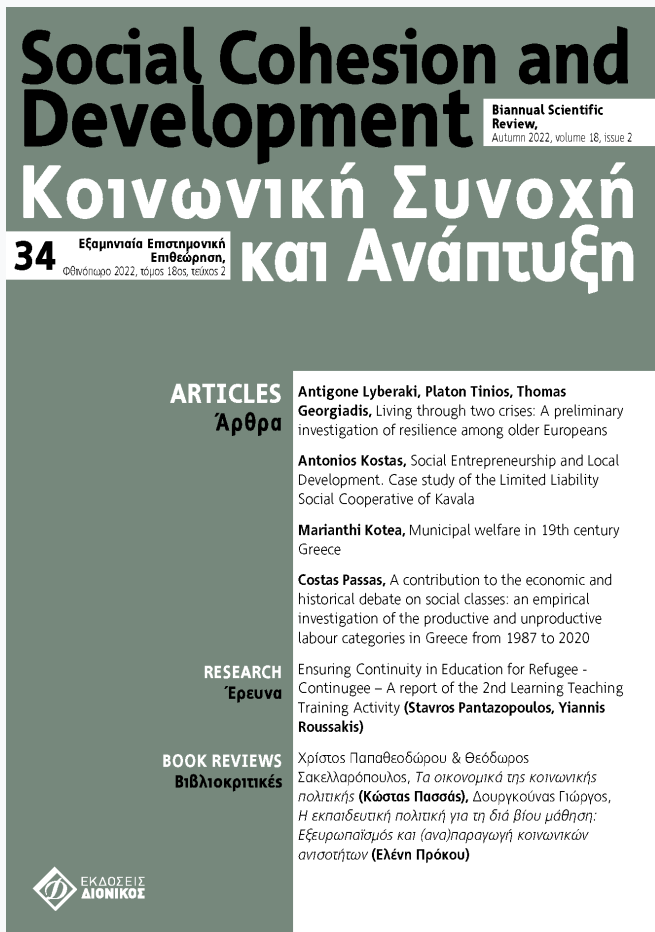


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A contribution to the economic and historical debate on social classes: an empirical investigation of the productive and unproductive labour categories in Greece from 1987 to 2020

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Μια συμβολή στην συζήτηση της οικονομίας και της ιστορίας για τις κοινωνικές τάξεις: μια εμπειρική διερεύνηση της διάκρισης μεταξύ των κατηγοριών της παραγωγικής και μη παραγωγικής εργασίας στη Ελλάδα την περίοδο 1987 έως 2020

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ABSTRACT

The distinction between productive and unproductive labour, tracing its origins to classical and Marxian political economy, has been a source of a long-standing debate in the literature. In this essay we argue that the proper definition of productive and unproductive labour is critical for the empirical estimation of social classes from a Marxian perspective. In addition, using the methodological framework of the classical Marxian tradition we estimate the categories of productive and unproductive labour for the Greek economy during the period spanning the years 1987 to 2020 using micro-data from the Labour Force Survey and discuss our results in comparison with other recent similar studies for Greece.

KEY WORDS: Social classes, productive labour, unproductive labour, mode of production.

ΠΕΡΙΛΗΨΗ

Η διάκριση μεταξύ της παραγωγικής και μη παραγωγικής εργασίας, έχοντας τις ρίζες της στην κλασική και Μαρξική πολιτική οικονομία, έχει αποτελέσει την πηγή μιας εκτεταμένης συζήτησης στη βιβλιογραφία. Στην παρούσα μελέτη υποστηρίζουμε ότι ο ορθός ορισμός των κατηγοριών της παραγωγικής και μη παραγωγικής εργασίας είναι καθοριστικός για την εμπειρική εκτίμηση των κοινωνικών τάξεων υπό μια Μαρξική οπτική. Επιπρόσθετα, χρησιμοποιώντας το μεθοδολογικό πλαίσιο της Μαρξικής παράδοσης, προχωρούμε στην εμπειρική εκτίμηση των κατηγοριών της παραγωγικής και μη παραγωγικής εργασίας για την Ελλάδα για την περίοδο 1987 έως 2020, χρησιμοποιώντας μικροδεδομένα της Έρευνας Εργατικού Δυναμικού και συγκρίνουμε τα αποτελέσματα που λαμβάνουμε τα με άλλες αντίστοιχες μελέτες για την Ελλάδα.

ΛΕΞΕΙΣ-ΚΛΕΙΔΙΑ: Κοινωνικές τάξεις, παραγωγική εργασία, μη παραγωγική εργασία, τρόπος παραγωγής.

1. Introduction

The resurgence of interest for radical social, political, and economic theories during the late 1960s brought along a renewed interest in the topic of social classes. Renewed in the sense that, on the one hand a significant corpus of literature on the subject already existed in the works of Marx, Durkheim and Weber and their immediate followers; and on the other in that old theories were recast and reformulated to account for what at the time were considered new phenomena. In particular, the growing importance of managers and technicians, or in general of the new middle class, became the focus of a debate that centred around the contributions of Poulantzas (1973), Carchedi (1975a; 1975b) and Wright (1976; 1985). In parallel, the increasing awareness of the relevance of unproductive labour for the empirical estimation of Marxian categories (Gillman 1957; Mage 1963) and the reformulation of the distinction between productive and unproductive labour in the context of the theory of Monopoly Capitalism (Baran 1957; Baran and Sweezy 1966) also reached a high point during the same period with significant contributions by Gough (1972), Yaffe (1973), Bullock (1973; 1974), Fine (1973), Gough and Harrison (1975), and Harrison (1973).

Although the debate on class has since moved on from that early stage, characterized by an intense focus on the labour process itself, towards issues of power, exploitation, and income inequality (Neilson 2007; 2017), a fundamental issue has not stopped to generate controversy: the relation of the definitions of productive and unproductive labour to the boundary of the working class. This comes as no surprise as the debate on productive and unproductive labour is both ancient and unresolved (Coontz, 2010). As Wright (1976: 3) notes the boundary of the category working class can be identified either with the boundaries of productive labour proper, or with the boundaries of productive labour plus some other laborers, typically low-level white-collar employees, or with the entirety, or almost the entirety, of wage-laborers.

The main aim of this essay will be to empirically estimate the categories of productive and unproductive labour and social classes for the Greece Our dataset comprises of micro-data from the Labour Force Survey for the period 1987 to 2020. Our method of investigation will be based on the contribution of Shaikh (1978) and the detailed mapping of national account categories to Marxian variables by Shaikh and Tonak (1994).

2. The categories of productive and unproductive labour in Marx

The core issues on the debate on productive and unproductive labour were summarised by Hunt (1979), Leadbeater (1985), and Mandel in his introduction of *Capital Vol II* (Marx 1992). Those include (a) the validity of formulations of the distinction based on normative criteria, (b) the relationship between modes of production and social formations, (c) the relationship of labour producing services to labour producing commodities, (d) the relationship of managers, engineers and other non-manual labourers to the collective worker, (e) the relationship of labour employed in the sphere of production to labour employed in the sphere of circulation, (f) the relationship of supervisory to non-supervisory labour. Not surprisingly those same issues were, abstracting from the effects of the superstructure, the main issues also on the debate on social classes (see for example Wright 2005). In what follows we discuss those claims from within the Marxian tradition.

