'THE ECONOMICS OF MODERN IMPERIALISM'. A pioneering but flawed paper.

"The Economics of Modern Imperialism" by Guglielmo Carchedi & Michael Roberts is a pioneering and challenging piece of work that breaks new ground. All new additions to theory, and this document is worthy of that designation, deserve the closest examination because there novelty means they are invariably incomplete and sometimes contradictory at the margins.

The authors define the main hypothesis governing the subordination of the many dominated economies by the few dominant (imperialist) economies thus: *In our view, economic imperialism is a system of international social relations basically founded on long-term technological differentials in which the high technology, high productivity imperialist countries (and thus with higher OCCs) persistently capture in a variety of ways the surplus value generated in the low-technology and low-OCC dominated countries. Persistent unequal levels of technology are the necessary condition for the persistent appropriation of surplus value.* (page 12) But before reviewing this hypothesis a bit of housekeeping is in order.

On page 19 we have the following assertion. "*A glance at Table 1 shows that UE is not exploitation. Exploitation is a relation between capital and labour, between surplus value and variable capital. UE is a relation between capitals, namely the appropriation of surplus value when the high OCC capitals trade with the low OCC capitals.*" The only substantiation is Table 1. But Tables do not make for real life. Here I will refer to China and to the primary relationship between it and Imperialism once it was opened up to imperialist exploitation in the late 1980s, which was sub-contracting. In the case of sub-contracting the relationship is one of Principal and Agent, with the Chinese Capitalists acting as agent for the imperialist buyer (often a producer who had converted into an importer). In cases where technology was provided, the contract would often state that the output belonged to the buyer and all the agent received was a commission. Thus both Chinese capitalist and Chinese worker could be said to be working for the buyers in the imperialist country. Generally the transfer price, which is not the market price, is also generally lower than the market price set by competition. Thus the principal can be said to share directly in the exploitation of the workers employed by the agent. To conclude both unequal exchange and exploitation is taking place. Thus while the authors supposition is correct, it is abstract.

It is thus an error to argue that unequal exchange does not involve direct transfers of surplus value. It can be argued that where the imperialist buyers have a monopoly, say the Walmart's of this world, they are able to squeeze their suppliers both at home and abroad and thus some of the surplus value produced within the supply company is directly appropriated by Walmart through the prices they pay.

It appears that in order to magnify the importance of prices of production as the key determinant of the imperialist relationship, they predictably fall into the trap of reducing in importance, a number of other avenues by which value is appropriated by the imperialist countries.

The hypothesis itself.

The issue of productivity and exploitation is more complicated than first assumed.

For the purposes of providing a fuller explanation, one which is not confounded by exchange rates, especially by the use of PPP and international dollars employed by the Penn tables, we will be examining two industries within the USA united by a common currency. Manufacturing which has a composition above the average (in vulgar language it is 'capital intensive') and food services and accommodation which has a composition below the average (or 'labour intensive'). All the sources, data and formula can be

found in the accompanying spreadsheet 'Roberts productivity working paper' from which all the graphs are derived. The other advantage comparing these two industries is that the number of full-time employees has converged making comparisons easier to see. This can be seen in Graph 1.

Graph 1.

