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PHYSIOCRATIC ECONOMIC ANALYSIS

by

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P R E F A C E

The writings of Francois Quesnay and his disciples should be of exceptional interest to all students of both theoretical and applied economics, especially to those faced with the problems of under-developed economies. Capitalistic modes of production, in both agriculture and industry, were just beginning, at the mid-point of the 18th century in France, to take root and give promise of a potentially great increase in wealth. The physiocrats began with a detailed factual study of the new techniques of production, which they conceptualized into a theory of capital and its reproduction. On the basis of this theory, they tried to ascertain the conditions and policies that would be most favourable to the growth and development of emerging Capitalism. The experience of the English agricultural revolution provided a ready-made model for the agricultural sector, and several of Quesnay's disciples, notably Baudeau and Turgot, were quick to apply the same principles of political economy to industry.

Quesnay and company took it for granted that the New Economic Order would be directed by private enterprise. Moreover, they were votaries of what came to be called "economic liberalism", a persuasion propagandized by their slogan "Laissez faire, laissez passer". The physiocrats had little confidence in government paternalism of the

mercantilist-kind. They were of the opinion that vigorous capitalistic institutions which had, or were about to become established, would quickly dominate the economic scene, if only they were permitted an unobstructed field. In any event, bureaucratic control was so uncertain in their day that it was undoubtedly best to reduce government interference and planning to a minimum. None the less, they elucidated certain economic principles that must always be adhered to, no matter what the political and social organization.

Especial emphasis has been placed on Quesnay's concept of intra-sectorial equilibrium as it was depicted by his tableau économique. After the criticism of mercantilist policy of his forebear Boisguillebert (1646-1714), he attempted to show with the help of this analytical device that the growth of each sector of the economy must be proportional to that of every other sector, and that to force the growth of any individual part of the economy, as did the mercantilists for manufactures and commerce, would disrupt the whole economic equilibrium. The physiocrats were more keenly aware of the problem of proportional sectorial development and growth than any economists before the advent of modern input-output analysis.

This particular use of the tableau-analysis has not, to the author's knowledge, been examined by any other student of physiocracy. It is hoped that modern economists, following similar lines of inquiry, will therein find

insights that will aid their own investigations.

The author has also given special attention to several other neglected aspects of physiocratic analysis - e.g. Quesnay's "utility" theory and his demand schedule explanation of rent. However, an attempt has been made to give at least an outline of every major part of the physiocratic system, fitting these neglected aspects into the entirety. Due attention has been given to the progenitors and successors of certain kinds of analysis used by the physiocrats in order that they might be seen within the context of the development of economic analysis.

In his documentation the author has tried to limit his references to three sources: Mirabeau's Philosophie Rurale (Amsterdam, 1764), Eugene Daire's collection of selected works of several of the more important physiocrats Les Physiocrates (Paris, 1846), and the collected works of Quesnay in Francois Quesnay & Le Physiocratie (Institut National D'Études Démographiques, 1958). This gives reference to works that are likely to be accessible to the average reader. Moreover, it is the conviction of the author that these works contain the most valuable part of physiocratic economic analysis. The physiocratic journals are chiefly significant for their extensive discussion of economic policy and technology.

The development of this thesis has been greatly influenced by two previous students of physiocracy.

Several valuable insights have been gleaned from Karl Marx's study of the general meaning of Quesnay's theory of capital and circulation, presented in Theories of Surplus Value. The author has deferred, in many instances, to Professor Schumpeter's judgment on the criterion for doctrinal evaluation and the physiocrats' place in the history of economic analysis.

Acknowledgement is gratefully made to Professor Alex. L. Macfie, Professor Sydney G. Checkland, and Professor Thomas Wilson for suggestions, criticism and encouragement.

I am especially indebted to the authoritative criticism of Dr. Ronald L. Meek who has followed the detailed progress of this thesis. The reader will understand that, as is always the case, intellectual filiation occurs on so many planes that it is impossible to do justice to previous authors or personal critics.

The development of this thesis, however, was done in my own way and its inadequacies are my own responsibility.

G. A. R.

Glasgow University,
Spring, 1959.

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INTRODUCTION

The physiocrats are a particularly interesting study in the history of economic thought, because, in a sense, they constituted the first scientific school of economics. This claim might be made on the basis of the great refinement and coherence of their theory and the wide range of economic phenomena they exposed to theoretical scrutiny. They defined certain analytical categories more precisely than any of their predecessors and correlated all economic fact with a general theory of equilibrium. The measure of their achievement cannot be judged by the categorical truth of their doctrines, but rather, by the breadth and theoretical articulateness of their copious works. Admittedly, few theorizers have proclaimed doctrines that have so outraged the common sense of contemporaries and successors alike. Indeed, some earlier economic writers and contemporary critics were first-rank thinkers, and individual portions of their work were of better quality than the comparable physiocratic theory. But few devoted more than a small part of their time and energy to economic studies. Whereas, the doctrines of Francois Quesnay, the Master of the physiocratic school, were embraced by at least four other economists who might have made their mark on their own merit, several of whom gave most of their time for a number of years to the study of the Science Nouvelle. Moreover, many lesser adherents made pedestrian

contributions, particularly studies in farm technology which were published in the several physiocratic journals. The very mass of physiocratic literature, which synthesized historical, institutional, statistical, and theoretical studies, was enough in itself to incite a clamorous intellectual stir. The paramountcy of the physiocrats was acknowledged by the appellation Les Économistes, accorded them both in acclaim and derision.

This tremendous burst of theoretical speculation could not, of course, have flourished were it not for the substantial contributions of anticipators, and as well, an intellectual climate receptive to abstract ideas. The physiocrats had at least a passing acquaintance with most previous economic literature. From the mercantilists they inherited a fair stock of analytical tools, but more important, these early economic writers fostered the growing conviction that the stage upon which the human drama is played was built of economic material. Both the exigencies of power politics and the instability of the complexly-developing European economy, suggested that a closer study should be made of this economic basis of society. A modern reader should be surprised to find the physiocrats blaming poverty for the existence of vice, because this emphasis on economic causation was a comparatively new perspective. In addition to the "practical" motives for economic study, a peculiar fascination with knowledge for its own sake was much in evidence during the 17th and 18th centuries. The members

of the Royal Society personified the spirit of pure science in that most of their investigations had no immediate mundane application. From several men associated with this scientific circle, the physiocrats acquired significant ideas, particularly the statistical methodology of John Graunt, Sir William Petty and Charles Davenant. And another intimate of this society, John Locke, gave them instruction on the ordering of knowledge. Quesnay himself presented both an abstract turn of mind, as displayed by his imaginative medical treatise, and the practical bent of a political reformer. But the purely scientific spirit of the Age of Reason can hardly be over-emphasized. Neither the natural scientist nor the many noteworthy economists of the time would have been so prolific had it not been for a dilettantish but appreciative public, willing to applaud these esoteric performances.

It is indicative of the physiocrats' scientific acumen that they were the first to recognize the merit of the two most capable economic theorists up to their time, Richard Cantillon and Pierre Boisguillebert. These two authors had a particular affinity to physiocracy in that they had ideas that might have suggested the unique productivity of agriculture, the doctrine that became the physiocrats' stock in trade. We shall have occasion to discuss Boisguillebert at length, because he had a great influence on the physiocrats' concept of general equilibrium, which was undoubtedly one of the more significant

aspects of their theory. A review of this growing awareness of how things economic hang together, gives insight into the way the development of economic theory is carried along by the drift of social and intellectual currents --- a proper study for historiography.

Though this thesis will in the main be an attempt to evaluate the physiocrats' analytical apparatus, it will be necessary to keep in mind the historical circumstances of their day in order to explain the actual content of their theory. For instance, it might be argued that Boisguillebert did not explicate a complete theory of fixed-capital for the simple reason that technology did not generally require a large capital establishment. But the primacy of Capital was developing in both industry and agriculture. Quesnay's theory of fixed capital developed naturally from his study of the agricultural revolution, which he witnessed at second hand from the works of various agricultural writers who described the English experience, and which he observed personally in scattered areas of France. This theory of capital was, in turn, adaptable to general application. Baudeau and Turgot applied it to capitalistic organization which was developing at a rapid pace in manufactures. Though an individual economist may or may not have had the intuition to catch sight of the evolutionary movements which were transforming society, all the more perceptive 18th century economic theorists had ideas in common that reflect the structure of a pre-industrial economy. As

an example, Locke, Boisguillebert, Cantillon, and Quesnay, all agreed that the landlord was the most important consumer of goods and services from the non-agricultural sectors, and, for that reason, the economic models they had in mind would look very similar in composition and proportion.