In general, the distinction between productive and unproductive labour in societies where the capitalist mode of production is dominant can be traced to the analysis of the commodity. In this context commodities have two fundamental aspects: on the one hand they are objects to be consumed, an attribute that gives them use-value or utility, and on the other hand they are exchangeable objects, an attribute that gives them exchange-value. Marx is very clear to note that neither the bodily form of the commodity (whether it is an external object or a service, the useful property of labour itself), nor the nature of the need that the commodity satisfies (being for example a wage-good, or a luxury-good) makes any difference. This in fact is his main line of critique against the Smithian definition of productive labour in the Theories of Surplus Value. Regarding this issue Marx (2000: 164-168) commenting on Smith identifies four cases. Firstly, Marx notes that he agrees with Smith on including intellectual labour that is consumed in the process of material production as productive labour. Marx expands on this idea by making use of the notion of the collective labourer, an issue that we will consider shortly. Secondly, Marx criticises Smith's identification of unproductive labour with labour that is not transformed into tangible commodities since a number of workers employed out of revenue (and thus unproductive), such as a domestic cook, do in fact produce articles of consumption that are vendible. Marx notes that what is critical here is that labour is exchanged with revenue and not the material characteristics of the product. Thirdly, Marx criticises Smith by identifying a number of services that indeed do not produce a material commodity but are subsumed under capital (actors, singers, teachers). This is the clearest endorsement of the productive nature of services under capitalist relations by Marx. Fourthly, Marx sets labour power apart as a special commodity and identifies the expenses that train, repair or modify labour power as *faux frais* of production, as a cost for repairs. Therefore, labour that produces commodities as external objects to be consumed on a future date, or labour that produces a service that is to be consumed on the spot, do not differ between them from the Marxian perspective. Any inconsistencies in Marx's treatment of services derive in our opinion from his understanding of services as activities not having attained a real as opposed to merely formal subsumption under capital; a condition that historically has been negated by what has been described in the literature as the "industrialisation of services" (Sakellaropoulos 2002:121).

The production of commodities requires a combination of expenditures of capital to purchase labour (variable capital) and of capital to purchase machines, raw materials, and other means of production (constant capital). Such a combination from the point of view of use-value is a ratio of machinery to labour hours, the technical composition of capital, and from the point of view of value is the value composition of capital. Taken together the technical composition and the value composition of capital constitute the organic composition of capital. Capital, though, does not reside only on the production sphere, the focus of Volume I of *Capital*, but also on the circulation sphere, the focus of volume II of *Capital*. For the delineation between production and circulation Marx makes use of a complex argument that links functions of capital, with forms of existence of capital, into circuits of capital. Therefore, Marx does not use a physicalist argument for the definition of the boundaries of production activities, i.e., he does not emphasise the physical aspects of the production process, but instead places emphasis on the functions that capital performs in its reproduction. The functions that capital performs are those of money, commodity and production. To those correspond the forms of money capital, commodity capital and productive capital. Under this formulation three circuits of capital are identified: (a) The circuit of money capital, (b) the circuit of commodity capital, and (c) the circuit of productive capital. In this context industrial capital is defined by Marx (1992: 133,183) as the unity of the three

functional forms and their corresponding circuits of capital. According to Marx (1990: 1025) only industrial capital is able to constantly produce relative surplus value under a real subsumption of labour under capital, as opposed to pre-industrial capital that without the necessary technical basis for production was only able to achieve a constant production of absolute surplus value under a merely formal subsumption of labour under capital. It is only industrial capital according to Marx that implies ("schließt") the existence the classes of workers and capitalists. Thus, it is impossible to define the working class without a definition of industrial capital, and it is also impossible to define the latter without prior definitions of the unity of functions and functional forms of capital in production and circulation activities.

Therefore, this analysis: (a) assumes the existence of non-industrial modes of capital, aside from other explicitly non-capitalist modes of production, and (b) identifies production and circulation activities in a manner that has nothing to do with the external characteristics of the service, or of the commodity produced.

This brings the issue of relation of managers, engineers and other non-manual labourers to the collective worker. Marx discusses this issue at some length in the first volume of *Capital*, where he gives his first definition of productive labour "If we look at the whole[labour] process from the point of view of its result, the product, it is plain that both the instruments of labour and the object of labour are means of production, and that the labour itself is productive labour" (Marx 1990: 287).

Marx notes that this definition, based solely on the labour process, is inapplicable to capitalist production. The cause for this is that capitalist production includes both the labour process, i.e., the process of producing use values, and the valorisation process, i.e., the process of producing value. The critical difference between the valorisation process and the labour process is that in the latter labour is employed for its qualities and it is heterogeneous in the same way that commodities viewed from the point of their use value are heterogeneous. Whereas, in the former labour is employed for its quantity and becomes homogeneous in the same way that commodities viewed from the point of their value are homogeneous.

Accounting for the specifically capitalist character of production relations causes two significant changes. First the concept of productive labour expands. Under capitalist relations of production, the labourer can no longer be considered as an individual, since the product is the result of the joint effort of a combination of labourers, of the collective labourer. Moreover, mental and physical [manual] labour cannot be a basis for the distinction between productive and unproductive labour, since both are functions of the collective labourer. Critically Marx notes that the earlier definition still holds for the collective labourer, but not for each of its individual members.

The second effect of the specifically capitalist character of production relations on the definition of productive labour is that it also makes the latter narrower. Since production is considered as capitalist production the labourer has to produce not only commodities, but also surplus value. Therefore, a productive labourer in capitalism can only be a wage labourer. Marx notes that various definitions of productive labour that preceded his mainly differed on their conception of the nature of surplus-value. It is also worth noting that since only wage labour is productive labour in capitalism, production of use value for direct consumption, and simple commodity production, or production of values, should be considered as production labour but nevertheless unproductive labour.

In this context Marx provides his second definition of productive labour, it is this definition that is applicable to capitalist relations of production. "The only worker who is productive is one

who produces surplus-value for the capitalist, or in other words contributes towards the self-valorization of capital" (Marx 1990: 644).

The final issue that remains is that of supervisory labour. According to Marx (1990: 449-450) the emergence of the collective worker is not a result of the spontaneous act of workers in cooperation, but rather the act of capital. The two-fold character of the commodity, use-value and value, and as a corollary the two-fold character of the production process, labour process and valorisation process, requires the emergence of a separate kind of labour that on the one hand participates in the production process as a labourer that organises production and on the valorisation process as a wage-labourer, but with its exclusive function being that of supervision of other labourers. This is exactly the kind of labour that Poulantzas (1973; 1975) identifies both as unproductive and as not a member of the working class. When considering this kind of labour Marx draws attention to the conflicted position of classical political economy that regards supervisory labour as a *faux frais* of production (unproductive labour) in the case of non-capitalist production, but also as organising and productive labour (part of the collective worker) in the case of capitalist production. To this tension Marx does not provide a direct answer and therefore both aspects could be considered as dominant. However, to expand on the example that Marx gives, identifying managers with officers, and foremen with NCOs of the industrial army does not mean that they do not fight, bleed and die in battle. This is though not the case for top-management, a special segment of wage-labourers that indeed exclusively perform the function of capital, outside and above the production process and in direct antagonism to the producers. The actual direction of the battle and certainly the horrors of actual combat being delegated to lower tiers of management.

In that sense, far from forming a separate class or part of separate class, supervisory labour should be considered both as a part of the collective labourer, because of its necessary organisational aspect, and unproductive since it is as Marx notes a *faux frais* of production. Poulantzas escapes this dilemma by assuming that all unproductive labour cannot be a member of the working class; this however is a position that cannot be supported from within the Marxian tradition, as it conflicts the labour theory of value. This becomes apparent using the following example: if unproductive labour is not a part of the working class, then, since capital necessitates its antithesis: the worker, only productive capital is capital; therefore, leaving the status of commodity and money capital in limbo. The latter of course has obvious consequences for the coherence of Marxian theory. Thus, in what follows supervisory labour will be considered as unproductive labour and as a separate stratum of the working class.

