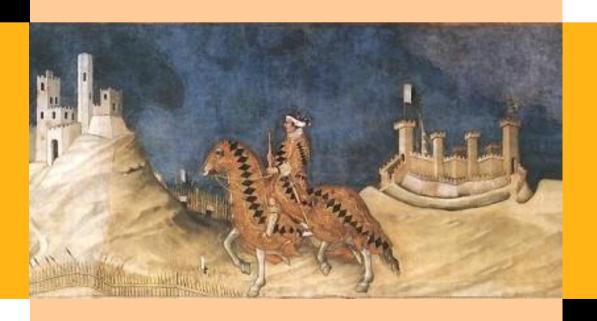# QUADERNI DEL DIPARTIMENTO
DI ECONOMIA POLITICA E STATISTICA

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Autonomous components of aggregate demand and capital accumulation in Richard Cantillon's Essai? An inquiry through the lens of modern demand-led growth theory

n. 846 – Novembre 2020

Autonomous components of aggregate demand and capital accumulation in Richard Cantillon's *Essai*? An inquiry through the lens of modern demand-led growth theory*

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November 16, 2020

Abstract

Recently, some authors have severely criticised the incorporation of the notion of autonomous components of aggregate demand in demand-led growth theory. We show that these components are present in Richard Cantillon's *Essai* written in the XVIIth century, and that an *implicit* demand-led theory of capital accumulation can be also developed based on his writings.

JEL classification: E11, C22

Keywords: Cantillon, Growth theory, History of Economic Thought

1. Introduction

The rediscover of autonomous components of aggregate demand that do not create capacity have recently allowed demand-led growth theory to reach an important milestone through the Sraffian Supermultiplier (Serrano, 1995). During many years the discussion on Harrodian instability and the non-convergence of capacity utilisation in Neo-Kaleckian framework have been at the center of the debate from a non-mainstream perspective. Recently, some authors (Nikiforos, 2018; Skott, 2017, 2019) have severely criticised the incorporation of the notion of autonomous components of aggregate demand in Sraffian long-run demand-led growth theory. However, the importance for these components for some pre-Classical authors, although a matter of paramount, has not drawn sufficient attention until recent contributions. Because of this we would like to re-introduce the case of Richard Cantillon, one of the first authors in which an economic theoretical system could be found (Jevons, 1959; Higgs, 1892, p. 456; H.H., 1932, p. 330; Marshall, 1920, p. 625; Hayek, 1931; Johnson, 1937; Schumpeter, 1954, p. 562; Spengler, 1954; Einaudi, 1955, p. 231 and p. 265; Letwin, 1963; Brewer, 1988b, p. 448; Brewer, 1992a, p. 714; Brewer, 1992b, p. 10; Giacomin, 1994, p. 149; Rothbard, 1995, p. 343-362; Aspromourgos, 1996, p. 112 and 2013, p. 5; Thornton, 1998, p. 61; Blaug, 2003, p. 21; Thomas, 2012, p. 92; Thomas, 2015, p. 16; Thomas, 2018, p. 12; Grieve, 2016, p. 2). We will introduce an analysis of Cantillon's thought on, what is under our view, the determinants of aggregate demand levels under a historical reconstrucation.

In line with Aspromourgos (1997), with the risk of losing contact with the text under examination, we will present an analytical rational reconstruction[1] for his *implicit* capital accumulation theory that, in our view, follows logically from his analytical framework.[2] Surely, output theory - if something in these lines is expressed in the referred *Essai* - is not so clear at first sight in Richard Cantillon's *Essai sur la Nature du Commerce en Général in the Nature of Commerce* (*Essai* hereafter) and, in our view, in accordance with many authors, it cannot be interpreted as a theory of output as whole (Aspromourgos, 1996, p. 196, fn. 9; Aspromourgos, 1997, p. 434; Thomas, 2015, p. 21; Thomas, 2018, p. 19, fn. 1). However,

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[1] Following Professor Aspromourgos (1997), 'by rational reconstruction is meant the application of formal models designed to accurately capture the *intentions* or ideas of an earlier author or text, while going beyond the actual analytical or formal *execution* of the writer. This is an interpretive method which may enable a clearer grasp of the logical coherence (or otherwise) and implications of a system - but runs the risk of losing contact with the text under examination.' (ibid., p. 418, emphasis in the original).

[2] It is necessary to clarify that the writings in these paragraphs were taken from Higgs translation edited in Richard van den Berg Variorum's edition. For a detailed discussion on the different versions and translations of Cantillon's Essai see Hayek (1932), Thornton (2009), Groenewegen (2012), van den Berg (2012), Finzi (2014), Sabbagh (2016), Berdell (2016), Tribe (2017). For biographical aspects see Higgs (1891), H.H. (1932), Hone (1944), Einaudi (1955), Hyse (1971), Murphy (1986, 2009).

once this difficulty is recognized, some paragraphs of the original *Essai* might allow us to derive an *implicit* theory of accumulation which we will enrich with authors that, later with new analytical tools - steady growth - applied in modern growth theory, followed him in similar lines.[3]

At a very first sight, it must be said that, under our interpretation, Richard Cantillon's output approach is under no means in the same line of reasoning of the Classical authors (particularly, Smith and Ricardo), in the sense that, although not explicitly, he rejects what later was known as Say's Law (Brewer, 1988a, p. 1 and 1988b, pp. 447-448; Blaug, 2003, p. 29). According to some authors, Say's law was not the result of an analysis of output but rather the result of the lack of any such analysis in the Classical authors (Garegnani, 1978; Mongiovi, 1990, p.78) and this makes possible the Classical system of value and distribution to be 'open' to different theories of output.

In our view, in Cantillon's Essai there can be traced the very first notions of consumption's 'autonomous expenditures'.[4] Given the critics above mentioned to the Sraffian Supermultiplier, noticing this issue through the *Essai* is the first main aim of this paper and the second one is its formalisation. The fact that autonomous components are the main driver of growth (and capital accumulation) in Cantillon's view might be analyzed as evidence supporting demand-led modern growth theory that incorporates these components. We will be focus, but not solely, on the first part of the *Essai*: Production, Distribution and Consumption; and given our principal aim is analysing autonomous expenditures in Cantillon's *opus magnum* our center of attention will be centred on production and consumption[5] taking into account that Cantillon 'stands between pre-capitalist and capitalist society, in some respects straddling both' (Aspromourgos, 1989, p. 83).

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[3]In an analogous way, Splenger (1954b, p. 419, fn. 92) claims that an *implicit* employment theory is to be found in some of his arguments. Following Gilardi (1981), Giacomin (1994) claims that 'there is scope for a model based on the theory of effective demand' (ibid., p. 134). Some authors have tried to formalise Cantillon's thought under different perspectives: Dávila (1982), Aspromourgos (1989), among others.

