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Special Theory of Employment and Co-Productive Goods

Abstract

In the paper is presented special theory of employment, which is not part of the four economic methods (simultaneous equations, partial equilibrium, macro-aggregates, Marxian hermeneutic). The special theory of employment indicating that households, as one of the four regulators of the economy, in addition to markets, the state and enterprises, in their search for work must themselves find a "loop" that integrates the regulators in order to achieve their goals. The building block for creating this "loop" is the disclosure, that in the history of economic thought too much importance was attributed to the substitutability and complementarity of goods (e.g. between leisure and consumption in the theories of employment), while not enough importance was attributed to the co-productivity of goods. The co-productivity of goods x and y means mutually gaining access to one of these goods as a result of using (consumption) of the other good. On account of this co-productivity households can control the remaining regulators of the economy and create employment for themselves, regardless of macroeconomic conditions of stability or instability.

Introduction

In the analysis of employment (unemployment) economics uses four of its major methodological traditions. The method of simultaneous equations that describes the overall balance of the economy (from L. Walras (1874, 1926) all the way through to R. E. Lucas (1990)), the method of the hermeneutic discovery of labor as the sole value-creating factor in the economy (from K. Marx (1867) all the way through to T. Piketty (2014)), the partial equilibrium method that analyses the respective markets in the economy, including the labor markets (from A. Marshall

(1920) all the way through to A. E. Roth (2015)) and the methodology of aggregates, among which employment/unemployment (from J. M. Keynes (1936) and M. Kalecki (1933, 1990) all the way through to P. Krugman (2012) and J. Gali (2015)).¹ Based on this last method, J. M. Keynes wrote *The General Theory of Employment, Interest and Money*. However, all the major methodological trends in economics aspire to create the most general theory of employment. Unfortunately, all these trends are characterized by significant weaknesses in terms of explaining the phenomenon of employment, especially as regards to explaining the possibility of finding the desired work by households. Therefore, in this paper we suggest a new research method and a new, special theory of employment, interesting in a cognitive and normative way to households wishing to know why they are/are not able to find the desired work and what they can do to find it – of course both as employees and owners or managers of enterprises.

The in this paper presented special theory of employment, which is not part of the above-mentioned four economic methods – although benefiting from them abundantly – attempts to prove and use two hypotheses. The first one – indicating that households (hereinafter referred to as **H**), as one of the four regulators of the economy, in addition to markets, the state and enterprises, in their search for work must themselves find a "loop" that integrates the regulators in order to achieve their goals. As we know, a supersymmetric integration of all four regulators of the economy within households is presented in the literature classic *Robinson Crusoe*, greatly appreciated by many generations of the greatest economists. *Robinson Crusoe* had a job! While creating markets, enterprises and states (communities), in their anthropological development households also created great leveraged development opportunities for themselves, but also exposed themselves to an

¹ H. Leibenstein talks about three methods, omitting the method of K. Marx (H. Leibenstein, 1976).

alienation of those created regulators and unemployment or unsatisfactory work in soulless corporations. They created extremely helpful instruments and financial institutions, but these in turn created financial crises. They created the protective power of states, but exposed themselves to unpleasant consequences resulting from their great disability and public debt etc. How can they regain control of all the regulators through a "loop" integrating them for their own needs? This is a great challenge for the proposed special theory of employment.

The building block for creating this "loop" will be the second hypothesis of the paper, which draws attention to the fact that in the history of economic thought too much importance was attributed to the substitutability and complementarity of goods (e.g. between leisure and consumption in the theories of employment), while not enough importance was attributed to the co-productivity of goods. The co-productivity of goods x and y means mutually gaining access to one of these goods as a result of using (consumption) of the other good. On account of this co-productivity households can control the remaining regulators of the economy and create employment for themselves, regardless of macroeconomic conditions of stability or instability.

1. Co-productive goods

The co-productivity of goods² x and y is the process wherein the created or acquired amount of good y_k creates the possibility of a certain volume of good x_k , which in turn leads to the possibility of a certain volume of good x_l , where $x_l > x_k$.

² In this paper the term "goods" will be used very broadly, including not only material goods, but also services and even institutions, access to common goods, tariff goods and public goods, including e.g. access to production systems (outsourcing, franchising), political systems, regulatory systems, pension systems, etc.

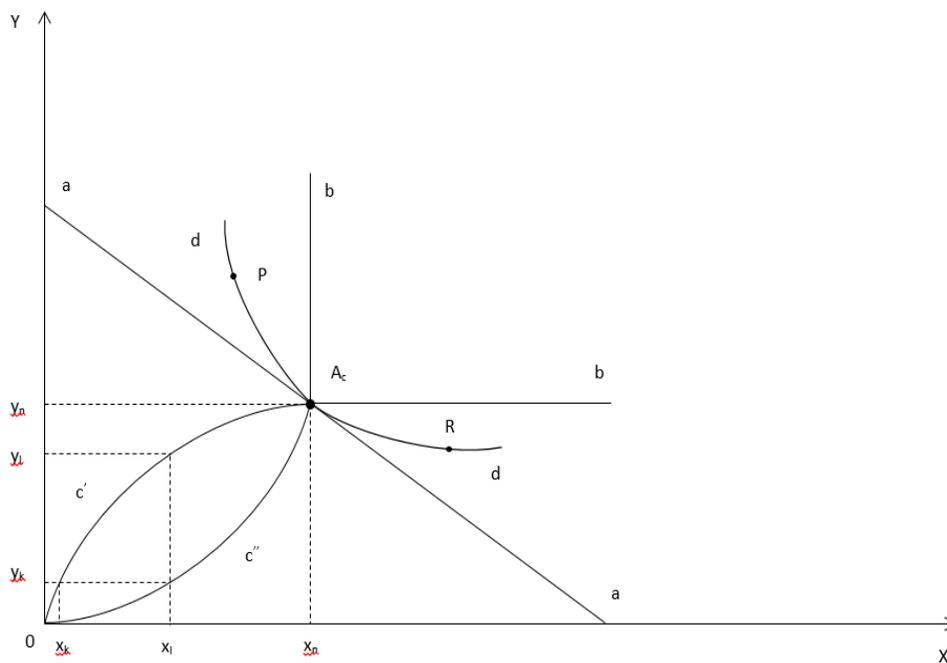
Subsequently, x_1 creates access to y_1 being greater than y_k etc. Such a positive process of co-productivity can occur until x_n equals y_n . A further increase of any of the co-productive goods will have a negative effect, which means that it will cause a decrease in the consumption of the second good, and subsequently also the first. In the history of science the phenomenon of co-productivity is excellently described by means of an experiment conducted by Joseph Priestley in the year 1774. The researcher placed a mouse in a closed glass container, and after a short while it turned out that the mouse is not able to survive. Once he placed a plant (mint) in the container with the mouse, the mouse survived. Priestley discovered the life-giving connection between gases (oxygen and carbon dioxide), which humans and animals use up and give off (National Geographic, 2011). Examples of co-productivity, which is crucial for **H** to have a job, include: purchasing SMART products, such as education services, computers and robots, IT applications, access to electronic networks, access to social networks (M. Granovetter, 2005, A. E. Roth, 2015), the possibility of renting production capacity, or influence on political and regulatory systems (J. J. Laffont, J. Tirole, 1993) etc. (**goods y**) and the use of the assets of **H** in creating a lucrative job and/or developing a business (**good x**). Co-productive dependencies can exist between goods that are far from "smart", but then this co-productivity will be much smaller (shorter cycle), e.g. in the case of food (**y**) and increasing the physical strength of an employee (**x**), or the dependency between the diet of an athlete (**y**) and his results (**x**), or between the purchase of a programmable machine (**y**) and production and programming (**x**). Very often, however, the goods purchased or created by households will not have co-productive properties, meaning that they will not contribute to the creation of jobs for the buyer, although they can provide pleasure or the possibility of survival.³