This critique of physiocratic analysis assumes that physiocracy is in the main stream of economic thought and of the same order of rationality, and therefore, allowing for historical and institutional change, it should be possible to evaluate it by the same standards of criticism that one would apply to modern theory. The seventeenth and eighteenth century economists posed problems that still bother moderns and had already established some of the patterns that economic theory was to follow. Sir William Petty and his followers had made an attempt to quantify economics. Boisguillebert had suggested a theory of general equilibrium, and the Italians were working on value theory. These early economists had a truly scientific method, i.e., they attempted to reduce economic fact to manageable categories and correlative relationships. It is sometimes suggested that the 17th and 18th century economists were still thinking in such a primitive fashion as to defy logical scrutiny and criticism. To the contrary, it will be the contention of this thesis that at least a few of the physiocrats' predecessors, and they themselves, were theoretically articulate, and, further, that they had at least a few insights that

might have benefited some economists of a more recent vintage, were they considered seriously. Boisguillebert, for example, envisaged a multiplier within a framework of general equilibrium, which was well conceived, at least as far as it went. And, what is important, his theory was communicable, insomuch as it filiated the physiocrats' ideas on these subjects.

In a way, it is hardly surprising that these first "scientific" economists anticipated many of the turns that the future development of economic theory was to follow. They borrowed their basic philosophic hypotheses from the mathematics and physics of their day and, in the main, pure economic theory is still following the same patterns of thought. They beheld before them everything that could be seen from this vista, and all economists, ever since, have been trying to come to a better understanding of this same scenery.

Some critics seem to feel that there is something so odd about certain physiocratic notions --- specifically, the unique productivity of agriculture --- that this subject is beyond all ordinary criticism. Actually, the assumptions upon which this doctrine is based are fairly explicit, and most of the conclusions follow in logical order. We shall be forced to conclude that many of these assumptions were mistaken, but that should offer us no embarrassment. Although there were historical reasons for stressing the fact that agriculture generated a larger

income than any other sector, it did not follow per se, in the way the physiocrats theorized, that agriculture is the only source of income and supports all taxation. Some of their contemporaries criticised these doctrines for much the same reasons as we would today, and so, though it is to be admitted that pre-industrial conditions moulded the form of this theory, we should not make things difficult for ourselves by a supposition that physiocracy is a special order of abstraction that can be only explained by some distant train of logic. A modern economist might consider the Ricardian theory of rent completely amiss, but he still finds it valid to evaluate it by his own logical canons. It should be possible to come to some understanding of the unique productivity doctrine, insofar as it is ever possible to understand a line of reason based on assumptions with which one disagrees.

Les Économistes and their precursor Boisguillebert looked upon consumption as the motivating force that drives the economic machine. For this reason their theory of aggregate demand should be considered a unifying basis of their system. Some of their freakish notions about the unique productivity of agriculture and their unfriendly attitude towards credit institutions were apparently inspired by eccentric interpretation of aggregate demand considerations. They even had an utility theory of exchange value which was used to explain consumer demand. A review of this body of theory might be mistakenly construed as an attempt to interpret physiocracy in terms

of modern theories of economic fluctuations. No one would ever go so far as to credit either Boisguillebert or the physiocrats with an anticipation of modern theories of employment. Neither was inclined to emphasize the reproduction and accumulation of fixed capital as an important element of aggregate demand, and the former made only a superficial examination of its productive role, possibly because he could not imagine a technological situation even in agriculture, in which intensive investment in Real Capital would produce a significant increase in economic product. However, notwithstanding this relativity of doctrine to specific historical situations, it is sound to examine old doctrine in the light of modern theory. It might be argued that we are better prepared to examine sympathetically these "consumptionist" ideas now that similar theories have become fashionable, since many early commentators on physiocracy were not able to understand them at all. In any event, for those who find it incredible that an 18th century economist should have an articulate theory of aggregate demand, it should be pointed out that this type of analysis found a few theoretically skilled proponents throughout most of the nineteenth century and that several men representing different traditions advanced systems similar to that of Keynes about the time the General Theory was published.

The practical economist may be inclined to lose patience with long dissertations about the seemingly pedestrian

insights of the founders of our science. Some may think that what the physiocrats had to say about the agricultural entrepreneur and fixed-capital must have been understood by all the more progressive farmers. But the fact remains that no one found reason to celebrate on the capitalistic development of agriculture until it was already quite advanced. Scientific discovery is usually no more than the systemization of facts that have already become commonplace. The difficulty of breaking old preconceptions and establishing a new order of thought is shown by the great length of time that a theory can remain within what appears to be easy reach before its significance is finally realized. At the very least, we might hope to gain from this study some insights into the sociology of economists, though it may make us uneasy about our own recondite truths.

We shall give the first chapter to a survey of the pre-physiocratic economic analysis so as to place physiocracy within its doctrinal context. Separate chapters will follow on the three factors of production: "The Unique Productivity Doctrine", "Capital" and "Labour". We will devote a chapter to the tableau économique and another to taxation and economic policy. And, finally, we will conclude with a brief examination of the influence physiocracy had on a few selected aspects of succeeding theory.

CHAPTER I

THE PRE-PHYSIOCRATS AND BOISGUILLEBERT .

As the eighteenth century wore on, Political Economy acquired the status of a recognized body of ordered knowledge. It was becoming a reputable study for first-rank thinkers. Practical controversy over economic policy during the previous two hundred years had prompted inchoate pieces of theory that were beginning to form a composite picture. And the complexly-developing economic structure was further widening the scope of inquiry. The period witnessed several attempts to synthesize these ideas into a unified system - by Richard Cantillon, the physiocrats and Turgot, Sir James Stewart, and, finally, the most successful of them all, Adam Smith with his Wealth of Nations. The physiocrats must be observed within the sweep of this intellectual current to be seen in proper perspective.

The quality of economic theory had improved appreciably during the two hundred years that preceded the publication of Quesnay's Tableau Economique. One has only to compare the unproven opinion of John Hales (A Discourse on the Common Weal, 1549) or Lewis Robert (The Treasure of Traffic, 1641) with the comparatively sophisticated works of Charles Davenant, John Locke, John Law, and Pierre Boisguillebert, written around the turn of the 18th century, to perceive the progress made in economic analysis. The development of a

few of the more tangible analytical tools, used by the physiocrats, can be traced with some confidence. Gregory King's statistical demand schedule was adopted by a series of successors, most notably Davenant, before it was finally passed on to Quesnay, who used it with brilliance. The physiocrats read a fair selection of mercantilist literature, and so one can assume they got their ideas on the balance of trade directly from that source, although their own handling of the concept hardly did credit to their precursors. And, of course, Cantillon and Boisguillebert can almost be considered progenitors of the physiocratic system. But apart from these two authors, the physiocrats made several important breaks with all previous economic theory, with what Mirabeau stigmatized as the systeme mercantile. And so, in this negative respect as well, the mercantilists gave the physiocrats their bearing, in that they provided a methodological tradition against which their successors revolted and in doing so learned a good deal. It will be profitable to consider this mercantilist literature briefly, as this will enable us to see certain physiocratic peculiarities in their true light. This procedure will also give us the opportunity to review a historical situation that was about to undergo such an obtrusive change as to demand from the physiocrats a revolutionary reappraisal of basic economic preconceptions.

The term "mercantilism" aptly characterizes most of the more articulate economic theory written before the advent of physiocracy and classical economics. Many of these economic writers had a personal interest in commerce and manufactures. As members of a rising social class they were necessarily under a greater onus to spill ink in their own behalf than the landlords or farmers. Besides, even the disinterested were fascinated by this emerging enterprise that seemed to portend much for the future. The mercantilists noted a marked progress in technology and rise in the standard of living and naturally concluded that commercial enterprise had something to do with it. They sought the stimulus to the increase of wealth in the process of exchange. They conjectured that the merchant facilitated trade and provided a stimulus to production by acting as an intermediary between producers and consumers so as to broaden the market. These early economic writers were inclined to regard consumption as the prime mover of the economic process, but in that vague sense that most people do who have never been exposed to sophisticated reasoning on the subject. They had little to say on the motives for consumption and only an uncertain consciousness of the formation of income.

The mercantilists had great hopes for economic expansion. There was a pent-up demand for goods and services for which the masses had a ready need, and the best of existing technology could produce a tremendous

increase in output if it were only generally adopted. The greatest bulk of mercantilist literature was devoted to the improvement of technology and the establishment of new industries. Europe was undergoing an agricultural and commercial revolution and every one knew it.