NUMBER OF EMPLOYEES (millions full-time)
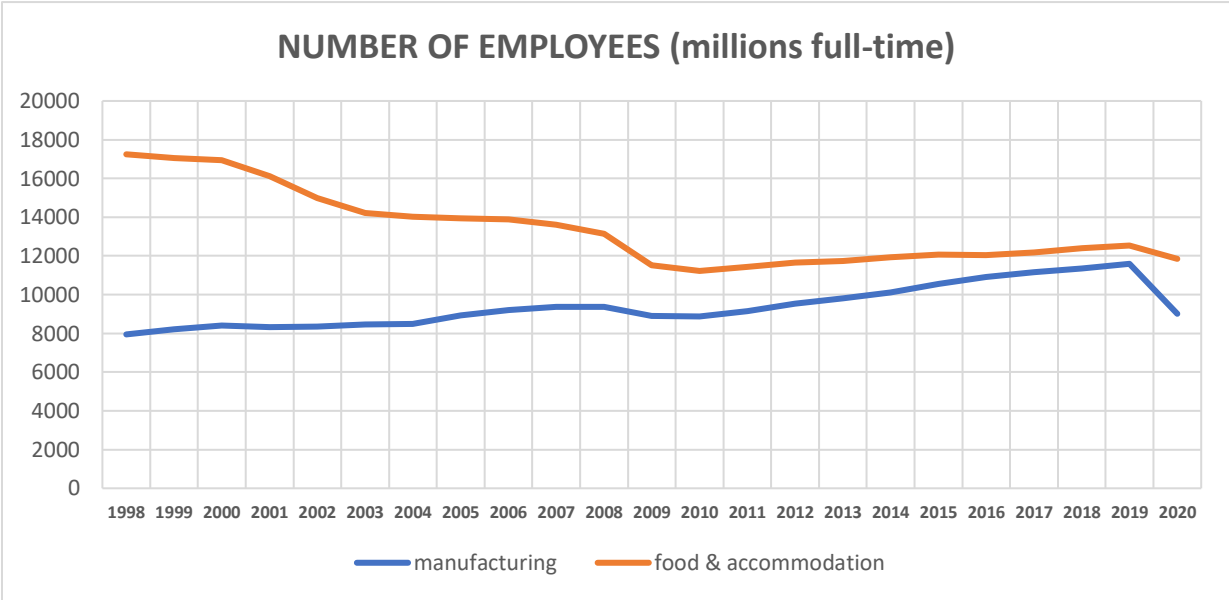
The second graph is the technical composition of capital defined as the value of fixed capital divided by the number of workers setting them in motion (full time employee equivalents). It implies that in manufacturing each worker works with a greater quantity of means of production. (Please ignore 2020 because the pandemic has upended the ratios.)
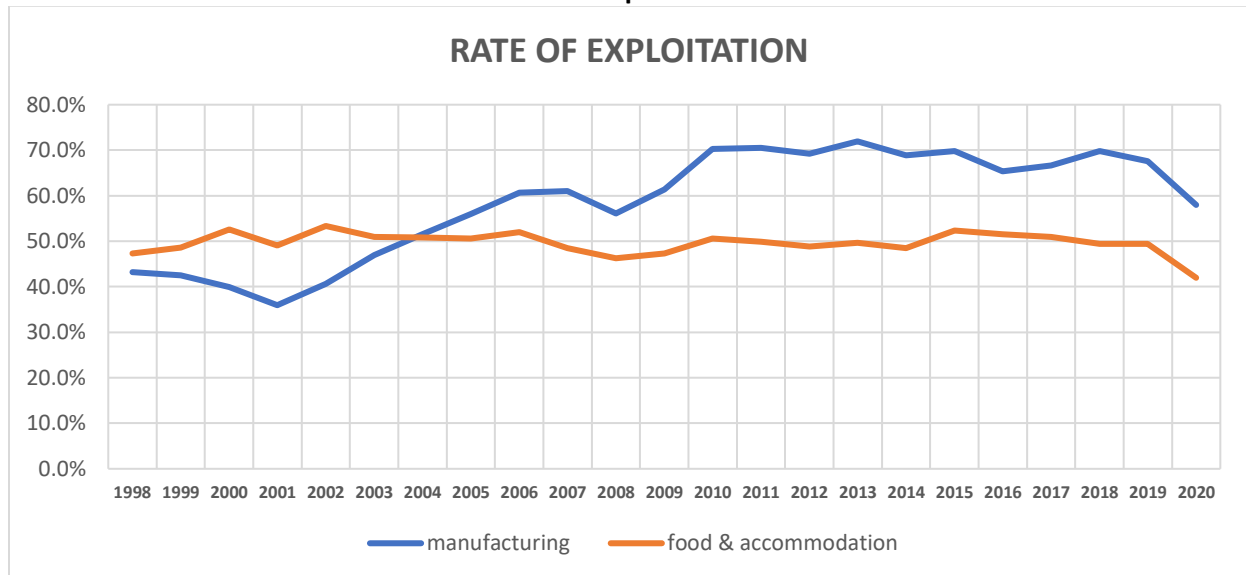
Graph 2.

TECHNICAL COMPOSITION OF CAPITAL
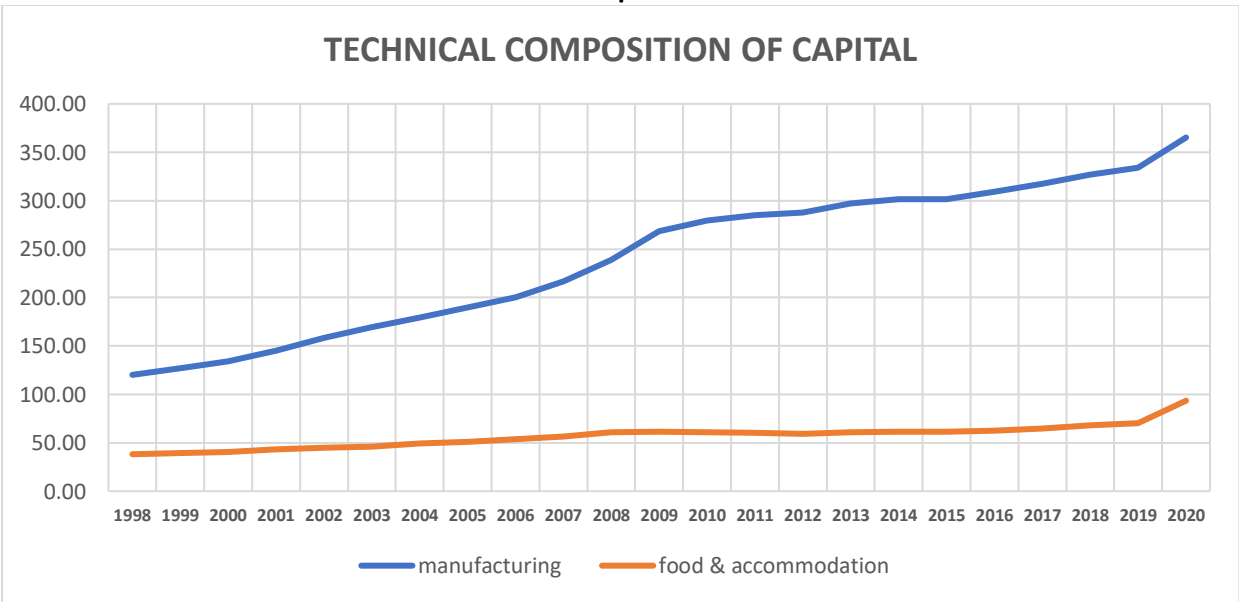
Thus the composition of capital is roughly three times greater in the manufacturing sector.

