has to grapple with the asymmetricity that is connected to the profit criterion. *More* value-in-exchange/money must be sucked-in by capitalists, on their sales side, than they emitted to workers and supplier firms before on the sourcing side. The driving force of profit economies is to create a gap between M‘ and M, the challenge to its ability to close its circuits is the very same gap. Our analysis will ultimately show that a closure of the gap – using value-in-exchange generated in the first leg of M–C–M’-circuits and the *expected* profits – is theoretically possible. *However, it is conditional*. Accordingly, a full and adequate understanding of the problem of capitalist circuit closure can only be achieved by understanding the structure of this conditionality. When can the conditions be met? And why is what ought to happen for circuit closure in the productive economy normally not happening? We shall find the answer in the flight of investment into the sterile economy. The reader who is only interested in the results of our review of the selected economists but not in their individual treatment may re-join in Chapter VIII. The deficient-producive-spending-syndrome .

Section 2. Quesnay's dépenses-integrated "royaume agricole"

An organism reproduced by just the right "dépenses"

Quesnay, the physician,[2] thought of the economy, of his "royaume agricole", in much the same way as of the body of his patient Louis XV. What happens at one place must have consequences at another place and in order for it to be possible something else must have happened before or be happening at yet other places. A biological or zoological system, Quesnay knew, has a built-in *telos* or an *entelecheia*, which works towards a healthy state. It takes care that juices of the right composition and volume will be produced and find their way to the right destinations at the right time; it also takes care that they will be welcomed and not rejected. Why should God not have arranged for the economy, which Quesnay "dissected",[3] to operate in a basically reliably way, predetermined by Platonian ideas or by a God-imbued spirit? So, he believed: "L'ordre et la marche de cette machine admirable sont fixés décisivement par

2 Noteworthily, *William Petty* (1623–1687), the English economist, who was writing earlier than Quesnay, was also a professor of anatomy.

3 He himself uses the word "disséquer" (*Quesnay* in: *Cartelier* (2008) page 154). Marx calls the tableau économique "einen höchst genialen Einfall, unstreitig der genialste, dessen sich die politische Ökonomie bisher schuldig gemacht hat". (*Marx*, Theorien über den Mehrwert, MEW 26.1, page 319). Marx also states that Smith would "hardly have executed and interpreted the totality of the movement so correctly as indicated in the Tableau Économique, notwithstanding the wrong predictions of Quesnay" (loc. cit. page 319).

son Auteur".[4] The "royaume agricole", thus it appeared, was a machine which, after it had come into existence and was set into motion, continued to run, except when it was abused, indefinitely. The "royaume agricole", says Quesnay, is an "ordre des dépenses régulières,[5] (qui) assure perpétuellement la même reproduction annuelle".[6] The supreme rule-setter of Quesnay was, in fact, a "dieu juste";[7] yet, as we know from other religious or metaphysical concepts about society, that is no absolute guaranty against things getting out of hand. Misunderstandings, egocentric short-term interests and sins may throw them out of their rhythm and the order may fall apart.[8] In other words, Quesnay did not approach the systems integration he observed with the modern question whether the system observed its own operation and elements, how it would do that and what means it had to interfere. His religious-metaphysical approach also relieved him of the question of how his wonderful foresightful and well-meaning system had come into being; he has no theory of economic evolution to his "royaume agricole". This pre-modern and pre-scientific methodology is a weak spot in his economics.

It appears, though, that this deficit is the price paid for an otherwise extremely strong and clear and, indeed, absolutely modern concept of the economic system. Quesnay gives us statements, which, until today shine with insightfulness and precision. He wants to understand the "constitution économique", which has an "ordre réciproque des causes et effets" and announces his intention to expose "toutes les pièces de rapport qui entrent dans la construction de la machine économique", to

4 Quote in *Quesnay* in: *Cartelier* (2008) page 154. Cartelier also reads this "argumentation économique du type finaliste" in this sense (*Cartelier* (2008) page 19, and summarizes "Les règles doivent donc se déduire d'une loi naturelle volue par dieu." (page 17)

5 *Quesnay* in: *Cartelier* (2008) page 165, 190.