³ A similar method can be transferred to other economic choices (selections), e.g. enterprises, demonstrating e.g.

The transition from the simple definition of individual co-productive goods to more realistic choices and selections of households of entire bundles of goods will require the implementation of measuring the value of these bundles and the co-productivity between them.

Figure 1.

Co-productive goods vs. complementary and substitute goods



Source: Own elaboration

Figure 1 presents the concept of co-productivity based on the example of only two goods and without their valuation. The co-productive goods **x** and **y** are represented by curves **c'** and **c''**, while curve **a** represents perfect substitute goods, curve **b** perfectly complementary goods and curve **d** (e.g. Cobb-Douglas type) substitute goods. As we know, the shape of curves **a**, **b** and **d** can be easily derived

the co-productivity of Union Pacific and shale gas explorers or the choices of countries, demonstrating e.g. the co-productivity of the national stock exchange and international financial markets.

from the CES function suggested by K. J. Arrow, H. B. Chenery, B.S. Minhas, R.M. Solow (1961).

Point A_C in Figure 1 represents the exhaustion of the positive co-productivity between goods x and y . This point also represents a perfect substitutability and complementarity between goods x and y . Attempts to increase the consumption of one of the goods can: a) either be conducted at the expense of reducing the consumption of the other, goods x and y become substitutable for households (curve d in Figure), or b) can lead to a negative co-productivity, i.e. a decrease in the consumption of both goods x and y . These substitutability curves, showing equal utility for households, have become, on account of the Lausanne School, the foundation of modern economics, the foundation for the scientific explanation of the search for optimal states of economic entities and entire economies. According to Bentham's theory, a hedonistic household will prefer being on the curves parallel to d , more distant from the origin. A huge part of economic research will search for the shape of these curves (as the mentioned authors of the CES function) and use them along with the structure of the prices of goods x and y in order to find the optimal states of households and other entities as well as entire economies. These research studies will contain a lot of controversy regarding: the possibilities of obtaining information about entities and their surroundings, psychological and behavioural assumptions regarding entities, etc.

In our research we take a different approach: households do not only seek to choose a certain optimal state at specified preferences, budget constraints, prices and availability of goods, but they also use the **drive** resulting from the co-productivity of goods, i.e. "shifting" from point 0 to A_C , and subsequently from point A_C to subsequent points in A (Figure 2). At higher incomes and lower prices households can increase consumption of goods x and y , but do not have to increase

their co-productivity. Bentham's hedonism may prove to be enjoyable here, showing the actual behaviour of households, which is why it should be observed by marketing units of enterprises, but it does not increase the potential of households in the economy, in other words – as will be demonstrated later – their ability to create jobs for themselves.

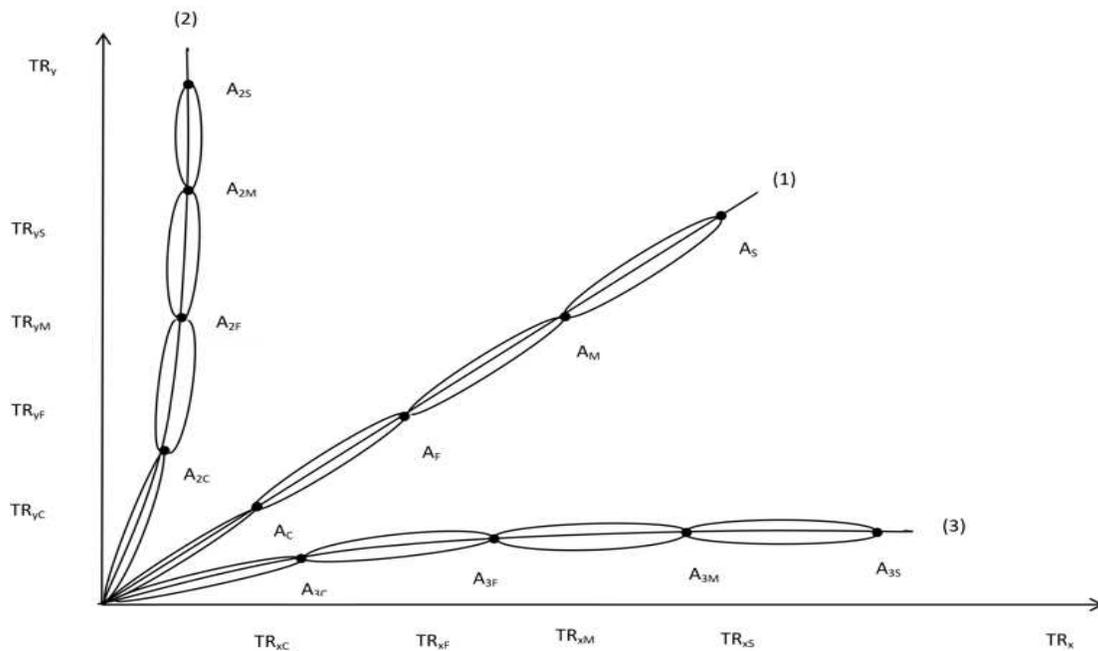
A Walras-Pareto-Menger-Jevons economy built on Bentham's entity goals will mainly focus on economic entities (not just **H**) shifting along the equal-utility curve **d** in Figure 1. Points **P** and **R** in this Figure have the same utility for the entities as **A_C**. Thus, allocative economics is built, explaining how entities can find optimal solutions under certain restrictions. Entities behave economically here or they rationally optimise their goals, which we shall refer to as universal goals (such as profit, return on assets, asset value, asset correlation value). In contrast to universal goals, the goals that entities achieve on account of co-productivity we shall refer to as autonomous goals, in other words goals that each of the groups of entities or economic regulators can achieve best: so **H** in the economy are able to achieve certain goals better than enterprises, markets or states, while other goals enterprises achieve better than **H**, markets or states, etc. The identification of these autonomous goals and **H** gaining access to them is the key to creating the desired work.