[4]Our aim is, therefore, to go *profoundly* on the argument developed by Giacomin (1994), Aspromourgos (1997, p. 420) and Thomas (2015, 2018, 2019), including further elements, i.e. international trade and non-land constraint binding, in a complementary way. Giacomin (1994) explicitly claims that 'The acknowledgement of this fact led Cantillon to formulate a theory of effective demand, the determining component of which, in his opinion, is the luxury consumption of the landowners. It signifies that the level and the composition of aggregate production is dependent upon the expenditure of rent.' (ibid., p. 150).

[5]For a detailed discussion, under different perspectives, of distribution in Cantillon's framework see Higgs (1892, p. 450), Bowley (1973), Davila (1982), Walsh (1987), Brewer (1988, 1992), Aspromourgos (1989), Prendergast (1991), Grieve (2016).

2. The *Essai*

Along the lines of this *Essai*[6] could be interpreted that his framework is based in a circular economy which starts with land-based production. From the *Chapter Two [Of Human Societies]* it is clear that land-workers[7] must receive their salaries in order to pursue their subsistence[8], the 'Surplus' can be distributed among the prince, the lords of the State and the land-owner. The output produced by land cultivation is divided among three classes: workers, capitalists and noblemen. Moreover, distribution could be considered *given* in a more or less constant manner,

> The Farmers have generally two thirds of the Produce of the Land, one for their costs and the support of their Assistants, the other for the Profit of their Undertaking: on these two thirds the Farmer provides generally directly or indirectly subsistence for all those who live in the Country, and also Mechanicks or Undertakers in the City in respect of the Merchandise of the City consumed in the Country.
>
> The Propietor has usually one third of the produce of his Land and on this thir he maintains all the Mechanicks and others whom he employs in the City as well, frequently, as the Carriers who bring the Produce of the Country to the City.

ibid, pp. 115 and 117

No matter how the land is used, its output is sold in a market-town for the convenience of the

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[6]On a precise description of the different manuscripts and versions of the *Essai* see van den Berg (2012).

[7]Farmers or laborers who carry on the work.

[8]The subsistence, however, it is not homogeneous and depends on the region that it is taken into account for calculation, the author claims that 'I had some calculations made, which will be found in the Supplement, in order to determine the yearly amount of land which one man can consume the product of under each category of food, clothing, and other necessaries of life, according to the ways of life found in Europe, where peasants in different countries often are nourished and maintained very differently.' (p. 62). The Supplement, however, has never been found. It must be noticed, also, that the wage structure is given in Cantillon's Essay: '...a plowman would never be willing to have a trade taught to his son if the artisans did not earn more than the plowmen' (p. 41) or 'Therefore, those who employ artisans or professionals must pay for their labor at a higher rate than for that of a plowman or common laborer. Their labor will necessarily be expensive in proportion to the time lost in learning the trade, and the cost and risk incurred in becoming proficient.' (p. 42) or 'The jobs which require the most time in training or most ingenuity and industry must necessarily be the best paid. A skillful cabinetmaker must receive a higher price for his work than an ordinary carpenter, and a good clock and watchmaker more than a blacksmith' (p. 45). Finally he claims that 'By these examples, and a hundred others we could draw from ordinary experience, it is easily seen that the differences in the prices paid for labor is based upon natural and obvious reasons' (p. 46).

parties engaged in trade. And the size of this market will be proportional to the population (and quantity of land[9]). In our view, Cantillon's notion of 'the size of the village' and 'the size of the market town' are almost equivalent, given his definition,

> The size of a Village is naturally proportioned in number of inhabitants to what the Land dependent on it requires for daily work, and to the Artisans who find enough employment there in the service of the Farmers and Labourers

> ibid, p. 59

> The size of the Market Town is naturally proportioned to the number of Farmers and Laborers needed to cultivate the Lands dependent on it, and to the number of artisans and small Merchants that the Villages bordering on the Market Town employ with their assistants and horses and finally, to the number of whom that Landowners resident there support.

> ibid, p. 65

From these cites, two comments could be done. First, it is safe to claim, as we have said previously, that the size of the market depends on the population amount which, at the same time, depends on the quantity of fertile land.[10] Backing this argument the author claims that,

> When the Villages belonging to a Market Town (i.e. whose people ordinarily bring their produce to market there) are considerable and have a large output the Market Town will become considerable and large in proportion; but when the neighbouring Villages have little produce the Market Town also is poor and insignificant.

> ibid, p. 65

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[9]For the sake of simplicity, we are assuming here homogeneous fertile land. However, as Cantillon explicitly claims: 'One Acre of Land produces more Corn or feed more Sheep than another' ...'If two Acres of Land are of equal goodness, one will feed as many Sheep and produce as much Wool as the other, supposing the Labour to be the same' (ibid., p. 89).

[10]The author explicitly claims that the population also will depend on the activity that can be performed in that land, e.g. in case the land is only suitable for maintaining sheep the village will be smaller because only a few shepherds are required on the land (ibid, p. 59). In case the land is sterile, there will be no villages or inhabitants (ibid, p. 61). Spengler (1954a, p. 294) agrees on this.

Therefore, there is a clear proportional relationship between the size of the village and that of the market town. Our second comment was related to the fact that Cantillon attaches great importance to the behaviour of property owners and aristocracy. In the latter case the property owners, through their hiring decisions, might define, maybe unconsciously, the size (level) of the town and/or its population composition.[11] What differentiate a village from a city is also its size.[12] If a couple of prices or nobles move to a particular place and several other lords come to live there, this place will become a city (ibid, p. 69).[13] And its size is determined by factors quite similar to the previous ones,

> ...the size of a City is naturally proportioned to the number of Landlords who live there, or rather to the produce of the Land which belongs to them after deduction of the cost of carriage to those whose Land is the furthest removed, and the part which they are obliged to furnish to the King of the Government, which is usually consumed in the Capital.
>
> ibid, p. 71

Again, the importance of aristocracy's conspicuous consumption (Murphy, 1986, p. 259; Giacomin, 1994, p. 141; Thomas, 2015, p. 24) on the size of the market town is highlighted by the author.[14] But the reader might wonder if these kind of consumption actually imply a greater 'size of the market' or simply a change in the composition of output, or a geographical

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[11]In relation to the composition, Cantillon claims, in relation to 'the size of the village', that 'If one or more of the owners of the Land dependent on the Village reside there the number of inhabitants will be greater *in proportion* to the domestic servants and artisans drawn thither, and the inns which will be established there for the convenience of the domestic servants and workmen who are maintained by the Landlords' (ibid, p. 59, emphasis in *italics* added).