6 Quesnay in: Cartelier (2008) page 216.

7 Quesnay in: Cartelier (2008) page 344.

8 Quesnay examines forgetfulness of one's duties and lack of insight by the parts, e.g., sons of farmers desiring to move to Paris (*Quesnay* in: *Cartelier* (2008) page 107 et seq.), the pursuance of excessive decorative luxuries (loc. cit. page 92) or excessive thrift in this regard: "Que les propriétaires et ceux qui exercent les professions lucratives, ne soient portés par quelque inquiétude qui ne sera pas prévu par le gouvernement, à se livrer à des épargnes stériles qui retrancheraient de la circulation et de la distribution une portion de leurs revenus ou de leur gains." (loc. cit. page 105). Quesnay, furthermore, speaks out against sovereign debt with the argument that it creates a sterile market. "Que L'État évite des emprunts, qui forment des rentes financières, qui chargent l'État des dettes dévorantes, et qui occasionnent un commerce ou trafic de finance, par l'entremise des papiers commerçables, *où l'escompte augmente de plus en plus les fortunes pécuniaires stériles, qui séparent la finance de l'agriculture, et qui la privent des richesses nécessaires pour l'amélioration des biens-fonds et pour la culture des terres*." (loc. cit. page 117, italics added). On both occasions, Quesnay, noteworthily, uses the term "sterile" not with a view to his unfortunate cl. sterile, which, even if it can produce goods, including services, and sell them above their costs, cannot be "productive"; he rather uses "sterile" it in a sense, which comes close to its use in this book.

understand "le jeu de cette machine régénératrice." For this purpose, he undertakes a "démonstration anatomique des toutes ses parties et par le développement de leurs entrelacements, de leur connexion et du concours de leur action mutuelle"[9] He finds a two-sidedness, a functional double character of flows. "Par la circulation on entend ici les achats payés par le revenu…".[10] There is a "…débit réciproque d'une classe à l'autre".[11] "…tout doit être dépensé pour pouvoir être reproduit."[12] And as in Quesnay what needs to happen *will* happen, he can also write "…l'ordre de la distribution de de la dépense du revenu…" shows that "la reproduction du revenu y est égale au revenu dépensé…".[13] "De la vient que l'on dit que consommation et revenu sont synonymes".[14]

The price for the stability of the "royaume agricole" is not necessarily an absence of growth. Quesnay's machine can run at any level, hence also at greater volumes. He even advocates policies, which allow production to rise – e.g., by the sale of agricultural produce to foreign markets.[15] Hence, we find a contradiction in Quesnay, methodologically speaking. On the one hand, we have an advanced understanding of a necessity of capitalist circuits to close and of the preconditions of their closure, on the other hand, we have a pre-modern Platonian, Aristotelian (Catholic even), explanation for why these preconditions will be automatically fulfilled. The exceptional contribution of Quesnay to the history of economic thinking resides in the first dimension, in speaking out about the existence of the necessary discipline of circuit closure in the economy[16] – as strict as any of those found in biological systems – and in requiring a style of economic reasoning, which is compatible with this request. By elevating that "the right amount of money will always be where needed to buy the produce" to an axiom of economics, he drew the attention of economists to the buried question if it happens why it happens. He moved the question *where employment-generating spending come from, how they are financed and how circuits of exchanges between units prepare the ground for a next round of circuits* to the center of economics. We should not criticize Quesnay that his answer falsely misconceived the economy as a teleological system by bringing God and happily fitting numbers into play, but admire him for discovering that capitalist circuits must close by assuming that they do close.

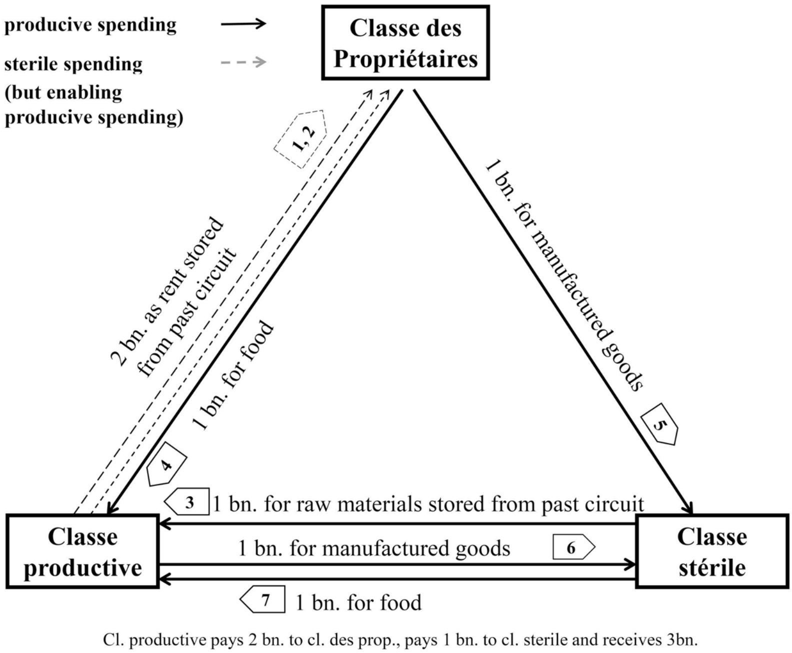
9 *Quesnay in*: *Cartelier* (2008) page 153 et seq. (both quotes).
10 *Quesnay* in: *Cartelier* (2008) page 137.
11 *Quesnay* in: *Cartelier* (2008) page 94.
12 *Quesnay* in: *Cartelier* (2008) page 165.
13 *Quesnay* in: *Cartelier* (2008) page 165.
14 *Quesnay* in: *Cartelier* (2008) page 165.
15 *Quesnay* in: *Cartelier* (2008) page 144.
16 One might say this about logistics and motivation of the elements or classes. In another context, Quesnay writes "Tout est assujetti ici à des règles rigoureuses…". (*Quesnay in: Cartelier* (2008) page 392.

