Productive and Unproductive labour in the Greek economy: 1970-2005

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ABSTRACT

This essay aims at measuring the productive and unproductive parts of labour in the Greek economy and in explaining their evolution for the years 1970 to 2005. To do so the methodology proposed by Shaikh and Tonak (1994) for the mapping between mainstream and Marxian categories is applied and refined for the Greek economy. A short historical account of the theoretical debate around productive and unproductive is also provided in order to clarify various misconceptions.

Jel Classification: B5, E1, O52

Keywords: Productive Labour, Unproductive Labour, Greek Economy

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INTRODUCTION

The question of identifying productive and unproductive labour has been a persistent problem in the Marxian literature, but also in mainstream economics as the growing importance over the “real economy” in the days of the current economic crisis reveals.

This essay aims at measuring the productive (PL) and unproductive (UL) parts of labour in the Greek economy for the years 1970 to 2005. Such measurement is a necessary first step for the correct estimation of Marxian categories as it has been elaborated by Shaikh and Tonak (1994), Moseley (1991, 1997) and Mohun (2005). Failure to provide correct measures for productive and unproductive labour results in inflated measures of surplus value and as a result a profit rate trend incompatible with Marxian theory (Mohun 2002). The standard methodology on measuring fundamental Marxian categories, including productive and unproductive labour, is given by Shaikh and Tonak's (1994) work on “Measuring the Wealth of Nations” that provides the theoretical and empirical link between the mainstream system of National Accounts and input output tables and its Marxian interpretation. Earlier work on the empirical measurement of Marxian categories starts with Gillman (1958) and Mage (1963) and includes the important contributions of Shaikh (1978), Wolf (1987) and Moseley (1991).

The theoretical debate on the importance of productive and unproductive labour in the Marxian tradition finds the obstacle of a multitude of definitions on productive labour. Often a socioeconomic definition identifying productive labour with labour employed by capital is contrasted with an analytical definition identifying productive labour with production labour. In this essay a historical explanation of the emergence of multiple definitions and of their treatment by Marx is attempted. The aim is to clarify Marx vision on the subject and to explain various misconceptions.

Mohun (2005) identifies Shaikh and Tonak’s way of calculating productive workers as including a three step procedure where (a) each sector of economic activity is placed within the appropriate circuit of capital (production\(^1\), distribution, 

\(^1\)Shaikh and Tonak (1994:21-2) “Production: where use-values are utilised to produce new use values, Distribution: where use-values are utilised to transfer such objects from their immediate possessors to those who intend to use them, Social Maintenance and Reproduction: in which use-values are used up in the private and public administration, maintenance and reproduction of the social order by the government, the legal system, the military, corporate security personnel, etc.”. Apart from
(b) a measure of production to non-production workers is calculated out of BLS data, (c) the amount of productive workers is calculated as the product of BLS production workers and NIPA workers on that sector.

The methodology applied in this essay for the empirical estimation of productive and unproductive labour in the Greek economy follows closely that of Shaikh and Tonal in identifying production and distribution sectors adjusting only for issues related with data coverage. Since the National Statistical Agency of Greece (NSSG) does not provide a ready-made measure of production and non production workers within production sectors data on occupation are utilised in order to reconstruct those categories. Finally the ratios of production to non production workers are applied to data available from the EU KLEMS database in order to obtain productive and unproductive labour estimates for the entire economy. The period covered is from 1970 to 2005.

The remaining of this essay will be structured as follows. A historical presentation of the theoretical debate on productive and unproductive labour along with the argument of Marx and Marxists in that debate will be set on the next two sections. Finally, a calculation of productive and unproductive labour shares of labour for the Greek economy will be presented.

I. History of the Theoretical Debate on Productive and Unproductive Labour

The debate on what constitutes productive and what unproductive labour runs through the entire history of economic thought. In the passage of time it has taken the form of various debates. Thus, in ancient and medieval times productive labour was identified with the Aristotelian concept of natural money-making; in the period of transition to capitalism with productive activity and with the particular outcome of that activity in the form of goods; on modern times with the distinction between market activity from non-market activity. This transformation of the way the question is formulated rests on transformations of the concrete economic reality, of the prevailing mode of production. In other words it depends on the economic problems that the prevailing mode of production poses at each period.