Summarising, Marx identifies productive labour under capitalist relations of production as wage labour directly exchanged with capital, as opposed to labour that is directly exchanged with revenue (Marx, 2000: 157), within the production circuit of capital as opposed to capital in the process of circulation or other areas of social reproduction (Marx, 1992: 133). The first part of this definition focuses on the social form of labour, while the second part of this definition focuses on the function of capital that employs labour and thus by corollary on the function of labour. In Marx's own words "Productive labour is merely an abbreviation for the entire complex of activities of labour and labour-power within the capitalist process of production (Marx, 1990: 1043)". Thus, productive labour in capitalism is labour that produces surplus value, i.e., consumes inputs productively, while unproductive labour is any kind of labour that consumes a portion of the surplus value produced, i.e., consumes unproductively.

Thus, in order for a kind of labour to produce surplus value it has to fulfil the following criteria: (a) From the point of view of use-value, i.e., of the labour process, it has to be labour in contrast to non-labour. This statement corresponds to the first definition of Marx. (b) From the point of view of value, i.e., of the valorisation process, it has to be wage labour in contrast to non-wage labour and part of the collective worker in contrast to the (collective) capitalist. This statement corresponds to the second definition of Marx. (c) From the point of view of the production process, the combination of the labour process and the valorisation process, it has to be labour that performs the functions of the collective worker and not the function of the (collective) capitalist, i.e., it has to be non-supervisory labour. This statement corresponds to Marx's comments on cooperation. (d) From the point of view of the function of capital, it has to be labour employed by productive capital in contrast to labour employed by commodity and money capital, i.e., it has to be production labour in contrast to circulation labour. This in turn is the essence of Marx's discussion on productive labour in the second volume of capital.

3. Productive labour, unproductive labour and the working class in Greece: An empirical estimation

Having established a Marxian definition of productive and unproductive labour we now turn to the issue of its empirical estimation. Since National Statistical Offices and international organisations do not estimate or report data on productive labour it is necessary to provide consistent empirical criteria for its estimation. This is neither an easy nor a straightforward task as the literature is not unanimous regarding the exact method that has to be employed. For example, Moseley (1991), Shaikh and Tonak (1994), Mohun (2005; 2006; 2014), Paitaridis and Tsoulfidis (2012), and Maniatis and Passas (2013; 2018) differ slightly in their method and results due to differences in data availability over time.

Using the Marxian definition of productive labour, we identify wage labour in general with labour exchanged with capital, and labour employed in the production circuit of capital with labour in the production process. However, for the strict identification of wage labour with labour exchanged with industrial capital the use of additional criteria is required in order to delineate the industrial capital from non-industrial capitals. Traditionally a criterion of firm size based on the number of employees, for example 10 or more, is considered as sufficient to exclude all non-industrial capitals. In our opinion such a criterion is largely arbitrary and inadequate. A better although computationally much heavier solution would have been to place emphasis directly on the size of invested capital. However, since no data are available for such a delineation between industrial and non-industrial capitals, we opt to retain the original formulation simply in order to distinguish between self-employed persons without employees and employers and thus identify and delineate that segment of the workforce that retains characteristics not directly identifiable with the capitalist mode of production. Finally, the identification of production processes in contrast to circulation activities is an additional issue. Here we adopt a functional approach that considers both the occupational and sectoral dimension of labour performed as necessary for the identification of production activities. This can be considered as an approximation due to data availability limitations of the circuits of capital approach that we described before.

Therefore, productive labour proper is a homogeneous category that includes wage labour, at the intersection of production occupations and production sectors. In contrast unproductive

labour is a heterogeneous category that includes wage labour both in circulation labour and in non-production activities, including supervisory activities, within production sectors. In addition, unproductive labour also includes all labour employed by revenue, i.e., not employed by capital. In what follows we will call the former unproductive labour employed by capital and the latter unproductive labour not employed by capital. Thus, the working class can be identified with the sum of productive labour and unproductive labour employed by capital.

Using micro-data from the Labour Force Survey it is now possible to turn to the estimation of productive and unproductive labour, and therefore also of the working class, for the period 1987 to 2020. For this purpose, we employ the following criteria: (1) professional status, i.e., distinction between self-employed with employees, self-employed without employees, family members and wage labour; (2) occupation, i.e., distinction between managers and non-managers on the one hand and between production and non-production employees among non-managers; (3) economic activity, i.e., distinction between on the one hand the business sector of the economy and the State, and on the other hand between production and circulation activities within the business sector; and (4) engagement in supervisory activities.

A comparison of our estimates (Table 1) with those of Economakis et al. (2016b) and of Sakellariopoulos (2014) makes clear some fundamental differences in the theories underpinning empirical estimates.

Table 1: Class structure, Greece, 1987-2020

| YEAR | TOTAL | SELF-EMPLOYED | SELF-EMPLOYED (WITHOUT EM- PLOYEES) | SELF-EMPLOYED (WITH EMPLOY- EES) | FAMILY MEMBERS | WAGE LABOUR | MANAGERS | PRODUCTION LABOUR | PRODUCTION LABOUR (SUPERVI- SORY) | PRODUCTION LABOUR (NON- SUPERVISORY) |
|------|-----------|---------------|---|--|----------------|-------------|----------|----------------------|---|--|
| 1987 | 3,597,447 | 1,274,424 | 1,077,118 | 197,306 | 529,166 | 1,793,857 | 30,355 | 1,005,110 | 85,216 | 919,894 |
| 1988 | 3,657,354 | 1,287,181 | 1,082,925 | 204,256 | 525,541 | 1,844,632 | 33,816 | 1,003,658 | 85,093 | 918,565 |
| 1989 | 3,670,894 | 1,258,913 | 1,054,774 | 204,139 | 523,750 | 1,888,231 | 30,964 | 1,012,866 | 85,874 | 926,992 |
| 1990 | 3,719,056 | 1,292,884 | 1,083,284 | 209,600 | 479,628 | 1,946,544 | 28,947 | 1,028,419 | 87,192 | 941,227 |
| 1991 | 3,632,437 | 1,278,505 | 1,049,072 | 229,433 | 423,464 | 1,930,468 | 30,017 | 992,127 | 84,115 | 908,012 |
| 1992 | 3,684,501 | 1,301,453 | 1,045,609 | 255,844 | 445,496 | 1,937,552 | 38,252 | 977,516 | 82,877 | 894,640 |
| 1993 | 3,720,179 | 1,288,282 | 1,019,390 | 268,892 | 451,170 | 1,980,727 | 22,592 | 1,013,318 | 85,912 | 927,406 |
| 1994 | 3,789,609 | 1,304,309 | 1,038,044 | 266,265 | 467,602 | 2,017,698 | 29,136 | 1,015,866 | 86,128 | 929,738 |
| 1995 | 3,823,809 | 1,290,115 | 1,045,353 | 244,761 | 473,612 | 2,060,082 | 27,646 | 1,024,464 | 86,857 | 937,607 |
| 1996 | 3,871,923 | 1,304,473 | 1,036,487 | 267,987 | 466,444 | 2,101,006 | 33,451 | 1,034,400 | 87,699 | 946,701 |
| 1997 | 3,854,055 | 1,282,647 | 1,007,867 | 274,779 | 459,940 | 2,111,468 | 29,952 | 1,015,035 | 86,058 | 928,978 |
| 1998 | 4,020,734 | 1,304,739 | 1,009,633 | 295,033 | 453,112 | 2,262,882 | 42,950 | 1,104,630 | 93,654 | 1,010,977 |
| 1999 | 4,034,080 | 1,302,370 | 997,829 | 304,541 | 418,801 | 2,312,909 | 39,717 | 1,106,053 | 93,774 | 1,012,279 |
| 2000 | 4,090,707 | 1,320,178 | 989,866 | 330,178 | 390,740 | 2,379,789 | 39,122 | 1,109,756 | 94,088 | 1,015,667 |
| 2001 | 4,202,137 | 1,314,671 | 973,740 | 340,930 | 347,498 | 2,539,968 | 35,439 | 1,189,386 | 100,840 | 1,088,547 |
| 2002 | 4,264,915 | 1,323,751 | 1,006,583 | 317,168 | 340,787 | 2,600,377 | 46,258 | 1,220,241 | 103,455 | 1,116,785 |
| 2003 | 4,353,159 | 1,337,188 | 1,022,629 | 314,560 | 353,037 | 2,662,933 | 43,502 | 1,241,156 | 105,229 | 1,135,927 |
| 2004 | 4,389,515 | 1,316,938 | 968,415 | 348,523 | 278,139 | 2,794,438 | 48,091 | 1,280,616 | 108,574 | 1,172,041 |
| 2005 | 4,443,563 | 1,319,099 | 969,192 | 349,906 | 280,651 | 2,843,813 | 42,260 | 1,296,767 | 109,944 | 1,186,824 |
| 2006 | 4,527,509 | 1,335,578 | 972,799 | 362,779 | 296,063 | 2,895,868 | 49,405 | 1,309,247 | 111,002 | 1,198,245 |