Tableau économique as quantitative flow diagram

Quesnay's teleology lies in the match of God-chosen quantities. By putting numbers on flows that enable circuit closure, he tells what is needed for the circuits to close. The circuits close because of the fit of the quantities; hence the quantities will allow to understand why they close. Here is our leading theoretical interest in Quesnay – to understand how the quantities can be as they are or how employment-generating spending is created in the tableau in such numbers as to enable the flows of "dépenses" to integrate.

Quesnay presents several versions of his *tableau*, in the format of a zigzag-drawing or of a table. We have chosen to use the version from 1766[17] and represent it in this book as a flow diagram.

Figure 11: Quesnay's tableau économique (graphic by author)



The flows require stocks as preconditions. There must be "avances primitives" of approx. Livres 10 bn. and additional "avances annuelles" of approximately Livres

17 *Quesnay in*: *Cartelier* (2008) page 207 et seq. (first published in Journal de l'agriculture, du commerce et des finances, June 1766).

2 bn. of the "*classe productive*"[18] (cl. productive) and Livres 1 bn. of the "*classe stérile*"[19] (cl. stérile) and there must be both labor[20] and money. No credit, no private banking, and no central banking are required and no state and no taxation appear as separate elements or flows in the tableau.[21]

In a biological system the flow of blood from the heart to an organ or peripheral place, which it will nurture, does not depend on the simultaneous flow of something else in the opposite direction. Muscles do not make "payments" to the heart for the nutrition they receive.[22] However, in the economy we have flows of goods or services in one direction and of money in the opposite direction, which mutually do depend upon one another; as jurists say *do ut des* or *quid pro quo*. Quesnay uses the word "dépenses",[23] which corresponds to our "spending", for the money flows being emitted by purchasers of goods or services for them.[24] His perspective, much like

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18 Quesnay in: *Cartelier* (2008) page 212.

19 *Quesnay in*: *Cartelier (2008)* page 97. The "classe stérile" includes the producers of handicraft, housing, clothing, those who give loans, domestics, commerce, foreign trade etc. (*Quesnay in*: *Cartelier* (2008) page 139).

20 *Quesnay in*: *Cartelier* (2008) page 94. He mentions that half of the "avances annuelles" would be used for feeding animals and half for the salaries of the workers.

21 Even if the Banque de France was only formed in 1800, Quesnay was certainly aware of the activities of the Banque Générale of Paris under John Law from 1716 to 1720. He mentions "emprunts", "rentes financières", "la finance", and "papiers commerçables" a few times in a critical sense (*Quesnay in*: *Cartelier* (2008) page 117).

22 One might contend that a muscle, like everything in a organistic biological system, contributes to the survival and reproduction of the whole, including the heart. While this is true, the heart will not immediately withhold nutrition for the muscle, if the muscle no longer makes valuable contributions for the body as a whole.

23 He even occasionally uses "dépenses" to name two of his three classes when he speaks of the "classe des dépenses productives" and the "classe des dépenses stériles" (e.g., *Quesnay in*: *Cartelier* (2008) page 92). It is noteworthy, though, that only the cl. productive makes rent-"dépenses" to the cl. des propriétaires, thereby transferring the "revenu net" of the economy, which enables the cl. des propriétaires to close the circuits.

24 We can obviously look at each exchange, first, in terms of the flow of goods or services or in terms of the flow of money and, second, from the perspective of the seller or from the perspective of the buyer. The word "*supply*" covers produced goods or services from the seller's perspective, the word "*demand*" covers the need or desire for goods or services from the purchaser's perspective. "*Purchasing power*" (or "producive spending", "effective demand", and "effectual demand", etc.) points to the capability of the prospective recipients of the goods and services to make money payments for them. The desire to exchange goods or services against money, when looked at from the seller's perspective, is well expressed by the German word "Absatz". The French word "débit" evokes a book-keeping perspective (entering a debit). In English dictionaries, we mostly find the less specific words "distribution", "sales", or "offer" . Sometimes we also find "off-sale", which is less customary but comes closest to "Absatz" or "débit". A flow of money, when considered as incoming, is called "sales price", "revenue", or "income", while the same flow considered as outgoing is a "purchase price" spend-

ours, thus, focuses on (i) the *flow of money* (not so much of goods and services), and (ii) from the point of view of the *dispatcher of money* (who must first have it and then be ready to make the sacrifice and depart therefrom).[25] Furthermore, Quesnay (iii) looks at *actual* flows in executed transactions, not only at potential transactions. In other words, his “ordre des dépenses régulières” is rendered possible by there being people *capable and ready to give money away.* These money-”dépenses” re-appear somewhere else as “revenues” or income and integrate the economy as a whole.

