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# Deindustrialization: Why Would Anyone Consider It Is a Myth

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## Abstract

*In this paper work we assemble the mosaic: we started with deindustrialization in the (negative) perspective of employment dynamics. We contextualized it here with indications of divergence between productivity and employment; it turned out that the productivity dynamics was not synchronized with the wage trends i.e. that the productivity is tied to significant asymmetry of distribution of productivity results. Deindustrialization occurs nowhere else but in this context; namely, in groups of different tendencies or, if we use our methodological projection, deindustrialization may be placed in the context of cumulative causal chains. Talking about deindustrialization without contextualizing shall not give us deeper explanations.*

*Therefore, this is data that is worthy of full attention and do not allow us to get rid of the burden of speaking about deindustrialization too quickly. So, if we sum up everything said in this section, we may say and be able to see later as well, that there are certain differences, but globally speaking, there is no deindustrialization as a one-line process in terms of absolute drop in industrial employment.*

**Key words:** *deindustrialization, productivity, output, employment*

## 1. INTRODUCTION

Let us focus first on employment dynamics. After all, we cannot disregard that present problems with deindustrialization can be mostly seen right from the perspective of employment. In other words, deindustrialization inevitably appears to us in the light of structurally determined unemployment; many describe deindustrialization as stagnation of industrial employment. Nicholas Kaldor presumed that the offer in relation to industrial workforce shall not become non-elastic while wages in other fields do not increase to the level which converges with the level of wages in industry (thereby, let us at least mention the example of the USA where in the 1960's there was a convergence of wage trends in non-industrial and industrial sector; at the same time, one must take into consideration that previous wages in processing sector were bigger than, let us say, in the UK). However, in this case, we must take into consideration some other moments as well.

We must take into consideration the epochal specificities. As we know, Fordism that used to be so successful got into crisis at the end of the 60's and in the beginning of the 70's: crisis processes overwhelmed even the prominent industrial circles. *In medias res*: "deindustrialization" as a negative indication in relation to developed countries (thus, it is an "early" product of

contemplating, not an indication relating to it that arised recently) did occur in the context of crisis and in the processes of contradictory ways to overcome the crisis. In the USA there were many discussions relating to this; some economists saw alarming signs relating to the advanced "deindustrialization" and they presented their dark forecasts in terms of economic faith of the USA. However, allarming in relation to economic paths of the USA leaves some concerns though, and requires deeper considering (later we shall try to perceive the dynamics in other countries as well, but we may start with the analysis of the USA). Let us just take a look at simple data from the period in question, from the beginning of the 20th century to its end in order to really see the increase in the volume. More precisely, since we started from the crisis phenomena in the 70's, we shall place the same period in a historic context with an aim to consider the *tendencies*:

**Table 1.** Dynamics of the volume of industrial employment in the USA [1]

1900	10,920,000
1950	20,698,000
1971	26,092,000
1998	31,071,000

If we focus ourselves on the crisis period, in this case on the period that began in 1973, we cannot speak at all about the decrease in the absolute level of employment. It is clear that we may actually speak about opposite tendencies: from 1973 to 1998, we see the increase in the volume of employment by 21%. In terms of absolute level, it is about the highest level in general. Even if we expand our focus, so, in relation to transatlantic countries as a whole, we may see that there was no decline in terms of *absolute level* of industrial employment: in 1998 the level of industrial

employment was 112 million, which is by 25 million more than in 1951 and by 7.4 more than in 1971 [2]. In 1995, the World Bank calculated that about 479 million people worked in industry worldwide, 800 million in the service sector and about a billion in agriculture. Industry of low-income countries employed 211 million people, in medium-income countries 164 million people and in transatlantic world there was about 110 million [3]. Let us look at the sectoral structure of the world economy not leaving the frame of the chosen period, so in 1999:

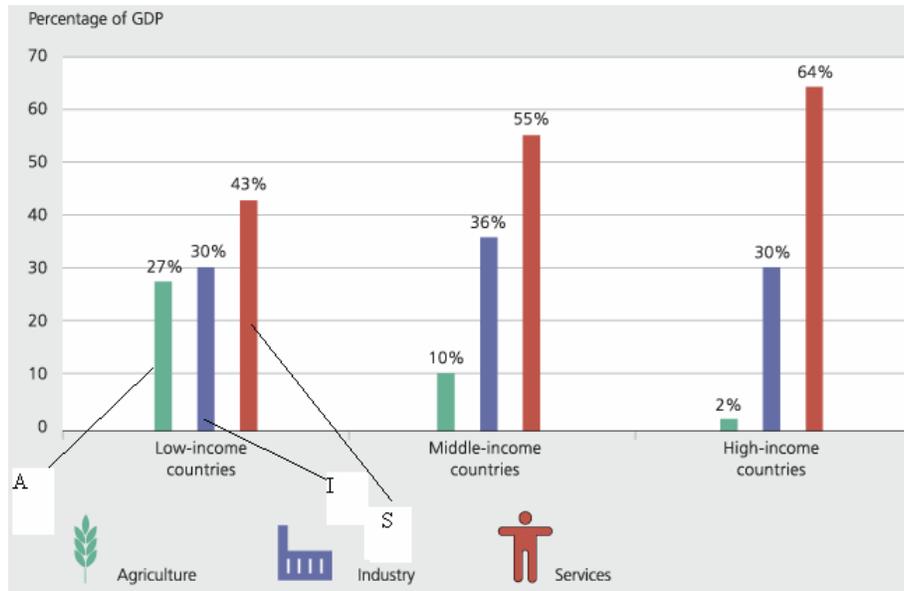


Figure 1. Sectoral structure of the world economy, 1999 [4]

In this figure we transfer the logic of the World Bank. We see the movements but on the basis of tripartite division of countries based on different levels of income. It will not harm to mention that the economists of the World Bank used the term “post-industrialism”, so, they

envisaged three phases of capitalism that shall be finalized in post-industrial patterns. We shall also take a look at the next figure which reports about the changes that occurred in the period from 1980 to 2000, again on the basis of tripartite structure.

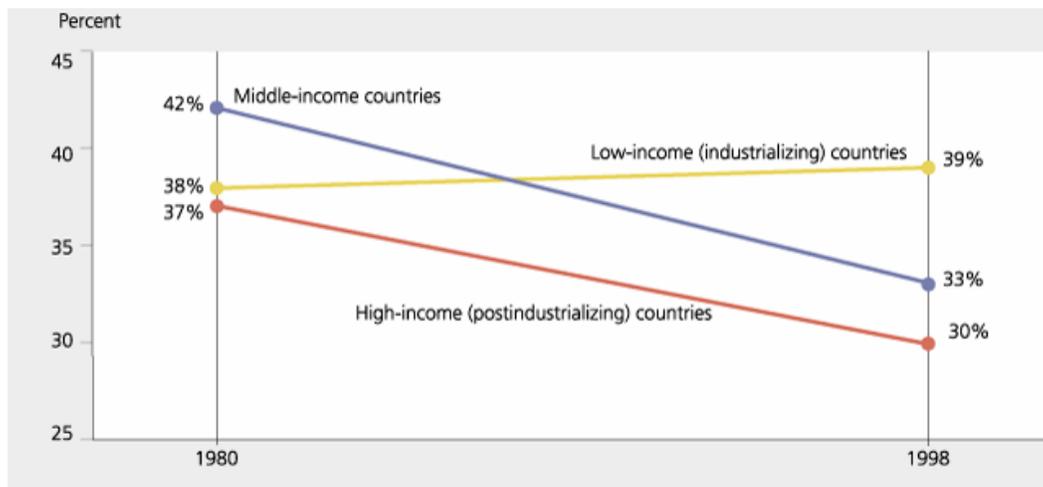
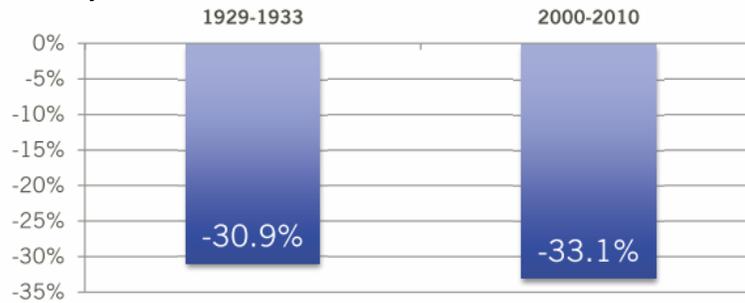


Figure 2. Dynamics of changes in industrial output as percentage of GDP [5]

Of course, it is clear to us that our vision shall change if we change the optics and try to take the *relative* aspects into consideration. For example, one study[6] shows that in the period 1988-1998 the USA lost half a million of its workforce. The workforce employed in industry really decreases *relatively*, in terms of its share

in the volume of workforce. It is enough to show that the loss of jobs was more prominent in the first decade of the 21st century than during “the Great Recession”.