In this paper we will also try to demonstrate the earlier mentioned, second hypothesis, according to which it takes the combined achievement of the autonomous and universal goals by economic entities and institutions in order for them to be able to reach the successive points **A** in Figure 2. It will also create a basis for development economics, which is more general in relation to allocative economics. Our special theory of employment will be set within the framework of development economics.

Households shifting to the successive points **A**, their development, and especially the development of their ability to create work for themselves, is presented in Figure 2 using three paths. These paths are created by combining co-productivity curves, which were presented in Figure 1. By including in this Figure not two but all the goods that households create and acquires we have to move on to a value analysis: axes **x** and **y** no longer represent the quantity of goods but their value, i.e. the quantity of goods multiplied by the price (revenue, **TR**), which in the further efficiency analysis will be equated to the assets of a household.

Figure 2.

Co-productivity paths of household goods



Source: Own elaboration

Despite the fact that in the graph in Figure 2 **H** can move along different paths, achieving high **A** values, they have the best chances of development, not only limited to creating work, when they move along the middle path labelled (1).

Then they have the chance to achieve high co-productivity between \mathbf{TR}_x and \mathbf{TR}_y : points \mathbf{A}_C , \mathbf{A}_F , \mathbf{A}_M and \mathbf{A}_S , as the products of \mathbf{TR}_{xC} and \mathbf{TR}_{yC} , \mathbf{TR}_{xF} and \mathbf{TR}_{yF} , \mathbf{TR}_{xM} and \mathbf{TR}_{yM} as well as \mathbf{TR}_{xS} and \mathbf{TR}_{yS} , demonstrate a significant increase in both x and y . Such an increase of x and y in paths (2) and (3) is either much less significant or does not occur at all.

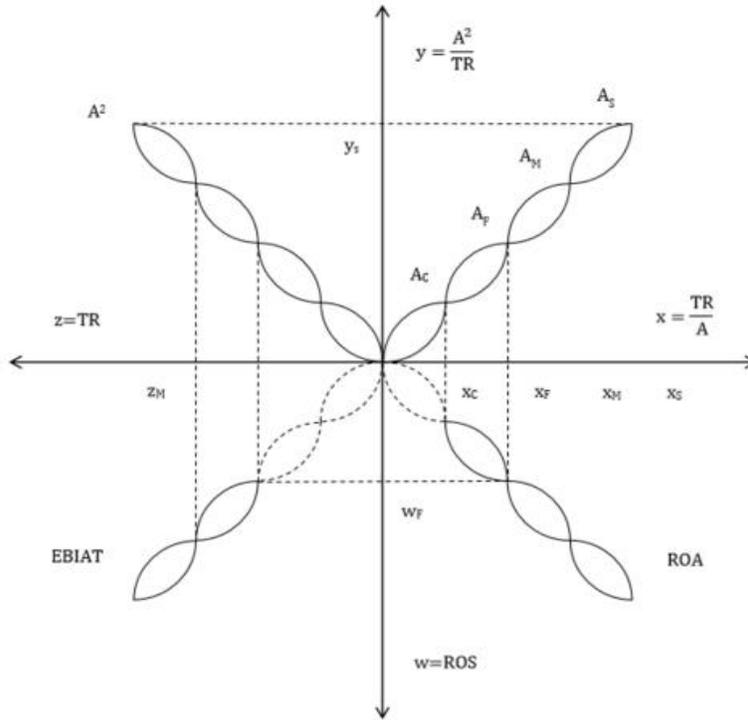
\mathbf{X} and \mathbf{y} can be co-productive with each other in an economy with four regulators, so not only in one with one regulator \mathbf{H} like in the economy of Crusoe (\mathbf{CR}). This means that they can also be co-productive with the other ones: enterprises, markets and states. \mathbf{H} , for their own development and sustainable employment, must seek to increase x , y , as well as w and z , which we will define now showing \mathbf{H} within the entire regulatory system of the economy.

2. Regulators of the economy and their autonomous goals

Households, in their anthropological development, have created enterprises, markets and states, and continue to repeat this process incessantly. Theories on enterprises, markets and states within an economy should not ignore this fact of creation realised by households. Nonetheless – according to the structural anthropology of Claude Lévi-Strauss (1977) – \mathbf{H} are becoming a cultural product of the other three regulators, often – as already mentioned – suffering the negative consequences of the alienation of their own creations. Before we move on to the next part of the paper where we discuss the possibilities that \mathbf{H} have to regain partial control over them and to create the desired work for themselves, based on the principle of co-productivity, let us first consider the regulatory system of the economy presented in Figure 3 and the household's place within this system.

Figure 3.

The subjective place of households within the regulatory system of the economy



Source: Own elaboration

H starting from point **0** have the possibility of reaching point **A_C** in Figure 3 and achieving co-productivity between the values of bundles of goods **x_C** and **y_C**, with the latter bundle of goods being goods acquired by **H** from an economic system with state regulation, and the first one being goods produced by **H**, e.g. through domestic work. Reaching point **A_F** will require **H** to start working in an enterprise, point **A_M** using the market to increase the assets of **H** and point **A_S** using the entire economic system and the positive role of the state in it. Sections **0A_C**, **A_CA_F**, **A_FA_M** and **A_MA_S** and the curves connecting them will often be divided into many, invisible in Figure 3, short sections and curves, demonstrating significantly

lower values of bundles of goods type x , w , z , and y as well as of the co-productivity between them. These values and the relations between them shown in Figure 3 can be defined as follows:

- $x=TR_x/A$ i.e. the work efficiency of H , valuable work results offered by H thanks to working assets A ;
- $y=A^2/TR_y$ i.e. the access of H to the **(time-space) hyperrelationality** part of the economy A^2 thanks to the possibilities of selecting a multiperiodic structure of demand TR ;
- A : the value of the working assets of households as the co-productivity between: TR/A and A^2/TR , i.e. the amount that consists primarily of the by H accumulated values: physical (physical strength, machinery, real estate), financial, intellectual (talents, knowledge, relationships) and regulatory (influence on the choice and selection of asset utilisation, influence on enterprises, markets and the state)

$$(TR_x/A) \times (A^2/TR_y) = A, \text{ when } TR_x = TR_y$$

- **ROA**: return on assets as a measure of the efficiency of asset utilisation of H thanks to the enterprise or the market, i.e. the co-productivity between TR/A and **ROS**, giving $(TR/A) \times (ROS) = ROA$
- **w=ROS**: return on sales as a measure of the power and efficiency of H thanks to the enterprise in the market **ROS=EBIAT/TR**
- **EBIAT** – the net profit per household as the co-productivity between **ROS** and TR , giving $(EBIAT/TR) \times (TR) = EBIAT$
- **z=TR** – the supply and demand of H , the size of the space occupied by H within the economy, i.e. its part in the market in terms of supply and

demand, the degree of sovereignty of **H**, to what extent they are dominated, and to what extent they can enjoy the benefits of competition;

- A^2 - the time-space hyperrelationality of the assets of **H**, the infrastructure matching for **H**, as the co-productivity between A^2/TR and **TR**

All the above amounts can be portrayed in Figure 3, in order to make the image more indicative, in a standardised form, ensuring that their denominators become comparable.