The rate of exploitation between them is interesting and much closer than normally anticipated.

Graph 3.

RATE OF EXPLOITATION

The primary reason for this is the differential in remuneration. Generally in higher composition capitals a higher set of skills prevails, and this is reflected in terms of remuneration. Remuneration is typically 250% higher in manufacturing. Most importantly, here we collide with the issue of economic hours or as Engels categorised them, 'compound hours'. Skilled labour produces more value than unskilled labour and economic hours is used to equate this. Although the number of workers converged in 2019 the number of economic hours was much greater in manufacturing because the average skill set was much higher there. This has profound implications for the study of imperialism because higher VCC implies higher skill sets. Economic hours is the bane of my intellectual life because it is so often ignored by those analysing the labour theory of value.

Graph 4.

REMUNERATION PER WORKER
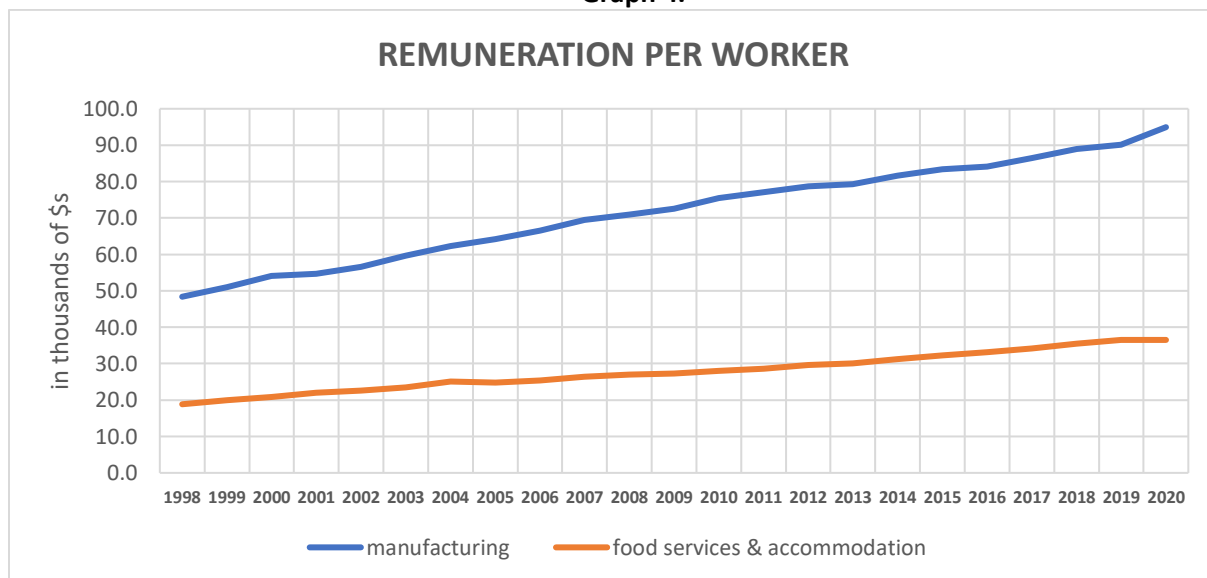
More, if the rate of exploitation is higher in manufacturing despite higher wages, it implies that each manufacturing worker is producing more profit, and, that profit has further been boosted by prices of production which favours manufacturing. Despite this contribution, and confirming the author's own observations, the rate of return on fixed assets is higher in the food service and accommodations sector because its lower composition (quantity of means of production) overrides these contributions to output.

Graph 5.