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Laibman (1992), in his critique of the distinction between productive and unproductive labour, proposes that productive labour can be defined under three competing ways through: (a) a socioeconomic definition, (b) an evaluative definition and (c) an analytic definition. While his identification of the existence of multiple definitions is correct he fails to understand the way they are interrelated.

The key to understand the reason behind multiple definitions of productive labour can be found in the history and evolution of economic systems. As the economic systems evolve from one to another in the same way the categories used to describe them also evolve. Two processes describe the evolution of the category productive labour through time: (a) expansion and (b) contraction and change. The expansion process of the category is identified with the expansion of the analytical definition as the dominant mode of production expands into new sectors and occupations. Contrary to that when the dominant mode of production changes this is followed by a change in the socioeconomic content of the category and its analytical contraction to the sectors that the new mode is now dominant. Thus, when the mode of production expands, thus also the categories that describe it also expand, the focus is on the analytic element of the distinction between productive and unproductive labour; on the other hand when the mode of production changes then the focus turns to the socioeconomic element of the distinction, since it is this element that identifies the incompatibility of various modes of production. Finally the ethical-evaluative part of the definition is a secondary process aiming at the justification of the distinction and should be considered apart. Depending on the prevailing ideology that part of the definition can be formulated through law, ethics or scientific categories.

Following the various formulations of the category productive labour though time provides evidence that justify the scheme presented above. Aristotle in Politics discusses the naturalness or unnaturalness of property and money. The criterion for the distinction between natural and unnatural is explicitly stated to be the full development of a category to its end and its self-sufficiency. In that way money-making can be both natural and unnatural. When money making is achieved in a manner according to the prevailing mode of production, that is by means of exploiting slave labour for agricultural production and trading its product not aiming at some commercial profit, it is considered natural; on the contrary when it is conducted in a manner that is alien to the prevailing mode of production as in retail trade, usury and
wage labour it is considered unnatural. Thus Aristotle uses a socioeconomic definition of productive labour by distinguishing between two kinds of occupations those “natural” and those “unnatural”, the former being identified with the main production process of the time and the latter with all other production relations that do not fit in the slavery mode of production.

Aristotelian philosophy played a pivotal role in the canonization of catholic ideology that dominated European thinking in the middle ages. One of the most prominent commentators of Aristotle, Thomas Aquinas, discourses economic issues within the context of ethics and justice in the second part of the second part of Summa Theologica. There a number of important modifications to the Aristotelian proposition of unnatural money making are made. The first being the acceptance of commercial trade intending on profit and the second is the introduction of some flexibility to lending on interest. It is evident that Aquinas makes an expansion of the category “natural money-making” that facilitates the incorporation of the merchant class under feudalism as a “natural” occupation. Also a change of form is made changing the formulation from legal to ethical.

Scholastic concepts of natural occupations where heavily criticized by mercantilists. The basis of their critique was that productive labour should be identified with any kind of labour if the commodities it produced brought back to the nation when exported more money as commercial profits than their cost. Also their critique focuses among other fields on the rejection of the unnaturalness of usury, thus opening the way for all occupations to be regarded as natural and productive. With the mercantilist theory a final analytical expansion reaches the point where all classes existing within the framework of the nation state can be categorised as “natural” thus productive.

The physiocrats bring a transformation in the way the problem of productive labour was put. This change is indicative of the sharp transformations in the economic and social relations of the time when agriculture continued to have its ancient prominence as a sector but with production relations drastically changed. By allowing only for agriculture to be a productive occupation it is indicated that the core of the previous production process has changed making necessary a more limiting socioeconomic definition. Also a different formulation of productive and unproductive labour is made that is marked by the first purely economic formalisation
contrary to the legal-ethical formulation of the past.

