show, on average, a very close proximity between direct prices and market prices as well as prices of production, we can safely use this International social value-Direct Price (IDP) as a good proxy to International Market Price (IMP), which in our case is approximated by the weighted average of the abstract sectoral labour values reported for each country (Seretis 2013). It is important to note that the empirical validity of the argument has already established in previous works (Seretis and Tsaliki 2015). In this frame, the so computed IDP represents the socially necessary labour time established by the international competitive forces for the specific sector; more importantly, its difference from the Domestic Direct Price (DDP or DLC) should define each sector's competitive position in the international market.

It is easily observed that positive differences between DPP and IDP indicate that the specific sectoral per unit output requires more labour content than that required internationally, indicating low productivity and lower levels of competitiveness for the specific sector and country; negative differences indicate the exact opposite. Hence, the country with a sectoral labour value lower than the international socially necessary labour time enjoys higher productivity efficiency, which may lead to positive transfers of values. In contrast, a country with a sectoral labour value higher than the international socially necessary labour time suffers from lower productivity and eventually it may experience negative transfers of value.

Empirical Analysis

For each sector, country, and year we estimate the DDP and in turn we compute the respective IDP. IDP approximates the "conventional" (for our analysis) international direct price which is formed in the international competitive environment, where the respective sectors are activated. The so defined price encapsulates, to some extent, the international regulating conditions of production of each sector which are established by the law of one price (intra-industry competition at the international level) and by the law of equal profitability (inter-industry competition at the international level). Table 2 presents the sectoral labour content per unit of output (DDP) for each country and each year; the last column reports the respective IDP.

Table 2: Labour content per unit of output (DDP) and the respective IDP in 22 sectors

Year 2000	GR	SP	FIN	IDP
Agriculture, hunting, forestry and fishing	0.087581945	0.054658929	0.065542311	0.069261062
Mining and quarrying	0.092159274	0.079189154	0.060448629	0.077265686
Food products, beverages and tobacco	0.095790041	0.074040591	0.070681355	0.080170662
Textiles, textile products, leather and footwear	0.132628627	0.08509325	0.068920787	0.095547555
Wood and products of wood and cork	0.111199996	0.081848849	0.062812635	0.08528716
Pulp, paper, paper products, printing and publishing	0.077124764	0.066433388	0.046319345	0.063292499
Coke, refined petroleum products and nuclear fuel	0.080314425	0.068965489	0.055828243	0.068369386
Chemicals and chemical products	0.085246492	0.075106091	0.051702669	0.070685084
Rubber and plastics products	0.089335225	0.07996897	0.058312766	0.07587232
Other non-metallic mineral products	0.101903121	0.079197313	0.057892526	0.07966432
Basic metals	0.081847617	0.076718326	0.056243211	0.071603051
Fabricated metal products except machinery and equipment	0.099894702	0.083484133	0.062745829	0.082041555
Machinery and equipment n.e.c	0.121384353	0.083655649	0.060492332	0.088510778
Office, accounting and computing machinery	0.064388043	0.094209675	0.080962781	0.079853499
Electrical machinery and apparatus n.e.c	0.087950622	0.082350899	0.050708931	0.073670151
Radio, television and communication equipment	0.09089068	0.087841184	0.0606843	0.079805388
Medical, precision and optical instruments	0.130997196	0.086947175	0.053454735	0.090466369
Motor vehicles, trailers and semi-trailers	0.086096688	0.082140527	0.062344228	0.076860481
Other transport equipment	0.101207971	0.081472596	0.067061756	0.083247441
Manufacturing n.e.c; recycling	0.129665594	0.095829698	0.068100653	0.097865315
Agriculture, hunting, forestry and fishing	0.081383968	0.059946154	0.045612769	0.062314297
Mining and quarrying	0.075602127	0.081897826	0.062915273	0.073471742

Year 2005	GR	SP	FIN	IDP
Agriculture, hunting, forestry and fishing	0.087231794	0.057621363	0.045843351	0.063565503
Mining and quarrying	0.098174097	0.082802401	0.038461951	0.07314615