[12]Analogously, Cantillon differentiates between a provincial city and a capital city: 'A Capital City is formed in the same way as a Provincial City with this difference that the largest Landowners in all the State reside in the Capital, that the king or supreme Government is fixed in it and spends there the government revenue, that the Supreme Courts of Justice are fixed there, that it is the centre of fashions which all the provinces take for a model, that the Landowners who reside in the provinces do not fail to come occasionally to pass some time in the Capital and to send their children thither to be polished. Thus, all the Lands in the State contribute more or less to maintain those who dwell in the Capital.(ibid, p. 73)

[13]

> ...we may say that the assemblage of several rich Landowners living together in the same place suffices to form what is called a City.
>
> ibid, p. 71

[14]

change of output.[15] It doesn't seem to be exclusively the latter case because Cantillon incorporates, in an analogous way, the notion of external demand. The author claims the following,

> Great houses will be built for the Noblemen and an infinity of others for the Merchants, Artisans, and people of all sorts of professions whom the residence of these Noblemen will attract thither. For the service of these Noblemen, Bakers, Butchers, Brewers, Wine Merchants, Manufacturers of all kinds, will be needed. These will build houses in the locality or will rent houses built by others.
>
> ibid, p. 69

> As all these Artisans and Undertakers serve each other as well as the Nobility it is overlooked that the upkeep of them all falls ultimately on the Nobles and Landowners. It is not perceived that all the little houses in the City such as we have described depend upon and subsist at the expense of the great houses. It will, however, be shown later that all the classes and inhabitants of a state live at the expense of the Propietors of Land. The City in question will increase still further if the King or the Government establish in it Law Courts to which the people of the Market Towns and Villages of the province must have recourse. An increase of Undertakers and Artisans of every sort will be needed for the service of the legal officials and Lawyers.
>
> ibid, p. 71

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[15]We insist on the issue of composition of output given that many authors have claimed this (Spengler, 1954a, p. 290, p. 294; Murphy, 1986, p. 259; Brewer, 1992, p. 196). Also Cantillon explicitly claims this many times, e.g. related to capital cities, 'If a Sovereign quits a City to take up his abode in another the Nobility will not fail to follow him and to make its residence with him in the new City *at the expense of the first.*' (ibid, p. 73), and also when he develops a proto 'demonstration effect' (Duesenberry, 1949) - this point was also raised by Giacomin (1994, p. 152, fn. 93), Aspromourgos (1996, p. 195, fn. 7) - when he claims that 'The Owner, who has at his disposal the third of the Produce of the Land, is the principal Agent in the changes which may occur in demand. Labourers and Mechanicks who live from day to day change their mode of living only from necessity. If a few Farmers, Master Craftsmen or other Undertakers in easy circumstances vary their expense and consumption they always take as their model the Lords and Owners of the Land. They imitate them in their Clothing, Meals, and mode of life. If the Landowners please to wear fine linen, silk, or lace, the demand for these merchandises will be greater than that of Propietors for themselves . . . as the variations of demand are chiefly caused by their mode of living the prices which they offer in the Market decide the Farmers to all the changes which they make in the employment and use of the Land' (ibid., pp. 135 and 137). Moreover, he states that [natural and uniform (ibid, p. 137)] changes in demand composition will change output composition, through changes in 'normal' or 'intrinsic values' relative prices or also when he claims that 'The example of the Prince, followed by his Court, is generally capable of determining the inspiration and tastes of the other Propietors of Land, and the example of these last naturally influences all the lower ranks. A Prince, then, without doubt is able his own example and without any constraint to give such a turn as he likes to the labour of his subjects. (ibid., p. 165).

> If in this same City workshops and manufactories be set up apart
> from home consumption for export and sale abroad, the City will be
> large in proportion to the Workmen and Artisans who live there at
> the expense of the foreigner.

<div align="right">ibid, p. 71</div>

Cantillon explicitly introduces 'external demand' as a source of foreign expenditures and at the same hierarchical level of property owner's expenses[16], given that foreign expenditures are derived from property owners of other states.[17] This manufacture beyond home consumption, that could be interpreted as another autonomous component of aggregate demand, increases the size of the city - and therefore of the market - *per unit of worker* clearly changing the *level* of output[18]; beyond its possible implications on composition of output, in which Cantillon does not investigate in this case. The impact of external demand is also mentioned while analysing the possibility of installing new factories along the state, in the following passage,

> ... to set up Manufactures in this way would need not only much
> encouragement and capital but also some way to ensure a *regular* and
> *constant* demand, either in the Capital itself or in *foreign Countries*,
> whose exports in return may be of service to the Capital, to pay for
> the merchandise which it draws from these Foreign Countries or for
> the return of silver in kind.

<div align="right">ibid, p. 259, empashis in *italics* added.</div>

Therefore, exports could be a source of *regular* and *constant* demand for the manufacturing sector which is a necessary condition (among encouragement and capital funds) for the installation of a new manufacturing factory. If the necessary conditions are fulfilled, then the capital will be sunk. Along these reasoning a relationship between the *normal* level of

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[16]This is even clearer in the text *Analysis* in which it is clamed that 'The Grandeur and Riches of a City are proportioned to the Propietors of large Fortunes, who reside there; except in Cities where considerable Manufactures are established, and where more Goods are fabricated than what are consumed by the Inhabitants, in order to be exported abroad.' (ibid., p. 70).

[17]Although the author is only 'considering only a State in regard to its own Produce and Industry' (ibid., p. 119), meaning a closed economy assumption, 'True there are often in the Cities several Unidertakers and Mechanicks who live by Foreign Trade, and therefore at the Expense of Foreign Landowners' (ibid., p. 119) and because of this in the present essay we consider a key point the open-economy assumption in order to develop our argument. van den Berg (2012, p. 902) claims that foreign trade analysis is considered separately in the *Essai*.

[18]The importance of demand for output or employment levels in Cantillon is also recognised by Giacomin (1994, p. 138), Berdell (2010) and Thomas (2015, p. 23-24).