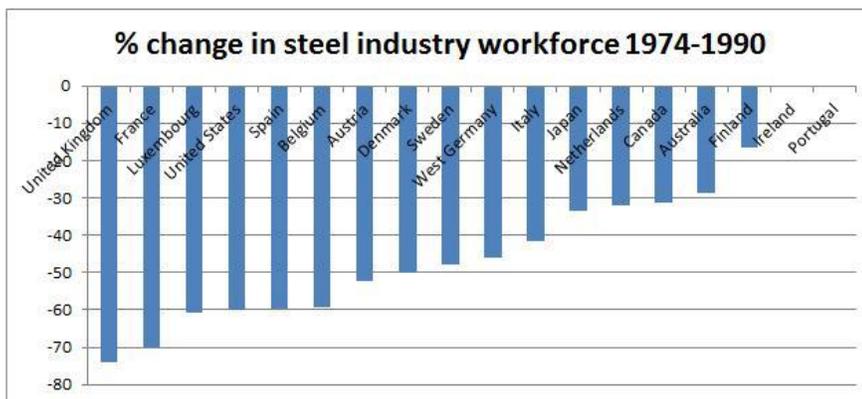


**Figure 3.** Change rate in manufacturing employment within the frames of two historical periods [7]

However, the question is how to explain the same tendency: here, nothing has been said about whether the relative decline may be ascribed “only” to endogenous processes as is the already mentioned bigger industry productivity. As we just said about Kaldor, the productivity of industry is more pronounced than the productivity of the service sector. Finally, this claim is being supported by data from the chosen period: between 1973 and 1999 in OECD countries the industrial output increased by 2.5% and by 3.1% in service sector. However, if we look through the data on productivity, the constellation changes because the numbers show that the productivity rate was 2.8% in industry and 0.8% in service sectors [8]. Can it be explained by deindustrialization? Do we treat deindustrialization here as a cause or as an *effect*? Different “post-industrialism” style theories are unconditionally classified into the first group i.e. they insist that deindustrialization is a cause. Since we reached the cause and effect issue, we need to take a look at the problem of cumulativity and to keep in mind that the relation between the cause and effect is much more complex than people think. So, in connection with deindustrialization, we cannot be satisfied by a mono-line relationship between the cause and effect.

What can we say about the output dynamics – let us move from the problem of employment. Manufacturing industries, as we can read, [9] participate with 20 to 30% in creating the output in developed countries, and about 80% of manufactured products are created in developed countries like USA, Japan and Europe. One researcher claims that during the period 1989-2000, annual value of the output in manufacturing increased by 2.9 trillion dollars (the base is a constant dollar value in 1992). At the same time, he claims that the value of electrical devices increased by 155% in the same period *despite the decline in employment* [10]. In other words, there is a divergence between productivity dynamics and dynamics of the added value volume with certain consequences in relation to employment dynamics – we have to say that similar tendencies may be also presented in relation to other industrial sectors.

Turl draws the attention to American steel industry and the degree to which it reflects such tendency: from 1970, this sector of American industry lost 2/3 of its workforce, and the output increased from \$167 trillion to \$178 trillion in the period from 1995 to 2000. Let us now take a look at the rate of workforce volume decrease in steel industry in international context, where one may see that the same rate was very prominent nowhere else but in the USA:



**Figure 4.** Dynamics of decrease in steel industry in various countries [11]

Regarding steel industry, there was a decline in 2008 which can be assigned to crisis phenomena and not to endogenous processes of deindustrialization. In the meantime, China made a great progress in terms of share in steel export [12]. Can we then say that deindustrialization is a “myth”? In the period from 2001 to 2009, the American economy lost 42.000 factories (2001 was noted as the year when China joined WTO; it is obviously a factor that needs to be taken into consideration i.e. it suggests that certain forms of international trade enhance deindustrialization). Thereby, we are talking about 36% of factories that employ more than 1000 people and 38% factories that employ 500 to 999 people [13]. Employment in manufacturing industries dropped to 11 million, which represents a 32% decrease compared to 2000. Total GDP in manufacturing industries in 2008 represented 11.5% of American output. Therefore, it was a 17% drop compared to 1999 and a drop of 28% compared to 1959. In addition, it would be good to record that the importation of goods reached \$2.52 trillion in 2008 and the exportation reached \$1.29 trillion – creating a deficit of \$821 billion. So, as we may calculate, the imported goods represented 17.6% GDP. In addition, we keep in mind that despite “relocating” various sectors of industry the value of manufacturing output in the USA increased by 1/3: although China had a 19.8% share in terms of globally added manufacturing value; the same share on behalf of the USA is slightly smaller – 19.4%, therefore, in industrial projection, it is not significantly smaller [14]. What we have stated in terms of dynamics of value of electrical devices, here we may generalize: dynamics of output and dynamics of the volume of the industrial output show divergent paths. Similarly, here we shall not forget the fact we have emphasized several times: divergence between the productivity in manufacturing and in services. Certain researchers claim that between 1987 and 2005 the productivity increased by 3.3% in trade and by 0.7% in services when compared to food. In the same period, the productivity in four manufacturing industries increased by 3.4%, and in industries relating to computers and relevant manufacture it was even recorded that the increase reached 19.4% [15]. Abraham K. even claims that during the period 1977-1997 there was a drop in labor

productivity in the service industry: [16] prominent economist William Baumol developed a theory on inherent divergence of productivity growth between manufacturing and service sector with consequences [17].

Decline of industrial employment also needs to be explained in the context of increased employment in trade. If we look backwards, and still take into account Kaldor’s ideas, he found a strict correlation between the rhythm of output boost and productivity, but he did not find any connection between output increase and employment. He kept in mind that there are parallel tendencies in trade and agriculture: he emphasized that the economic competition in a certain area leads to the fact that extraordinary advantages in the field of profitability do not disappear because of price drop but because of multiplication of the number of subjects in service production. However, we are facing other tendencies as well: relative growth of employment in trade sector based on low wages. Here, Walmart plays a representative role: moreover, some interpreters even speak about redirection of American economy on the basis of the logic of economizing of Walmart and on the basis of previously built-in logic of “cheap trading articles” not based on increasing the productivity [18]. Moreover, there is research proving that despite Walmart employs a great volume of workforce i.e. a great volume of workforce concentrates there, final results are negative in terms of employment. According to a study, for every new position in Wal-Mart, there is a loss of 1.5 work places [19]. Therefore, if we adhere to Kaldor’s arguments, here we have an inflow of workforce in the trading sector, but with appropriate negative externalities.

Finally, if we treat the employment dynamics as circulation of workforce, then one may clearly demonstrate certain tendencies. First, we shall take a look at the share of corporate profit and income tax in GDP:

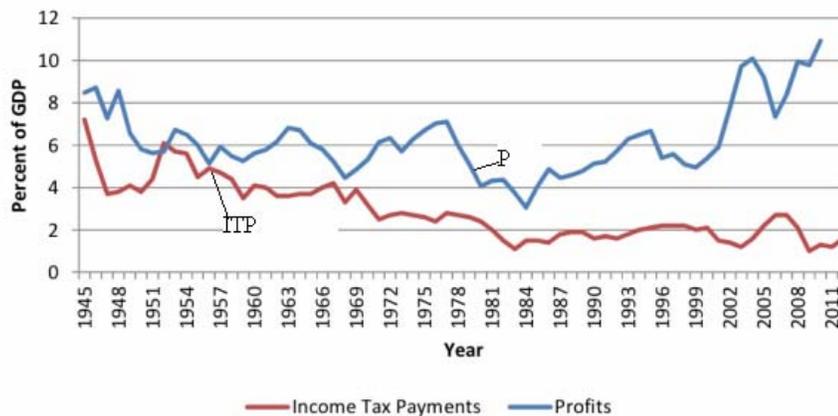


Figure 4. Dynamics of decrease in steel industry in various countries[11]

As it can be seen, there is a long-term increase in corporate profit and decrease in corporate fees. In order to finish this argumentation, we shall take a look at two more figures:

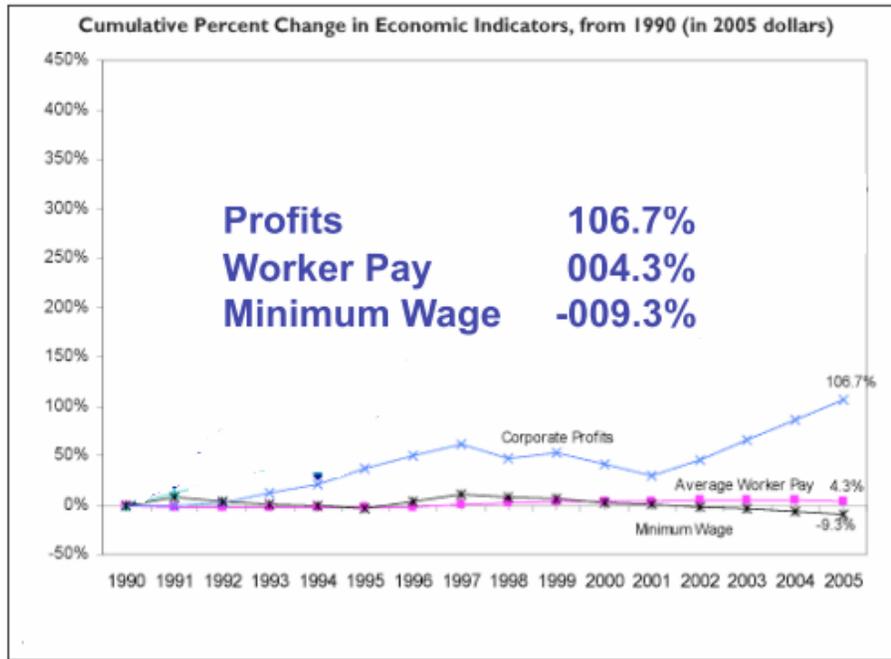


Figure 6. Cumulative change in economic indicators, 1990-2005 (corporate profit, wage, minimum wage) [21]

This picture clearly shows the significant divergence between dynamics of *corporate profit* and *trends in wages* and *minimum wages*. One should take into consideration that a polarization occurred after 2008, so, after the outbreak of crisis. After a momentary decrease the corporate profit increased, which throws light on the fact about the historical decrease of corporate tax volume i.e. share of this tax modus in carrying the burden for public sphere.

We shall now take a look at the next picture which is related to the previously given argumentations i.e. we will take into consideration the fact of divergence between productivity and wage trends:



Figure 7. Divergence between productivity and wage [22]

Now we may assemble the mosaic: we started with deindustrialization in the (negative) perspective of employment dynamics. We contextualized it here with indications of divergence between productivity and employment; it turned out that the productivity dynamics was not synchronized with the wage trends i.e. that the productivity is tied to significant asymmetry of distribution of productivity results. *Deindustrialization occurs nowhere else but in this context; namely, in groups of different tendencies or, if we use our methodological projection, deindustrialization may be placed in the context of cumulative causal chains.* Talking about deindustrialization without contextualizing shall not give us deeper explanations.

Therefore, this is data that is worthy of full attention and do not allow us to get rid of the burden of speaking about deindustrialization too quickly. So, if we sum up everything said in this section, we may say and be able to see later as well, that there are certain differences (Italy, France, Great Britain, especially in the end we shall mention Germany, particularly taking into consideration the tendencies in the last period), but *globally* speaking, there is no deindustrialization as a one-line process in terms of absolute drop in industrial employment. *Deindustrialization really is a tendency but unfinished condition in terms of completion* and therefore it should be constantly treated as a process. In simple words, there is no such thing as deindustrialized world. "Deindustrialization" in non-reflected sense only repeats various theories on post-industrial society where, like in some non-material projections, the material creation disappears and people only float in non-material condition without industry. It would be difficult to find a researcher who denies the occurrence of great changes: they have been expressed in various theories. This is how we become familiar with various theories that tend to affect the mentioned changes: "economy based on knowledge", "information society", "new techno-economic paradigm", "network society", "cognitive capitalism" etc [23]. Therefore, we write the following: "industrial capitalism may be characterized as production of goods with the help of goods, and the cognitive capitalism creates knowledge with the help of knowledge..." [24]. However, data does not show that "cognitive labor" replaces industrial labor. Again, we may only speak about *tendency* which undoubtedly requires revision of our knowledge about industry but not the writing off of industry in terms of creating the output and employment. This forces us to throw some light on the problem of deindustrialization before we analyze the varieties of deindustrialization.