The relation TR/A can be increased by **H** to the level of x_C only through co-productivity between bundles of goods on axes **x** and **y**. From point x_C such increase possibilities significantly grow because of employment in enterprises (there is work!), access to a greater **efficiency** of assets **ROA**, the use of the additional co-productivity between goods on axes **x** and **w**, and subsequently because of the market, the co-productivity between **w** and **z**, and because of the entire system with state regulation, that is co-productivity between **z** and **y**. It is important to keep in mind, however, that very frequently purchased or created by **H** goods **x**, **y**, **w** and **z** will not have co-productive qualities, in other words, they will not contribute to the creation of employment for **H**, although they may provide an existence in the system.

Enterprises have the greatest autonomous ability to make efficient use of the assets of households, which is why many theories of the enterprise exist, trying to explain this attractive quality (see A. Marshall (1920), R. Coase (1937), E. Penrose (1959) etc.). In the context of our model, an enterprise is an extension of a household, pursuing its universal goals in the best way possible on account of the mentioned autonomous abilities. In Figure 3 this is represented by the transition from the north-east quadrant to the south-east quadrant. Such a successful

transition demonstrates the ability of **H** to create a job for themselves within enterprises. Because of the enterprises, **H** achieve a higher return on their assets, gaining access to surpluses, i.e. the autonomous goals of enterprises achieved between:

1. the benefits and costs of agency;
2. economies of scale and costs of growth (Penrose costs);
3. indivisibility benefits and sunk costs;
4. economies of scope and the costs of complexity;
5. network benefits and network costs;
6. the benefits of creating knowledge and the costs of learning;
7. the benefits of innovation and the costs of R+D;
8. the benefits of leverage of capital and the costs of capital;
9. the positive and negative external effects;
10. the benefits of concentration and specialisation and opportunity costs;
11. the benefits and costs of CSR, etc.

A^2/TR_y on axis **y** in Figure 3 shows the access of households to the hyperrelationality of the economy due to their multiperiodic structure of demand (TR_y). **H** choose those goods that will increase their **A** through the co-productivity of **y** and **x** as well as their access to the hyperrelationality of the system, which is the basis for social and market matching. The greatest autonomous multiperiodic ability to create hyperrelationality of households lies with the state organisation, its development from the initial primitive forms of communities to the sophisticated

modern democratic systems, which is why many economic theories of the state exist, trying to demonstrate this attractiveness. In Figure 3 this is represented by the transition of households from the north-east quadrant to the north-west quadrant. Such a successful transition demonstrates the ability of households to obtain social, intellectual and physical possibilities to perform work.

The autonomous ability of the state to create hyperrelationality consists in, among other things, the state creating surpluses between:

1. the benefits of multiperiodic operations and the costs of loans and public debt
 - 1.1 the benefits and costs of scientific, technical and military progress
 - 1.2 the benefits and costs of broadly-defined infrastructure (financial, transportation, ICT, legal, energy)
 - 1.3 the benefits of private business cajoling and the costs of rent-seeking
2. the benefits of hypersociality and multisegmentality and the costs of security
 - 2.1 the benefits and costs of networking
 - 2.2 the benefits and costs of democracy
 - 2.3 the benefits and costs of education
 - 2.4 the benefits and costs of monetary and fiscal regulation
 - 2.5 the benefits and costs of trust

3. the benefits of social matching and the costs of market matching

3.1 the benefits and costs of cooperation

3.2 the benefits and costs of dictatorship

3.3 the benefits and costs of social innovation

3.4 the benefits and costs of social imitation

In the presented regulatory model of the economy households, being one of the economic regulators, directly reach only two of the other three regulators: enterprises (efficiency) and states (hyperrelationality), while through these two regulators they indirectly also reach markets – the fourth regulator of the economy. Because of this, they also derive a lot of co-productivity, expressed in terms of EBIAT, profits are generated only in the market, on account of the autonomous goals of markets, which include surpluses between:

1. the benefits of transactions (divisibility and flexibility, i.e. scalable, relevance and changeable) and the costs of transactions;
2. the benefits and cost of market demarcation;
3. the benefits of new entries and the costs of bankruptcy (the benefits and costs of contestability);
4. the benefits of first mover advantage and path dependence and the costs of innovation;
5. the benefits of expanding the market (scope of activity, relationality) and the costs of marketing;

6. the benefits of overcoming Leibenstein's X-inefficiency (job valuation) and the costs;
7. the benefits of benchmarks (possibilities to imitate) and spillover costs;
8. the benefits and costs of shared responsibility for type of economic activity;
9. the benefits and costs of information.

The above-mentioned leverages (bludgeons) of households can be used co-productively (in a positive or negative way) on account of their own autonomous goals. Because of these goals, as is shown in Figure 3, **H** create their own assets $A = (TR/A) \times (A^2/TR)$. The assets of **H** are located on paths (1), (2) and (3) of Figure 2 and in the north-east quadrant of Figure 3. Thus, the key structural role of our special theory of employment we attribute to the ability of **H** to identify and develop their assets within the entire regulatory system of the economy.

3. The special theory of employment

Paraphrasing M. Friedman (1963), employment is primarily a human matter, just as inflation is primarily a monetary matter. This means that primarily the household regulator holds the key to whether it will have a job and what kind of a job it will have, while the other regulators of the economy only contribute, positively or negatively, to multiplying the effects of this job and its evaluation, both in commercial and in social terms. So, what is the autonomy of **H**, in order for the other regulators to positively, both commercially and socially, evaluate their job, and thus contributing to increasing the desired work by **H**?

In points A_C , A_{2C} and A_{3C} in Figure 3 a further increase in the value of the goods by H both on axis x and on axis y does not increase their co-productivity. H must find new co-productivities between the new goods (bundles of goods) in order to be able to move on to subsequent points A along paths (1), (2) or (3). H "moving along" path (2) means their excessive consumerism, poorly translating co-productively into the by them achieved abilities in terms of investments (creating assets), production and as a result employment. It hardly increases x and the co-productive possibilities of x with w and subsequently of w with z and z with y . Whereas H "moving along" path (3) means a big productive effort of H with a low level of investment of H in their own assets as well as a low level of consumption. This hardly increases y and the co-productive possibilities of y with z and subsequently of z with w and w with x . In terms of long-term possibilities of creating the desired work, both paths are unsatisfactory because they do not provide large loops $x - w - z - y$ or $TR_x/A - ROA - ROS - EBIAT - TR - A^2 - A^2/TR_y - A$.