This contemplated increase in output drew attention to the role of productive factors, but, necessarily, all theory was tailored to fit the pre-industrial economic structure in its contemporaneous stage of development. The mercantilist theory of production was based on the time-honoured thesis that land and labour are the sources of all wealth. This is the rationale of Petty's famous attempt to find a natural par between land and labour. Most of these early economists had the idea that these two original factors are aided by two requisites of production, "art" and "stock". Petty proposes that "riches" are the

1. *Professor Heckscher has propounded the thesis that the mercantilists assumed "a static condition of economic life." He says that the static view was that "there was a fixed quantity of economic resources in the world, which could only be increased in one country at the expense of another." Hence, "the commercial wars carried on without interruption from the end of the 17th century down to 1815".*

Eli Heckscher, Mercantilism (London, 1935) Mendel Shapiro translation, V.II. pp. 23-4.

We will not be able to take up a controversy that has minor relevance to our argument, but for those who are interested in the opposite thesis, that the mercantilists were thinking in terms of an expanding economic horizon, see: E.A.J. Johnson, Predecessors of Adam Smith (London, 1939) and the pertinent sections of Joseph Schumpeter's History of Economic Analysis (New York, 1954).

"results of land, art, labour, and stocks which produce them."² It is difficult to determine what clarity of insight such cursory statements may represent, but, to the extent they are explained, their authors obviously had in mind a different sort of economic organization than we would assume today. Their orientation is formulized by their use of the concepts "stock" and "art". They had not yet worked out an explicit theory of the physical means of production ("real capital"). They looked upon stock only as monetary capital, though it was seen to play a role in both production and commerce. They meant by "art" the degree of technological improvement or "know how".

Now, it is important that the reader should visualize this economic model, in regard to which economists were selecting their facts, if he is to appreciate the revolutionary perspective of the physiocrats. The characteristic industry that the economist beheld and reasoned about was artisan manufacture, domestic industry, and the factories of owner-entrepreneurs, of which the latter were few and usually small. Corporate organization was rare except in finance and commerce and a few public schemes. Though relatively large scale enterprize had appeared in Italy in the 14th century and in England in the 16th, capital intensive production was not prevalent

2. *William Petty, Economic Writings of Sir William Petty, Edited by Charles Henry. (Cambridge, 1899), p.81.*

anywhere, except perhaps in agriculture, until the first few decades of the 19th century. For that reason, economists assumed that capital was mainly important in its monetary aspect for the financing of commerce and the purchase of labour and materials needed by manufacturers. The characteristic manufacturing unit used primitive and inexpensive machinery and made only a nominal investment in wage-labour and materials, and so the recompense of the master artisan was conveniently regarded as a superior wage owing to the expense of his apprenticeship. Few found reason to stress the fact that investment in physical plant would require a profit commensurate with its value.³ The significant thing is that no one before Quesnay theorized that wealth could be appreciably increased through intensive investment in real capital. Except in agriculture, the

3. Cantillon probably made the most explicit statement on this subject previous to Quesnay in his famous comment on the three rents: "It is the general opinion in England that a Farmer must make three Rents. The principal and true Rent which he pays to the proprietor, supposed equal to the value of the produce of one third of his farm, a second Rent for his maintenance and that of the Men and Horses he employs to cultivate the Farm, and a third which ought to remain with him to make his undertaking profitable".

But he goes on to say: "The assumption I shall make in this enquiry as to the circulation of money is that the farmers make three Rents and spend the third Rent on living more comfortably instead of saving it. It is in fact the case with the greatest number of farmers in all Countries."

Richard Cantillon, Essay on the Nature of Trade (London, 1931).
Henry Higgs edition, pp. 122-3.

existing technology did not warrant this opinion, and those few writers who turned their minds to agriculture were individuals subject to the usual lag of preconceptions. Before Quesnay, economic growth was considered largely a matter of multiplying the existing types of economic units by employing more labour (an increase in population) and economic development was viewed as an improvement in the state of the "arts". The latter sort of amelioration usually meant an increase in labour productivity or more effectual industrial organization, the sort of thing Adam Smith had in mind when he talked about the division of labour. This idea occasionally embraced external economies such as improved modes of transportation or advanced credit institutions.

According to the opinion of the time, the main factor limiting economic progress was the availability of cheap credit. This was supposed to be the key to Holland's success in commerce and manufactures. The English commercial classes, particularly, saw no end of profitable projects, provided that credit could somehow be mobilized. On the basis of this assumption, economic policy was given a singleness of purpose that can only be compared with the post-Quesnayian preoccupation with the accumulation of Real Capital. Since the rate of interest was thought to be mainly a function of the quantity of money, those who theorized on the subject saw two means for achieving this end: an export surplus, or, as another

possibility, a banking system which could make better use of the precious metals at hand.

In its general intent, the typical mercantilist programme for an export surplus can be explained with a fair degree of confidence. Though the meaning of the earlier mercantilists may be obscure, as E.A.J. Johnson has pointed out in his Predecessors of Adam Smith, in some general sense they identified the importation of precious metals with the mobilization of mercantile capital. The later advocates of this programme are more explicit. Briefly, they reasoned that the rate of interest was in the main a function of the quantity of money, and so, a favourable balance of trade, at least in the short run, would reduce the interest rate and stimulate economic activity.⁴ In any event, it is not our purpose to make absolutely binding generalization about mercantilist literature. We only want to make the point that some of the mercantilists, at least the later writers, were intelligible monetary theorists. (Few mercantilists if any actually confused money with wealth.)

4. *Not all the pre-Classical economists used this particular argument to favour an export surplus, though it is the most common. David Hume thought inflation was desirable in itself to the extent it redistributed income at the expense of real wages and thereby forced greater labour efficiency and increased the profit margin.*

And then there were those who did not agree that a favourable balance of trade could exist over a period of time in the face of counteracting movements. The term "pre-Classical" might be better usage than "mercantilist", since there is nothing approaching an uniformity of doctrine during the two hundred years preceding Classicism, except to the extent that most economist of the time stressed monetary theory.

The physiocrats, therefore, rejected a meaningful theoretical tradition when they propounded their own system of thought in which money was never considered an independent causal factor in its own right. We might quote John Locke to illustrate the later mercantilist ideas on monetary theory. His exposal of the reasons for desiring an export surplus is more refined than most; still, this seems to be the train of reason that the other mercantilist had in mind:

Every man must have at least so much Money, or so timely Recruits, as may in hand, or at a short distance of time satisfy the creditor who supplies him with the necessaries of life, or his Trade. For nobody has any longer these necessary Supplies, than he has Money, or Credit, which is nothing else than the Assurance of Money in some short time. So that it is requisite to Trade that there should be so much Money, as to keep up the Landlords, Labourers, and Brokers Credit: And, therefore, ready Money must be constantly exchanged for Wares and Labour, or follow within a short time after.

This shows the necessity of some Proportion of Money to Trade: but what proportion that is, is hard to determine: because it depends not

barely on the quantity of Money, but on the quickness of its Circulation. The very same Shilling may at one time pay Twenty Men in Twenty days, at another, rest in the same hands One hundred days together⁵

And so, allowing for the velocity of circulation, Locke argues that the interest rate is fixed by the supply of money ("Scarcity of Money")⁶ and the demand for credit ("The want of Money being that alone that regulates its Price")⁷. The supply of credit, in turn, is determined by the individual's desire to hold money at any moment, which is decided by expectation of risk and profit on the capital market. And, the supply of money, naturally, follows the course of foreign trade.

For there being a certain proportion of Money necessary for driving such a proportion of Trade, so much Money of this as lies still, lessens so much of the Trade. Now it can not be rationally expected, but that where the Venture is great and the gains small (As it is in Lending in England upon low Interest) many will choose rather to hoard up their Money than venture it abroad on such Terms.

5. John Locke, Further Considerations Concerning Raising the Value of Money (London, 1696), pp. 33-4.

6. *Ibid.* p.6.

7. *Ibid.* p.6.

This will be a loss to the Kingdom, and such a loss, as here in England ought chiefly to be looked after: for we have no Mines, nor any other way of getting, or keeping of Riches amongst us but by Trade, so much of our Trade is lost, so much of our Riches must necessarily go with it: and the over-balancing of Trade between us and our Neighbours, must inevitably carry away our Money, and quickly leave us poor and exposed.⁸

Monetary theory par excellence!

The physiocrats, following Boisguillebert's lead, reproached the mercantilists for having confused money with wealth. This cheap criticism would not be worthy of notice were not the opinionated obtuseness of all theorists something to be wondered about. Les économistes argued that a persisting export surplus would in fact be a "give away programme", because wealth consists of the annual produce of a country and not the quantity of precious metal within its borders. Many mercantilists believed that a continued favourable balance of trade would eventually defeat itself by raising domestic prices.⁹

8. *Ibid.* p.14.