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external demand and investment follows.[19]

The level of employment is determined by employment's demand: 'The Number of Labourers, Handicraftsmen and others, who work in a State is naturally proportioned to the Demand for them' (ibid., title of Chapter IX, p. 83). It could not be misleading to think that in Cantillon's Essay as we have said there is a level of wages at a subsistence level as a consequence of the operation of the law of population and a kind of infinite supply of labor

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[19]Thomas (2018, p. 23) seems to agree that 'investment is entirely consumption-induced'.

at that level of wages.[20]

> it is easy to conceive that the Labourers, Handicraftsmen and others
> who gain their living by work, must proportion themselves in number
> to the employment and demand for them in Market Towns and Cities.
>
> ibid, p.85

Some authors, under different frameworks, have claimed that Cantillon's view is supply-

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[20]

> If all the Labourers in a Village breed up several Sons to the same
> work there will be too many Labourers to cultivate the Lands belong-
> ing to the Village, and the surplus Adults must go to seek a livelihood
> elsewhere, which they generally do in Cities: if some remain with
> their Fathers, as they will not all find sufficient employment they will
> live in great poverty and will not marry for lack of means to bring
> up children, or if they marry, the children who come will soon die of
> starvation with their Parents, as we see every day in France.
>
> Therefore if the Village continue in the same situation as re-
> gards employment, and derives its living from cultivating the same
> portion of Land, it will not increase in population in a thousand years.
>
> The same may be said of the Tradesmen of a Village. If a Tailor
> makes all the cloaths there and breeds up three Sons to the same
> trade, as there is but work enough for one successor to him the two
> others must go to seek their livelihood elsewhere: if they do not find
> enough employment in the neighbouring Town they must go further
> afield or change their occupations to get a living and become Lackeys,
> Soldiers, Sailors, etc.
>
> ibid, p. 83

> It often happens that Labourers and Handicraftsmen have not enough
> employment when there are too many of them to share the business.
> It happens also that they are deprived of work by accidents and by
> variations in demand, or that they are overburdened with work ac-
> cording to circumstances. Be that as it may, when they have no
> work they quit the Villages, Towns or Cities where they live in such
> numbers that those who remain are always proportioned to the em-
> ployment which suffices to maintain them; when there is a continuous
> increase of work there is gain to be made and enough others arrive to
> share in it.
>
> ibid, p. 85

constrainted, particularly, land-constrained in a closed economy (Spengler, 1954a, p. 290; Brems, 1978; Brewer, 1988a, p. 1 and 1988b, p. 448; Aspromourgos, 1989, p. 360; 1997, p. 420; Berdell, 2009, p. 228 and p. 237; Berdell, 2010, p. 217; Menegatti, 2016, p. 177). We think this argument is *partially* accurate and might be not the general case. Of course it is implicit in the argument of Cantillon, while discussing distributive notions that there could be limitations for growth because of the scarcity of land[21], and therefore, the population that the latter could support.[22] However, under our view, the latter could be thought as a particular case of a one more general in which there are no clear land-constraints for economic growth.[23] Cantillon states at least two ways to sort a land-constrained economy: technical change and international trade, in the following paragraphs,

> Horses, Cattle, Sheep can easily be multiplied up to the number that the Land will support. *The fields which serve for this support may be improved by irrigation as in Milan.* Hay may be saved and Cattle fed in sheds and raised in larger numbers than if they were left in the Fields. Sheep may be fed on Turnips, as in England, by which means an acre of land will go further for their nourishment than if it were pasture.

> ibid, p. 139, emphasis added in *italics*

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[21]'As all land always has a master or current owner' (ibid., p. 77).

[22]'all the animal species can be multiplied to any quantity that the land allotted to them can support' (ibid, p. 85).

[23]Spengler (1954b, p. 408) claims that the limitation of land might be overcame by exchanging fabricated goods for produce. Brewer (1988b, p. 448 and p. 451; 1992b, p. 109; 2005, p. 9) explicitly claims that the land-constraint does not hold in an open economy framework; moreover, he states that 'Output and demand, on a global scale, are fixed, because land is fixed, and international competition is over market shares (ibid., p. 458). Aspromourgos seems to agree on that given that 'domestic manufactures may supply subsistence via exchange with foreign agricultural output' (1989, p. 361). According to Giacomin (1994, p. 154) it is an *institutional* scarcity, imposed and enforced by those who hold political power; similar view applied to Marx's analysis in Piccioni and Ravagnani (2002) and Fratini (2018). Naldi (1995, p. 132 and p.134) casts some doubt on the land-constraint assumption in the *Essai*. Thomas (2015) seems to agree on this given that he allows for an increase in the cultivation of land (ibid., p. 22); although he claims, explicitly based on Aspromourgos (1997), that no clear relationship can be derived between land utilisation and [aggregate] activity levels and that he seems to agree with Spengler (1954a, p. 290) that land could be a *potential* binding constraint (Thomas, 2018, p. 21-22), he finally states that 'there is a certain ambiguity in Cantillon's theory as regards whether the land constraint is binding' (ibid., p. 23) and 'there is an absence of definitive statements as regards whether the land constraint is binding' (ibid., p. 25).

> The Dutch exchange their Labour in Navigation, Fishing or Manu-
> factures principally with Foreigners, for the products of their Land.
> Otherwise Holland could not support of itself half its Population.

<div align="right">ibid, p. 157</div>

In the first cite, he directly expresses the possibility of increasing the production frontier of land with irrigation.[24] Second, he claims that through international trade countries are able to sustain more population that their land might allow, given that part of the population will live at the expenses of foreign landowners; however, the latter is a matter of political decision; from this and the latter citation we can conclude that it might be a mistake to associate Cantillon's thought to an objective binding constraint [production of land] for economic growth.[25] Again, the analysis of an open economy does also seem to be the general case, in which not only matters the quantity exported, but the composition of exports. And the latter might be modified by persistent import substitution policies as can be noticed below,

> In order that the consumption of the Manufactures of a State should
> become considerable in foreign parts, these Manufactures must be
> made good and valuable by a large consumption in the interior of the
> State. It is needful to discourage all foreign Manufactures and to give
> plenty of employment to the Inhabitants.

<div align="right">ibid, p. 163</div>

Cantillon also introduces other sources for autonomous expenditures. First, the notion of consumption out of accumulated wealth or credit in a short paragraph, where he claims the following,

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[24]In a different passage, the author claims that 'it therefore seems pretty clear that the Number of Inhabitants of a State depends on the Means allotted them of obtaining their Support; and as this Means of Subsistence arises from the Method of cultivating the soil, and this Method depends chiefly on the Taste, Humours and Manner of Living of the Proprietors of Land, the Increase and Decrease of Population also stand on the same Foundation.' (ibid., p. 153). Here it is clear that the limits to population growth are, in a more general way, an arbitrary decision of landowners, more than *technical* supply constraints.

[25]In fact, in another passage the author states that during a boom, i.e. more consumption, 'The altercations of the Market, or the demand for Meat, Wine, Wool, etc. being more intense than usual, will not fail to raise their prices. These high prices will determine the Farmers *to employ more Land* to produce them in another year: these same Farmers will profit by this rise of prices and will increase the expenditure of their Families like the others.' (ibid., p. 267, emphasis in *italics* added.) Therefore, land was not fully utilised first. This point is also raised by Spengler (1954b, p. 417).

> if some person on high wages or some large Undertaker has saved
> capital or wealth, that is if he have stores of corn, wool, copper, gold,
> silver or some produce or merchandise in constant use or vent in a
> State, having an intrinsic or a real value, he may be justly considered
> independent so far as this capital goes. He may dispose of it to acquire
> a mortgage, and interest from Land and from Public loans secured
> upon Land: he may live still better than the small Landowners and
> even buy the Property of some of them.