RETURN ON FIXED ASSETS
— manufacturing   — food & accommodation
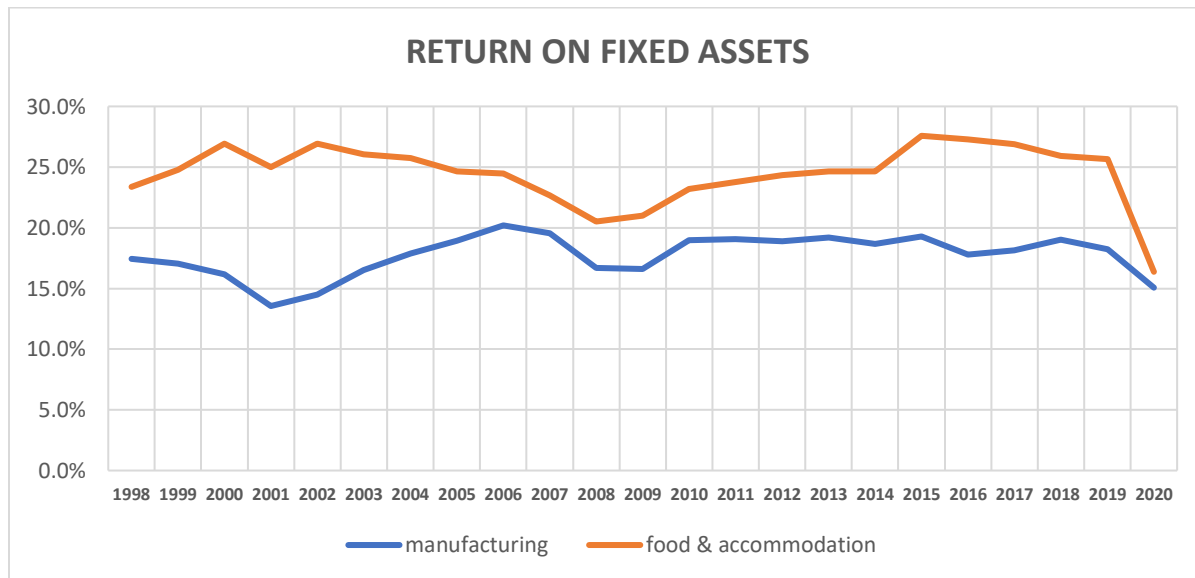
However, not too much should be read into this. When we add back circulating capital to obtain the actual rate of profit that divergence reduces because 'labour intensive' industries have a relatively higher proportion of circulating capital compared to fixed capital because of the relatively lower amount of fixed capital in use.

Having examined the production of value, we can now address productivity, and here comes the kicker. Productivity is normally measured as; GDP divided by the number of employed workers yielding GDP-per-worker, or better still, when divided by the number of hours it yields GDP-per-hour. Carchedi and Roberts fail to adopt this measure, resorting instead to curious measures for productivity which I will return to.

GDP as we know from Marx is composed of c + v + s. Strictly speaking this is incorrect. <u>Total prices</u> comprise **c + v + s** but not <u>final prices</u> which alone makes up GDP. To better understand this, c itself needs to be split into inputs & depreciation or '**in'** &' '**de'**. Thus the formula now is **in + de + v + s**. Inputs are the materials, power, components, sub-assemblies and now importantly software, used to complete the finished product. They form the chain of production whose links are made up by the private firms working up the product. To this must be added the cumulative depreciation or the wear and tear of the machines being used by these private firms which also add to the final price. Thus we have two forms of living labour: **in + (v + s)** and one form of past labour **de**. The living labour is the value added by the inputs and the workers engaged in the final act of finishing off the product completing its use value. The dead labour from past periods of production represents the machinery and equipment in use which lose their value through wear and tear and is represented by **de**.

However, in accordance with Marx in Volume 2, and in order to avoid value being duplicated the final price comprises only de + v +s. That is the sum of past labour and the totality of current labour. If we used (de + in) + v + s the final selling price would be the cumulative (duplicated) prices of all the input prices and final price which would yield a selling price far in excess of the actual final market price To make this simple to understand by avoiding the complications thrown up by private property, imagine a giant factory where materials come in through the back door, power through the roof and the completed product exists through the front door. Here there is no chain of production but a process of uninterrupted and continuous production. The accounts department will simply add the inputs consumed onto the labour expended in the factory floor while apportioning depreciation to yield the selling price.

The graph below shows why all these distinctions are important. It goes without saying that higher composition industries based on the higher relative employment of fixed capital will suffer higher rates of depreciation. Much higher rates.

Graph 6.

DEPRECIATION SHARE OF NVA

— manufacturing   — food & accommodation
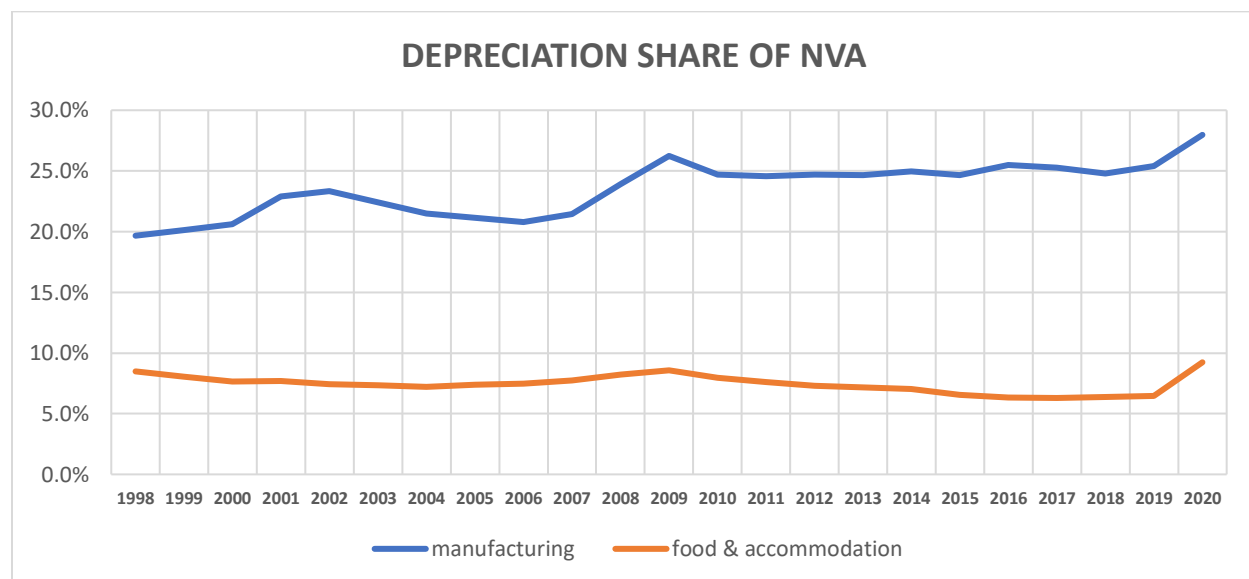
Depreciation in manufacturing relative to v + s (net value added in modern parlance not as Marx used it) is quadruple in manufacturing compared to food service and accommodation. Whereas depreciation is 25% in manufacturing it is well under 10% in food services and accommodation. But if depreciation rates differ, that means it swells GDP more in the manufacturing sector than it does in food services and accommodation, and as GDP is the marker for productivity measures, it will create the impression that productivity is higher in manufacturing relative to food services than it really is when measured by NVA. From this the general law flows. The higher the organic composition of capital, the more depreciation will be elevated relative to the value newly added. This is a function of the greater use of means of production set against the cheapening of production itself.