Classical political economy further formalized the distinction between productive and unproductive labour. Since land is not anymore the centrepiece of production, theory has to adapt and allow for the possibility that manufacturing also is important. It is well known that Adam Smith provides two definitions of productive labour: (a) productive labour is labour that produces profit (b) productive labour is labour that produces commodities. In general Classical Political Economy, with the outstanding exception of Malthus, understood unproductive labour identified with labour engaged in unproductive activity as an obstacle to growth. Thus a new cycle of analytical expansion of the content of the category of productive labour begins in order to incorporate the various sectors and occupations that operate under the new mode of production. The Neoclassical together with Keynesian economics rejection of the distinction between productive and unproductive labour as erroneous mark the end of the analytical expansion initiated with the domination of capitalist over pre-capitalist production relations. “And if we had to make a fresh start it would be best to regard all labour as productive except that which failed to promote the aim towards which it was directed, and so produced no utility” (Marshal 1890). Thus the final phase of expansion of the category of productive labour has been reached, since the entire economy operates under the main mode of production. It can be found that this rejection is not followed to its logical conclusions, since systems of national accounts that are constructed according to the prevailing dogma do use this distinction when excluding from measurement illegal and non-marketable activities (Shaikh and Tonak 1994:6).

Summarising it is observed that two cycles of expansion and contraction of the category productive labour can be found in history, the first starting with Aristotle and ending with the mercantilists and the second starting with the physiocrats and ending with neoclassical and Keynesian economics. Those cycles mirror the expansion and contraction of the pre-capitalist and capitalist modes of production. This explains the reason behind the multitude of the socioeconomic, analytic and evaluative definitions for productive labour and the link between them. It is important to note that both cycles start with land as the sole productive occupation and end with the acceptance of all occupations that fall under the dominant mode of production as productive.
II. Marx and Marxists on Productive and Unproductive Labour

The main addition that Marx (1990:287) makes in the discussion is the distinction between productive for the simple labour process and productive for the capitalist process of production. The nature of this distinction rests on the Marxian conception of the capitalist production process as the unity of the labour process and the valorisation process, with the former being the creator of use-values and the latter of value and surplus-value. In that way the socioeconomic element is set apart from the analytic element, since the socioeconomic element is identified with what is specifically productive for the capitalist process of production while the analytic element is identified with what is productive for the simple labour process in general (in any mode of production). It is clear that what is productive in general, because of the labour process, is the boundary of what can be specifically productive for capital, because of the valorisation process (Savran and Tonak 1999). The dominant role of the valorisation process over the labour process, as the specifically capitalistic element of the production process, has a twofold impact on the analytical element of the definition. On the one hand the category of productive labour expands as it is the collective worker and not the individual that is important for capitalist production. On the other hand it narrows, since only the worker that produces surplus value for the capitalist is productive for capital. Both are consequences of the fact the worker does not produce in general but produces for and under the supervision of capital. (Marx 1990:643-644)

The socioeconomic element of the categorisation in productive and unproductive labour is discussed by Marx in Grundrisse and Theories of Surplus Value. There the distinction between productive and unproductive labour is presented in the context of money as capital and money as means of circulation (money as revenue). In the first case money is advanced as capital for the purpose of production that from the viewpoint of consumption is industrial consumption, while in the second case money is advanced for the purpose of personal consumption only. A reconstruction of Marx’s argument reveals that four cases can be conceptualized out of those two outlays for money:

a) money as capital employs labour power that is directly subsumed under capital
b) money as capital employs labour power that is indirectly subsumed under capital

c) money as revenue employs labour either directly for its services or for the use values (potential commodities) that it produces

d) money as revenue directly buys commodities as articles of consumption.

While the first case is identified with productive labour and the fourth is identified with consumption proper the other two cases require further consideration.

When money as revenue employs labour either directly for its services or for the use values (potential commodities) that it produces Marx emphasizes that labour is unproductive not because of the particular characteristics of its product, but because it is not employed by capital, it does not enter the production process of capital. For the opposite reason labour that is indirectly subsumed to capital is productive. Only two exceptions are made that are specifically mentioned as generally unproductive; the first considers the labour of doctors and educators as a faux frais of production because it affects labour power that is singled out as a special commodity, the second considers personal services that are deemed as unfit to be subsumed to capital (Marx 2000:164-167). Although the explanation for the unproductiveness of the services of educators and doctors can be analytically valid this is not the case for the unproductiveness of personal services as it has been historically proven that in advanced capitalism those services have come under direct subsumption of capital.