9. *Apparently, some did not believe there was such a thing as self-adjusting mechanism which could effectively regulate gold movements, but then, one must admit that there were quite a few skeptics on that score after the collapse of the international gold standard during the interwar depression.*

We might expect the physiocrats to have adopted this argument, but, strangely enough, their theory of money denied both Locke's theory of interest and the possibility of this sort of self-adjusting mechanism. They had the idea that money is a neutral contrivance that merely facilitates what would be accomplished by barter in a more primitive economy. They thought that an increase in economic activity need not require a greater quantity of money, or the lack of it cause deflation, because transactions would simply take place more rapidly, which in reality means a greater velocity is imparted to a fixed quantity of money. We shall have occasion to return to this subject from time to time. But, before we go on, it should be pointed out that insofar as the mercantilists had a theory of economic fluctuations, it almost entirely revolved around the expansion and contraction of credit. Though they often displayed a consumptionist predilection, they did not understand the nature of income formation, in the sense that the modern economist sees income fluctuating through the effects of the multiplier.

It might be taken for granted that those who were nurtured on the mercantilist ideas about monetary capital would appreciate the possibilities offered by banking institutions. Since the 16th century the increasing prevalence of commercial paper, and the clearing and deposit banks of Amsterdam, Genoa, Hamburg, and Venice,

had been exerting a growing influence on commercial life. The metalist tradition in banking that led up to the establishment of the Bank of England is so well known that it need only be mentioned. It is the English land-bank projectors that are of special interest to us, because, like the physiocrats, they were primarily concerned with the problems of the landlord and farmer, and, yet, they preached a very different Message of Salvation. The land-bank actually became a Tory plank when the establishment of the Bank of England was being contemplated. The agricultural interests could not see why they should not borrow as cheaply and as easily as the commercial classes; they would not accept arguments proffered to show the difference between bills and mortgages. Dr. Hugh Chamberland, an obstetrician by profession, was the first of a number of writers to revive the idea of a land-bank. He did not provide very strong theoretical support for this scheme, but the idea attracted several proponents of some theoretical stature, including Nicholas Barbon, John Ashgill, John Briscoe, and the notorious John Law.

* * * * *

John Law of Lauriston, the blacksheep from a family of Scottish gentry, a dandy, a ladies' man, a man who lived by his wit. And, yet, a piercing, scientific intellect that dwelt on unlikely problems and arrived at uncommon results.¹⁰ As a young man he had a

10. Most of the intimate information on Law's life is supplied by a single person who simply signed himself A Scottish Gentleman. Grey (?), Memoirs of the Life and Character of The Great Mr. Law and his Brother in Paris (2nd ed. London, 1721).

a passion for mathematics; he amused himself by trying to reckon his chances with dice. Apparently he made useful discoveries in the theory of probability. Young Law began to win games of chance with ungentleman-like regularity, and thereby supported himself in a grand fashion. In England, he fought a duel that resulted in the death of his opponent. He was charged with murder, but made an adventurous escape to Scotland. After the union of Scotland with England in 1707, he was forced to flee to the Continent. Unfortunately, for science and economics, he continued to apply his knowledge of probability to its most remunerative employment, which could hardly have encouraged him to make his discoveries known. His winnings made him one of the richest men in Europe. But his one great obsession was his banking scheme. He tried to sell the idea to any one with influence who would listen, to the Scottish Parliament, to the King of Corsica. Law's ideas finally gained the patronage of Philip, Duke of Orleans, who as regent during the minority of Louis XV was in extreme financial distress. His Banque Royale and Mississippi Scheme collapsed in 1720 after a spectacular speculative boom. This unfortunate event came to have a distorting influence on the future development of economic theory, far in excess of its real importance. It was wrongly assumed by many theorists that the failure of this unconventional bank per se disproved the theory on which it was based. Though Law himself was bankrupt by the crash, his swashbuckling career was given as evidence that the whole affair was nothing but a colossal swindle. Just to associate an idea with Law's doctrine was enough to get it thrown out of Court. The physiocrats and classical economists were given to producing a double fright by accusing both Law and the mercantilist of having taught that money was the only form of wealth, as though a Dark Age prevailed before the enlightenment of Real Analysis.

* * * * *

Law's performance as a monetary theorist brought to the surface two ideas that were implicit in the writings of many land-bank projectors: (1) that a proper banking system could control the value of money within a country's borders by varying its effective quantity; and (2) that monetary capital could be manufactured independent of the process of exchange.

That Law should have wanted to control the quantity of money is understandable. He was admittedly greatly influenced by John Locke's economic works. Like Locke, he thought it of no use to limit interest by law to the rate favourable to commerce, since its natural rate is affected by the current quantity of money.¹¹ An export surplus was to be favoured, because it would increase the quantity of money and reduce the interest rate. An import surplus to the contrary, would reduce available credit and thereby stifle the production of export goods; the only limit to this decline being complete economic disintegration. Changes in domestic prices could not be expected to limit international transfer of precious metals, because he assumed chronic unemployment, or, at least, that sort of under-employment that is always characteristic of under-developed countries :

The first Branch of Foreign Trade, which
is the Export and Import of Goods, depends on

¹¹. John Law, Money and Trade Considered with a Proposal for Supplying the Nation with Money (Edinburgh, 1707), p.20.

the Money. If one half of the people are employed, and the whole Product and Manufacture consumed; More Money, by employing more people, will make an Overplus to Export: If then the Goods imported balance the Goods exported, a greater Addition to the Money will employ yet more people, or the same people before employed to more Advantage; which by making a greater, or more valuable Export, will make a Balance due. So if the Money lessens, a part of the people then employed are set idle, or employed to less advantage; the Product and Manufacture is less, or less valuable the Export of Consequence less, and the Balance due to Foreigners.¹²

Law hoped to use a centrally-directed banking system to mobilize credit and stabilize economic activity. Briefly: This is his theory of money and banking. Law observed that the precious metals derived value both from their use as a commodity and use in exchange.¹³ This led

12. *Ibid.* p.14.

On unemployment in Scotland he says: "But Numbers of People, the Greatest Riches of other Nations, are a burden to us, the Land is not improved; the Product is not manufactured; the Fishing and other Advantages for foreign Trade are neglected"

op. cit., p.11.

13. *Ibid.*, pp. 10,72,73.

him to believe that the precious metals might be replaced by a cheaper material or convention.¹⁴ This is not to imply that he thought value could be given by fiat to a cheap material like printed paper or that monetary value could be increased by debasement. - "If raising or alloying the Money could add to its Value, or have a good effect on Home or Foreign Trade; then no nation would want Money".¹⁵ Credit had to be based on real wealth. Law argued against Locke's idea that the value of precious metals is established by convention. He pointed out that their value is determined by their supply and the demand for them, their use as a medium of exchange being no more a matter of convention than their use as a commodity.¹⁶ Law of course recognized that fractional reserve banking could extend credit on the basis of this monetary wealth. His explanation of deposit banking, like Cantillon's, was that credit increased the velocity of cash which banknotes represent by proxy; banknotes in effect settle more transactions than cash could by going from hand to hand, especially

14. Eugene Daire, Economistes Financeres (Paris, 1843), pp.609-611.

This volume contains reprints of most of Law's more important writings in French. It also contains most of Boisguillebert's works and so we will have occasion to refer to it in that connection.

15. Law. op. cit., p.101.

16. Daire, op. cit., pp.469-470.

since the banking system would utilize savings that might otherwise remain idle.¹⁷ But this sort of credit is limited by the available supply of precious metals. A retarded economy generally lacks this first requisite needed to forward production.¹⁸ For this reason he thought the only Salvation was to base credit on some wealth other than precious metals. He promoted the idea that land has a ready value that can actually serve the mobilization of credit better than silver - "Land may be conveyed by Paper, and thereby has the other Qualities in Money, in a greater degree than Silver".¹⁹ Commercial paper issued on rent values would have, he argued, all the attributes of money - i.e. transportability and divisibility to a greater degree than metallic money, and a real value that is less likely to fall than that of silver, since the quantity of the latter is being increased by mining, and since there is always the danger that some nation might abandon the silver standard, reducing the demand for it as a medium of exchange.²⁰ In addition this form of commercial paper would readily lend itself to monetary management, having all those advantages of a unconvertible

17. *Ibid.*, pp. 578-585. pp. 512, 513.

18. *Law says of Scotland*: "Credit that promises a Payment of Money, cannot well be extended beyond a certain proportion it ought to have with Money. And we have so little Money, that any Credit that could be given on it would be inconsiderable".