The reader is aware that productivity growth in the USA is insipid. One of the hidden reasons for this is the plateauing of depreciation due to insipid investment as the graph above shows. But this is by and by. Our main concern remains the measurement of productivity. The extent to which depreciation boosts productivity is seen in the graph below. It plots both GVA and NVA per worker in the two sectors. It shows

what a difference depreciation makes to nominal productivity. Using NVA, the ratio in 2019 was 2.6 compared to 3.4 when using GVA.

The important point to stress here is the value imparted by depreciation does not derive from products produced in the dominated countries. It is derived from means of production, which are most often produced within the imperialist block itself. Thus when measuring productivity differentials and seeking to determine how much surplus value transfers upwards from the dominated countries in the form of prices of production, the element of depreciation as a confounding factor cannot be ignored.

Graph 7.

NVA vs GVA PER WORKER p.a.

Legend: manufacturing — food & accommodation — GVA manuf. — GVA food
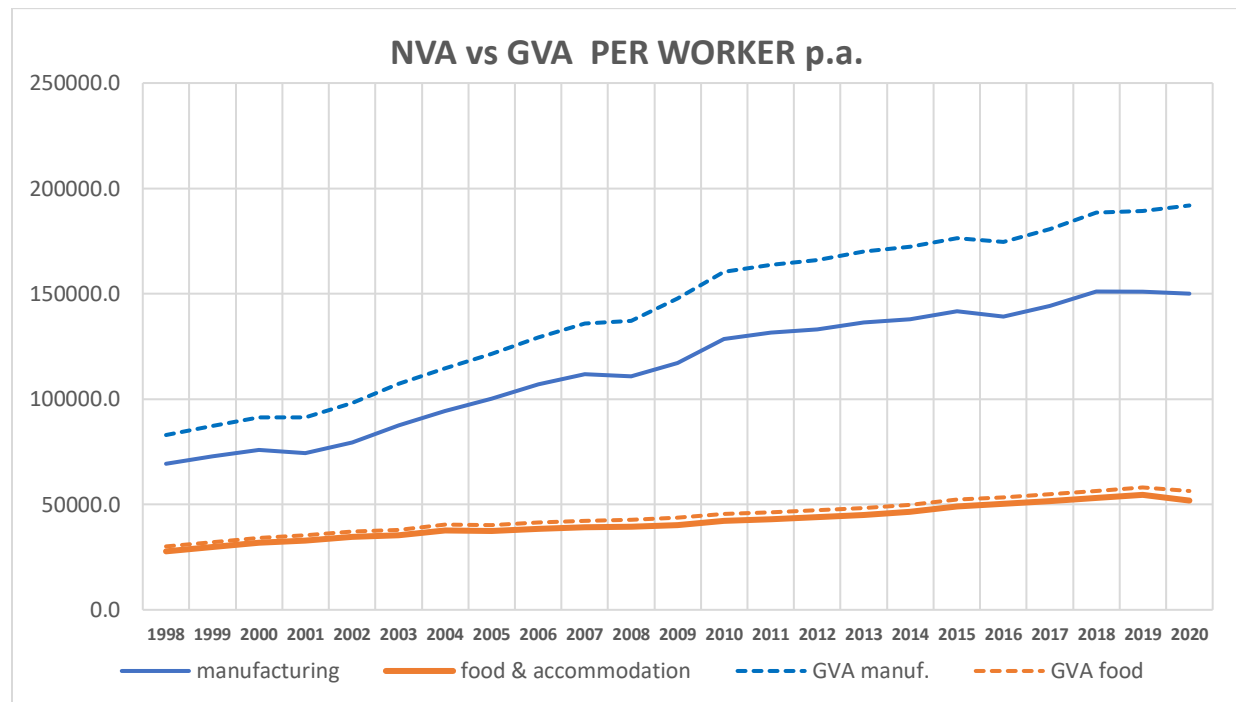
Returning to the authors we find their definition of the measure of productivity to be quite curious. Here we are dealing with Section 3: *Measuring Productivity***.** *Then the productivity ratio is the price of assets divided by labour units, as in Figure 6.* (Page 8) This oddity arises from their conceptual characterisation of the global economy, where whole national economies mimic sectors within the national economy, where unevenness between countries are fixed and where everything is average. The authors begin with the following Marxist position. *"While within a nation we can assume a tendential equalisation of the different sectors' rates of exploitation, 'On the universal market … the integral parts are the individual countries*." (page 8) This is not factually true. Rates of exploitation do vary between industries in the same country. As Graph 3 above shows, the rate of exploitation in manufacturing rose above that of food services to a level consistently 40% higher. It is to be expected that the rate of exploitation will be higher in higher OCC because skilled workers produce more value (economic hours), therefore they are subject to relatively higher rates of exploitation, and additionally, there is the transfer of value via prices of production which by raising market prices also raises the rate of exploitation. They also equalise between nations when cheaper imported products force changes in the rate of exploitation found in the imperialist countries by driving down wages. This was seen for example in the rate of exploitation found in the Furniture and related products sector of US manufacturing.