| | | | | | | | | | | |
|------|-----------|-----------|---------|---------|---------|-----------|--------|-----------|---------|-----------|
| 2007 | 4,564,048 | 1,322,617 | 956,513 | 366,105 | 290,266 | 2,951,165 | 50,836 | 1,339,038 | 113,337 | 1,225,701 |
| 2008 | 4,610,464 | 1,343,174 | 958,584 | 384,590 | 271,125 | 2,996,166 | 50,727 | 1,380,204 | 114,012 | 1,266,193 |
| 2009 | 4,555,996 | 1,340,897 | 963,970 | 376,927 | 266,138 | 2,948,961 | 51,315 | 1,347,137 | 116,448 | 1,230,689 |
| 2010 | 4,389,754 | 1,313,976 | 969,334 | 344,642 | 248,879 | 2,826,899 | 53,252 | 1,265,222 | 118,194 | 1,147,028 |
| 2011 | 4,054,331 | 1,246,214 | 935,609 | 310,606 | 221,719 | 2,586,398 | 39,412 | 1,116,813 | 108,764 | 1,008,049 |
| 2012 | 3,694,976 | 1,168,663 | 907,928 | 260,735 | 185,311 | 2,341,002 | 42,370 | 988,661 | 106,677 | 881,984 |
| 2013 | 3,513,197 | 1,127,763 | 893,987 | 233,776 | 171,757 | 2,213,678 | 39,436 | 922,649 | 104,442 | 818,207 |
| 2014 | 3,536,240 | 1,105,766 | 882,003 | 223,763 | 166,126 | 2,264,348 | 30,210 | 954,312 | 101,257 | 853,055 |
| 2015 | 3,610,693 | 1,104,260 | 855,894 | 248,366 | 157,904 | 2,348,528 | 22,916 | 962,896 | 94,320 | 868,577 |
| 2016 | 3,673,559 | 1,108,655 | 836,915 | 271,740 | 143,675 | 2,421,229 | 25,107 | 1,019,976 | 115,541 | 904,435 |
| 2017 | 3,752,674 | 1,131,157 | 856,786 | 274,371 | 147,367 | 2,474,150 | 29,869 | 1,049,452 | 121,321 | 928,131 |
| 2018 | 3,828,021 | 1,141,654 | 850,047 | 291,607 | 140,089 | 2,546,279 | 33,542 | 1,070,669 | 127,065 | 943,604 |
| 2019 | 3,911,030 | 1,124,072 | 834,760 | 289,312 | 123,436 | 2,663,522 | 33,706 | 1,107,513 | 138,741 | 968,772 |
| 2020 | 3,875,479 | 1,118,026 | 817,953 | 300,074 | 116,577 | 2,640,876 | 38,200 | 1,089,829 | 128,961 | 960,867 |

| YEAR | NON-PRODUCTION LABOUR | NON-PRODUCTION LABOUR (SUPERVISORY) | NON-PRODUCTION LABOUR (NON-SUPERVISORY) | CIRCULATION LABOUR | CIRCULATION LABOUR (SUPERVISORY) | CIRCULATION LABOUR (NON-SUPERVISORY) | STATE UPPER STRATUM | STATE LOWER STRATUM | STATE LOWER STRATUM (SUPERVISORY) | STATE LOWER STRATUM (NON-SUPERVISORY) |
|------|-----------------------|-------------------------------------|---|--------------------|----------------------------------|--------------------------------------|---------------------|---------------------|-----------------------------------|---------------------------------------|
| 1987 | 257,607 | 22,716 | 234,891 | 302,391 | 20,225 | 282,165 | 20,282 | 178,113 | 33,245 | 144,868 |
| 1988 | 265,356 | 23,399 | 241,957 | 322,305 | 21,557 | 300,748 | 14,016 | 205,481 | 38,353 | 167,127 |
| 1989 | 275,764 | 24,317 | 251,447 | 337,068 | 22,544 | 314,523 | 9,836 | 221,733 | 41,387 | 180,346 |
| 1990 | 293,764 | 25,904 | 267,859 | 368,631 | 24,655 | 343,975 | 6,127 | 220,657 | 41,186 | 179,471 |
| 1991 | 294,062 | 25,931 | 268,131 | 375,279 | 25,100 | 350,179 | 7,612 | 231,372 | 43,186 | 188,186 |
| 1992 | 310,333 | 27,365 | 282,968 | 378,573 | 25,320 | 353,252 | 8,192 | 224,686 | 41,938 | 182,748 |
| 1993 | 267,666 | 23,603 | 244,063 | 410,826 | 27,478 | 383,348 | 4,569 | 261,757 | 48,857 | 212,899 |
| 1994 | 261,850 | 23,090 | 238,760 | 428,491 | 28,659 | 399,832 | 4,394 | 277,960 | 51,882 | 226,078 |