The stocks, flows, quantities and action in the tableau

Quesnay’s “dépenses” flow in a *triangle* between the “classe des propriétaires”, the “classe productive” and the “classe stérile”. Each class has certain physical stock and may also have a certain monetary stock. The cl. des propriétaires owns the land and rents it out to the cl. productive who uses it for production. The cl. productive has made “avances primitives” and “avances annuelles” and sits on money earned from the past year. It produces agricultural goods (grains, plants, animals, meat, wine) and other primary products (wood, minerals, other raw materials) with rented land and supplies them to both the cl. des propriétaires and to the cl. stérile. The cl. stérile also has certain physical “avances primitives”[26] (equipment, tools etc.) and some money and processes the primary goods further (e.g., to construct buildings or to produce clothes or furniture) with handicraft; it distributes them via trade to the cl. des propriétaires and to the cl. productive or renders services to them (as domestic servants, craftspeople, artists, lawyers, generals, priests, forwarders etc.) including by trading the produce of the cl. productive as merchants.

All three classes receive “dépenses” as a consideration for the goods or services delivered, which are their revenues, the cl. des propriétaires receives rent, and the other classes purchase prices or other payments for their services. These “dépenses” motivate and reward either production or, with regards to the cl. des propriétaires, the permission to use their land; they transport “purchasing power” and, in so doing, build the economic system and allow it to go on.

The quantities used by Quesnay in his *tableau* from 1766 have already been outlined in the flow chart above. They show how his system operates. At the beginning of a year, the cl. productive sits on Livres 2 bn. in cash from last year, which it pays as rent to the cl. des propriétaires in exchange for land. The cl. productive also sits on its “avances primitives” of Livres 10 bn., which were made on the land (irrigation

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ing, expenses, or costs. These multiple terms for connected, or the same things, occasionally cause confusion.

25 This corresponds to Minsky’s and Mehrling’s observation that capitalism is essentially a financial system (*Mehrling* (2011) page 11).

26 See footnotes 18, 19 on page 207.

systems, fences etc.)[27] and on “avances annuelles” of Livres 2 bn. (seed, horses, oxen, food for laborers, etc.) also from the previous year.

The productivity of the cl. productive allows it to generate an output (in agricultural products and products of primary production) of Livres 5 bn. The cl. stérile sits, aside its physical “avances”, on Livres 1 bn. as a stock of money from the preceding year. It uses this money as “avances annuelles” to purchase “matières premières” (primary materials) from the cl. productive and turns them into products and services, which are worth Livres 2 bn.[28] Hence, the cl. productive made Livres 5 bn. worth out of Livres 2 bn., the cl. stérile made Livres 2 bn. worth out of Livres 1 bn and an annual produce of Livres 7 bn. worth comes out of “avances annuelles” of Livres 3 bn in total. The cl. des propriétaires does not produce anything.

The annual produce of commodities and services exists only in kind at this point, e.g., in the storehouses and shops, and the aforementioned Livres values express only *anticipated* sales value (“valeur vénale”). Luckily, the system is set in motion, and everything goes as planned. The sequence is not crucial, but all processes can easily be thought of as financing themselves without additional money stocks as follows: The cl. productive makes “dépenses” of Livres 2 bn. as rent to the cl. propriétaires (flows 1, 2 in the tableau). The cl. stérile makes “dépenses” of Livres 1 bn. for raw materials to the cl. productive out of its stock of Livres 1 bn (flow 3 in the tableau). The cl. des propriétaires’ spends the whole rent just received in two directions; it makes “dépenses” of Livres 1 bn. on agricultural produce (meat, grains, wine etc.) to the cl. productive (flow 4) and of Livres 1 bn. to the cl. stérile for processed goods or services (see flow 5), which the cl. stérile has produced in the meantime with the raw materials purchased from the cl. productive previously. The cl. productive can now fill up both its “avances primitives” and “avances annuelles” with purchases of equipment, tools. and maintenance and repair services, etc. from the cl. stérile for Livres 1 bn (flow 6) thereby providing the cash to the latter class, who in turn buys grains, meat, and wine for consumption from the cl. productive (flow 7).[29]

As a result of this round of mutual spending, the class productive still has a significant remainder of its original produce (agricultural and primary products) left, worth Livres 2 bn.; it will use this produce for its own consumption, for the consumption of its laborers, or as seed or for feeding and breeding animals, etc. the following

27 It is not completely clear in Quesnay’s work whether they were made by the cl. des propriétaires or by the cl. productive. But this is not important for our argument.