The authors then move from exploitation to the equalisation of the rate of surplus value on a world scale. *"There is no tendential equalisation of the rates of surplus value in the universal economy."* This can be the result of many factors of which productivity due to OCC is only one. They then use this as a springboard to leap to the conclusion that productivity cannot be measured by output (GDP), and because of this (despite an inserted quote from Marx) it can be only measured from the opposite direction - the input side: *"Then the productivity ratio is the price of assets divided by labour units, as in Figure 6."* Inputs take over from outputs. But how one can use this as a measure is anyone's guess because as we shall see below, Toyota reduced its inputs while boosting its outputs. In reality Toyota incontestably improved on productivity, whereas when using the authors measures the opposite happened, productivity fell.

This is as perplexing as it is unnecessary. True, depreciation which is a function of the input side will raise the value of output as I have shown, but this is a precise way of looking at the relationship. To however substitute the Price of Means of Production for the Price of Output is not. All it is a proxy. It merely states that higher rates of productivity are associated with higher OCC, that is all. It is wrong to convert an observation into a measure.

Additionally it can be said that in the imperialist countries, at least in those industries with above average OCCs, that the average level of skills ensures more economic hours are expended there. If we were to measure the global economy in physical hours and then in economic hours we would find total economic hours exceeding the physical hours by at least a factor of two. This being so, the share of physical hours expended in the imperialist countries will be a smaller slice of the total than when measured by economic hours, because the density of economic hours is greater in the imperialist countries. (Remember the example provided by Graph 4.) This greater fraction of economic hours alone would create the impression that value is being transferred to the imperialist countries when it is not. In other words, to factor for the redistribution of surplus value between nations, we first have to remove the effect of economic hours which push up the value of output within high OCC industries prior to the redistribution effected through the mechanism of market prices of production.

And here we come to the nub of the problem. The authors misunderstand the distinction between the value composition of capital and the organic composition of capital. The value composition is two sided, mimicking the two-sided technical composition of capital. It is the conversion of the number of hours expended into their value form – variable capital – on the one side, and the conversion of the physical quantities of the means of production into their value form on the other – constant capital. By doing so a common denominator in the form of quantities of socially necessary labour time is applied to both sides to make them commensurate.

But the value composition of capital hides many differences. In particular it obscures the fact that two capitals expressing the same value composition, could be hiding diverging individual productivities. The authors are right to point back to the technical composition of capital when determining the OCC because capitals with identical value compositions may be using equipment and machinery differently or they may have differing management styles. Take 'just in time' & 'lean' production. When Toyota pioneered this they altered the value composition of capital by reducing constant capital on the one side - inventory and minimising warehousing and factory space – and on the other side by reducing the number of productive workers. They did not necessarily invest in additional machines and equipment to build their cars. However the OCC found in Toyota was higher than that found in General Motors at the time regardless of the VCC because the higher productivity of Japanese workers resulted in higher rates of profit and a better

quality of product. "*General Motors, for example, needed twice as many people as Toyota to build a car. Germany's results did not turn out any better either. The study (by MIT) determined that for every worker who built cars, another worker was needed to correct all the mistakes that had gone wrong during the initial production*". https://www.allaboutlean.com/firstlecture_hom_4/

How do the authors contrast the VCC from the OCC. "*But for the rates of profit to be computed, labour units must be expressed as wages. Then the productivity ratio is the ratio of assets prices (value) to wages. This is the value composition of capital.* So wages are substituted for the labour units in their original formulation. Now they postulate that the value composition of capital can measure productivity. I understand the motive for doing this, which is to quantify the redistribution of value between nations on the basis of composition, but which is confounded by incommensurable rates of surplus value. This is a valiant but vain effort. Productivity is integral to the OCC not the VCC. Differential rates of productivity around a single market price are what distinguishes the OCC from the VCC. This allows the OCC to deviate from identical VCCs because productivity rates deviate.

Two identical VCCs in the same industry united by a single market price may register different levels of income. So how can the VCC measure productivity when the same measure may yield two different results. Productivity differentials play a role in the OCC but not the VCC. Stripping out productivity rates from the OCC when measuring similar capitals reduces them back to VCC. While it is true in general to say that higher VCCs are associated with higher rates of productivity, it is not correct to say that within a specific set of VCCs, individual productivities cannot differ.