Moving from point A_C to subsequent points A in Figure 3 happens in two different ways. First, through the autonomous ability of households to seek co-productivity between different bundles of products with the characteristics TR_x/A and A^2/TR_y on the axes x and y . Second, as a result of enforcing such a co-productivity through the regulators in the form of enterprises and the system with the state based on their autonomous goals as described in the previous section.

Households have development opportunities, because they find for their supply TR_x , generated by working assets A and supported by the possibilities of enterprises, markets and the economic system with the state (their autonomous goals), such a demand TR_y so that $TR_x = TR_y$, i.e. so that the values of the bundles of goods delivered by H and acquired by H achieve a full co-productivity here, so

that \mathbf{TR}_x/\mathbf{A} multiplied by $\mathbf{A}^2/\mathbf{TR}_y$ gives the amount of working assets of households \mathbf{A} . Similarly, \mathbf{H} can generate \mathbf{TR}_x , because they create their working assets \mathbf{A} through access to \mathbf{A}^2 on account of purchases \mathbf{TR}_y . Thus, with a full co-productivity, \mathbf{TR}_x and \mathbf{TR}_y are simultaneously perfect substitutes and perfectly complementary, which means that you can replace one with the other and that one and the other are necessary for each other.

A full positive co-productivity and a perfect substitutability and complementarity of bundles of goods arise from \mathbf{H} bit by bit (that is with very small endowments, although often very substantial ones when \mathbf{H} are entrepreneurial families), by access to \mathbf{A}^2 through consumption \mathbf{TR}_y , gaining access to the time-space hyperrelationality part of the economy in which matching \mathbf{TR}_x and \mathbf{TR}_y is possible, at increasing levels of \mathbf{TR}_x and \mathbf{TR}_y . So \mathbf{TR}_y does not only generate more \mathbf{TR}_x (work), but it also ensures a greater likelihood of demand for this work. We can consider four situations here, the first three of them passive and the fourth one active – the one we are looking for.

The first situation takes place in the economy of Robinson Crusoe, where he generates as much and such \mathbf{TR}_x as needed by \mathbf{TR}_y . In well-known concepts of management, e.g. in the Ford factories, workers were paid much more than in other companies so that they could afford to buy Fords.

The second situation occurs with the use of barter and offset. For your \mathbf{TR}_x we give you \mathbf{TR}_y . If you buy \mathbf{TR}_y from us, we will help you sell your \mathbf{TR}_x .

The third situation involves \mathbf{H} reducing the acquired amount of \mathbf{TR}_y to such an extent that it is equal to the sale of their \mathbf{TR}_x . \mathbf{H} obtain a small \mathbf{A}^2 and create minor \mathbf{A} . \mathbf{TR}_x is so small that \mathbf{H} do not find work outside of their own household, and sell or consume only domestic work (*ekos* – household, Xenophon's and

Aristotle's economics). However, nowadays **H** have an increasing chance of being prosumers (A. Toffler, 1970) e.g. on account of 3D printers and robotisation in general, and can therefore move on to an active situation of creating work for themselves and selling the results of this work. Increasing the ability of **H** to create \mathbf{TR}_x and the related work, whether within the household itself or an enterprise, leads to the next – active situation.

The fourth – active situation involves **H** trying to: on the one hand reach the largest possible \mathbf{A}^2 through the largest possible and best selected \mathbf{TR}_y , in order to co-create assets with \mathbf{TR}_x , i.e. to create work. On the other hand – reaching \mathbf{A}^2 means reaching the matching process in the time-space hyperrelationality of the economy (M. Granovetter, M. 2005, A. Roth, 2015). Goods **y** and their valuation in \mathbf{TR}_y give **H** access to some kind of filter (\mathbf{A}^2) with which they can close the loop that runs through all the regulators of the economy and align \mathbf{TR}_x with \mathbf{TR}_y at a high level, reach the high-quality enterprises, markets and the entire economic system with the state, i.e. a strong achievement of the autonomous goals. \mathbf{A}^2 and **A** are the effects of co-productivity, they are formed in the same process as the work and its effects as well as their valuation. Our research demonstrates that goods **y** can be unco-productive and well as co-productive. Only the latter have a work-generating nature. Some of them have a stronger work-generating nature, they are more prospective, have a higher ratio of \mathbf{A}^2 to \mathbf{TR}_y , and can be described as leadings, while others have weaker co-productive qualities and can be described as laggings. Whereas the filter can consist of those parts of the economy where there is a greater number of **H** time-space connections as well as greater possibilities of such new connections being established.

For example, a filter can be an elitist education system, Harley community or franchise system. In the first filter the loop closed by entering \mathbf{A}^2 through

A^2/TR_y in the form of purchasing an exclusive educational service (a leading good, e.g. a preschool with full care and education, transport of the children to school and back home), co-productive with the work of a professor (TR_x), who, thanks to better assets (A), expands his educational offer for a renowned university (ROA), which sells services (TR) to the elitist system A^2 at high prices (ROS). In the second studied filter the loop closed by the simple purchase of a second-hand Harley Davidson motorcycle (TR_y), which gave access to the Harley community (A^2), a job was given within this community (ROA), well paid ($ROS, EBIAT$), and TR sale was achieved within the community (A^2). This simple filter, loop, manifests itself in modern economies in the concept of franchising. So, the buyer of a franchise gains access to production capacity (enterprises, ROA) – on the one hand, while on the other hand he also gains access to a mass replication of the demand for the goods of the franchisor (A^2). A similar phenomenon occurs nowadays with the Uberisation of economies. H gain access to work not only on axis x , as employees or entrepreneurs, but also on axis y , as users of assets A^2 , thus creating own assets A . Generally speaking – according to our research, a worker with a large regulatory loop is above all passionate about both the demand and the supply of the given work.

This concept of gaining access to A^2 is a type of decision-making theory of H , according to which it is not so much about the choice but the selection (coupling) of broadly understood goods with the greatest possible for H co-productive qualities. It will be the goods that will guarantee access to a high achievement of the autonomous goals of the state, enterprises and markets, i.e. the best use of the leverages of these regulators. H with the amount y_C do not have a co-productive good for profitable work $x > x_C$. By gaining access to greater A^2 thanks to the selection of $y > y_C$ - H ensure they have work $x > x_C$. The key matter

then becomes what kind of bundles of goods y H will select, based on the criterion of their co-productivity with x and using the co-productivity in bundle y , which is particularly high on account of family – the original A^2 . This ability of H is the most valuable in the special theory of employment, it constitutes the working assets A of households, next to the material, financial and intellectual qualities.