<div align="right">ibid, p. 129</div>

Second, an 'increased quantity of money' could be deliver not only by exploitation of a mine or a favourable balance of trade (i.e., from sending abroad articles and manufactured goods of greater value and quantity than is imported and consequently receiving the surplus in money), but also 'by subsidies paid to this State by foreign powers, by the expenses of several Ambassadors, or of Travellers whom political reasons or curiosity or pleasure may induce to reside there for some time, by the transfer of the property and fortune of some Families who from motives of religious liberty or other causes quit their own country to settle down in this State. In all these cases the sums which come into the State always cause an increased expense and consumption' (ibid., p. 277). Some of these expenditures, however, will be only activated through public spending[26]

The author also claims that the subsistence of the inhabitants might be reduced if the nobility and property owners increases their consumption of imported manufactured commodities, meaning that the import share increases,

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[26]

> As to subsidies which the State has received from foreign powers,
> either they are hoarded for State necessities or are put into circulation.
> If we suppose them hoarded they do not concern my argument for I
> am considering only money in circulation. Hoarded money, plate,
> Church treasures, etc. are wealth which the State turns to service
> in extremity, but are of no present utility. If the State puts into
> circulation the subsidies in question it can only be by spending them
> and this will very certainly increase consumption

<div align="right">ibid, p. 279</div>

> But when the Nobility and Proprietors of Land draw from Foreign
> Manufactures their Cloths, Silks, Laces, etc. and pay for them by
> sending to the Foreigner their native produce they diminish extraor-
> dinary the food of the People and increase that of Foreigners who
> often become Enemies of the State.

<div align="right">ibid, p. 147</div>

Up to now, we were able to notice that in Cantillon's *Essai* there is a distribution of out-put within different social classes, that distribution of income is *persistently* stable through time and that the produced quantities are induced by consumption out of wealth, public expenditures and external demand.

2.1. Interest and Profits in the Essai

One of the main debate sorrounding Cantillon's *Essai* it is his view on profits and that's why this deserve a subsection in this article. The reader must be warned that there still exists a discussion on the introduction of profits in 'Surplus' during the *Essai*, some authors claim that profits do not appear in Cantillon's theory of value as a conceptually distinct income category (Davila, 1982, pp. 1-2; Aspromourgos, 1989, 1996, p. 82; Grieve, 1993, p. 45). In Marx's view 'Petty, Cantillon and in general those writers who are closer to the feudal times assume ground rent to be the normal form of surplus value in general, whereas profit to them is still amorphously combined with wages, or at best appears to be a portion of surplus-value extorted by the capitalist from the landlord.' (Marx 1998 [1864, 1894], p. 551). Aspromourgos (1996, p. 82) claims that 'the returns to undertakers are a species of wages and as a result profits find no very definite role as a conceptually distinct income category. This is not to say that profits find no mention in the Essai. Indeed, even with regard to the theory of prices there are references to profit as a component of prices (. . .) The point to be emphasized is that profits enter the economics in a casual and incidental manner, without much system or theoretical significance'; however, he also recognises a 'striking exception' in the discussion of interest as a deduction from profits (Part II, Chapters IXX). Aspromourgos (2013, p. 7) also claims that there are a number of instances in which entrepreneurial returns are characterised in a manner which makes them akin to a 'supply-price' of entrepreneurial activity but cannot be completely generalised.

Brewer (1988a, p. 7) and Grieve (1993, p. 48; 2016, p. 27, fn. 3) clearly state that in Book II Cantillon comes very close to recognising profit on investment as a separate category of

<div align="center">13</div>

income. Brewer (1988b) states that 'Profit consists simply of the wages of management and compensation for risk, with no interest element . . . Output adjusts to demand through entry or exit of entrepreneurs according to whether prospective returns are above or below the conventionally defined *normal* level' (ibid., p. 450, emphasis added in *italics*). According to Prendergast (1991, p. 428) Cantillon identifies profit as a separate category of income which was a surplus above subsistence; Steiner (1997, p. 621, fn. 19) seems to agree. In a recent article, Richard van den Berg (2014) has introduced new insights from other versions of Cantillon's writings; the author concludes that there is a rate of profits, equal to the rate of interest, that pays for what we know as the 'pure remuneration of capital' (Pivetti, 1991) but that this 'not lead to an *explicit* revision of the theory of intrinsic price' (van den Berg, 2014, p. 638, emphasis added in *italics*).

What cannot be denied is that there exists a process of gravitation from market prices to *normal* prices. Cantillon claims that,

> There is never a variation in the intrinsic value, but the impossibility
> of proportioning the production of merchandise and produce in a State
> to their consumption causes a daily variation, and a perpetual ebb
> and flow in Market Prices. However in well organized Societies the
> Market Prices of articles whose consumption is tolerably constant and
> uniform do not vary much from the intrinsic value; and when there are
> no years of too scanty or too abundant production the Magistrates of
> the City are able to fix the Market Prices of many things, like bread
> and meat, without any on having cause to complain.

> ibid, p. 97

This gravitation could be related to the Classical notion of gravitation (explicitly or implictly in Higgs, 1892, p. 445; Tarascio, 1981, p. 12; Tarascio, 1985, p. 252; Bordo, 1983, p. 240; Murphy, 1986, p. 252; Walsh, 1987, p. 319; Brewer, 1988a, p. 8; Brewer, 1988b, p. 447; Brewer, 1992b, ch. 5; Brewer, 2005, p. 4; Grieve, 1993, p. 46; Giacomin, 1994, p. 134; Aspromourgos, 2009, p. 103; van den Berg, 2015, p. 97; Grieve, 2016, p. 5). Also Hayek (1991 [1931], p. 263) and Hérbert (1985, p. 271) seem to recognise gravitation in this sense.[27] and also the Law of One Price.[28],

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[27]Some authors might not agree that this notion of gravitation could be similar to that one of the Classical authors (O'Mahony, 1985; Rothbard, 1995; de Carvalho & Neto, 2019) but they do not offer a clear alternative explanation or seems to interpret his price's theory as a subjective one close to Austrian authors (Thornton, 1998, pp. 66-67; 2007). For a critique to the latter see Menegattti (2016) and Grieve (2016).

[28]

Up to this point, it is safe to claim, under our view, that three basic concepts for a theory of accumulation are present in Cantillon's view, which are:

    a. Autonomous components as a source of a *regular and constant* demand.

    b. The notion of gravitation from market prices to 'intrinsic' values.

    c. A notion of pseudo-profits for proto-industrial producers.

In the next section we will try to analyse Cantillon's *Essai* through our rational reconstruction.

3.   Richard Cantillon's *Essai*: A simple formalisation

Through the last section it was clearly demonstrated the importance of autonomous components for aggregate demand levels in Richard Cantillon's view. Through a process of developing simple algebra on national accounts and imposing some assumptions for the sake of simplicity, we will try in this section to formalise *partially* Cantillon's thought on this topic.