The analytical element of the distinction is considered in chapter VI of Vol. II and chapter XVII of Vol. III of Capital. There Marx uses as an operating criterion for the categorisation of an activity as unproductive the relation of this activity with the simple labour process. Thus what was not productive for the simple labour process remains unproductive for the capitalist process of production also (Marx 1992:210). Under this conception circulation is viewed as a faux frais of production for industrial capital by definition (1991:416).

Critics of the distinction between productive and unproductive labour within the Marxist tradition have focused on an assumed inability of clear division between production and circulation activities as a reason to reject this distinction as erroneous. Laibman claims that the acts of production and distribution cannot be separated in time-space, but exist only as a means, as a purely theoretical abstraction, to explain
the extraction of surplus value. “*The critical question is whether an aspect of buying, selling, insuring, legal accounting labour can be identified, that is not reducible on further analysis to some aspect of the transformation and processing of use values: the concrete labour activity that provides the bodily form (to use a well-known volume I metaphor) for abstract labour and the creation of value.”*(Laibman 1992:77). On the other hand Camara Izquierdo (2006, 2007) argues that while the analytical element of distinction between production and distribution exists it cannot be described by National Account sectors, since they are constructed according to use-value criteria. Production and distribution exist for Camara only as moments of valorization within all sectors of economic activity. Contrary to that reasoning Simon Mohun (2002) in his debate with Laibman points that any attempt to refute the given definition cannot come from a theoretical analysis of the consistency of the theory, but rather it must come out of the empirical verification or for refutation of the fundamental propositions of the theory itself. So, he argues that since the main propositions of the Marxian theory explain the actual trends of capital accumulation only if the distinction between productive and unproductive labour is taken into consideration, then the distinction is valid and a necessary building block of the theory.

Summarising, for Marx the labour process provides the analytical framework, while the valorisation process provides the socioeconomic element. In the same way that the production process is the unity of the labour and valorization processes so is also productive labour defined by the combined effect of the analytical and the socioeconomic element. In this combination the analytic is dominant but the socioeconomic characteristic. The ethical-evaluative element, although existing and forming an integral part of the narration, has a purely aesthetic and presentational value.

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Mohun (2002) summarises those propositions:”(1) the rate of surplus value will rise as absolute and relative surplus value are produced,(1) as relative surplus value is produced, then, for a given money wage, both the value of money and the value of labor-power will fall; (2) with the productivity increases which produce relative surplus value, real wages will tend to rise; (3) productivity increases are typically the outcome of ‘labor-saving capital using’ technical change, via concentration and centralisation; if technical change is of this type, then it must generate increases in the technical and organic compositions of capital; (4) productivity increases will produce some negative feedback via price reductions, but these will not be so great as to produce a fall in the value composition of capital; i.e. the increase in quantities through accumulation will tend to dominate the price reduction effects of productivity increases; (5) because of the bias of technical change, the reserve army of labor will tend to rise, along with relative immiserisation; (6) in the course of establishing these secular tendential developments, accumulation will tend to proceed cyclically, and the rate of profit will tend to fall (at least cyclically).”
III. Measuring Productive and Unproductive Labour in the Greek Economy

The Labour Force Survey is an annual sample survey conducted by the NSSG by interview that covers the period after 1974 and provides employment statistics for the Greek economy. For the period 1974-1980 the survey was conducted in urban and suburban areas only, while after 1981 it covers the entire national territory. Data are available, among other variables, for status in employment and at a second digit level for employment by sector and occupation. Thus by combining all available data it is possible to accurately measure the shares of productive and unproductive labour within each sector. This is the main merit of this survey since alternative surveys conducted by the NSSG, such as the Labour Cost Survey and Labour Statistics, lack the necessary detail as they do not cover all sectors of economic activity and do not provide information on occupational statistics. It has also to be noted that the distinction that those surveys make between workers (production workers) and employees (non production workers) in mining, manufacturing and electricity, gas and water sectors is problematic. This is because, production workers are nominally defined in a way that is of use for the distinction between productive and unproductive labour, but their actual classification is based on legal terms. Most of the times this classification is decided in court rooms because of its practical importance for the compensation of labour. Thus, although of use as a general reference data on those surveys can be misleading.