Thus, at this particular point we see that in the special theory of employment H create work for themselves not only through the division of labor as we see in the work of A. Smith (1776, edition 2003), but primarily on account of a multiperiodic division of consumption. While the 19th century belonged to entrepreneurs, the 20th century to workers (trade unions) and the state, the 21st century belongs to the consumer. Symbolically, we can show that households are regaining, at a very high and leveraged level, supersymmetry CR (*Crusoe Robinson*) in the form of CR (*Consumer Regulator* in four regulators). H create own assets with the structure AP (physical assets: material and human) + AI (knowledge, talent, relationships) + AF (financial assets) + CR (regulatory assets), where the CR element is the most value-creating one, deciding on replacing TR_x with TR_y , deciding on the desired work.

In the economic literature presenting empirical and heuristic research studies, many can be found that lead to the special theory of employment, there are many pragmatic concepts allowing H to discover co-productivity between consumption and work.

The most famous one is probably Maslow's Hierarchy of Needs (1943), according to which H seek to satisfy successively higher needs that occupy a set hierarchy: from physiological needs, through safety, love/belonging and esteem

needs, to the need for self-actualisation at the highest level. Satisfying the successively higher needs is like a force that moves **H** to ever higher points **y**.

Here the huge contribution of G. Becker and his concept of human capital (1964) should be mentioned, which pointed very strongly towards great self-responsibility and the vast possibilities of households in shaping their own employment potential.

In the above context the contemporary research of E. Langer (1989) regarding mindfulness is definitely worth mentioning. His concept points not only towards the need for a higher concentration of entities wanting to achieve more, e.g. achieve ever higher **y**, **x** and as a result **A**, but also towards the very positive emotional, developmental and self-actualisation aspects of this kind of behaviour of **H**. These positive emotional possibilities of **H** constitute their competitive advantage and is also their chance to maintain the desired employment in this rapidly advancing era of automation.

A big step in the direction of the special theory of employment was D. Ricardo's theory of comparative costs (1817), one of the greatest achievements of economic theory in its history. Through specialisation everyone has a chance to be useful in the economic system.

The special theory of employment is very strongly underpinned by the theory of property rights, among which primarily allocation of responsibilities (A. Alchian, H. Demsetz, 1972). The erosion of the responsibility of **H** for creating and performing the desired work, very often occurring based on noble neo-socialist values, is not any less negative than the de-alienation of work in large corporations.

Similarly, the role of the concept of consumer sovereignty in the special theory of employment can be explained, which has been articulated in many market theories (F. Hayek, 1973).

What may surely prove useful for the special theory of employment is the concept of the classification of goods by E. S. Savas (1987). This classification distinguishes goods according to consumption, from which some can be excluded to varying degrees, and some can be competitively consumed to varying degrees. **H** go from the consumption of private goods to tariff goods, common and public goods as well as their increasingly sophisticated combinations, including reverse public goods, as described by Ch. Kim and R. Mauborgne (2005). Through these sophisticated goods **H** have the chance to achieve the use of vast resources (A^2), of which they do not have to be the owner, as is the case in the symbolic Uber company in the market of taxi services and many imitators in other areas of the economy.

Among the common assets of the system that **H** can use for "climbing up" on the **y**-axis, there are also possibilities of choosing a regulatory system, as described by J.J. Laffont and J. Tirole (1993).

The special theory of employment, developed on the basis of co-productive goods, is greatly supported by the concept of added value for the customer, as described by P. Drucker (1954) and M. Porter (1985). Other concepts that prove very useful here include the lean startup concept, moving away from business plans towards developing through trial and error with the help of a creative system and effective error correction (E. Ries, 2011).

Also other fields provide great support for the special theory of employment. We mentioned the research of Priestley, a biologist. In the modern approach to the

theory of evolution it is demonstrated that successful expansion was achieved by those populations that shifted towards an increasing hypersociality, meaning that this process was in a way in line with this paper – co-productive with the development of thrown weapons (C. W. Marean, 2014). The species that survived were those that had increasingly diverse consumption, which allowed for an increasing co-productivity (that is how *Paranthropus boisei* went extinct, eating only plant foods, whereas the *Homo erectus*, also known as the *Homo ergaster*, the representative of our species, survived thanks to more diversified consumption). On the other hand, modern physics is definitely moving away from the metaphor of balance, which economics has adopted so abundantly. In modern physics we will talk more about metastability, for the maintenance of which **H** are required to be permanently active, which can be compared to the constant stirring of a stir fry.

In yet another metaphor it is worth mentioning V. Rometty (2013), who believes that we reach for more and more refined energy fuels (moving upwards along the **y**-axis), starting from simple thermal energy, through energy from oil, gas, hydrogen, atomic energy, ending on refined energy created through information. Similarly, the concept of complexity should be mentioned, according to which **H** try to master, reduce, organise complexity by acquiring successive goods – so not only e.g. food, knowledge, technology, but also the already mentioned access to sociality, esteem, regulation etc.

In most general terms, the concept of co-productive goods and its role in the special theory of employment draws a lot from cybernetic feedback loops. However, similarly to the above discussed cases, this happens more metaphorically than substantively or methodologically.

4. The desired work thanks to the special theory of employment. From CR to 4xCR.

The special theory of employment demonstrates that the chance for the desired work is all the greater the greater the loop according to which **H** try to integrate their items in consumption, enterprises, the market and in the entire socio-economic system regulated by the state. The large loop runs through the fields of the regulatory system of the economy, which can be called **4xCR** – *Consumer Regulator* (see Figure 4). This is a symbolic demonstration of the transition from a **CR**- Crusoe Robinson economy, located in only one quadrant, the north-east one, in Figures 3 and 4, to modern economies, in which **H** can achieve huge leverage advantages because of the existence of the other three quadrants, if **H** can control them somehow. **H** gain this control when in all four quadrants they are located in the **CR** fields (**CR1**, **CR2**, **CR3** and **CR4**).

Fields **CR1**, **CR2**, **CR3** and **CR4** are located high on paths (1), from Figure 2, now in all the regulators of the economy. Thus, they show the achievement of high co-productivity: **CR1** – between **y** and **x** so $A = A^2/TR \times TR/A$, **CR2** – between **x** and **w**, so $ROA = TR/A \times ROS$, **CR3** between **w** and **z** so $EBIAT = ROS \times TR$ and **CR4** between **z** and **y** so $A^2 = TR \times A^2/TR$. Of course **H** will, unfortunately, too frequently be located also in the other 12 fields shown in Figure 4, developing along paths (2) or (3), with negative consequences for creating the desired employment for themselves.