Law, op. cit., p.60.

19. *Ibid.* p.101.

20. *Daire, op. cit.*, p.515, 516.

paper standard.²¹ This definition of money was probably the most refined to that date; it has the merit of giving bank credit proper dignity by formally viewing it as a form of money.

What is important for our study, John Law and his fellow monetary theorists maintained two propositions which were first denied by Boisguillebert and the physiocrats and subsequently by most of the more influential economists of the 19th century :

(1) that the quantity of money affects output through the agency of the rate of interest;

(2) that commercial and real capital might be accumulated independently of individual decisions to consume less and save more.

The first proposition was denied by the physiocrats, because they thought money is a neutral mechanism which can facilitate any number of transactions, regardless of its total quantity. At the best, they did not look very deeply into the problem of interest. This proposition was rejected by the Classical Economists because, assuming full employment, their rigid interpretation of the quantity theory implied that an increase

21. Law argued that this form of bank money would not be lost through exportation and its quantity could be increased to the most desirable level :

This "Money is established that has no intrinsic Value, and its extrinsic Value to be such, as it will not be Exported; nor will it be less than the Demand for it within the Country".

Law, op. cit., p.102.

in the quantity of money could only result in inflation. Moreover, they were inclined to stress that the interest rate is fixed by the quantity of savings and neglected to consider that the ability to save may be circumscribed by the quantity of money in circulation. Insofar as the physiocrats had a reason for discarding the second idea, other than their emotional aversion to Les financiers, they had the notion that the accumulation of monetary capital would result in an immediate and prolonged contraction of income. (We will discuss this particular theory at length when we come to examine their ideas on capital). On the other hand, the Classical Economists rejected the second consideration, because, again, they assumed full employment, and even those like Henry Thorton, who realized the possibility of forced saving, thought the inflationary aspect of the phenomena would weigh against any benefits resulting from its contribution to productivity.²² The Classical Economist took it for granted that investment rests on

22. *By forced savings we mean involuntary savings forced on consumers when their income does not keep up with prices, such that resources are diverted to capital users. This is what would typically happen if credit for productive purposes were expanded under conditions of full employment. Law did not consider this situation, since he presupposed an under-developed economy with unemployed resources. Hume envisioned something of the sort being forced on wage earners when their wages did not keep up with inflation. Although a few 19th century economists understood forced saving, none before Leon Walras considered it normal or desirable.*

individual decisions to consume less and save more. Indeed, this course of action and forced saving are the only choices offered in an economy in which all resources are fully employed. However, manufactured credit can draw unused resources into the economic machine, when they are available. Strictly speaking one cannot manufacture credit by the means afforded by ordinary fractional reserve banking; the credit extended is always less than the monetary deposits, whether these deposits be in specie or cheques. But the land-bank projectors had in mind a convention analogous to commercial paper written on goods in the process of production and sale. When a claim for property circulates as money, it is quite proper to consider this credit as having been manufactured independent of saving.

The striking thing about the changes in doctrinal orientation that came in with Classical Economics is that they may to a great extent be characterized as changes in intellectual fashion. That individual economists are again looking at interest as primarily a monetary phenomenon after a lapse of two hundred years proves this contention. Still, this interpretation should not be overworked. A case in point is Law's theory of credit, which we outlined above; it was obviously tailored to fit the historical circumstances

of his day. The fact that bank credit may stimulate output rather than raise prices, when it impinges on an environment of unused resources, is more pertinent to an underdeveloped economy than to a country completely under the sway of capitalistic production, since, in the latter surroundings, underemployment of resources will in general only occur in periods of depression when there is no demand for additional credit. Yet, Law's ideas on credit should still have had application to the historical conditions that Quesnay encountered in France soon after the mid-point of the 18th century. Some of the excesses of the Real Economists might be chalked up to the first awareness of Real Capital which was being forced on them by the capital-intensive nature of the agricultural and industrial revolutions. Theorizers have always had a weakness for making too much ado about whatever it happens to be that is new under the sun. None the less, this enthusiasm of discovery is only one source of bias. The physiocrats were greatly influenced by Boisguillebert, who saw fit to dismiss all monetary theorists without ever having been exposed to the New Economic Order. And so, we will turn our attention to Boisguillebert and Cantillon, the two most significant progenitors of the physiocratic system. We shall have to devote most of our effort to the former. This need not make us members of what Professor Schumpeter refers to as the Boisguillebert Cult; his contributions to physiocratic analysis happen to be more numerous, if

not more important than those of Cantillon, and, since they are somewhat off the beaten track, require a good deal of explanation.

* * * * *

Pierre le Pesant, *Sieur de Boisguillebert*²³ (1646-1714), a member of the semi-hereditary civil service gentry of pre-revolutionary France, officiated during the greater part of his career as the Lieutenant General of Rouen. He was the reform-minded type, his particular economic cure—all being a rationalization of the tax system. Unfortunately, his difficult personality prejudiced the reception of his ideas; he was singularly lacking in social graces, a self-made man who made a great point of making his accomplishments known, totally oblivious to practical difficulties that might stand in the way of his scheme, and obdurate to boot; when presenting his case before Chamillart, he could never bring himself to pass lightly over his high flown ideas on money which the finance minister interpreted as saying, "The scarcer money is in France, the more there is of it". He impressed most of his contemporaries as an occasionally brilliant, but basically unsound theorist. And, indeed there is something even in his literary style that suggests the man is nine tenths failure, yet, with an odd bit of genius. His obscure phraseology and hopeless syntax make him an abominable writer by all ordinary standards, but through the maze bursts forth a forceful social protest, which (whatsoever such judgments are worth) Michelet considered sublimely eloquent. Though he considered himself a defender of the old order, forever praising the tried and proven economic policy of Sully, his economic sociology has an almost Radical cast, the disturbers-of-the-peace in his view being those in economic power who demanded

23. For a review of his life and economic works, see Hazel Robert's *Boisguillebert, Economist of the Reign of Louis XIV* (New York, 1935). We might assume that the author was not reading into his work the Keynesian characteristics she describes, because of its early publication date. In his *History of Economic Analysis*, Professor Schumpeter says she "displays a bad case of what Lord Macaulay called the illness of biographers or *lues Boswelliana*". p.216. This may be true of her somewhat uncritical judgment of the man and his reforms, but nevertheless her critic of his economic theory faithfully outlines the meaning of his system. This is an exceptional accomplishment, since she was examining ideas that were still unfashionable. One can well imagine that an author writing today might devote a whole chapter to Boisguillebert's primitive idea of a "multiplier", now that the term has become a by-word. Regrettably, we shall have occasion to refer to historiographers who did not even bother to examine the logic of what from their preconceptions were "obvious errors".

Since reading Boisguillebert is something akin to divination, quotations from his works will be translated, or translations borrowed from Hazel Robert's book.

excessive profits or had become so corrupted by pecuniary values as to hoard money, taking it out of circulation, and the owners of the means of production and their workmen who were continually fighting over the division of the economic product. He explained the historical origin of property by "force and violence", a thesis that became more popular as the century moved on. As for his pure economic theory, it was so paradoxical, abstract, and contrary to prevalent opinion, that no major part of it was taken up by any economist before the physiocrats, not even by the two men who respected him most as a thinker, Marschal de Vauban and the Abbe de Saint-Pierre. However, his statistical approach was appreciated. The French bureaucracy had always realized that rational administration depended upon a firm appraisal of economic fact. Both Boisguillebert and the great military engineer and fellow tax reformer Marschal Vauban (Dime Royale, 1705), made impressive use of statistical evidence to argue for their respective schemes. Undoubtedly, their work was the best of this vein up to their time, but, from our point of view, the greater laurels should go to the Intendent of Rouen; he explained the economic fluctuation that he saw in his data with what one must concede is a beautiful body of theory, regardless of what one may think of its utility. It is easy to sympathize with his conceit that these discoveries were comparable to those of Copernicus, Galileo, and Columbus, the ridicule and persecution he suffered being the Cross of all Creators.