Some of the assumptions that will be imposed are just a consequence of the previously mentioned arguments that could be found along the *Essai*. As a matter of fact, we have three classes: hired workers, capitalists (entrepreneurs and farmers) and noblemen (proprietors, nobles and landowners), that earn real wages (ω), profits (r) respectively and the latter live on tax collection, minting currency or rent of land (τ).[29] Distribution of income among different social classes, as explicitly admitted by Cantillon, is relatively stable and in more or less fixed proportions so this allow us to take it as *given* and constant [30] (otherwise this

> If two Acres of Land are of equal goodness, one will feed as many
> Sheep and produce as much Wool as the other, supposing the Labour
> to be the same, and the Wool produced by one Acre will sell at the
> same Price as that produced by the other.

<div align="right">ibid, p. 89</div>

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[29]Although in this case 'rentiers' could be correct for those who earn livings from the property of soil, they are also those who pay wages in advance. A pure 'entrepreneurial' class also exist, but we will include the rentiers and the capitalists in just one class, for the sake of simplicity. Furthermore, this is not arbitrarily assumed given that according to Cantillon 'By all these inductions and many others which might be made in a topic relating to all the Inhabitants of a State, it may be laid down that expect the Prince and the Proprietors of Land, all the Inhabitants of a State are dependent; that they can be divided into *two classes, Undertakers and Hired people*; and that all the Undertakers are as it were on unfixed wages and the others on wages fixed' (ibid., p. 127).

[30]Some authors share a similar view: Dávila (1982, p. 9), Aspromourgos (1989, p. 357 and p. 365;

will be explicitly clarified). Land, as well as labor force, is not *necessarily* scarce as we have demonstrated in the last section. No technical progress is assumed.[31] Moreover, we will impose a fixed proportion between homogeneous labour[32] and output and no joint production. Finally, following Pierangelo Garegnani (1962), 'the analysis is conducted with regard to long-term effects in an economy that is under normal conditions' (1962, p. IV-V).

3.1. A land-constrained model?

After the assumptions we can introduce a model in which what Cantillon calls 'the size of the market town' that could be associated with aggregate demand or output (Y) is a vector of given physical magnitudes for a year in a closed economy without government, in the following form,

$$Y = min(\frac{u_T \bar{T}}{v_T}, \frac{u_K K}{v_K}, aL) \tag{1}$$

Where Y is output, u_T the level of land utilisation, $\bar{T}$ the maximum quantity of land, v_T the land-output ratio, u_K capital utilisation, v_K the capital-output ratio, K the quantity of capital, a expresses the technical relationship between Y and L, and L is the quantity of labor. Given that we assume homogeneous land and no technical change, v_T is given and equalized to 1, the latter equation could be expressed in the following form,

$$Y = min(u_T \bar{T}, \frac{u_K K}{v_K}, aL) \tag{2}$$

As we noticed that the labour supply is infinite at a subsistence real wage taken as given[33], and capital constraints are not even mentioned, therefore, output must be in a particular proportion to land as Cantillon claims in his *Essai*.

$$Y = u_T \bar{T} \tag{3}$$

1996, p. 82; 1997, etc), Berdell (2010, p. 215), Coutinho (2007, p. 256), Dasgupta (2009, p. 177), Foucault (2005 , p.202), Spengler (1954a, p. 292 and 1954b, p. 412), Thomas (2012, p.93), Thomas (2015), Grieve (2016, p. 4), Thomas (2018). We assume a *given* distribution and a *given* vector of relative prices correspondingly. Distribution is studied independently of accumulation, not because there could be no relationship among them, but because this could be studied in separate stages. In this case also, we will get rid off the Duesenberry's effect.

[31] According to Aspromourgos (1996, p. 195, fn. 8; p. 81; 2013, p. 6), Thomas (2015, p. 18, fn. 4) and Grieve (2016, p. 27, fn. 6), the constancy of 'intrinsic values' seems to imply the absence of technical change.

[32] In the *Essai*, however, labour is not homogeneous (see ibid., pp. 75, 77, 71).

[33] Brewer (1988a, p.1 and 1988b, p. 449) claims that labor is in elastic supply at a given real wage. Hicks (1990, p. 530) also introduces the assumption of perfect elasticity of labour supply with wages fixed in terms of corn.

From the latter we can derive the 'sources' of the supply-side of the economy. Given $\bar{T}$, and therefore $g_{\bar{T}} = 0$ the economy will be able to growth if land utilisation g_{u_T} can growth,

$$g_Y = g_{u_T} \tag{4}$$

On the one hand, from a standard macroeconomic equation, we know that,

$$Y = C + I + Z \tag{5}$$

Where C is gross consumption, I is gross investment and Z gross autonomous components of aggregate demand. We also know that,

> The consumption of the Inhabitants of a State is, in a sense, entirely for Food.
>
> ibid, p. 247

And assuming only induced investment (see Thomas, 2018, p. 23), the latter equation could be replaced by the following one, in line with the Sraffian Supermultiplier (Monza, 1976; Serrano, 1995; Freitas and Serrano, 2015),

$$Y = \omega Y + hY + Z \tag{6}$$

Where ω is the wage share and h is the investment share. Now we are able to derive a Keynesian-multiplier[34],

$$Y = \frac{Z}{1 - \omega - h} = \Phi * Z \tag{7}$$

Where its rate of growth could be expressed as it follows,

$$g_Y = g_\Phi + g_Z \tag{8}$$

As distribution is given and constant and we assume *provisionally* h to be given, $g_\Phi = 0$ follows, therefore, from Equation (4) and Equation (8), we are able to claim that the economy will growth at the rate of growth of autonomous components until the point in which land is at its full utilisation. Once achieved the full utilisation of land it is difficult to find

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[34]Many authors have claimed that in Cantillon's *Essai* there is a kind of rudimentary Keynesian-multiplier: Landry (1910), Huq (1959), Leduc (1960), Hicks (1990, p. 531), Giacomin (1994, p.137 and p. 138) and Thomas (2012, p. 95). Spengler (1954a, p. 292, fn. 47; p. 294) states that there is a 'geographical' multiplier and denied a foreign-trade multiplier. Aspromourgos formalises an input-output multiplier (1997, p. 420) in a land-constrained economy with autonomous demand.

in the *Essai* what could happen to this economy, doubting that Cantillon has thought of the possibility of the existence of this case. Finally, in order to close this section, we will *imposse* the economy reaches a state in which $g_Y = 0$ and it remains in a stationary state of self-reproduction when land is fully utilised.

$$g_Y = \begin{cases} g_{u_T} = g_Z, & \text{if } T < \bar{T} \\ 0, & \text{if } T = \bar{T} \end{cases} \tag{9}$$