| | | | | | | | | | | |
|------|---------|--------|---------|---------|--------|---------|-------|---------|--------|---------|
| 1995 | 269,081 | 23,728 | 245,353 | 467,444 | 31,265 | 436,180 | 4,567 | 266,879 | 49,814 | 217,066 |
| 1996 | 274,830 | 24,235 | 250,595 | 484,683 | 32,418 | 452,265 | 6,238 | 267,404 | 49,912 | 217,493 |
| 1997 | 280,487 | 24,734 | 255,753 | 507,348 | 33,934 | 473,415 | 6,884 | 271,762 | 50,725 | 221,037 |
| 1998 | 280,467 | 24,732 | 255,736 | 553,568 | 37,025 | 516,543 | 8,296 | 272,971 | 50,951 | 222,020 |
| 1999 | 303,278 | 26,743 | 276,534 | 576,688 | 38,571 | 538,117 | 6,195 | 280,978 | 52,445 | 228,533 |
| 2000 | 317,224 | 27,973 | 289,251 | 609,814 | 40,787 | 569,027 | 5,971 | 297,902 | 55,604 | 242,298 |
| 2001 | 347,022 | 30,601 | 316,421 | 655,517 | 43,844 | 611,673 | 4,804 | 307,799 | 57,451 | 250,348 |
| 2002 | 343,007 | 30,247 | 312,760 | 672,823 | 45,001 | 627,822 | 6,367 | 311,681 | 58,176 | 253,505 |
| 2003 | 346,648 | 30,568 | 316,081 | 703,373 | 47,044 | 656,328 | 7,776 | 320,478 | 59,818 | 260,660 |
| 2004 | 353,950 | 31,212 | 322,738 | 753,774 | 50,415 | 703,359 | 6,920 | 351,087 | 65,531 | 285,556 |
| 2005 | 363,316 | 32,037 | 331,278 | 789,976 | 52,837 | 737,140 | 7,008 | 344,485 | 64,299 | 280,187 |
| 2006 | 362,826 | 31,994 | 330,832 | 788,873 | 52,763 | 736,110 | 8,971 | 376,546 | 70,283 | 306,263 |
| 2007 | 380,969 | 29,059 | 351,910 | 792,858 | 57,486 | 735,373 | 9,020 | 378,444 | 72,661 | 305,783 |
| 2008 | 403,997 | 29,972 | 374,025 | 781,719 | 59,979 | 721,741 | 9,356 | 370,161 | 61,115 | 309,013 |
| 2009 | 393,853 | 30,477 | 363,376 | 779,575 | 57,683 | 721,892 | 9,792 | 367,288 | 62,907 | 304,381 |
| 2010 | 366,734 | 29,160 | 337,574 | 771,775 | 59,985 | 711,790 | 8,313 | 361,602 | 73,310 | 288,293 |
| 2011 | 337,390 | 27,486 | 309,904 | 737,912 | 61,125 | 676,787 | 4,640 | 350,231 | 71,181 | 279,050 |
| 2012 | 316,534 | 30,709 | 285,825 | 666,744 | 68,246 | 598,498 | 5,945 | 320,748 | 60,404 | 260,344 |
| 2013 | 298,607 | 27,412 | 271,195 | 627,931 | 64,931 | 563,001 | 6,442 | 318,611 | 74,312 | 244,299 |
| 2014 | 337,321 | 24,681 | 312,640 | 631,469 | 54,380 | 577,090 | 5,874 | 305,162 | 69,358 | 235,804 |
| 2015 | 368,033 | 32,152 | 335,881 | 681,997 | 59,351 | 622,646 | 4,588 | 308,099 | 66,574 | 241,525 |
| 2016 | 372,376 | 33,347 | 339,029 | 672,481 | 67,115 | 605,365 | 4,522 | 326,767 | 76,537 | 250,230 |
| 2017 | 376,953 | 35,800 | 341,153 | 687,264 | 68,954 | 618,310 | 3,729 | 326,883 | 86,642 | 240,241 |
| 2018 | 394,871 | 35,224 | 359,647 | 710,622 | 67,309 | 643,313 | 5,118 | 331,457 | 89,824 | 241,633 |
| 2019 | 447,284 | 39,240 | 408,044 | 733,525 | 71,647 | 661,878 | 3,676 | 337,817 | 83,356 | 254,462 |
| 2020 | 425,248 | 34,767 | 390,481 | 737,133 | 74,635 | 662,499 | 3,893 | 346,573 | 94,279 | 252,294 |

First, in the Althusserian tradition a social formation is a historically specific articulation of different modes of production. In that sense, the historically specific character of a social formation, fluid from the effects of class struggle, is the juxtaposition of the ahistorical essence of a "pure" mode of production, of the "matrix" of a mode of production, where class struggle is abstracted. However, both in the "Transition" and "Brenner" debates, regarding the transition from feudalism to capitalism, and in the so called "modes of production controversy" (see for example Foster-Carter (1978) and Laibman (1984)), such a formulation has been the point of heavy debate. The alternative view, that forms also the methodological foundation for this essay, is that "[a] social formation is the concrete expression of the form of existence of a mode of production in a particular historical society" (Mavroudeas 1999: 35). Thus, a multitude of modes of production existing simultaneously within a social formation can be considered as a special case valid only during transitional stages; not after the point when capital has dominated production. Under this formulation the mode of production is not a metaphysical fixed ahistorical essence but rather a real historical category. Therefore, in the same way that the usurer's and the merchant's capital become subsumed under industrial capital, their profit regulated by the general average rate of profit, so too all other modes of production are subsumed under capital, or in any case their forms of revenue to the particularly capitalist forms of revenue. To state the contrary necessarily undermines the regulating properties of the average rate of profit and thus also the consistency of the Marxian system. We note that we retain as a special marginal case self-employed persons (including their family helping members) that do not employ wage labour, the traditional middle class, i.e., we reduce the simple commodity and the hybrid modes of production, along with all "grey areas", to a common domain.

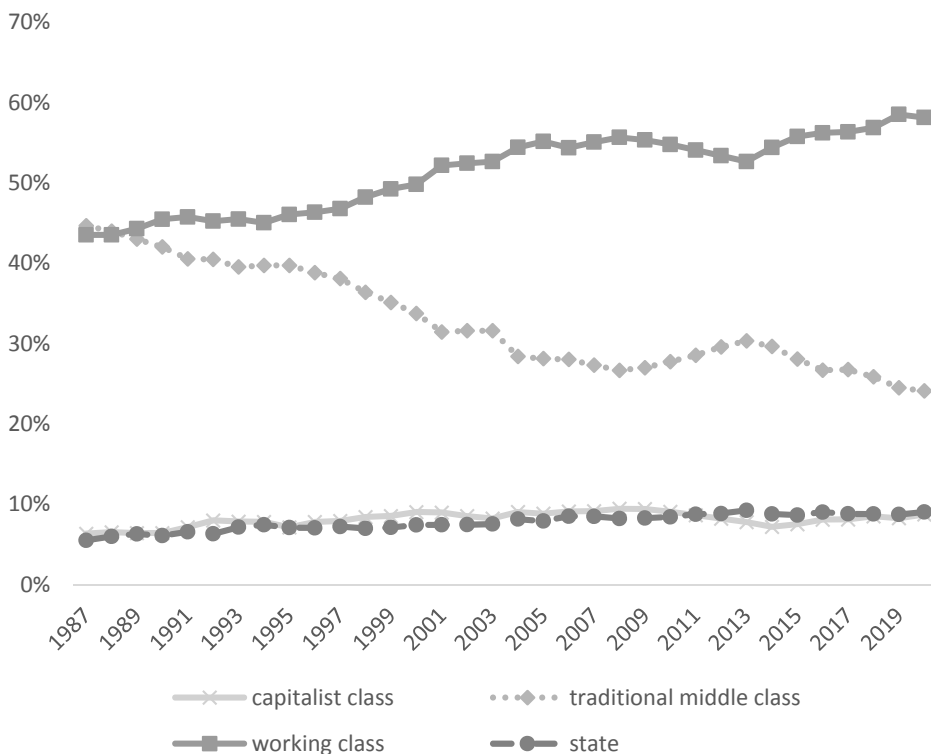
Second, in the Althusserian tradition the State uses a number of Repressive and Ideological State Apparatuses, with the former using predominantly violence and the latter predominantly ideology as elements of its repressive apparatus. While the repressive state apparatuses are directly controlled by the State, they exist in the public sphere, this is not so with the totality of ideological state apparatuses as some of them reside in the private sphere. Thus, the ruling class needs to exercise political and ideological hegemony over the ideological state apparatuses in order to hold state power; if hegemony is lost state power will eventually be compromised. In this context it is the fact that the social formation is dominated by the capitalist mode of production that guarantees the capitalist character of the State. On the contrary, for proponents of the 'capital logic' school the form and function of the capitalist state are directly derived from the capitalist mode of production. The implication is subtle but critical, in the Althusserian case businesses controlled by the State, for example schools and hospitals or for that matter the power corporation, are not necessarily embedded in the capitalist mode of production, as their owner the State is not inherently dominated by capitalist relations of production. On the contrary in the 'capital logic' tradition the State is the ideal collective capitalist (Jessop 1977). Following the latter tradition, we identify employment by the State proper with employment that is both: (a) not in the private sector of the economy and (b) in public administration, social security and defence; all other non-private sector employment (including labour employed in educational and health activities) is considered to be in the broader public sector. In general, since the broader public sector of the economy and the private sector of the economy differ between them only on the legal form of property relations it is possible, as an approximation, to consider both in unison as segments of the business sector of the economy. In contrast, employed persons in the core functions of the State should be set apart and treated separately under a different set of assumptions