Food products, beverages and tobacco	0.087540489	0.078716891	0.045617834	0.070625071
Textiles, textile products, leather and footwear	0.120303756	0.08846496	0.045437324	0.084735346
Wood and products of wood and cork	0.131735386	0.083875742	0.043936456	0.086515861
Pulp, paper, paper products, printing and publishing	0.07360202	0.067269104	0.034526307	0.05846581
Coke, refined petroleum products and nuclear fuel	0.08367597	0.07161655	0.033169391	0.062820637
Chemicals and chemical products	0.092140403	0.077878724	0.033781985	0.067933704
Rubber and plastics products	0.090508441	0.086177157	0.038543907	0.071743168
Other non-metallic mineral products	0.101816171	0.084371559	0.038752436	0.074980055
Basic metals	0.097472088	0.082782627	0.035843721	0.072032812
Fabricated metal products except machinery and equipment	0.109765929	0.088523931	0.04138732	0.079892393
Machinery and equipment n.e.c	0.120009134	0.087147846	0.040594058	0.082583679
Office, accounting and computing machinery	0.068732077	0.090584692	0.034126204	0.064480991
Electrical machinery and apparatus n.e.c	0.08955079	0.090401031	0.033103552	0.071018458
Radio, television and communication equipment	0.075501004	0.098036469	0.040122767	0.07122008
Medical, precision and optical instruments	0.121405523	0.090667025	0.034588606	0.082220385
Motor vehicles, trailers and semi-trailers	0.086492711	0.086012594	0.049300701	0.073935335
Other transport equipment	0.124510219	0.083942621	0.041038991	0.083163944
Manufacturing n.e.c; recycling	0.136331883	0.100547218	0.048431516	0.095103539
Agriculture, hunting, forestry and fishing	0.080344098	0.063902788	0.026309068	0.056851985
Mining and quarrying	0.077571602	0.088550115	0.042019405	0.069380374

Year 2011	GR	SP	FIN	IDP
Agriculture, hunting, forestry and fishing	0.021504528	0.037176127	0.036447238	0.031709298
Mining and quarrying	0.051021168	0.046097642	0.02935877	0.042159193
Food products, beverages and tobacco	0.036229411	0.048740642	0.035701207	0.040223753
Textiles, textile products, leather and footwear	0.060960586	0.055222665	0.038848931	0.051677394
Wood and products of wood and cork	0.08804319	0.063792082	0.037556294	0.063130522
Pulp, paper, paper products, printing and publishing	0.039019856	0.044806401	0.02690053	0.036908929
Coke, refined petroleum products and nuclear fuel	0.043086507	0.040827545	0.025189974	0.036368009
Chemicals and chemical products	0.048581507	0.044365241	0.027457495	0.040134748
Rubber and plastics products	0.047406516	0.052088169	0.029939426	0.043144704
Other non-metallic mineral products	0.062983081	0.054714815	0.032013259	0.049903718

Basic metals	0.056197353	0.048891683	0.029437517	0.044842184
Fabricated metal products except machinery and equipment	0.055539029	0.058302564	0.033698844	0.049180146
Machinery and equipment n.e.c	0.06061227	0.054491947	0.03202045	0.049041556
Office, accounting and computing machinery	0.041704905	0.063806933	0.031595906	0.045702582
Electrical machinery and apparatus n.e.c	0.046306671	0.05536085	0.028879613	0.043515711
Radio, television and communication equipment	0.03360687	0.056588587	0.032832254	0.041009237
Medical, precision and optical instruments	0.060655685	0.056133914	0.027245864	0.048011821
Motor vehicles, trailers and semi-trailers	0.08110096	0.05447321	0.038149952	0.057908041
Other transport equipment	0.09369779	0.053380878	0.037876083	0.061651584
Manufacturing n.e.c; recycling	0.073579	0.066362619	0.041907646	0.060616422
Agriculture, hunting, forestry and fishing	0.038707055	0.036948156	0.020035921	0.031897044
Mining and quarrying	0.051357216	0.059985915	0.037054317	0.049465816

In Table 3 are presented the differences of DDP from the respective IDP. From tables 2 and 3, we observe that the IDP for all sectors decreases, indicating a fundamental trend in capitalist societies that the socially necessary labour time needed for the production of the respective products diminishes over time indicating the ongoing increase of labour productivity.