#### 4. CONCLUSION

A dream about non-material world is finished. There is no economic activity which, in some or at least indirect way, does not use manufactured products. Unlike the World Bank, we do not believe we have entered the post-industrial phase of development, although we cannot deny for a single moment that some significant transformations took place. However, we cannot speak

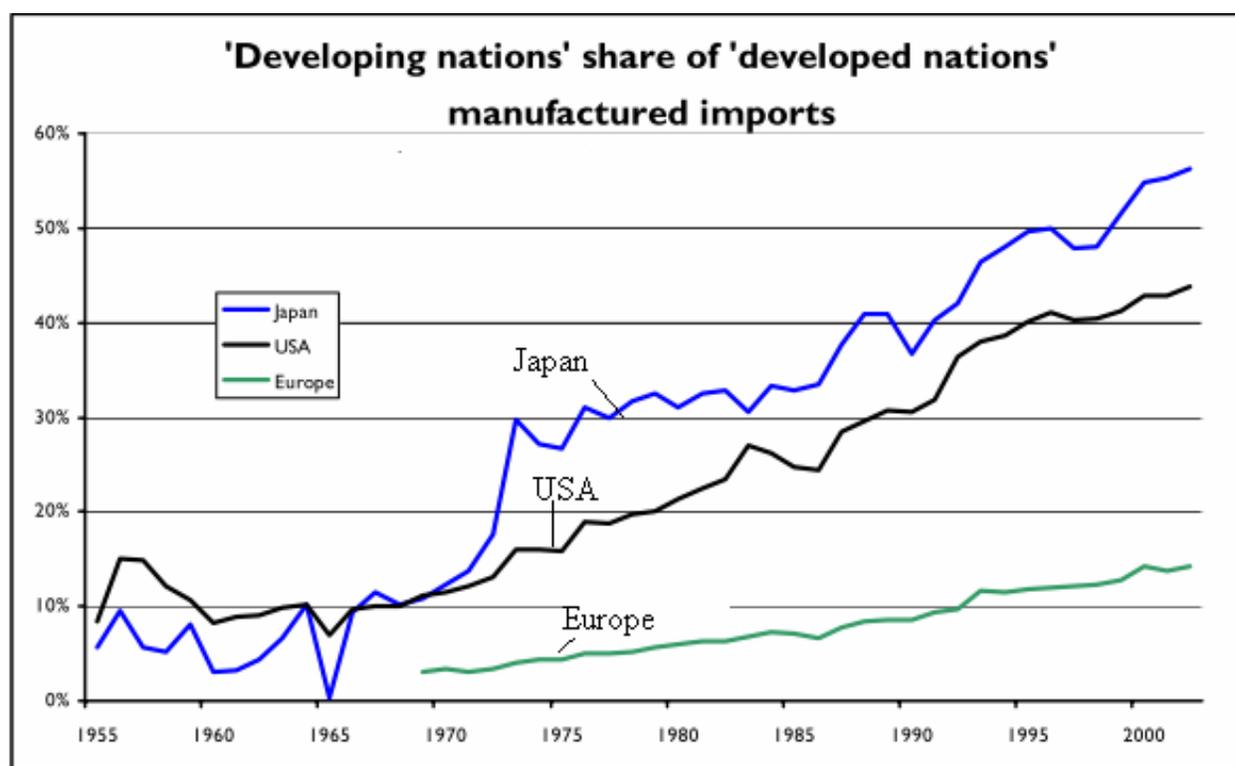
in the sense that some changes of determinations in capitalism took place. Ha Yoon Chang, a Cambridge economist, claims that our picture of post-industrialization is often the result of optical illusion: he says that because of globalization processes which are in the last line carried out through relocation (*outsourcing*), there are some movements in statistical classifications [25]. Anyway, many think that deindustrialization is substantially the effect of expanded and globalized processes of relocation.