than those used for the economic identification of classes, since they do not participate directly neither to production, nor to circulation activities.

Third, supervision activities, occupational categories and economic activities are treated separately, i.e., top managers do not need to perform supervisory activities, nor is employment in the State classified according to occupation. On the contrary we make full use of those categories by estimating production labour, non-production labour and supervisory labour in production activities, circulation activities and the State, according to the methodology described in the previous section.

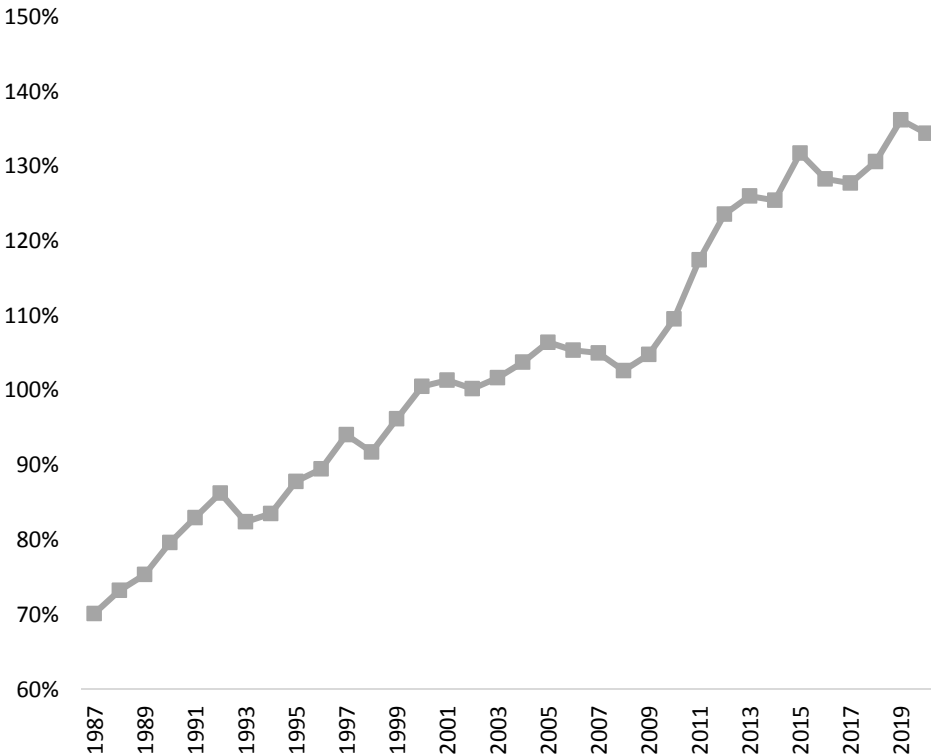
Our approach, therefore reduces the entirety of the employed population into the following classes: a capitalist class consisting of employers and managers, a traditional middle class consisting of self-employed persons without employees plus their family helping members, a working class consisting of productive and unproductive labour, and an intermediate class of state functionaries consisting of three strata that reflect the division between management on the one hand and supervisory and non-supervisory activities on the other.

Figure 1: Class structure, Greece, 1987-2020



Source: Labour Force Survey, Authors own calculations.

Figure 2: Unproductive to productive labour ratio, Greece, 1987-2020



Source: Labour Force Survey, Authors own calculations

4. The significance of productive and unproductive labour for the debate on social classes

The discrepancy between the estimates presented in this essay and those presented by proponents of the Althusserian school reflects a more fundamental difference of perspective on the issue of productive labour. This difference of perspective forms a significant part in the wider debate on the class structure of the Greek society and class in general. A debate that in turn has been heavily influenced by the ideas of the Althusserian school. The fundamental positions of authors of this tradition regarding the issues at hand can be summarised in two propositions: first that the class structure of the Greek society includes a multitude of classes that are carriers of the relations of production of distinct modes of production, and second that that the working class currently is a minority in Greece, as a significant portion of wage-labour is categorised by the authors as not working class. Those propositions though raise obvious questions: First, if only a minority of total employment is employed under capitalist relations of production how is it possible to claim, as the authors do, that capital relations dominate the economic sphere? Second, if

capitalist relations are so shallow in the case of Greece, an advanced capitalist country in Europe, what is the case of less advanced capitalist countries in other places of the world?

Moreover, regarding the distinction between productive and unproductive labour and its relation to the economic identification of the working class both Economakis (2021) and Sakellaropoulos (2014) dismiss the distinction as irrelevant. In particular for Economakis et al. (2016a) wage labour employed in the circulation process is explicitly productive labour (and therefore also part of the working class) since it is paid out of variable capital; productive labour being a necessary, but not a sufficient condition for the definition of the working class. Sakellaropoulos (2014: 217) uses a very similar formulation with productive labour "being that labour that is exchanged with capital, irrespective of its position in the combined production process". Such a formulation by both authors solves the extreme restrictiveness of the working class definition by Poulantzas, that identified workers solely with manual labourers, but at the cost of overly expanding the definition of productive labour to include circulation labour, something that Marx clearly avoided. An obvious problem arising from such a formulation is that if all labour is productive and the labour theory of value is retained then the value of a commodity will increase in circulation each time it is resold from a wholesaler to a wholesaler ad infinitum. Therefore, identical commodities will have prices that vary in proportion with the time they spend in circulation, and moreover the more time they spend in circulation the higher the price they will obtain, which is not only a theoretical, but also an empirical fallacy. Thus, the distinction between production and circulation activities, and as a corollary between productive and unproductive labour is absolutely necessary if Marxian theory is to retain its fundamental characteristics.

Poulantzas contribution is particularly critical to our discussion as it strides both the debate on productive labour and the debate on class and therefore it is necessary to devote some time to reconstruct his main arguments. In Poulantzas (1973), a social formation is composed of a combination (articulation) of several coexisting modes of production, with classes being those groupings of social agents that are structurally determined principally by their place in the production process and secondarily by the effects of the superstructure, in other words by their place in the division of labour. Within the capitalist mode of production productive labour is labour employed in the production process, the latter defined as the unity of labour process with the relations of production, whereas labour not employed in the production process is unproductive labour. Relations of production define the relation of workers and non-workers with the object and the means of labour, and involve two aspects: the ownership of the means of production and the possession of those means of production. In this context "productive labour is that which (always on the basis of use-value) produces exchange value in the form commodities, and so surplus value. It is precisely in this way that the working class is economically defined in the capitalist mode of production: productive labour relates directly to the division between classes in the relations of production" (Poulantzas 1973: 30). Therefore, according to Poulantzas the producer of surplus value is a productive worker, a part of the collective worker, a member of the working class. Such a formulation leaves two issues unresolved: first the relation of productive labour to wage labourers that are employed in the circulation process, i.e., wage labour in retail trade, banks, offices of various kinds, etc.; second the relation of productive labour to wage labourers that are employed in the periphery of the production process as technicians and engineers. Poulantzas answers in both instances in the negative, neither circulation labour, nor technicians and engineers can be considered as productive labour, and thus by extension they cannot be a part of neither the collective worker, nor the working class. In fact, it is Poulantzas main point that unproductive labourers of the capitalist mode of produc-

tion, including civil servants employed by the State, form a new petty bourgeoisie that is expanding under monopoly capitalism. Moreover, the new petty bourgeoisie itself is a fraction, together with the traditional petty bourgeoisie, of a petty bourgeois class. The main argument in favour of this proposition being that both fractions share common ideological and political characteristics.