* * * * *

Writing around the turn of the 18th century, Boisguillebert observed that France had been experiencing a nearly continuous economic decline since 1660. Now there is something about his appraisal of the situation that gives it a sterling quality. He was not content to make a generalization about economic trends and leave it at that; he examined the detail of this decline from every factual source he could command - his own persistent inquiry over the years into the state of individual businesses, information supplied by acquaintances in the world of finance, tax returns, and other government statistics. Most commentators on economic vicissitudes were given to arguing with such a bare minimum of fact

that it was possible to disagree, even in the most general terms, about the state of the economy. According to the humour of their bile, they either saw long monotonous periods of prosperity or persistent stagnation. But Boisguillebert, owing to his closer scrutiny, distinguished within the downward secular-trend, vigorous, fast-moving "ups and downs", which he realized required an explanation. In a word, he came to grips with economic fluctuations.²⁴

In contradiction to the prevalent opinion on the subject, Boisguillebert ruled out all monetary causation. Historically, he noted that there had been a tremendous influx of precious metals from the New World and still France continued to decline,²⁵ and, as well, recoinage in 1693 revealed that specie was still abundant, and therefore the lack of it could not have been the cause of the current depression.²⁶ For obvious reasons, this superficial historical analysis could not bring out the salient points of the monetary theorists, but Boisguillebert's insistence on looking behind the monetary veil revealed

24. The sense in which this word is used will become obvious from the context. But it should be made clear from the start that he was not looking at the phenomena of re-occurring self-generating cycles such as those associated with housing, inventories, capital plant, ship-building, etc. for the simple reason that cycles of this sort had not yet become an obtrusive characteristic of the economic pattern. Of course, something similar to the modern "corn cycle" was observed in some agricultural commodities. See, Daire, op. cit., p.370-72.

25. Ibid. p.p. 176-72. pp. 390-5.

26. Ibid. p.180.

phenomena that had been only dimly seen before. He had a view of the matter, which, for the lack of a better tag, we might call the "velocity theory of money". He thought that consumption was the impelling force that gave life to the economy, and, indeed, it was the ultimate end of economic activity. Money was considered a completely neutral mechanism; if transactions occurred fast enough, money could be given an infinite velocity, and, for that reason, there could never be a lack of specie as such. Consumption and investment were functions of current national-income and recent changes in income. When income declines, both investment and consumption decrease, and therefore the velocity of money slows down and a part of it is hoarded in the form of specie. In reality, this velocity theory is no more a theory of money than pragmatism is philosophy, for it abstracts away all the real problems germane to the subject, but it is an extremely cogent theory of employment. A few extensive quotations will be sufficient to show its character :

Since consumption and revenue are one and the same thing, the ruin of consumption is the ruin of revenue, which means that a tax that only returns to the King 100,000 pounds, while diminishing consumption, either in terms of price or quantity by two millions, is in fact

a two millions reduction in income.²⁷

From these principles it follows, that in wealth, which is nothing other than the power to procure the easy maintenance of life, both for necessities or superfluities (the one or the other) being a matter of indifference at the end of the year to the one who has passed it in abundance, as he considers whether he has procured his commodities with little or much money, money is only a means and a way to an end, whereas goods useful to life are the purpose and the end. A country can be rich without very much money, and the one which has only silver, very poverty-stricken if it can be exchanged only with difficulty for these (necessities and superfluities). Thus the ships of Spain no sooner reach Europe than it is necessary to call all the silver to the countries whence products have been obtained, to carry into those where the mines are situated. And this silver produces by a continual circulation (révolution) the same effect in these countries that it has produced in (the country of) its birth, making more or fewer circulations and recirculations (tours et retours) as it changes

27. *Daire, op. cit., pp. 193-4.*

masters more or less often, that is to say, as more or less commerce or consumption is made.

But countries such as France, which produce products necessary to life have this advantage over those from which silver is obtained; exchange is made in a very advantageous manner, considering that silver, not being consumed at all by use, produces utilities without limits and without end for the country to which it is carried; whereas the goods which are given in counter-exchange are useful only a single time, perishing through use. But while silver has the quality of being unalterable by time and accidents, it has at the same time that of not increasing by keeping as does other merchandise. And it is useful not when it is kept in the coffer, but when it is conserved as little as possible. And as it is consumption, of which it is only the slave, which leads its movement, from the moment that [consumption] ceases it stops also, and dwells immobile in the hands where it is found when the disorder commences to make itself felt. In this way, if when commerce is active the worst situation of a merchant is to have his money useless in his coffer, because it produces

nothing, it is to his advantage when commerce is inactive not to have it out, considering that if he earns nothing he loses nothing, for he risks loosing on account of bankruptcies, inseparable from the cessation of commerce.

And what is said of the merchant is equally true of all persons who live on their incomes, either from lands or from landing. Such persons, receiving payments, cannot re-invest (reconstituer) for lack of security, because the most ordinary disturbances occurring on the land, the products (of the land) diminish daily and perceptively on account of the destruction of consumption. Consequently, they prefer to lose interest rather than risk capital, reducing expenses to a minimum, which increases the evil for the whole body of the republic. In this manner all the revenues of industry cease completely, and silver, which produces as much revenue as it circulates, not going out of strong hands [i.e. out of the coffers of the rich] completely stops its ordinary course. This paralyses the State in all its parts, and causes it to be poverty stricken in the midst of an abundance of all sorts of goods. The poor feel the effects first, but they are communicated next imperceptively to

to all the other parts of the State, even to the most noble (relivé) ...²⁸

{On the other hand} a thousand écus distributed among a thousand persons of small means, would pass through a thousand hands in less time than they would have resided in the coffers of a rich man. {Each ecu} could only result, as a consequence, in bringing about a hundred ecus for consumption. {On this total spent} the prince would receive the tenth part as his share, that is, he would have received the value of ten thousand ecus on a sum to which he has not even received a farthing because of the disturbance in the use which is made of it, and which is augmented and supported every day by those who falsely persuade him that it is to his particular advantage that both he and his people be equally ruined.

If then the rich understand their interest, they would wholly relieve the poor of their taxes, which would immediately create more well-to-do persons. This would result in

28. Roberts, *op. cit.*, pp. 210-11. Original French, Daire, *op. cit.* pp. 209-11.

a great increase in consumption which, spreading itself over the mass of a State would trice identify the rich for their first advances. It would be analogous to a master who lends grain to his farmer in order to seed the land, without which he would have no harvest.²⁹

This should be enough for the reader to find the measure of the man. He begins with the maxim that "consumption and income (revenue) are one and the same thing". From the context it is obvious that his meaning is that one person's expenditure becomes another's income. Though the idea in itself is not of much use, he went on to assume the existence of a multiplier. Apparently, he thought that redistribution of income in favour of the poor would cause income to increase a hundred fold. And the rich would find their income tripled to the extent they assumed the tax burdens of the poor. What optimism! No wonder Chamillard tried to bring him down to reality - "unhappily not all that which you propose is as good as you are persuaded it is".³⁰ The genetic cause of crisis that Boisguillebert discusses here is hoarding, which is aggravated by increased expectation of risk

29. Roberts, *op. cit.*, p. 171. Or.Fr., Daire, *op.cit.*, pp.419-20.

30. Roberts, *op. cit.*, p.60.

as the depression set in. No doubt the hoarding of specie as such was more common in the 17th century than it is today now that most saving has been mobilized by the banking system. Nonetheless, this theory is somewhat analogous to the Keynesian situation in which planned saving is in excess of planned investment. In addition to this Keynesian-like theory of crises, Boisguillebert had another which we will discuss presently.

It should be noted in the quotation above that capital expenditure is included in the term "consumption". This is all the more interesting because to some extent Boisguillebert anticipated Quesnay's theory of fixed capital. He suggested Quesnay's thesis that up-to-date agriculture depends upon intensive investment in horses and livestock,³¹ but he did not get very excited about it, for he could not have foreseen the agricultural revolution. Yet, in his scheme of things, the manure produced by these farm animals almost achieved the rank of a separate factor of production. He realized that the farmer would have to obtain profits on these long term investments. He says, **[In times of prosperity]** "everybody would lend to them **[fermiers]** very readily, seeing the certainty of being reimbursed, both as to capital and interest, by the end of the year or sooner *** **[And since]** this would produce fertilization, which is always followed by a good harvest, he will be in a position

31. *Daire, op. cit.*, pp. 358-361.

to share his profits with those who have aided him".³²

The reader may feel uncomfortable about crediting Boisguillebert with a "multiplier". We are only using the word as a convenient tag for what is admittedly a very imprecise idea. Still this notion --- that an initial increase or decrease in income would multiply itself as it is passed from one income recipient to another --- does imply a multiplier in some general sense, though this idea is defined imprecisely in that the effects of consumption are not differentiated from those of investment. The reader may or may not be impressed by the quotations we have chosen as a propos to the subject, but the difficulty is that early economists generally lacked detailed organization and the language is so imprecise that isolated quotations do not give a fair presentation of the author's economic insight; owing to his difficult literary style, this is even more true of Boisguillebert than most. In any event, no matter how crude his understanding of the multiplier may have been, it is, to the extent his economic theory is valid at all, an essential part of it. We must take it into account in our study, moreover, for the physiocrats accepted this idea just as uncritically as did Boisguillebert and on the basis of it came to fantastic conclusions concerning the formation of income and capital.