The other area of concern is the use of averages. I do not disagree in any way that that the average VCC in the imperialist countries is higher than the average VCC in the dominated countries and that this implies a higher rate of productivity in the imperialist country as well as a gain in surplus value by the dominant countries. Nor do I disagree with the following observation: "*It follows that exploitation is underestimated in the countries with negative UE (the DC) and overestimated in the countries with a positive UE (the IC).*" (Page 21) Nor do I disagree with the observation that the transfer of value through unequal exchange boosts rates of profit in the imperialist countries by depressing them in the dominated countries. (page 6).

The issue of averages is this. For prices of production to redistribute surplus value from the DCs to the ICs, it is not enough for the authors to say goods only need to be sold on the international market and thus become part of the labour of the globalised society, it needs to go further, it must specifically involve the exchange of exports produced by low composition companies in the dominated countries with imported products produced by high composition companies in the imperialist countries. If this condition is met, then yes, it becomes permissible to use averages.

Estimates.

"*We define the imperialist countries as the G7 and the dominated countries as the rest of the G20. The imperialist G7 countries run a persistent and rising annual net primary income surplus that reached over half a trillion dollars in 2019, or 14% of G7 GDP (Figure 9). That's a sizeable contribution to the surplus value of the G7 economies.*" (pg. 19) Half a trillion Dollars is the benefit here. On page 26 figure 16 they state that unequal exchange amounts to 1.1% of the G7's GDP in 2019 equal to 31% of the global total of $87 trillion yielding a G7 GDP of $27 trillion. 1.1% of $27 trillion adds another $300 billion in transfers. I cannot find any other Dollar dominated transfers. I did find the following quote where the authors

consider the contribution to transfers from OCC differentials to be the dominant source of transfers. *We find that an average of 60% of the surplus value transfer since 1970 has been due to the OCC differential and 40% due to the rate of surplus value differential (Figure 18).* It would be useful for the authors to actually put numbers to this.

While I do not disagree that higher and lower VCCs between the imperialist and dominated countries is a key element in transfers (and bravo to the authors for highlighting this neglected aspect), I do not believe it is the single major source of transfers. I remain of the opinion that the discounts forced upon producers in the dominated countries by imperialist buyers together with their under-valued currencies, to be the primary indirect source of transfers rather than the prices adjusted by differing VCCs, especially when we factor for economic hours, which the authors fail to do.

In support of this I provide two graphs, assuming them to be representative of price differentials between the imperialist block and the economically subordinated block. The US provides the most comprehensive Indexes, and the advantage of examining prices entering, circulating, and exiting the US is they are all priced by the world's reserve currency - the dollar. Two indexes are chosen. The Import Price Index (I.P.I) and the Producer Price Index (P.P.I.) the former for in, and the latter for out.

Graph 8 below shows that up to the middle of the 1990s import and producer prices tracked each other. However once globalisation kicked in around this time, they diverged to around 25% after 2014 when the price of oil no longer raised import prices. Using the data contained in a very informative UK Govt publication which I have linked, in 2019 the USA, Canada, the UK, Japan and the EU imported $10.5 trillion in goods of which 60% came from non-G7 countries. This yielded an import figure of $6.3 trillion. 25% of this balance of $6.3 billion amounts to $1.6 trillion or 1.8% of global GDP. This figure of $1.6 trillion is significantly higher than the one provided by the authors in their article which focuses on G7 economies. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1036243/global-trade-outlook-september-2021.pdf

Of course many ingredients have gone into this pot - currency depreciations, cheapening of production, price repression and of course the role played by prices of production. However given the estimates for each provided by the authors, their claim that prices of production are the primary source of redistribution is not sustainable given the magnitude of transfers revealed by these two indexes as found in Graph 8 below. Graph 9 gives a better picture of the relative movement between these two indexes which span nearly 40 years, both pre and during the period of globalisation.

Graph 8.