Two replies to Poulantzas argument on the identity between productive labour and the economic identification of the working class that are directly relevant to our discussion were those of Carchedi (1975a; 1975b) and in Meiksins (1981). Although Carchedi agrees with the Althusserian position that relations of production determine the relationship between means of production and agents of production he views this relationship not only as an issue of ownership and possession of the means of production, but also from two additional perspectives. First, from the perspective of function performed, an agent of production can either be labourer or non-labourer. The social content of a function under capitalism being that an agent can either perform the function of the collective worker or the global function of capital. Second, from the perspective of the social division of labour, an agent of production can either be a producer or a non-producer. Under capitalism only productive labour produces surplus value, is expropriated of surplus labour in the form of surplus value. However unproductive labour (for example commercial labour), according to Carchedi, is also involved in a production process; it too produces a use-value, with the difference that the surplus labour it performs does not take the form of surplus value. Using those additional aspects allows Carchedi to directly challenge Poulantzas position identifying the working class with productive labour by assuming that both productive and unproductive (circulation) labour perform surplus labour, although under capitalist relations of production only productive labour produces surplus value. Moreover, the collective worker is an ensemble not only of workers that produce manual work, but also of technicians, engineers, etc. with the majority of the latter being proletarianised due to the devaluation of their labour power, or using a different terminology being polarised towards the working class.

For Meiksins (1981) on the other hand unproductive labour is a heterogeneous concept, as it includes both labour in the production process that is exchanged with revenue and labour exchanged with capital outside the production process. Labour exchanged with revenue is used in the context of classical political economy to set as unproductive the employment of servants. A servant in this context is a person employed not to produce a commodity to be sold for some expected profit, but instead to be directly consumed in the form of a service, as in the case of a cook or a teacher employed domestically. It is critical to note that for Marx unlike for Smith it is not the form of the product, the fact that in most cases it is a service and not a material commodity, but the social content of the relationship between the employer and the servant, the fact that a servant is not expected to produce commodities to be sold in the market that is critical. Labour exchanged with capital outside the production process accounts labour employed by capital in circulation activities as unproductive due to the fact that by definition no production takes place in circulation. Circulation activities do not add value, nor for that matter add or transform to the use-value of a commodity, but merely change the form of value from that of commodity to that of money.

Those initial formulations were refined by Shaikh (1978) and later by Wolff (1987) and Shaikh and Tonak (1994) that provided a detailed mapping of national account categories into Marxian variables. Savran and Tonak (1999) and Mohun (1996; 2002) and Moseley (1983; 1988; 1991) build and expand on this framework that has been thereon a standard point of reference in the literature. Recent years have seen a revival of interest in the debate over productive and unproductive labour with contributions from Laibman (1992; 1999), Izquierdo (2006; 2007), Marginson (1998), Duménil and Lévy (2011) and Cockshott and Zachariah (2006).

5. Conclusions

The relation between productive and unproductive labour and the economic identification of the working class has been the source of controversy in the literature. From a theoretical perspective unproductive labour can be seen to form a stratum of the working class or an altogether separate, or part of a separate, class. The alternative view is to fully discard the distinction between productive and unproductive labour by declaring all labour productive. In this essay we argued that unproductive labour should be considered as forming a stratum of the working class, since both alternatives are in conflict with the labour theory of value. Moreover, we provided evidence that the empirical estimation of social classes necessitates a position in the debate on productive and unproductive labour. In other words, it is not possible to estimate social classes from a Marxian perspective without taking into consideration the distinction between productive and unproductive labour. This position in turn has profound impact on the empirical estimation of social classes. Finally, in our estimation of social classes and productive labour as empirical magnitudes in the case of the Greek economy in 2020, the capitalist class accounted for 8.7% of employment, the traditional middle class 24.1%, the working class for 58.1% and state functionaries 9.0%.

Appendix

Sectors of Economic activity

For years before 1992

Using ISCO rev.3 categories

| | |
|-------------------------|--|
| PRODUCTION ACTIVITIES: | 01, 02, 03, 04, 05, 11, 12, 13, 14, 15, 16, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 41, 42, 50, 66, 71, 72, 73, 93, 94, 95, 97, 98 |
| CIRCULATION ACTIVITIES: | 61, 62, 63, 64, 65, 81, 82, 83, 84, 85, 92, 96, 99, 0 |
| STATE: | 91 |

For years between 1993 and 2007

Using NACE REV.1 categories

| | |
|-------------------------|--|
| PRODUCTION ACTIVITIES: | 01, 02, 05, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 40, 41, 45, 55, 60, 61, 62, 64, 72, 73, 80, 85, 90, 92, 93 |
| CIRCULATION ACTIVITIES: | 50, 51, 52, 63, 65, 66, 67, 70, 71, 74, 91, 95, 99, 0 |
| STATE: | 75 |

For years after 2008

Using NACE REV.2 categories

| | |
|-------------------------|--|
| PRODUCTION ACTIVITIES: | 01, 02, 03, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 35, 36, 37, 38, 39, 41, 42, 43, 49, 50, 51, 52, 53, 55, 56, 58, 59, 60, 61, 62, 63, 71, 72, 74, 75, 85, 86, 87, 90, 91, 93, 95, 96 |
| CIRCULATION ACTIVITIES: | 45, 46, 47, 64, 65, 66, 68, 69, 70, 73, 77, 78, 79, 80, 81, 82, 88, 92, 94, 97, 98, 99, 0 |
| STATE: | 84 |

Occupations

For years before 1992

Using ISCO-68 categories

| | |
|-------------------------|--|
| PRODUCTION OCCUPATIONS: | 01, 02, 03, 04, 05, 06, 07, 08, 09, 11, 12, 13, 14, 15, 16, 17, 18, 19, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99 |
|-------------------------|--|

CIRUCLATION OCCUPATIONS: 31, 32, 33, 34, 36, 37, 38, 39, 43, 44, 45, 49, 52, 53, 54, 55, 56, 57, 58, 59, 0

MANAGERS OCCUPATIONS: 20, 21, 35, 40, 41, 42, 50, 51, 60

For years between 1993 and 2010

Using ISCO-88 categories

PRODUCTION OCCUPATIONS: 21, 22, 23, 24, 25, 26, 27, 31, 32, 33, 34, 61, 62, 63, 64, 65, 66, 67, 71, 72, 73, 74, 75, 76, 77, 78, 81, 82, 83, 84, 85, 86, 87, 88, 91, 92, 93