A major problem when using the Labour Force Survey data as a time series is that they are not updated after revisions in the categorisation of sectors (ISIC, NACE) and occupations (ISCO). Data on employment by sector for the years 1981-1992 follow ΣΤΑΚΟΔ-80, which is the Greek version of ISIC rev.2 (1968), and for the years 1993-2007 ΣΤΑΚΟΔ-91 which follows NACE rev.1 (which in turn is the European version of ISIC rev.3). On the other hand, data on occupation for the period 1981-1992 follow ΣΤΕΠ-81, which is the Greek version of ISCO-68 and for the years 1993-2007 ΣΤΕΠ-92, which in turn follows ISCO-88. Thus for the years 1981-1993 we have a table with 57 sectors and 86 occupations and for the years 1993-2007 a table of 60 sectors and 46 occupations, both periods are aggregated into a single table that has 17 sectors that are compatible with NACE rev.1 and 7 major occupational categories that allow both for continuity and the existence of the minimum
information needed for the distinction between productive and unproductive labour. It has to be noted that although the sectoral classification can be made continuous by use of a conversion table provided by NSSG no such table exists for the occupational classification, thus it had to be constructed. Another issue regarding the continuity of data is the periodical changes in the sample population (1993 and 1998) and the redesigning of the survey (2004). Finally due to small sample size and big detail of the survey no reliable estimates can be produced at a detail greater than the second digit as standard error increases in unacceptable levels.

Following the methodology of Shaikh and Tonak (1994:295) we account as production sectors the NACE rev.1 sectors “Mining and Quarrying”, “Total Manufacturing”, “Electricity, Gas and Water Supply”, “Construction”, “Hotels and Restaurants, “Transport and Storage and Communications” and finally “Other Community, Social and Personal Services” and as distribution sectors “Wholesale and Retail Trade”, “Financial Intermediation”, “Real Estate, Renting and Business Activities”, “Public Administration and Defence; Compulsory Social Security”. We deviate from the Methodology of Shaikh and Tonak by excluding from production sectors the sectors of “Agriculture, Hunting and Forestry”, “Fishing” along with “Education” and “Health and Social Work”. The reason for that is that the Agriculture and Fishing sectors are not characterised by capitalist relations of production as the ratio of self employment and family workers taken together exceeds 95 percent of total employment for most of the period. On the other hand in the sectors of Education and Health and Social Work, although capitalist relations of production are dominant having a ratio of wage labour that is 83 and 87 of total employment respectively, their product is not transformed into surplus value since it is offered by the State universally and for free, at least nominally. It is important also to note that on average only 21,30 percent of doctors work on private capitalist and self employed institutions, while the same magnitude for educators is only 5,32 percent.

The estimation of productive labour is obtained by the following procedure. At first productive labour within each production sector is estimated as a percentage of total wage labour from the Labour Force Survey for the 1987-2005 period. For the period 1970-1986 the average of the 1987-2005 is used as deviations from the average are very small (less than 3 percent).At a second step and this result is applied back to the EU KLEMS data.
It is found that the shares of productive to unproductive labour vary significantly between production sectors, with Transport, Storage and Communications averaging over the period at a low 64 per cent and Construction at a high 99 percent the share. In general we can distinguish three groups of production sectors relative to the share of productive to unproductive labour they employ. The first includes transport, electricity, gas and water and other community services that have a productive to unproductive ratio of 60 to 70 percent. The second includes hotels and restaurants, total manufacturing and mining and quarrying at a ratio between 80 and 90 percent. The third includes only construction at just less than 100 percent.
The results indicating a substantial increase in unproductive labour are similar with those reported on studies estimating Marxian categories based on Shaikh and Tonak’s (1994), namely Maniatis (2005) for the Greek economy, of Cockshott, et all (1995) for UK Cronin (2001) for New Zealand and Mohun (2005) for the US. This indicates that the increasing share of unproductive to total labour has been a common feature of capitalist countries in the second half of the 20th century.
The increase in unproductive labour in the case of Greece is the result of fundamental changes in the labour force. Focusing on data by sector it is evident that the declining share of self employment in the national economy came from the rapid decrease of total employment agriculture from 38.05 percent of total employment in 1970 to 11.91 percent in 2005 with the share of wage labour within the sector remaining unchanged at 13 percent or even at periods decreasing.