32. *Ibid.*, p. 242.

However seriously one choses to take this theory, it must be admitted that Boisguillebert has rather peculiar ideas about the workings of his multiplier. He seems to assume that specie can obtain an infinite velocity. He clearly exaggerates the possibility on this score, but his contention that the quantity of precious metals can have no proportional effect on the level of trade is made somewhat more plausible by his argument that metallic money is to a great extent replaced during periods of prosperity by bills of exchange underwritten by merchants with sound credit.³³ For Boisguillebert, the idolatry of precious metals, resulting in the depreciation of real wealth, was one of the sins man acquired when he gave up his primitive innocence to live in a "civilized society of over two hundred trades and professions". It was of course wishful thinking on his part, but he thought that this Moloch could be done away with entirely through the use of commercial paper. Essentially, the physiocrats accepted these ideas about money. It might be pointed out here that they disagreed with Cantillon, the other Master they professed to follow, on two important monetary questions. ---

(1) Cantillon thought that a favourable balance of trade would be punctually reversed by a rise in domestic prices. One of his basic premises gives support to this theory:

33. *Ibid.*, pp. 265-267. Roberts, *op.cit.*, pp. 215-217

he assumed that there was no great reserve of resources and technological "know how" lying idle, ready to be tapped. (The disappointment of John Law's great expectations made him cautious on this matter). The physiocrats had other reasons to doubt that the international transfer of precious metals would be regulated by a mechanism that depends on the quantity of money to change the price level, since they emphasized changes in the velocity of specie and the availability of substitutes. And (2) Cantillon accepted the mercantilist thesis that an influx of precious metals would lower the interest rate and thereby stimulate commerce and manufactures. Here again, as we have mentioned above, the physiocrats abstracted away all the relevant facts with their own rendition of Boisguillebert's "velocity theory of money".

As did the physiocrats and Adam Smith after him, Boisguillebert found in competition an equilibrating mechanism that would set everything right, provided it were allowed free sway. (1) It would stimulate maximum productivity. (2) It would settle disputes between contending economic factions, or, at least, to the extent it did, there would be no call for fallible human intervention. And (3) it would distribute income between the different income recipients in such proportions as to help ensure an adequate aggregate demand for the whole of the economic product. It should be sufficient for our purposes simply to quote passages

illustrating the first two points, without direct comment, and then we can conclude with a brief examination of the third issue.

[In] the infancy and innocence of the world, when man was rich in the enjoyment of simple needs alone, there was only employment for three or four professions, as is the practice still in some number of nations poorly endowed by nature in respect of fertile lands and intellect.

But today, in countries where contrary dispositions have carried opulence and luxury to an extreme, there are more than two hundred **[professions]**, without counting those invented every day. * * * *

The two hundred professions which enter today into the composition of a rich and civilized state, beginning with bakers and ending with actors, are, for the most part, ranked the one after the other only in respect of luxury; but they have no sooner been introduced, or taken root in some manner, than they become a part of the substance of the State, and cannot be disjoined or separated without altering the the whole body. * * * * *

It is necessary then that commerce continue without interruption and at a price which is

obligatory * * * that is to say at a price that gives the merchant something above the break-even point (hors de perte), so that he can continue his trade at a profit; otherwise it is as though he did not sell at all, and with his destruction it will be like the case of those grappling vessels (vaisseaux accroches), in which one sets fire to the powder of the one, which causes both to blow up. * * * *

To the extent that things remain in this equilibrium [He is referring to a prosperous equilibrium established by competition.] there is no other means by which one can enrich himself, no matter what his status, than by surpassing his neighbour in labour and ability, not by trying to deceive him and obtain his commodities at a ruinous price, but by getting the better of him in skill.

And this emulation becomes general because of the hopelessness of enriching one's self otherwise, all the arts being perfected, and opulence is carried to the highest point it can be.³⁴ * * *

It is, therefore, proportions which create all wealth, because it is by their means alone

34. *Daire, op. cit., pp. 403, 404.*

that exchanges, and as a consequence commerce, can be carried on. It would be ridiculous to make a distinction between two equally good meals because one had cost very much more and the other very much less, and at the same time pretend to establish a higher degree of felicity in that one for which more had been expended. And it is by the disturbing of this harmony that the 1,500 millions of income, vanished from France since the year 1600, had been lost. The justice, which must exist between two dealers who trade with one another, must extend likewise over the two hundred professions which today are found in France. All of them have a common interest to maintain it, because from it alone can they obtain their subsistence and maintenance. It must not be disorganized in the least of its parts, that is to say, the least important workman (chétif ouvrier) must not sell at a loss, for his destruction like a contagious fever, corrupts the whole. It must exist, not only from man to man, but also from region to region, from province to province, from kingdom to kingdom, and even from year to year, in aiding or furnishing reciprocally that which they have in excess, and receiving in counter-exchange the things that they have in shortage. Nevertheless,

by a frightful corruption of the heart, there is no individual at all, although he obtain his well-being from the maintenance of this harmony, who does not work from morning to evening and use all his efforts to ruin it. There is not a single worker who does not try with all his power to sell his merchandise for three times more than it is worth, and to buy that of his neighbour for three times less than it costs to produce it. It is only at the point of the sword that justice is maintained in these encounters. It is the function of nature, or Providence, nevertheless, to bring this about; and as she has provided feeble animals with retreats and means in order that they may not all become prey of those which, being stronger or born armed in the same manner, live by killing, likewise in the commerce of life she has established such an order that, provided she is left alone (*porvu qu'on laisse faire*), it is not in the power of the most powerful to buy the products of the most wretched, to prevent the sale from providing the subsistence of the latter. It is this which maintains prosperity, to which both are equally indebted to the subsistence proportional to their estate.* * * It was said, porvu

qu'on laisse faire la nature, that is, that she is given her liberty and that one mix in this commerce only in order to provide protection to all and prevent violence. Nevertheless, just the opposite has been done.³⁵

Boisguillebert propounds the thesis that that cost-covering distribution of income which is apportioned by unfettered competition will ensure full employment, or at least it is a necessary condition for a prosperous equilibrium. What is more, this proportionality of incomes, he reasoned, must find its level between each of the two hundred trades and professions. This brings us to mention the most original characteristic of his economic model: he perceived --- indeed, he filiated --- what was to be the basic idea behind Quesnay's famous tableau économique, that there is a general and necessary equilibrium between the incomes of the various sectors. This concept was of real relevance to one of the major causes of France's economic stagnation. It gave him theoretical grounds to argue against the iniquitous restrictions on the grain trade, calculated to ensure the consumer a cheap supply of food, which along with a rapacious tax system made it impossible for the farmer to realize cost-covering prices for extended production and thereby stifled agricultural enterprise. Undoubtedly, this

35. Roberts, op. cit., pp. 250-251. Daire, op. cit., pp. 279-280.

was an extremely important consideration for policy at a time when agriculture produced a greater income than any other sector and was the industry immediately capable of achieving the greatest absolute growth. Boisguillebert was much more worried about disruption of the intra-sectorial equilibrium of incomes than he was over the over-saving bogey. He seemed to be of the opinion that over-saving would not become a major threat until an economic downturn had already begun and people began to have reason to feel insecure about their capital and future consumption. The initiating push that usually started the downturn was a reduction of income, no matter how small or temporary, caused when any sector of the economy was depressed by being deprived of its equilibrium rate of profit. The smallest fall in income, he imagined, no matter where it occurred, was sufficient to cause a devastating contraction of incomes, throughout all the other interdependent sectors. As did the physiocrats after him, he had an exaggerated notion about the force of the multiplier.

At this point, it should only be necessary to give a brief explanation of this theory of crises. It occurs again in a slightly different form in Quesnay's tableau-analysis and thereby was passed on to Say and Ricardo who presented it in the guise of their Disproportionality Theory of Crises. Briefly, this theory asserts that the equilibrium output of any particular industry, in both physical and value terms, is relative

to the income generated in all other sectors. This must be so for the demand schedules for the commodities produced by the industry in question are derived from the income generated in these other sectors. For that reason, circumstances that depress any single industry, especially agriculture in Boisguillebert's and Quesnay's frame of reference, must cause a general fall in the demand for commodities and a lesser reproduction of capital and income throughout the economy. On the other hand, there is no point in trying to force the growth of a single sector of the economy to the extent that its output is in excess of the equilibrium quantity, because such investment will by the very nature of the circumstances turn out to be unproductive --- that is to say, capital will not be reproduced with a profit. Boisguillebert and the physiocrats blamed the mercantilists for pursuing just such a self-defeating policy in favour of export manufactures.