Our considerations thus far suggest that the large loop going through **4xCR**, with which **H** can be included in the economy, depends on **H** and on the other regulators of the economy. Each of the regulators of the economy: households, enterprises, markets and the state can achieve a high concentration in the fields

4xCR, a high quality, through efficiently achieving their autonomous goals. The identification of these goals we have presented earlier. Economic history shows that the best achievement of autonomous goals occurs when: 1) they actually are the primary goals of the respective regulators, as opposed to, as is often the case, some regulators taking over the goals of others, and: 2) the regulators are co-productive when achieving the goals.

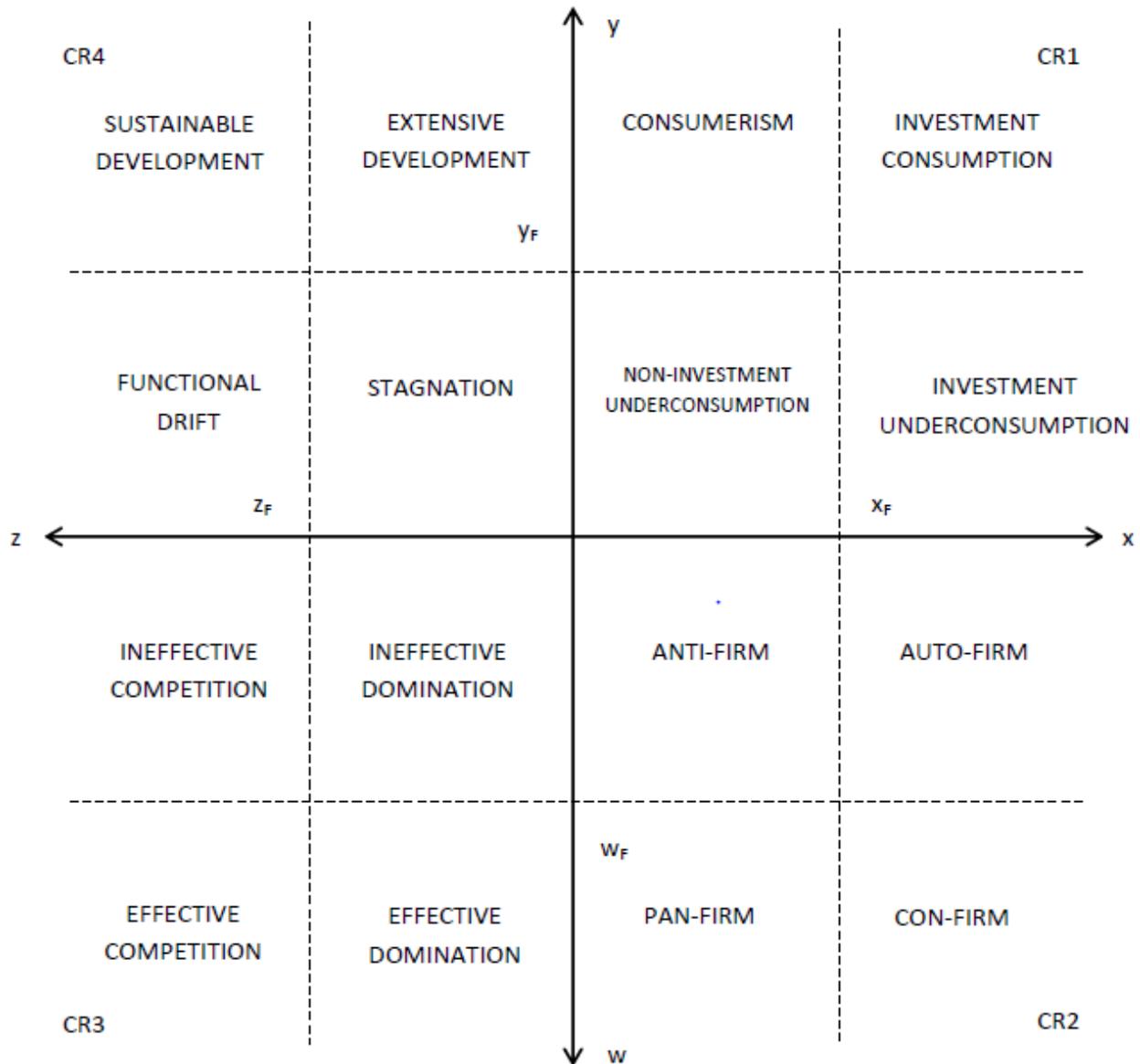
H getting to field **CR2** means that they have a strong influence on the enterprise or part of it. Such an enterprise that **H** have a strong influence on both in employee-entrepreneurial terms and in consumer terms we have called a "con-firm", as opposed to enterprises that we have denominated "pan-firm", "auto-firm" and "anti-firm". In a confirm **H** have the chance to achieve high efficiency of their assets: they offer a high entrepreneurial ratio of **TR** to **A** and obtain the approval of the market for a high valuation (price) of this offer. In relation to the Walras equilibrium models of welfare this price significantly deviates upwards from the price defined by normal profit.⁴ In field **CR2** in the south-west quadrant an entire enterprise can be located or a part of it. **H** that are able to find work in a con-firm or part of the enterprise that is like a con-firm, are the closest to finding a desirable and relatively permanent job. **H** have a chance at a permanent job once they have assets capable of continuously expanding it and not just reproducing it. For example, according to the clover concept of Ch. Handy (1989) this entails a specialist job that will give the employee an advantage over the enterprise, the possibility to get a job in many companies or obtain very favourable employment conditions in one company and the prohibition to work in others. In the field pan-firm **H** can count on a permanent job, the resources of which, however, shrink

⁴ Of course we can try to maintain the consistency of the Walras general equilibrium models here by demonstrating that every good (service) delivered by a confirm can be divided into a set of even smaller goods (services) offered at a price with normal profit.

greatly (J. Clifton, 2011). In the field auto-firm **H** can count on seasonal work, becoming a group of workers more and more often referred to as the precariat (G. Standing, 2011). In the field anti-firm **H** are in a state of unemployment.

Figure 4.

Consumer Regulator (CR) in consumption, enterprises, the market and the state



Source: Own elaboration

The shift of households to field **CR2**, their "confirmation" in the economy, is possible based on co-producing their assets **A** with the following structure: **AP + AF + AI + CR**, with the last element being of crucial importance to **H** for creating the desired work and also the value of the effects of that work. Thus, the special theory of employment becomes an important contribution to the theory of value (prices).