28 This shows that the “sterility” of the “classe stérile” cannot possibly mean that it does not produce anything, which is salable for more that its production cost. Quesnay makes this especially clear in two dialogues. See the reprint in: *Cartelier* (2008) page 297 et seq., 357 et seq.

29 See also a somewhat more complicated, and more detailed summary by Marx, based on a “zigzag“-model (Theorien über den Mehrwert, MEW volume 16.1, page 282–290, 304–318.

year. It also still sits on the processed goods and services it bought for Livres 1 bn. from the cl. stérile.

Quesnay calls the Livres 1 bn. of the cl. productive, which is used to purchase processed goods and services from the cl. stérile the "interest" of the cl. productive. He argues that the percentage of this amount of the "avances primitives" (Livres 1 bn./ Livres 10 bn.), i.e., 10 %, would be fair and appropriate and tries to convince the cl. des propriétaires that it ought not to try to infringe upon this amount, given that this would do great damage to agriculture.[30]

If everybody were to concede to Quesnay's prescription, the cl. productive would be able to use the 1 bn. from the cl. stérile to pay for maintenance, repair and to substitute its "avances primitive" or "avances annuelles" and it could reinvest or consume the goods and services, worth Livres 2 bn., which it still holds from its own production. However, the other cash, which the cl. productive has left after the round, i.e., Livres 2 bn., must be paid in full to the cl. propriétaires as rent once again. The cl. stérile keeps the Livres 1 bn. it has left from the sale of processed goods etc. for Livres 2 bn. to purchase primary materials from the cl. productive in the next year (as it did in the present round, flow 3) and consumes the agricultural products purchased. The cl. des propriétaires[31] consumes the purchased agricultural and processed goods and services, including the services of domestics, and expects the rent of Livres 2 bn. to re-start the process the following year once again.

In summary, all classes are restituted into the monetary and other position, including stocks, that they had at the outset after a full round and after having been all fed and entertained throughout the year (to a greater or lesser extent).

As already mentioned, Quesnay, of course, knew about the "quart état" as part of the cl. productive and of the cl. sterile,[32] but he does not go into the internal relations within these two classes, i.e., between farmers, miners, foresters, etc. and their workers or between owners of manufacturing plants, handicraft firms, transport agents, or merchants and their workers. In fact, the quart état or the working class does not appear in the tableau at all, neither as recipient nor expedient of goods or services or money payments. It should also be noted that Quesnay, contrary to Marx's reproduction schemes, does not distinguish between a sector that produces goods for consumption and a sector producing goods for investment.[33]

30 E.g. *Quesnay* in: *Cartelier* (2008) page 96, page 166, page 216.

31 This is also referred to as "la classe des propriétaires du revenue" *Quesnay in: Cartelier* (2008) page 220).

32 See Footnote 20 on page 207.

33 If he had, then both sectors should have been present in the cl. productive as well as in the "cl. stérile".

Quesnay's macro transmissions

Quesnay's macro transmissions indicate the sources of the flows in the tableau, connect profit-making and employment-generating spending and imply a certain complementarity between the productive economy and the wealth economy. As quoted previously, Quesnay's tableau shows "l'ordre de la distribution des dépenses et de la reproduction du revenue par la dépense *même* du revenue"[34] and, in effect, as just seen, all seven flows of "dépenses" were not only financed by what flew to the respective class before, but also reproduce the prior starting positions for the following round. Coming from the basic insight "il ne peut y avoir d'acheteur qu'autant qu'ils sont payés eux-mêmes pour pouvoir acheter…",[35] Quesnay sets up a circular financial flows-structure, which is built on this requirement and closes all circuits. Other wealth – wealth from abroad, credit, and fiat-wealth – is not necessary to close the circuits of the tableau.

If we apply the M–C–M' or C–M–C'-scheme, the rent-"dépenses" by the cl. productive to the cl. des propriétaires (flows 1, 2), the "dépenses" by the cl. stérile to the cl. productive of Livres 1bn. (flow 3), and the dépenses of Livres 1bn. by the cl. productive to the cl. stérile for processed goods and services are, from the perspective of the respective dispatchers, investive M–C-spending. From the perspective of the recipients, they are C–M'-collections or revenues following investive outlays. The "dépenses" of Livres 2 bn. for food, wine, etc. by the cl. propriétaires and by the cl. sterile to the cl. productive are consumptive M–C'-spending (flows 4, 7). The same applies to the "dépenses" of Livres 1bn. by the cl. des propriétaires to the cl. sterile for processed goods and services for consumption (flow 5).