3.1.1. Introducing technical change

Following the previous subsection, we will introduce the possibility of technical change in agriculture production. This is not an *arbitrary assumption*, given that it is present also in the *Essai*. Now, from Equation (1), v_T is not given and equalised to 1 anymore,

$$Y = \frac{u_t \bar{T}}{v_t} \tag{10}$$

In growth rates, and knowing that $g_{\bar{T}}=0$ as we have previously claimed, therefore,

$$g_Y = g_{u_T} + g_{v_T} \tag{11}$$

Not only land utilisation can change, but also the relationship between land and output. If less land is needed per unit of output, this will not translate itself in growth, nor be an attractor, but opens the door to get rid off the land-constraint with a new degree of freedom.[35] Finally,

$$g_Y = \begin{cases} g_{u_T} - g_{v_T} = g_Z, & \text{if } T < \bar{T} \\ -g_{v_T}, & \text{if } T = \bar{T} \end{cases} \tag{12}$$

As far as T reaches $\bar{T}$, $u_T = 1$ and therefore $g_{u_T} = 0$. Output, in this case, fostered by autonomous components, might growth if and only if new - land saving - techniques of production are able for agricultural products. If farmers notice that land is scarce, and g_Z is 'constant and uniform' they will try to introduce new techniques of production in order to sell at a cheaper price and/or earn quasi-rents. If the introduction of new techniques of production, profitable at the given 'normal' proto-rate of profits, are not available, then the economy will suffer from a 'supply' constraint. This does not imply, necessarily, that it is a 'supply' led economy because the potential output will not be an *attractor*.

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[35]Of course, technical progress has shown to be relatively stable and *persistent*, and it is difficult to claim that autonomous components' growth will mechanically induced technical change immediately, this must be a process that might take too much time but the purpose here is that it is a *possibility* in Cantillon's *Essai*.

3.2.   The Essai in an open-economy framework

In an open-economy framework, it is clear that countries are not land-constrained anymore, i.e., in the case of Holland, they export manufacturing commodities to import agriculture commodities. In fact, it is not clear at all which could be the limit to growth in this case. The land-constraint is not operating, the labor supply is elastic and passively accommodated, it could be that the accumulation of capital might be an issue, but contrary to this intuition there is no passage in the *Essai* that warns about the scarcity of capital.[36] Let us introduce the issue of capital accumulation. In this case, output might be only restricted by capital,

$$Y = \frac{u_K K}{v_K} \tag{13}$$

Where Y is output, u_K the level of capacity utilisation, v_K the capital-output ratio. Given that we *assume* no technical change in manufacturing[37] it can be normalised to one and the latter equation could be expressed in the following form,

$$Y = u_K K \tag{14}$$

As we noticed that the labour supply is infinite at a subsistence real wage taken as given[38], output is in proportion to capital. This can be noticed in the following parragraph,

> All these Undertakers become consumers and customers one in regard
> to the other, the Draper of the Wine Merchant and vice versa. They
> proportion themselves in a State to the Customers or consumption.
> If there are too many Hatters in a City or in a street for the number
> of people who buy hats there, some who are least patronised must
> become bankrupt: if they be too few it will be a profitable Under-
> taking which will encourage new Hatters to open shops there and so
> it is that the Undertakers of all kinds adjust themselves to risks in a
> State.

(ibid, p. 125)

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[36] According to Brewer (1992b, p. 110) Cantillon 'differs from that of his classical successors because they assumed that the availability of capital was the main constraint on output [...] Cantillon did not treat capital as a scarce resource at all.'

[37] Cantillon does not assume this.

[38] Brewer (1988a, p.1 and 1988b, p. 449) claims that labor is in elastic supply at a given real wage. Hicks (1990, p. 530) also introduces the assumption of perfect elasticity of labour supply with wages fixed in terms of corn.

However, this should not be considered as a *fixed* proportion. There is a lower bound that it is the capital *neccesary* to start business, and an upper bound in which competition[39] operates. In the *Essai*, the lower bound can be seen in the following passages,

> ...If the Farmer have *enough* capital to carry on his enterprise

(ibid, p. 325, emphasis added in *italics*)

> ...he [Undertaker] will carry on and will perhaps gradually save some capital by retrenching a little upon his necessities. With the aid of this he will have every year less to borrow, and when he has collected a capital *sufficient* to conduct his manufacture, which will always be proportionable to his sales, the profit will remain to him entirely and he will grow rich if he does not increase his expenditure.

(ibid, p. 329, emphasis added in *italics*)

On the other hand, the upper bound is identified in the following passage,

> ...Supposing two Tailors make all the cloaths of a Village, one may have more customers than the other, whether from his mode of attracting business, or because he works better or more durably than the other, or follows the fashions better in the cut of the garments.
>
> If one dies, the other finding himself more pressed with work will be able to raise the price of his labour, giving some customers a preference in point of expedition to others, till the Villagers find it to their advantage to have their cloaths made in another Village, Town, or City losing the time spent in going and returning, or till some other Tailor comes to live in their Village and to share in the business of it.

ibid, p. 77, emphasis added in *italics*

So the second Tailor increases capital utilization, after that it might increase prices or backlog orders, but this will have a limit until some other Undertaker comes to the Village to compete. Here, the process of competition allows an introduction of new capital directly

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[39]The presence of competition is clear: 'These Undertakers can never know how great will be the demand ...since their rivals will try all sorts of means to attract customers from them' (ibid., p. 123).

through a new enterprise.

It must be noticed that the idea that a minimum quantity of capital is proportional to output or sales (u_K^{min}) might imply a very first notion of an accelerator principle.[40] Thomas (2015) seems to introduce a similar approach; according to him, 'When the demand is steady and the supply is equivalent to it, entrepreneurs' expectations are completely fulfilled and the market prices will coincide with intrinsic values. Otherwise, *there would be an entry/exit of entrepreneurs* and depending on this, *a change in labour demand too*; in other words, the system will be in *disequilibrium*' (ibid., p. 19, fn. 5, emphasis in *italics* added) and 'If profits are higher than the normal or usual amount in a particular sector, it would attract new and existing entrepreneurs to enter that sector which over time would eliminate the 'excess' profit'. On the other hand, if entrepreneurs suffer losses, they would exit that particular sector (ibid., p. 20). His positions seems also to be based on Brewer (1992, p. 64) and Aspromourgos (1996, p. 84) when he claims that 'The entrepreneurs in every sector attempt to adapt supply to this demand, so as to earn profits. Commodity supplies adapt to their demands across sectors' (ibid., p. 21). Giacomin (1994, p. 140 and p. 154) seems to introduce a similar adjustment mechanism when he states that 'The shifts in market prices of goods with respect to their intrinsic value demonstrate the variations occurring in demand and indicate to the entrepreneurs the need to modify the level and/or the composition of supply.' (ibid., p. 154). Kurz & Salvadori (1997, p. 37) and Menegatti (2016, p. 187) are on the same page. Following this reasoning, from a standard macroeconomic equation, we know that,

$$Y = C + I + Z + X - M \tag{15}$$

Where C is consumption, I investment, Z autonomous components of aggregate demand, X the level of export and M the level of imports. The latter equation could be replaced by the following one,

$$Y = \omega Y + hY + Z + X - mY \tag{16}$$

Where m is the import share. The multiplier in this case will be

$$Y = \frac{Z_b}{1 - \omega - h + m} \tag{17}$$

---

[40]Prendergast (1991, p. 425) interprets directly that capital is proportional to sales. This is misleading. The French translation is clear on this point and manufactures are proportional to sales, not capital. Anyway this could be seen as a kind of stable inventories process. Thanks to Richard van den Berg who clarified this point to me in a fruitful discussion.