Table 3: Differences of sectoral DDP from the respective IDP			
Year 2000	**GR**	**SP**	**FIN**
Agriculture, hunting, forestry and fishing	0.018320883	-0.014602133	-0.003718751
Mining and quarrying	0.014893588	0.001923469	-0.016817057
Food products, beverages and tobacco	0.015619378	-0.006130071	-0.009489307
Textiles, textile products, leather and footwear	0.037081072	-0.010454305	-0.026626768
Wood and products of wood and cork	0.025912836	-0.003438311	-0.022474525
Pulp, paper, paper products, printing and publishing	0.013832265	0.003140889	-0.016973154
Coke, refined petroleum products and nuclear fuel	0.011945039	0.000596103	-0.012541142
Chemicals and chemical products	0.014561408	0.004421007	-0.018982415
Rubber and plastics products	0.013462905	0.00409665	-0.017559555
Other non-metallic mineral products	0.022238801	-0.000467007	-0.021771794
Basic metals	0.010244566	0.005115275	-0.015359841
Fabricated metal products except machinery and equipment	0.017853148	0.001442579	-0.019295726
Machinery and equipment n.e.c	0.032873575	-0.004855129	-0.028018447

Office, accounting and computing machinery	-0.015465457	0.014356175	0.001109281
Electrical machinery and apparatus n.e.c	0.014280472	0.008680748	-0.02296122
Radio, television and communication equipment	0.011085292	0.008035796	-0.019121088
Medical, precision and optical instruments	0.040530827	-0.003519194	-0.037011633
Motor vehicles, trailers and semi-trailers	0.009236207	0.005280046	-0.014516253
Other transport equipment	0.01796053	-0.001774845	-0.016185685
Manufacturing n.e.c; recycling	0.031800279	-0.002035618	-0.029764662
Agriculture, hunting, forestry and fishing	0.01906967	-0.002368143	-0.016701528
Mining and quarrying	0.002130385	0.008426084	-0.010556469

Year 2005	GR	SP	FIN
Agriculture, hunting, forestry and fishing	0.023666291	-0.005944139	-0.017722152
Mining and quarrying	0.025027947	0.009656252	-0.034684199
Food products, beverages and tobacco	0.016915418	0.00809182	-0.025007237
Textiles, textile products, leather and footwear	0.035568409	0.003729614	-0.039298023
Wood and products of wood and cork	0.045219525	-0.002640119	-0.042579406
Pulp, paper, paper products, printing and publishing	0.01513621	0.008803294	-0.023939503
Coke, refined petroleum products and nuclear fuel	0.020855333	0.008795913	-0.029651246
Chemicals and chemical products	0.024206699	0.00994502	-0.034151719
Rubber and plastics products	0.018765273	0.014433989	-0.033199262
Other non-metallic mineral products	0.026836115	0.009391504	-0.036227619
Basic metals	0.025439276	0.010749815	-0.036189091
Fabricated metal products except machinery and equipment	0.029873536	0.008631537	-0.038505073
Machinery and equipment n.e.c	0.037425454	0.004564167	-0.041989621
Office, accounting and computing machinery	0.004251086	0.026103701	-0.030354787
Electrical machinery and apparatus n.e.c	0.018532332	0.019382574	-0.037914906
Radio, television and communication equipment	0.004280924	0.026816389	-0.031097313
Medical, precision and optical instruments	0.039185138	0.008446641	-0.047631779
Motor vehicles, trailers and semi-trailers	0.012557376	0.012077259	-0.024634634
Other transport equipment	0.041346276	0.000778677	-0.042124952
Manufacturing n.e.c; recycling	0.041228344	0.005443679	-0.046672023
Agriculture, hunting, forestry and fishing	0.023492114	0.007050803	-0.030542917