Under the distinction between employment-generating and sterile spending, of the Livres 7 bn "dépenses" of a year in the tableau, the Livres 2 bn. of investive M–C-payments (from the cl. sterile to the cl. productive for raw materials and from the cl. productive to the cl. sterile for processed goods and services of each 1 bn. Livres)[36] are employment-generating spending. Equally, the payments of Livres 3 bn. of consumptive M–C-payments are employment-generating spending (from the cl. des propriétaires to the two other classes for agricultural products and processed goods and services and from the cl. sterile to the cl. productive for agricultural products). The tableau's final flow in are the rent payments of Livres 2 bn. from the cl. productive to the cl. des propriétaires. Assuming that they have no component rewarding the erection of buildings, improvements, repair, and maintenance and they would, thus, be "pure" sterile rent. That, as Quesnay's tableau exemplifies, does not exclude

34 *Quesnay in*: *Cartelier* (2008) page 190, emphasis added.

35 Including the Livre 2 bn. of rent and the "avances annuelles" of the cl. stérile, which waits in cash as stocks to be transformed into flows." *Quesnay* in: *Cartelier* (2008) page 345.

36 After "carve-outs", as we view it. See on page 123 et seq. and 351 et seq.

that they are highly beneficial and integrative. Without them, the cl. des propriétaires could not keep the wheal turning so generously as it does. It takes the royaume agricole's "revenu net", consumes it for luxuries and *immediately puts it fully back into the productive economy*.

Surplus or profit in the tableau is sufficient to nourish all three classes. The cl. productive begins the years with annual "avances" in kind and Livres 2 bn. and ends the year with them. During the year, it nourishes itself and draws some enjoyments, by consuming in kind a part of the difference between its gross produce worth Livres 5 bn. and the sold produce of Livres 3 bn. Equally, the cl. stérile, begins with Livres 1 bn. in cash and some "avances" in kind, consumes purchased agricultural products, say food and wine, but ends where it began, with Livres 1 bn. in cash and some "avances" in kind. Finally, the cl. des propriétaires begins with its land and a claim for the rent for the previous year and ends with them again. In between it has fully consumed the preceding year's rent, the "produit net". Hence, all classes in the tableau finish as they began; none has accumulated additional capital or wealth. The royaume agricole is neither shrinking nor growing; it is, as we have stated previously, a stationary economy, simple rather than extended reproduction.

Quesnay's cl. des propriétaires deserves special attention. As we already know, according to Quesnay: "Les propriétaires … ne produisent rien"[37], and: "les propriétaires sont utiles à l'état que par leur consumation…".[38] While it is quite true that the cl. des proprietaries does not produce anything, the most astonishing thing about it in Quesnay's tableau, is the marvelous fact that the cl. des propriétaires *immediately and fully* consumes its rental income. Whether by benevolence, forward guidance by a "dieu juste", decadent addiction to luxury, or for whatever reason, we do not know; but they do the right thing and fill the gap by this maximum generous consumption, thereby vindicating the toil of the cl. productive and of the cl. stérile, allowing them to close their circuits. *Quesnay's wealth owners, in fact, do almost exactly the opposite of what normal wealth owners do.* Normal wealth owners even shift employment-generating revenues into sterile investments; Quesnay's wealth owners immediately and fully re-inject sterile wealth revenues into the productive economy. There is no flight of Quesnay's wealth owners from the productive economy by acquiring wealth assets, not of sovereign debt, not of stock, firms, gold or other valuables, not even of land and of existing country side chateaux. Quesnay's wealth owners also do not

37 *Quesnay* in: *Cartelier* (2008) page 3.

38 The quotation continues: "…si leurs revenues n'étaient pas distribués au professions lucratives, l'État se dépeuplerait par l'avarice de ses propriétaires injustes et perfides" cited after *Cartelier* (2008) page 36. Providing land is immensely important from a value-in-use perspective and it is remarkable that Quesnay, writing in an absolute monarchy and handing over his work to the king, misses the opportunity to mention this contribution, at least in addition to their consumption.

speculate to seek capital gains. What will become a political request of utmost importance in Sismondi's, Malthus' and Keynes' thinking, the wealth owners in the organism contrived by Docteur Quesnay already silently comply with. This, the immediate re-injection of everything, which leaves the productive economy as a sterile "tribute" to wealth owners, together with the cl. productive and the cl. stérile also immediately spending the full amounts of their revenues in the productive economy, is the secret of Quesnay's circuits closure. In real life, unfortunately, a significant part of what moves in the sterile economy, stays there.