with $Z_b = Z + X$. Is there a law of capital accumulation in Cantillon's *Essai*? At a first sight, the response should be no. According to Thomas (2015, p. 28), Cantillon does not possess an account of capital accumulation; of course we agree it cannot be stated that Cantillon had an *explicit* law of capital accumulation. However, the necessary conditions for such a law are present in Cantillon's *Essai*, so, there could be derived an *implicit* law of capital accumulation. As far as we noticed, there is no Say's law under his framework. So the necessary conditions to derive an *implicit* theory of capital accumulation in this case are:

1. Positive profits,
2. Free competition,
3. Source of demand,

Positive profits is a necessary condition, no one will invest if profits are not positive. This issue was discussed in section 2.1. In relation to free competition, if there are no competitors the producer might be able to earn higher profits (i.e., producing at higher levels of utilisation) without feeling the pressure of loosing market share. Finally, a source of demand must be present, it could be weird to find an *entrepreneur* that invests with the perspective of not selling his produced commodities. But if the three conditions are present, gravitation towards 'intrinsic values'(Spengler, 1954b, p. 413; Prendergast, 1991, p. 426 and p. 428) as a result of (1) and (2), we impose the non existence of technical change and, finally, we precisely know, because the author has claimed so, that a there is a lower and upper bound for utilisation (or a relationship between output and capital), a law of capital accumulation could be *implicitly* derived.

We know from latter developments that higher effective profits in a particular sector are followed by a flow of capital to that particular sector until the rate of profit expected on newly installed equipment is the same across sector. This equalisation can occur with effective levels of capital utilisation different from that expected on investment; however, the gravitation of effective prices towards normal prices cannot be thought *completely* separate of the adjustment of capacity to demand in *growth* theory at an aggregate level. The question is, with gravitation of effective prices towards 'intrinsic values', and a demand-led determination of output, is that gravitation possible without capital accumulation in the long-run? Under our view, it is not; and a tendency of the amount of capital to adapt to output level follows. Analytically, assuming no depreciation for simplicity, we know that the law of capital accumulation could be written as follows,

$$K_{t+1} = K_t + I_t \tag{18}$$

Therefore, in continuous time,

$$\dot{K} = I \tag{19}$$

Given that the proportion between output and capital (u_K) is roughly given in the long-run because there exists a lower and upper bound for utilisation. As Spengler (1954b, p. 417) claims, Cantillon 'did not indicate explicitly how great he believed the amount of unutilized productive power tended to be under various circumstances, and so he did not make plain how elastic to a rising money price level, therefore, he considered output in general to be'. If the level of autonomous consumption increases because of, i.e. a change in Z[41], will deliver in an increase in u_K. Given that entrepreneurs would like to achieve a bounded relationship between output and capital that roughly holds, under the pressure of competition, they are forced to invest in order to not loose market share. As a consequence, variations in u_K through time ($\dot{u_K}$) will necessarily change the *level* of capital stock through changes in the *level* of investment.[42] Therefore,

$$(u - u_K) = \dot{K} = I \tag{20}$$

Replacing, (17) in (14) and both in (20),

$$\frac{\frac{Z}{1-\omega-h}}{K} - u_K = \dot{K} = I \tag{21}$$

And in the Fully Adjusted Situation, $\dot{K} = I = 0$, therefore,

$$\frac{\frac{Z}{1-\omega-h}}{K} = u_K \tag{22}$$

The latter means that there must be a rough correspondence between the effective relationship between effective demand and capital in the long-run.

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[41] As we have explicitly claimed in the last section, these 'autonomous components' could embody a diversity of expenditures in Cantilon's *Essai*: expenditures from accumulated wealth, exploitation of mines, by subsidies from foreign powers, by the immigration of foreign families, by the residence of ambassadors and travelers, but above all, by a regular and annual favourable balance of trade. Hicks (1990, p. 530) states that, in Cantillon's closed economy, 'It is reasonable to suppose that most (if not all) of Country demand for Town products comes from landowners'.

[42] The flexibility of capital to adequate itself to variations in 'normal' demand is also shared by Brewer when he claims that 'labour and capital are in elastic supply in the long run.' (Brewer, 1992b, p. 34). The notion of induced investment when there is 'sufficient demand' is also recognised by Thomas (ibid., p. 27).

Applying logarithms and derivative through time,

$$g_Z - g_K = g_{u_K} \tag{23}$$

The adaptation of productive capacity to output can be conceived in two different ways in Cantillon's *Essai*. Once recognised that there is a maximum output bound for the installed capital stock, the *entrepreneur* might decide to increase her productive capacity, raise prices or choose clients (backlog orders). If the decision taken is not the first one, there will be a tendency for other producers to dispute that market as Cantillon explicitly claims. It is the process of competition, what, in the end makes possible that productive capacity adjust itself to output levels, giving some margin to capacity utilisation to vary between bounds, but a process that delivers $g_{u_K} = 0$, making $g_Z = g_K$ in the long-run, reverting Say's Law.

4. Conclusion

The notion of autonomous components allowed growth theory to reach an important milestone. Some authors recently are not satisfied with the incorporation of these components as stabilizers of the economy (Nikiforos, 2018; Skott, 2017, 2019) and claim that the answer is not to adopt a reverse Say's law and assume that whatever is demanded can and will be supplied (Skott, 2017, p. 12).

Here we tried to reconstruct Cantillon's *Essai* through the lens of modern growth theory. We find that there are autonomous components of aggregate demand and that these might trigger the process of *induced* accumulation. This allow us to build a simple model in which the growth process is driven by these components.

To conclude, we can claim that theoretically, the notion of autonomous components is present also in pre-Classical authors as we have shown; that if three conditions are satisfied: autonomous demand, positive profits and competition, its natural to think growth process as autonomous-demand-led nomatter what the origins of these autonomous components. We think that much more research could be done analysing autonomous components in the history of economic thought to support our argument presented here.

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