Chang is right; statistical classifications may be brought into question. Certain tendencies related to the last decades (among others: financialization) really bring confusion and generate skepticism in terms of classifications' adequacy [26]. For example, as some researchers show, the just mentioned Baumol's theory (also called "Baumol's disease") tends to emphasize the development of services compared to industry i.e. that GDP data takes more into consideration the dynamics of services than the one of industry [27]. Others specified the special role of relocating the services [28] which has been underestimated in various calculations/statistics, despite the fact that it represents a significant moment – of course, here immediately arises a question of classification and definition of various services, which should deserve special considerations [29].

However, it is not disputable that the phenomenon of relocation significantly changed the world trends: the globalization of the world production may, to a great extent, be attributed to the relocation. Relocation channels are diverse and represent the subject of many analyses [30]. Some were celebrating the relation so much that they saw the herald of the "third industrial revolution" in it [31].

For us, it is most important that the relocation played, although indirectly, a role of a deindustrialization promoter. In other words, it is important for us because of our approach, that the deindustrialization can be understood on global level. "South" is really important for developed countries in terms of possibilities to import manufactured products: let us say that 53% increase was recorded in terms of importation of products manufactured in low wages countries in the period from 1990-2002. The rest of the importation related to China. Let us take a look:

However, we must warn that the "outsourcing" should not be exaggerated; particularly, it cannot be treated in the style of assumed hypermobility of capital that tears down all barriers: the capital dynamics cannot be understood that way; it really tears down certain barriers but only to come across some others. Here, we may better talk about complex processes of capital structuring and restructuring, as it was shown by various analyses in terms of spatial movement of capital. Those who already emphasized earlier that the relocation is not a panacea for all possible problems were indeed right.



**Figure 8.** Share of developing countries in importation of manufactured products to developed countries in the chosen period [32]

The world in which the capital is moving is not “smooth”, homogenized, but with many discontinuities, knot spots, state interference effects etc. It is particularly wrong to think about relocating as a process with negative effects on domestic unemployment. In car industry in the USA, in the period from 1990-2007, 172.000 work places were gone, but the added value per work place increased by 85%. In the period from 2009-2010 the car industry got back its 50.000 work places, even the increased profit, but one should not forget that it included the intervention of American government i.e. the changed situation implied state intervention [33]. In the electronics industry, in two decades, there was a loss of 365.000 work places, but the added value increased by 363% [34]. The loss of work places can only partially be really ascribed to relocation: other forms of loss we shall need to ascribe to new mode of technological regimes (labor-saving technology) as well as certain economic determinations, like crisis outburst in the end of the first decade of the third millennium. Speaking about the state intervention, let us also record the fact which may be relevant for understanding the deindustrialization. Change of workforce volume of 27.3 million in the USA may be to a great extent explained by absorption of workforce in the service sector: in doing so, the key role is being played by the state and the health sector. Thereby, one cannot ignore that the state remains the biggest employment sector with even 20% increase in volume in the mentioned period [35] - despite the rhetorics directed against the state. If we talk about deindustrialization, then we may forget at

what extent the state itself and the government's machinery aid the processes of deindustrialization.

In terms of deindustrialization, China has frequently been mentioned as a promoter of industrialization; it has been often described metaphorically also as the world industrial workshop. Of course, here we should not waste words on China boom; too much ink has been wasted on it already. Its economic enthusiasm has different effects: for example, it has often been claimed that direct overseas investments changed their destination; instead to the south, they directed them towards China with significant comparative advantages [36]. However, here we need to be careful again and it would be good not to rush: tendencies in China may explain only certain part of realized deindustrialization in developed countries i.e. *tendencies cannot be explained as a simplified plus-minus game, namely, as industrialization on one and deindustrialization on the other side*. For example, it would be good to take into account that in the period 1993-2006 new work places in manufacturing were not being created at all [37].

One must take into consideration that the significant part of industrial zest did not depend on work-intensive industries, as in many countries in the processes of industrialization there was absorption of relatively smaller volume of workforce compared to the growth of industrial input.

Chang draws his attention to other moments as well: possibility to take into account the change of industry share on the basis of relative price relations. If one takes into account the total output, then the drop in manufacturing in British economy was 40% in the

period 1955-1990, and if one takes into account the relative price effects, then the drop is much smaller, namely, 10% [38]. Of course, this fact shall not surprise us: this is an effect we have come across several times, productivity is bigger in industry than in service sector, the output increases faster.