Disorder and growth in the tableau

Quesnay exposes the problem of whether sufficient "dépenses" can be generated to integrate and reproduce the capitalist spending flows, by showing that the problem is automatically taken care of. This built-in teleology or the *entelechia* in his tableau (or should we speak about *nomoi* or his *universalia in res?*) do, though, not forestall the possibility of deviations. Given that Quesnay, following the design of his theory, does not have a philosophy of history or a theory of economic evolution, such deviations must, yet, be perceived as disorder or like an illness. This is precisely why Quesnay tries to lobby and educate his classes to behave as they should behave.[39] The tableau not only shows how things are, but it is also a proscriptive plan for behavior.

Furthermore, it allows us to reflect on the possible origins and consequences of disorder and on possible remedies thereto: If the cl. des propriétaires were, against Quesnay's guidance, to increase the rent payable by the cl. productive to Livres 3 bn. (and infringe upon what Quesnay considers the fair "interest" of the cl. productive on their "avances primitives"), then the cl. productive would lose Livres 1 bn., which it could spend on maintenance, repair and spare parts and its "avances primitives" would degenerate. The productivity and output of the cl. productive would, accordingly, soon fall. Of course, it could also only buy less from the cl. stérile. Alternatively, the cl. des propriétaires might buy luxury goods and services from suppliers outside of the tableau, e.g., from abroad. This would diminish the money flows to the domestic cl. stérile who would then have to cut back its "dépenses" to the cl. productive, whose reduced income would lead to reduced production and consumption of the cl. stérile. Disturbances can also originate from the sphere of the cl. productive. Natural catastrophes or war can either reduce or destroy harvests or seeds needed for the years to come. Cattle needed for breeding can be eaten up, thereby bringing the production down and leading to the human population's undernourishment.

If the cl. des proprietaries were to engage in war, financed by a reduction of food or luxury consumption, conversely, this might only lead to a repartitioning of his purchases from both the cl. productive and the cl. stérile. The cl. des proprietaries

39 See footnote 8 on page 204.

would possibly buy fewer agricultural luxury consumption goods, but likely more simple food for soldiers from the cl. productive. It would also likely buy additional armament, and have more castles and ships, etc., built by the cl. stérile, but would purchase less silk, furniture, artwork, and domestic services from it. If there is an aggregate increase of "dépenses" to the cl. stérile, then it should, in turn, increase its "dépenses" to the cl. productive for raw materials (which may thereby be enabled to pay higher rent to the cl. des proprietaries). The tableau, thus, not only allows for changes between a more Spartan or Puritan and a more luxurious or decadent or catholic lifestyle, but also for aggregate overall growth, provided this can be financed from available stocks of wealth, credit, or from fiat wealth. The economy may grow and re-settle in "sync" at a higher output level.

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Quesnay's tableau gives us several important introductory insights upon circuit closure. *First*, it teaches us that subjecting the biological and cultural reproduction of mankind to an economic system, even one subjected to the profit criterion (the M–C–M'-requirement), *can* function like an integrated organism *if* certain numeric preconditions are met. *Second*, he shows that the value-in-use-side poses no unsolvable problem. Frictions might arise if the cl. proprietaries had no land, or no good land at least, or if the cl. productive or if the cl. stérile were incompetent or unwilling to produce the primary goods or processed goods or services in proper quality and quantity in relation to the effectual demand of the other classes. (This is basically in agreement with Marx's reproduction schemes, in which the value-in-use-dimension appears to be even more of a concern.) The *third* requirement – the integration must be achieved through exchanges that fulfill the demands of the M–C–M'-logic, hence, enabling profit – is stickier. This was, in fact, the crucial hurdle for Quesnay. How can the circuits close and, simultaneously, profit be made? Or, more specifically, how can the three classes make "dépenses" to each other, which equip each other to make their "dépenses", yet still allow them all to make profit?

We studied what his numbers and his numeric narrative implied on how profit-making and circuit closure could coexist. The finding can be expressed in sober terms in the following way: If no additional money arrives, to enable circuit closure, then those who generate new value-in-exchange *in the form of produce* must give the same amount of value-in-exchange *in the form of money* to somebody who will use the money received to buy produce in its full amount therewith.[40] For the "revenu net" (in money form) to be able to buy the "produit net" (in kind, in commodity-

40 "Quoi qu'il en soit, le point essentiel est l'existence d'un flux de paiements qui ne sont pas représentatif d'un coût... Pour que se forme un revenu monétaire net au plan global, il est

form) money must, thus, travel from the value-in-exchange-creating class to the vindicating and rewarding classes that buy the produce in the very same amount. This is quite similar to the producing class having to buy the produce from itself, except for the being one change of money ownership in between. Quesnay uses legal property relations, the owner-power of the cl. des propriétaires over their land to justify this critical transfer rent-payments. Thereby, his solution comes mostly from the land-owning and rent-absorbing (but not producing) cl. des propriétaires, which, very gratefully, if unproductive, turns out to be a class of very hungry big spenders.[41]