IMPORT AND OUTPUT PRICES
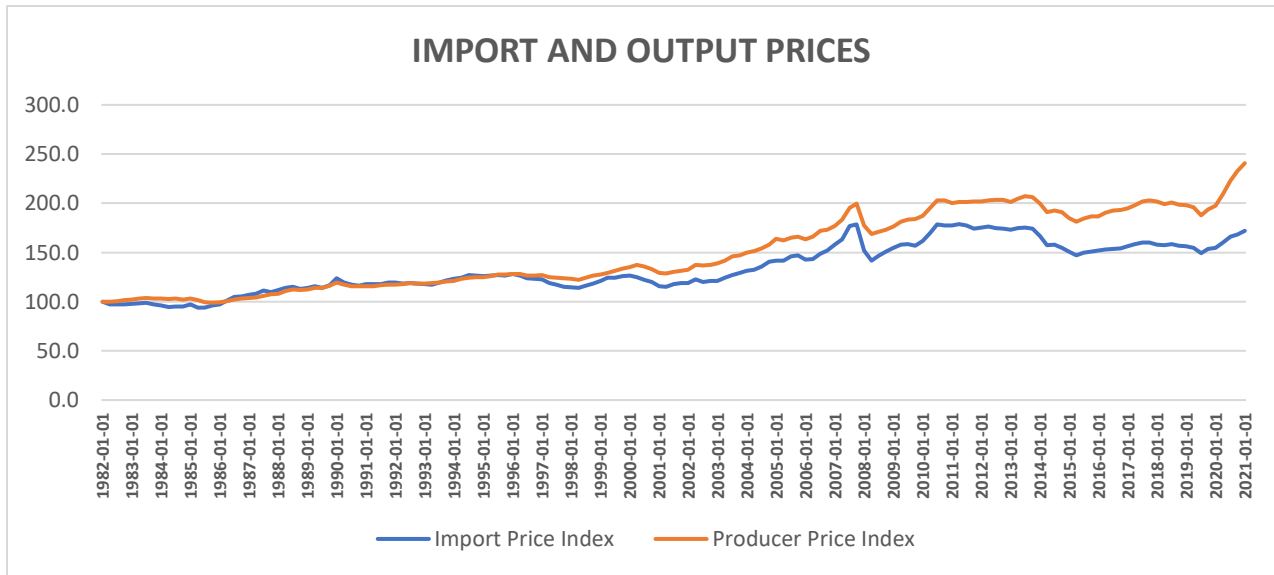
(Sources: FRED Table PPIACO for Producer Prices and TABLE IR for Import Prices)

Graph 9.

P.P.I. as a share of I.P.I.
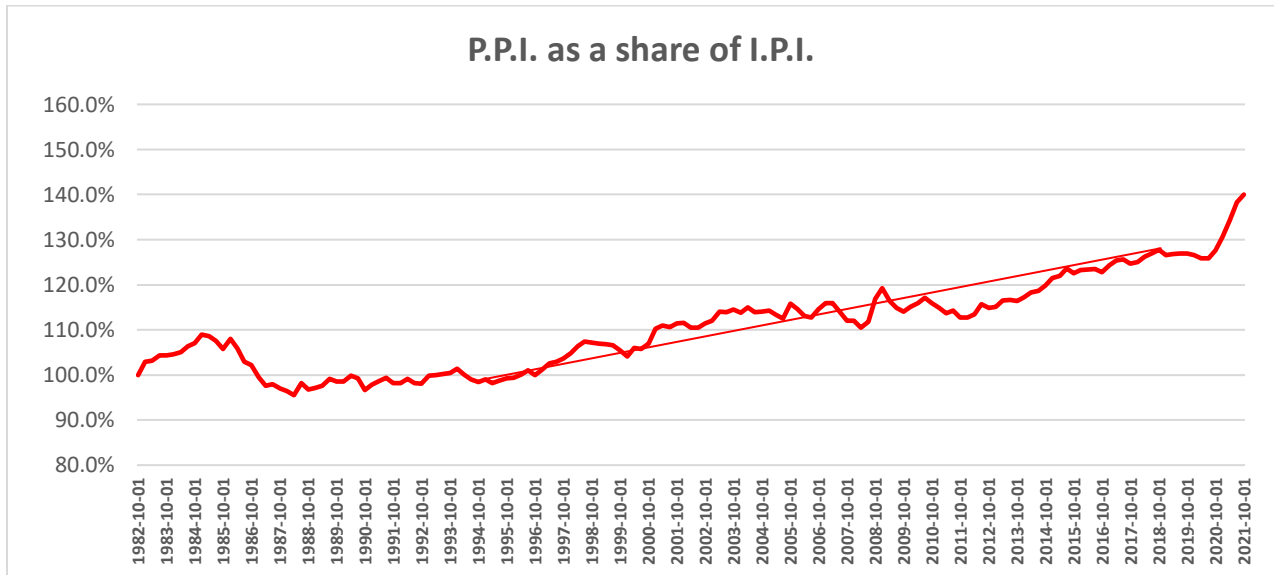
Conclusion.

It is possible to measure the movement of surplus value governed by prices of production - resources permitting. The formula would be prices of production less the adjustment for economic hours less the adjustment for depreciation. This would result in adjusted and comparative net value added (NVA). Adjusted NVA precludes considerations of rates of exploitation and surplus value as these have no bearing

on overall NVA, rates which the authors were grappling with at an international level. It would however still be affected by exchange rates.

Had they followed this route the authors would have had no need to develop unnecessary measures for productivity as this is baked into the above formula on the output side. Finally were they to correct the confusion between VCC and OCC this would free us to consider their central hypothesis on modern imperialism: the technical advantages found in the imperialist countries which allows them to economically dominate the subordinated economies, and which enables them to extract an additional source of surplus value through the pricing system.

This article is a step forward in the field of imperialism. It is not only novel, a scientific hallmark, but very relevant and topical given the vain efforts by the USA to restrain China's technical development so as to preserve its own hegemony via its monopoly of the commanding heights of the technical chain. It is also a product of deep research. It is extremely difficult to quantify all the different streams of surplus value even within a national economy where a common currency is used. It is safer to locate each and every stream and then to fully describe their mode of action, their weighting, and their long-term consequences for the world economy. This the article has done and that alone should satisfy the authors.

Brian Green 20th January 2020.