CIRUCLATION OCCUPATIONS: 41, 42, 51, 52, 53,0

MANAGERS OCCUPATIONS: 11, 12, 13

For years after 2011

Using ISCO-08 categories

PRODUCTION OCCUPATIONS: 21, 22, 23, 24, 25, 26, 31, 32, 33, 34, 35, 61, 62, 63, 71, 72, 73, 74, 75, 81, 82, 83, 91, 92, 93, 94, 95, 96

CIRUCLATION OCCUPATIONS: 41, 42, 43, 44, 51, 52, 53, 54,0

MANAGERS OCCUPATIONS: 11, 12, 13, 14

Notes

1. "A service is nothing other than the useful effect of a use-value, be that of a commodity, or that of the labour" (Marx 1990: 300)
2. "The nature of those needs, whether they arise, for example, from the stomach, or the imagination, makes no difference" (Marx 1990:125), "Here on the contrary, where we consider the labour of the spinner only in so far as it creates value, i.e., is a source of value, that labour differs in no respect from the labour of the man who bores cannon" Marx (1990: 296)
3. "The more perishable a commodity, the greater are the absolute barriers to its circulation time that its physical properties impose, and the less appropriate it is as an object of capitalist production." (Marx 1992: 206).
4. "Das industrielle Kapital ist die einzige Daseinsweise des Kapitals, worin nicht nur Aneignung von Mehrwerth, resp. Mehrprodukt, sondern zugleich dessen Schöpfung Funktion des Kapitals ist. Es bedingt daher den kapitalistischen Charakter der Produktion; sein Dasein schließt das des Klassengegensatzes von Kapitalisten und Lohnarbeitern ein." (MEGA II.13: 53)
5. "This method of determining what is productive labour, from the standpoint of the simple labour process, is by no means sufficient to cover the capitalist process of production" Marx (1990: 287)
6. "Just as the commodity itself is a unity formed of use-value and value, so the process of production must be a unity, composed of the labour process and the process of creating value" Marx (1990: 239)
7. "The product is transformed from the direct product of the individual producer into a social product, the joint product of a collective labourer, i.e. a combination of workers, each of whom stands at a different distance from the actual manipulation of the object of labour." Marx (1990: 643) and also "In order to work productively, it is no longer necessary for the individual himself to put his hand to the object; it is sufficient for him to be an organ of the collective labourer, and to perform any one of its subordinate functions" Marx (1990: 643-4)
8. "Just as the head and hand belong together in the system of nature, so in the labour process mental and physical labour are united" Marx (1990: 643) and also "If we may take an example outside the sphere of material production, a school-master is a productive worker when, in addition to belabouring the heads of his pupils, he works himself into the ground to enrich the owner of the school. That the latter has laid out his capital in a teaching factory, instead of a sausage factory, makes no difference to the relation" Marx (1990: 644)"
9. "The definition of productive labour given above, the original definition, is derived from the nature of material production itself, and it remains correct for the collective labourer, considered as a whole. But it no longer holds good for each member taken individually" Marx (1990: 643-644)
10. "Capitalist production is not merely the production of commodities, it is, by its very essence, the production of surplus-value. The worker produces not for himself, but for capital. It is no longer sufficient, therefore, for him simply to produce. He must produce surplus-value" (Marx, 1990: 644)
11. "In Volume 4 of this work, which deals with the history of theory, we shall show that the classical political economists always made the production of surplus value the distinguishing characteristic of the productive worker. Hence their definition of a productive worker varies with their conception of the nature of surplus-value" (Marx, 1990: 644).

12. *"Their unification into one single productive body, and the establishment of a connection between their individual functions lies outside their competence. These things are not their own act, but the act of the capital that brings them together and maintains them in that situation"* (Marx 1990: 445-450).
13. *"Just as at first the capitalist is relieved from actual labour as soon as his capital has reached that minimum amount with which capitalist production, properly speaking, first begins, so now he hands over the work of direct and constant supervision of the individual workers and groups of workers to a special kind of wage-labourer. An industrial army of workers under the command of a capitalist requires, like a real army, officers (managers) and N.C.O.s (foremen, overseers), who command during the labour process in the name of capital. The work of supervision becomes their established and exclusive function."* (Marx 1990: 450).
14. This extreme narrowness that separates the production sphere from the total circuit of capital is a well documented problem, noted for example in Mavroudeas (1999: 25)
15. Turn to the appendix for a detailed description of production and non-production occupations and sectors according to various classifications.
16. We note that due to data availability supervisory activities before 2006 were kept at a constant ratio.
17. *"In the context of capitalist production, commercial capital is demoted from its earlier separate existence, to become a particular moment of capital investment in general, and the equalization of profits reduces its profit rate to the general average."* (Marx 1991: 444), and *"In the modern credit system, interest-bearing capital becomes adapted on the whole to the conditions of capitalist production"* (Marx 1991: 735),
18. *"If an independent worker labours for himself and sells his own product - we may take a small peasant, since in this case all three forms of revenue can be used - he is first of all considered as his own employer (capitalist), employing himself as a worker, and as his own landowner, using himself as his own farmer. He pays himself wages as a worker, lays claim to profit as a capitalist and pays himself rent as a landowner. Once the capitalist mode of production and the relationships corresponding to it are assumed as the general social basis, this subsumption is correct in as much as he does not have his labour to thank but rather his possession of means of production - which in this case are always taken to have the form of capital - that he is in a position to appropriate his own surplus labour. Furthermore, in as much as he produces his product as a commodity and is therefore dependent on its price (and even if he is not, this price can be estimated), the amount of surplus labour he can valorize is not dependent on its own magnitude but rather on the general rate of profit; and likewise the possible excess above the quota of surplus-value determined by the general rate of profit is again not determined by the amount of labour he performs, but can be appropriated by him because only he is the owner of the land. Because a form of production that does not correspond to the capitalist mode of production can be subsumed under its forms of revenue (and up to a certain point this is not incorrect), the illusion that capitalist relationships are the natural condition of any mode of production is further reinforced."* (Marx 1991: 1015)
19. The criterion used by the Economakis et al. (2016b) to delimit state enterprises from state proper is based on the form of ownership of the employing unit (the "business ownership") and not on economic sector, thus significantly inflating the size of the State proper.
20. In the case of the private sector the owner is person, or a collection of persons in the case of the joint stock company, and in the case of the public sector the owner is the State, the collective representation of the dominant class.

21. We note that education and health activities directly produce and maintain labour power as a commodity.
22. Exemplified in Greece by the contributions of Milios and Economakis (2011) and Economakis et al. (2005,2016a,2016b,2021),
23. For example, in Economakis et al. (2016a,2016b) the working class and the capitalist class are the fundamental classes of the capitalist mode of production, the wage-earning producer class and the middle bourgeoisie the fundamental classes of the hybrid mode of production, the traditional petty bourgeoisie the fundamental class of the simple commodity production mode of production, and finally the new petty bourgeoisie is an intermediate class of the capitalist mode of production.
24. The same argument cannot be stated with regard to production since the value of the commodity is regulated by the social necessary time of its production. Such a formulation in the form of a “*socially necessary time of circulation*” cannot exist due to the fact that circulation activities end not with the productive consumption of a commodity, consumed to produce, but with its unproductive, i.e., personal and final, consumption. To introduce a socially necessary time of circulation thus eliminates the ability of the market to discard a commodity as a failure because it ensures that any commodity produced will necessarily be sold.
25. We note that in what follows we abstract from the effects of superstructure and limit our analysis to the economic definition, or economic identification, of categories, i.e., their definition corresponding purely to their economic and not to the political and ideological characteristics. Moreover, a stronger argument can be found in Milios and Economakis (2011: 241) on the impossibility of class definitions on the ideological and political levels in contrast to the economic level.

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