Quesnay has posed the eternal question of macroeconomics of capitalism in the paradoxical way of presenting it as being solved for eternity. When he gave his answer, he reverted from a high-concept-question to a rather naïve pre-ordained numeric solution,[42] which was metaphysical and premodern methodologically. Of course, Quesnay's answer was, unfortunately, false in substance: Landowners (or sterile wealth owners in general) do *not* save capitalist circuit closure by using their sterile revenues for consumptive employment-generating spending. Quesnay was still happy with his answer, not only because it pleased his organistic theoretical bias, but also because it supported corollaries which pleased his political preferences in favor of capitalist agriculture.[43] Sismondi, Malthus, Keynes, Luxemburg, Kalecki, and others adopted Quesnay's modern and systemic question, but freed

nécessaire qu'une partie de la dépense consiste en l'anticipation de ce revenue net." (*Cartelier* (2008) page 45, italics in the original).

41 Marx would later attack Malthus for allowing for the existence of such a class, see on page 257 et seq. There is, actually, a very similar structure in Marx's work: In Marx, the working class is the class that solely generates new value-in-exchange, a sub-component of Quesnay's classe productive and of his classe stérile, if You like. The value-in-exchange generated is appropriated by the capitalist class by legally acquiring ownership of the produce, which results, as in Quesnay, from owners' power and social rules (the inventories remain in the ownership of the capitalists even after having been processed by the workers). Marx's capitalist class, though, receives the new value-in-exchange, the surplus, not already as monetary rent (as in Quesnay), but still in kind, as produce C'. Therefore, the capitalists has to go through an additional stage to enable themselves to assume the role of Quesnay's classe des propriétaires. They must – paradoxically – sell their produce C', in particular its part representing the surplus (C'-C), which they can only sell to each other, in order to enable themselves to buy just this surplus-part C'-C (or M'-M) from each other.

42 He had access to statistical data and must have adjusted them so that they matched, either by trial and error or some kind of interpolation.

43 Marx saw the physiocrats as preparing the French Revolution. Particularly, he saw *Turgot* as a radical "bourgeois-minister" who "preluded the French Revolution". With all their "false feudal appearance, the physiocrats worked hand in hand with the encyclopaedists." (*Marx*, Theorien über den Mehrwert, MEW 26.1 page 24, 37, translated by the author).

themselves from his methodological and substantial limitations in trying to answer it.

Section 3. Smith: An invisible hand over suppliers and customers

Because he made no progress beyond Quesnay in the matter of circuit closure Adam Smith plays no major role in this book. He is still considered at some length for two reasons. First, unlike most economists today, being a man of great historic and philosophic knowledge, he was able to show what freedom and liberty (or, in our words: owner power) did in the economic realm; insofar he stands in the great natural law tradition of, e.g., Hobbes, Pufendorf, or Montesquieu, which already guarantees his historical longevity. In particular, he described how owners' power transforms into an abstract discipline of economic liberty, which not only keeps the greed of merchants within bearable limits, but also erects a benevolent automatic general motivational and steering system that favors productivity, consumer orientation, economic growth, and prosperity. Second, Smith stood between Quesnay and Ricardo with regards to the problem of circuit closure. Quesnay had seen the problem and he had set up the just introduced model, which is has remained valid for reflecting on it up to today. Ricardo also saw the problem, but used what he falsely called the "Law of Say" to pseudo-solve it.[44] Smith found himself between the two. He either did not see the problem or somehow considered it as solved; at least it played no relevant role in his work. Note that Smith's famous "invisible hand" was *not* meant to be a solution to the problem; the "invisible hand" was only meant to solve another, smaller problem, as we shall see.

Smith, as an economist, supported the physiocrats. Smith spoke of their work with admiration as the "agricultural system".[45] When Quesnay and the physiocrats had been pro-economic liberty, such economic liberty was, to a good deal, a conscient means to play merchants off against other merchants, about whom

44 We shall give three interpretations of, what we will call "Ricardo's Law of Say" below. Two are false statements while the third one is a valuable reformulation of the question the "law" is supposed to answer.

45 *Smith* (1776) page 1–3. As Smith says, all major European powers had adhered to the mercantile system since at least the colonization of the Americas, while the agricultural system (the physiocrats who called themselves "les économistes") would have "never been adopted by any nation and… exists only in the speculation of a few men of great learning and ingenuity in France." (Book IV chapter IX, volume II page 157). Smith rightly mentions that Egypt, Indostan, and China (and even Greece and Rome) often pursued policies akin to the agricultural system several times (Book IV chapter IX, volume II page 173–181). *Leon Walras* noted that the word "physiocray“" contains the Greek word for rule. It means "gouvernement naturel de la société" (*Walras* (1874) page 3).