Mining and quarrying			
	0.008191228	0.019169741	-0.027360969

Year 2011	GR	SP	FIN
Agriculture, hunting, forestry and fishing	-0.010204769	0.005466829	0.00473794
Mining and quarrying	0.008861974	0.003938449	-0.012800423
Food products, beverages and tobacco	-0.003994343	0.008516888	-0.004522546
Textiles, textile products, leather and footwear	0.009283192	0.003545271	-0.012828463
Wood and products of wood and cork	0.024912668	0.00066156	-0.025574228
Pulp, paper, paper products, printing and publishing	0.002110927	0.007897472	-0.010008399
Coke, refined petroleum products and nuclear fuel	0.006718498	0.004459536	-0.011178034
Chemicals and chemical products	0.008446759	0.004230493	-0.012677252
Rubber and plastics products	0.004261812	0.008943465	-0.013205278
Other non-metallic mineral products	0.013079362	0.004811097	-0.017890459
Basic metals	0.011355168	0.004049499	-0.015404667
Fabricated metal products except machinery and equipment	0.006358884	0.009122419	-0.015481302
Machinery and equipment n.e.c	0.011570714	0.005450391	-0.017021105
Office, accounting and computing machinery	-0.003997676	0.018104352	-0.014106675
Electrical machinery and apparatus n.e.c	0.00279096	0.011845139	-0.014636099
Radio, television and communication equipment	-0.007402367	0.01557935	-0.008176983
Medical, precision and optical instruments	0.012643864	0.008122093	-0.020765957
Motor vehicles, trailers and semi-trailers	0.023192919	-0.00343483	-0.019758089
Other transport equipment	0.032046206	-0.008270706	-0.023775501
Manufacturing n.e.c; recycling	0.012962579	0.005746197	-0.018708776
Agriculture, hunting, forestry and fishing	0.006810011	0.005051112	-0.011861123
Mining and quarrying	0.0018914	0.010520099	-0.012411499

This falling tendency in the labour content of commodities is caused by competition, which forces all units of capital to improve their production performance mostly by mechanizing the production process, as a sine qua non condition for their survival. More importantly, the persistent differences in the performance records of the various sectors provide evidence according to which international trade does not transform the absolute cost advantage into comparative cost advantage; the capitals with an absolute cost advantage enhance their competitive position over the years, whereas the capitals with a cost disadvantage worsen it (Seretis and Tsaliki 2015).

Table 3 indicates that all Greek sectors display large positive deviations from the IDP, indicating that their labour content per unit of output is higher than the respective international average (regulating) formed by competitive forces in the market. In fact, Greek sectors present the highest positive deviations from all countries under investigation signaling their weak position in the international trade arena and also the volume of imperialistic exploitation.

Nevertheless, it is worth noting that the labour units in all sectors display a decreasing trend which in some cases is very dramatic. The year 2000 all sectors but one indicate positive deviations from IDP. The sectors: 17 (Medical, precision and optical instruments) 0.040530827, 4 (Textiles, textile products, leather and footwear) 0.037081072, 13 (Machinery and equipment n.e.c) 0.032873575 and 20 (Manufacturing n.e.c; recycling) 0.031800279, indicate the largest deviations. There is only the sector 14 (Office, accounting and computing machinery) that indicates a negative deviation (-0.015465457) from IDP.

The year 2005 all sectors indicate positive deviations from IDP. The sectors: 5 (Wood and products of wood and cork) 0.045219525, 19 (Other transport equipment) 0.041346276, 20 (Manufacturing n.e.c; recycling) 0.041228344 and 17 (Medical, precision and optical instruments) with 0.039185138, indicate the largest deviations.