The 650 thousand self employed and family helping members that were removed from the agricultural sector along with the natural increase in population fuelled the increase of wage labour primarily in what can be called the extended state sector that includes also education and health by 491 thousands and secondarily in trade and services (hotels and restaurants and other services sectors) by 266 and 141 thousand respectively. On the contrary what can be called the extended manufacturing, that includes mining, manufacturing, public utilities and transportation, although increasing in the 1970-1980 period decreases throughout the 1981-1997 period to increase again after 1997 although it does not regain the pre 1980 levels. Also, this small increase in wage labour is does not bring an increase in total labour as self employment continues to decline. Thus initially in the period 1970-1980 the increase in productive and unproductive labour caused by the decreasing self employment in agriculture was evenly distributed between productive and unproductive activities, but in the period 1981-2005 the decreasing employment in extended manufacturing together with the continued increase in the extended state and
trade almost doubled the ratio of unproductive to productive labour.

![Wage Labour by Sector](chart)

Source: EU KLEMS Growth and Productivity Accounts: March 2008 Release

At a more disaggregate level it is evident that the stagnation of the 1980s and the consequent decline after 1990 in the extended manufacturing series is brought about by the steep decline in consumer and intermediate manufacturing that is contained only after 1996 by the relatively steep increase of wage labour employment in construction. Transport and storage neither loses nor creates any jobs after 1980. Between 1990 and 2005 132 thousand jobs were lost in mining and consumer, intermediate and investment goods industries. The only increasing series in manufacturing is that electricity gas and water supply which is state controlled. This decline that was not countered by the 106 thousand new jobs created in construction hotels and restaurants and other services. On the other hand hotels, restaurants and other services that are accounted as productive rise significantly over the period more than doubling their wage labour employment between 1970 and 2005.
Source: EU KLEMS Growth and Productivity Accounts: March 2008 Release
Turning now to the extended State which is the fastest increasing job creating sector throughout the 1970-2005 period it is obvious that all of its activities increase at almost the same rate. It is important to note also that the increase is continuous and uninterrupted with the exception of the public administration that decelerates after 1994.

Source: EU KLEMS Growth and Productivity Accounts: March 2008 Release

IV. Summary and Conclusions

The importance of correctly measuring productive and unproductive labour as a precondition for a measurement of Marxian categories has been a major issue in Marxian empirical literature. Although the importance of the distinction is accepted by most Marxists the multiplicity of definitions of productive labour is an obstacle to empirical investigation of Marxian categories as different definitions of productive labour and different specifications of data sets lead to diverging empirical results.

In this essay an investigation in the historical causes of the emergence of different definitions for productive labour was attempted, following the framework of Savran and Tonak in distinguishing between what is productive for capital and what is productive in general. In that way the socioeconomic and analytical element of productive labour definitions become elements of a single definition of productive labour. Further more it is proposed that this is the actual method that Marx applied to the problem.

By utilising the framework provided by Shaikh and Tonak (1994) for the
mapping of mainstream economic categories as found in National Accounts and I-O tables an estimation of productive and unproductive labour in the Greek economy for the years 1970-2005 was attempted. The main result, a constantly increasing share of unproductive labour to total labour both in absolute numbers of and in wage shares is in line with other results from a number of advanced capitalist countries. Furthermore an investigation of the causes of this increase reveals that the main reason behind it is a decreasing share of manufacturing employment and the increasing share of the extended state sector.

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