The conditions for increasing the productivity are different in the service sphere: for example, decrease of time frame for realization of certain services (temporal rationality) with detriment to the quality of services. We barely need to emphasize that if in a given country the service sector prevails with shown tendency compared to productivity, there is a *tendency* towards slowing down the economizing. Therefore, we may really confirm that the relative drop in the total output does not necessarily mean the change of demand for industrial products, as it is correct that one must need to respect *the divergence between employment* (with appropriate effects of deindustrialization) and *production* (which is nothing less industrial), although the deindustrialization cannot be even ascribed to change in relative prices as Chang suggests. Let us add another example: in Sweden, there was a relative drop in the share of industry in GDP, but the industrial output showed faster increase than the GDP. That is to say, it resulted in drop in relative prices of industrial products but there was no drop in terms of demand for industrial products. Therefore, the decreasing relative share in GDP was not followed by decrease in demand [40].

Anyhow, what remains is that the industrialization is the inevitable aspect of modernization. There are different paths for entering the industrialization, as well as promoting deindustrialization, but we are not living in a post-industrial world. Only in some oases (Seychelles Islands) one may speak about correct variants of post-industrialized constellation. The fact that we have found ourselves in the post-industrial world has been explained on the basis of *demand dynamics* (GDP grows and the demand for manufactured products decreases – D. Bel), as well as on the basis of *offer dynamics*. I)

Demand for servicing products is independent of income, deindustrialization is the product of different productivity; if the wages in the service sector grow simultaneously with the general level of wage growth, then there would be a relative drop in share of manufacturing in GDP; II) Industrial companies intensively buy intermediary products which used to be produced in-house (in the background, there is a progressed specialization and intensive distribution of work; Baumol). However, no explanation can triumphantly announce that we may leave the “pattern” of industry.

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## Deindustrijalizacija: Zašto bi neko smatrao da se radi o mitu

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### Rezime

U radu je predstavljen svojevrsan mozaik predstavljen na sledeći način: krenuli smo od deindustrijalizacije u perspektivi (negativne) dinamike zaposlenosti. Daje se kontekstualizacija sa naznakama o divergenciji između produktivnosti i zaposlenosti čime se pokazuje da dinamika produktivnosti nije sinhronizovana sa kretanjem dohodaka, odnosno, da se produktivnost vezuje za signifikatnu asimetriju distribucije rezultata produktivnosti. Deindustrijalizacija se javlja upravo u ovom kontekstu, naime, u sklopovima različitih tendencija, ili služeći se sa našim metodološkom projekcijom, deindustrijalizacija se može smestiti u kontekst kumulativnih kauzalnih lanaca. U radu se govori o deindustrijalizaciji bez njenog kontekstualizovanja nas ne vodi do dubljih objašnjenja.

Kroz rad se daju podaci koji zavrđuju punu pažnju i ne dozvoljavaju da se prebrzo oslobodimo od tereta govora o deindustrijalizaciji. Dakle, sumirajući ono što je iznešeno u ovom radu, možemo reći da postoje određene razlike, ali globalno gledano ne postoji deindustrijalizacija kao jednolinijski proces u smislu apsolutnog pada industrijske zaposlenosti. Deindustrijalizacija jeste tendencija, i a ne dovršeno stanje u smislu zgotovljenosti, ona se utoliko mora misliti stalno u smislu procesa.

Ovaj rad opisuje mogućnosti upotrebe tehnike „process mining“ kako bi se pojednostavilo otkrivanje nepotrebnih aktivnosti (u smislu lean usluge) u organizacijama koje samo pružaju usluge. Analizirani su sistemi pružanja usluga, sa posebnim ostvrtom na stvaranje vrednosti i nepotrebnih aktivnosti u organizaciji usluga. Postojeći algoritmi process mining tehnike mogu da se primene na „event logs“ (slučajevi koji su završeni, tj. „post-mortem“ slučajevi) koje stvaraju Sistemi Preduzeća kako bi otkrili nepotrebne aktivnosti i prekide toka rada. Primena process mining tehnike može takođe da se proširi na operacionu podršku lean transformacija (delimični slučajevi) kako bi se analizirali slučajevi koji još uvek nisu završeni („pre-mortem“ slučajevi) i kako bi se predvidela pojava nepotrebnih aktivnosti i preporučile odgovarajuće aktivnosti za smanjenje mogućih gubitaka.

**Ključne reči:** deindustrijalizacija, produktivnost, proizvodnja, zaposlenost