Households develop their assets **A** through the co-productivities **x**, **y**, **w** and **z**, among which they have a great power in the role of consumers to initiate the process of co-productivity from **y**. In both these cases, as in all others, **H** do not have to buy goods, or they can buy only certain goods and in a specific time sequence, i.e. goods that in our research we have identified as leadings and laggings⁵. A consumer can buy many public or common goods, with education at the forefront. In Poland, for example, anyone can study and graduate for free, and even do their Ph.D., everyone can rely on a lot of support in this process, including the most valuable kind of support – tutoring, which most people usually try to avoid. Another matter is that both in Poland and anywhere else in the world the education system is not able to function in the **4xCR** system.⁶

Reaching field **CR1** in Figure 4 largely depends on **H**. **H** can in fact get bogged down in non-investment consumption, wasteful exploitation in the form of investment underconsumption or non-investment underconsumption. Why do so few reach the **CR1** field? F. Dostoevsky wrote the following in *Crime and*

⁵ This fact is often brought up in less developed countries benefiting from foreign aid, or even from big funds in the European Union: we get great support, but we also give a huge market. However, the success of the European Union, as well as the TTIP for example, is possible only based on the concept of co-productivity, which plays a crucial role in the specific theory of employment.

⁶ In his work (2015) J. Stiglitz, despite yet another profound criticism of neoliberal economics, points to the example of the Mauritian education system as a success in the fight against inequalities.

Punishment: *'If one waits for everyone to get wiser it will take too long'*. That is why many theories of employment attribute a key role to our north-west quadrant: the role of the state and the entire economic system. However, in order for this role to prove useful for all **H** or for the vast majority, **H** should have access to **CR4**, to hyperrelationality and to hypermatching, and this is not provided to everyone by the state. **H** can in fact get stuck in the other three parts of the north-west quadrant. And again it will be **H** that will have to make the effort to reach **CR4**, to use it and to expand it. Economic history and modern times show all too vividly how many households will migrate to seek **CR4** in other countries, or move to large urban areas more often. Governments creating **CR4** requires mastering co-productivity between the functioning and the development of the economic system, mastering sustainable development. Meanwhile, governments focus more on the following: 1) improving functioning and counting on that to ensure development, but this is a long process and is usually difficult to accept for society, or 2) stimulating development and counting on that to improve the functioning, although it often happens that in order to stimulate they ruin the functioning, e.g. by trying to activate the Keynesian multiplier, which only works in **CR4**, because that is where the co-productivity of functioning and development is, as well as the co-productivity of the system and households, and the co-productivity of the system and the market.⁷ In a socio-economic system with state regulation four different "speeds" can be identified at which **H** can move: sustainable development (**CR4**), extensive development, functional drift and stagnation. The role of **H** in making use of sustainable development and having an impact on sustainable development is much greater than we are lead to believe. In the end, it will be **H** that will have to deal with creating employment in the future under conditions of automation and Uberisation, not governments.

⁷ Of course many governments do not do either (1) or (2), or ruin both (1) and (2).

H, by reaching **CR4** and **CR2**, have the chance to reach **CR3**, i.e. a high-quality effective consumer market. Such a market occurs in effective competition, i.e. a situation where on the one hand the consumers through their TR_y structure and hypermatching position have an impact on suppliers, and on the other hand “confirmatory” suppliers can offer TR_x , expanding the market and gaining a high profit margin (**ROS**), but one that is acceptable for the consumer (the consumer is the price acceptor). From the point of view of **H** the remaining fields of the market: 1) either do not give them sovereignty – **H** are dominated, efficiently and inefficiently by enterprises that are the *price makers*; 2) or do not have the power of efficiency despite a good competitive position with respect to the suppliers that are the *price takers*. **H** reaching **CR3** also allows them to feedback-con-firm their desired work and join in the sustainable development of the socio-economic system.

Table 1 presents all the possible combinations of the respective links in the loop of a household that is creating work for itself in the economy.

Table 1.

The formation of the loop of employment and development of households 4xCR

A^2	A^2/TR_y	A	TR_x/A	ROA	ROS	EBIAT	TR_x vs TR_y
Sustainable development – CR4	Leadings goods	Investment consumption – CR1	Expanding Work	Con-firm – CR2	Great market power	Effective Competition – CR3	Expanding Markets
Extensive development	Laggings goods	Consumerism	Reproducing Work	Pan-firm	Small market Power	Ineffective competition	Filling markets
Functional drift		Investment underconsumption		Auto-firm		Effective domination	
Stagnation		Non-investment underconsumption		Anti-firm		Ineffective domination	

Source: Own elaboration

Conclusion

What are the implications of the special theory of employment? The theory primarily indicates that households in their anthropological development of looking for leverages for their potential (assets) by establishing enterprises, organising markets and building communities and states could not avoid the alienation of these leverages. What these households had "left" was their consumer power, which, by the way, is undermined by many studies. However, this power exists. Consumers will always have some degree of freedom of choice and selection of goods. They experience a renaissance of their sovereignty to lesser and greater extents, e.g. in the conditions of an increasingly intense global competition or the development of pro-consumer technology like the 3D printer and the Uberisation of business models. Thus, in an economic system households, through their function of consumers, have a significant degree of autonomy, the use of which may have a greater impact on job creation than the Smithian division of labor and building of production capacity. Even under the conditions of high automation and efficiency households, on account of their consumer power, decide not only on what they buy, but also from whom they buy and for what purpose they buy – what the consequences will be of this purchase. These consequences of purchasing include work. As it turns out, many broadly understood goods purchased by households, not only in the form of goods and services but also in the form of education, imitation, the rights to use production capacity⁸, pension systems, health care systems, regulatory systems, etc., are not only substitute and complementary goods, but also co-productive – goods that mutually create one another. On account of the co-productive qualities of goods and their selection in bundles, households increase their assets, thanks to which they can create the

⁸ For example, the acquisition of the rights for pressing oil by Thales of Miletus (Aristotle, Politics), otherwise the acquisition of certain options.

desired work for themselves, both at home and in small and large firms. From their first ability **CR1** – *Consumer Regulator* they can move on within the entire regulatory system of the economy to the successive qualities **CR2**, **CR3** and **CR4**; *Consumer Regulator* in enterprises (con-firm), in the market (effective competition) and in the state (areas of sustainable development). Thus, households do not find work like in the four well-known economic approaches through: the development of the system of general equilibrium, partial equilibrium, macroeconomic equilibrium or the class struggle. Waiting for these equilibriums to develop, which, by the way, even in the metaphorical sense, are misleading because they stem from an era when physics still accepted the metaphor of equilibrium, may lead to secular unemployment, which the class struggle will turn into hidden unemployment. Households find work through a kind of filter, i.e. the loop passing through the four main regulators of the economy. The greater the loop, the more **4xCR** it contains, the greater the chance for the desired work. Its co-ordinates can be formed in the entire regulatory system of the economy, as shown in Figures 3 and 4. Due to the fact that this loop passes inter alia through the **EBIAT** values, the assets of households or the access to the volume of assets of the economy can be estimated. The loop shows the possibility of creating work from the point of view of every household: from the waiter John Smith all the way through to the entrepreneurial visionary Steve Jobs.

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