The year 2011 all sectors –apart four- indicate positive deviations from IDP. The sectors: 19 (Other transport equipment) 0.032046206, 5 (Wood and products of wood and cork) 0.024912668, 18 (Motor vehicles, trailers and semi-trailers) 0.023192919 and 10 (Other non-metallic mineral products) with 0.013079362, indicate the largest deviations. There are four sectors: 1 (Agriculture, hunting, forestry and fishing) -0.010204769, 3 (Food products, beverages and tobacco) -0.003994343, 14 (Office, accounting and computing machinery) -0.003997676 and 16 (Radio, television and communication equipment) -0.007402367 that indicate negative deviations from IDP.

Spain follows Greece's performance records. From tables 2 and 3, we observe that in all sectors Spain is characterized by sectoral unit labour content higher than the IDP, indicating that Spanish enterprises perform at a lower level than the average which is established by competition in each sector. The year 2000 12 sectors indicate positive deviations from IDP and 10 sectors indicate negative deviations from IDP. The sector 14 (Office, accounting and computing machinery) with 0.014356175, indicate the largest positive deviation while the other sectors present lower positive deviations. The sectors: 1 (Agriculture,

hunting, forestry and fishing) -0.010454305, 4 (Textiles, textile products, leather and footwear) -0.006130071, and 3 (Food products, beverages and tobacco) -0.006130071, that indicate negative deviations from IDP.

The year 2005 all sectors -apart from 2- indicate positive deviations from IDP. The sectors: 15 (Electrical machinery and apparatus n.e.c) 0.019382574, 14 (Office, accounting and computing machinery) 0.026103701 and 16 (Radio, television and communication equipment) with 0.026816389 indicate the largest deviations. The sectors: 1 (Agriculture, hunting, forestry and fishing) -0.005944139 and 5 (Wood and products of wood and cork) -0.002640119, that indicate negative deviations from IDP.

The year 2011 all sectors -apart from 2- indicate positive deviations from IDP. The sectors: 15 (Electrical machinery and apparatus n.e.c) 0.011845139, 14 (Office, accounting and computing machinery) 0.018104352 and 16 (Radio, television and communication equipment) with 0.01557935, indicate the largest deviations. There are two sectors: 19 (Other transport equipment) -0.008270706 and 18 (Motor vehicles, trailers and semi-trailers) -0.00343483 that indicate negative deviations from IDP.

Finland presents a totally different productive pattern. Country in productive sectors shows high productivity usually in all sectors remains above the average values depicted by IDP. The year 2000 all sectors but one indicate negative deviations from IDP. The sector 14 (Office, accounting and computing machinery) 0.040530827 indicate positive deviation. All the other sectors show negative deviations. The sectors: 17 (Medical, precision and optical instruments) -0.037011633, 20 (Manufacturing n.e.c; recycling) -0.029764662, and 13 (Machinery and equipment n.e.c) -0.028018447 that indicate the largest negative deviations from IDP.

The year 2005 all sectors indicate negative deviations from IDP. The sectors: 17 (Medical, precision and optical instruments) -0.047631779, 20 (Manufacturing n.e.c; recycling) -0.046672023 and 5 (Wood and products of wood and cork) -0.042579406, indicate the largest negative deviations from IDP.

The year 2011 all sectors but one indicate negative deviations from IDP. The sector 1 (Agriculture, hunting, forestry and fishing) 0.00473794, is the only that indicate positive deviation. There are three sectors: 5 (Wood and products of wood and cork) -0.025574228, 19 (Other transport equipment) -0.023775501 and 17 (Medical, precision and optical instruments) -0.020765957 that shows negative deviations from IDP.

In summary, the empirical analysis showed that the unit values of the Finish sectors remained above, whereas of the Greek and Spanish remained below, the so-estimated average international values. The empirical results show that all Greek sectors present persistent positive deviations between DDP from the respective IDP formed by the four Eurozone countries, indicating persistent lower productivity performance (Seretis and Tsaliki 2015).

Conclusions

This paper has supported the Marxist argument that Greek capitalism is subject to economic imperialist exploitation by the more developed EU economies through value transfers caused by "broad" unequal exchange. Additional research involving more EU economies is required (conditional upon the availability of the necessary data) in order to supplement this conclusion and also to show the complex pyramid-like structure of the EU.

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