For the most part, the physiocrats accepted Boisguillebert's ideas on general equilibrium. They definitely got their ideas on the multiplier from him. But in one respect the Intendent of Rouen had a more complex view of the economy. Whereas the tableau économique traced the flow of income from the farmers to the landlords and manufacturers considered as a collective class, Boisguillebert was forever talking about the two hundred trades and professions and the interdependency that exists between them. That is,

he fancied a more ambitious input-output model than Quesnay. But, regardless, he did not have an analytical tool which could handle this colossal idea, and so, when he wished to explain the workings of the multiplier, he abstracted the landlord and actor out of the economic structure --- the most important consumer and the least important profession --- and proceeded to describe an initial reduction of income rebounding between them, destroying income at every step; he was only able to imply by analogy that this destruction of income was also occurring at the same time between the other two hundred-odd trades and professions.³⁶ Yet, as we shall see, the diagrammatic method of the tableau Economique was hardly less awkward than his verbal analysis. This is not meant to be censorious of a theorist who was in many respects ahead of his time, but it is proper to comment on the limitations of his conceptual apparatus.

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At this point it might be helpful to define the physiocrats' position in the history of economic thought. First of all, following Boisguillebert's lead, they directed the whole of their attention to that part of the economic process that occurs behind the "monetary veil". The agency of money, of course, could not be ignored, but it was considered a completely dependent contrivance inseparably bound to the material facts of

36. *Daire, op. cit.*, pp. 406, 407.

production. A good example of this kind of reasoning is the theory advanced by Turgot and Adam Smith that the rate of interest is negatively correlated to the accumulated amount of Real Capital. The physiocrats, with their companion in arms Adam Smith, were responsible more than any other authors for the victory of Real Analysis over Monetary Analysis that occurred at the end of the eighteenth century. The physiocrats' bias towards Real Analysis was carried to such lengths, much further than by their predecessor Boisguillebert or their successor Adam Smith, as to completely break with the continuity of theoretical development. The very economic process was looked upon as the working up of material stuff. Herein lies the distinguishing characteristic of Quesnay's system --- the unique productivity doctrine: the notion that the primary industries (the most important being agriculture) are the only source of wealth. Since this doctrine is such an eccentric interpretation of the production of income in an agrarian society (Their contemporaries --- Verri, Galliani, Graslin, Hume, etc. --- were as astounded by it as modern economists would be) we will have to devote a good part of our next chapter (on this subject) to a detailed examination of the assumptions on which it was based and the logical consequences thereof. Cantillon was the only author who can be considered a forerunner of this doctrine; we will consider his ideas on the unique productivity of agriculture in the following chapter.

The term "physiocrat" is occasionally used rather loosely. Needless to say, concern for agricultural problems, the advocacy of a single-tax on land rent, the observation that agriculture is the main source of income in a pre-industrial society, the idea that land or God is the original factor of production, et id genus omne, do not make a writer a physiocrat. Strict adherence to the principle that land is the only source of income is the peculiarity that makes the physiocrats stand out from their predecessors, successors, and contemporaries.

CHAPTER 2

THE UNIQUE PRODUCTIVITY OF AGRICULTURE

The Physiocratic School was dominated by the profundity and person of its guiding genius Francois Quesnay (1691-1774). He was one of the more notable exceptions to the general rule that original work in abstract study is the province of comparatively young men. He devoted the greater part of his life to a distinguished career as a medical theorist and journalist, writing treatise on continued fevers and bleeding, and a history of the progress of surgery in France which, apart from its academic motive, was intended to advance the professional status of his calling by distinguishing the skilled practitioner from the ordinary barber. In appreciation for this service to his profession, he was elected the first permanent secretary of the Academy of Surgery in Paris and the editor of its journal. He became the private physician to Mme de Pompadour, her understand protection allowing the old doctor to indulge his passionate interest in economic research. Though he did not begin his economic systemizing until he was over sixty years of age, there is a distinct bent through the whole of his intellectual endeavours, succinctly characterized by the name medical men have given the school

of thought he followed, iatrophysical or iatromathematical. After the teachings of Giovanni Borelli (1608-1679), he attempted to interpret the functioning of the body and the effectuation of remedies by statistical and physical laws - body heat was explained by blood friction and the actions of muscles by the laws of levers; blood diseases were accounted for as crystalization or excessive local hydropressure, hence medicines to dissolve the crystals and leeches to relieve the pressure. Though this line of inquiry proved to be unfruitful, except insofar as its proponents acquired a knowledge of anatomy in the hopes of applying their mathematical and dynamic principles, its negative findings do not make it any less scientific. What is important, Quesnay did not have to learn new patterns of thought to study monetary circulation and the equilibrium of incomes as taught by Cantillon and Boisguillebert, having worked the greater part of his life in a comparable discipline that sought to equilibrate blood pressure between the toes and the head.

The impact of Quesnay's teaching on economic thought owes a good deal to his faculty for attracting top-rank disciples who expanded his brilliant theoretical sallies. Regrettably, their theoretical niceties suffered by being constrained to argue economic policy; their comprehensive analytical scheme dealing with

economic equilibrium, exchange value, labour, population, capital, money, etc. appeared only in disconnected sketches. Quesnay appreciated the importance of propaganda and for that reason made an effort to enlist popular literary men in his Cause. One of his first recruits Marmontel, the poet and playwright admitted that he had only the foggiest notion of the zig-zag (the name given the tableau économique in Court Circles), feigning understanding because Quesnay's apartment in the entresol of Mme de Pompadour brought him near the source of all favouritism. Whether or not others made this same discovery, this strategic vantage at the centre of the intellectual life of Versailles introduced Quesnay to his closet disciple Victor Riquetti, Marquis de Mirabeau (1715-1789). It is easy to see how Mirabeau fitted into his plans. The Marquis had just published L'Ami des Hommes (1756) which as an immediate popular success has had no equal except possibly Henry George's Progress and Poverty. Somehow Mirabeau had gotten his hands on a manuscript of Cantillon's as-yet-unpublished Essai. He describes his own work as a free commentary on the Irish banker's book. Sadly, Mirabeau showed little theoretical promise, missing the greater part of Cantillon's closely-reasoned analysis. But for Quesnay's immediate ambitions Mirabeau was superb convert; he had at least

a superficial awareness that France's economic improvement must rest on its agricultural basis and, what was very desirable, he had an established reputation as a writer. The year after their meeting in 1757, Quesnay published the tableau économique with a small printing press in the palace grounds at Versailles. Soon after, Mirabeau under the old doctor's supervision added a sixth volume to L'Ami des Hommes which was intended to popularize this new discovery. Mirabeau continued writing under his Master's editorship, producing Théorie de l'Impôt (1760) and Philosophie Rurale, in which he exuberantly compared the tableau économique with the invention of writing and money. Since Mirabeau was of somewhat undisciplined and impulsive spirit, we cannot assume that Quesnay would agree with every detail of those books. Their theoretical coherence does not measure up to the best physiocratic literature, Mirabeau's extravagant literary style being too rich for its austere subject matter. Still, the analytical content of these works is thoroughly physiocratic and they make important contributions to Quesnay's theoretical structure. If any of these elaborations are of Mirabeau's own invention, we must credit him with having become a considerable theorist in his own right. Quesnay's followers have often been accused of being slavish doctrinaires, the imputation

being that anyone who would accept the unique productivity of agriculture must not be in full possession of his critical faculties. This attitude might cause one to lose sight of certain important facts, - - - Nearly every one of Quesnay's closest disciples (there were at least a half dozen) brought some aspect of his theory to further perfection. Le Trosne displayed a greater interest than most of his colleagues in the utility theory of exchange value. Du Pont lived long enough to gradually break away from the physiocratic preconceptions on the source of wealth. And, what was probably the greatest achievement, both L'Abbé Baudeau and Turgot, at an early date (before 1770) applied Quesnay's theory of fixed capital to manufactures.

The reader may feel uncomfortable about placing Turgot (1727-1781) in the company of orthodox physiocrats. He considered himself a student of Vincent de Gournay (1712-1759), whom he credited in his Elegy de Gournay with being the founder of the laissez faire formula.¹ But Gournay's claims to this honour are rather weak; Boisguillebert had long before developed most of the implications of that idea, and we might assume that

1. *Eugene Daire, Oeuvres des Turgot (1841), p. 266.*

Quesnay's circle was introduced to the normalizing influence of pure competition by this earlier source. (In the sixth volume of L'Ami des Hommes Mirabeau is already making references to the maxims of the Intendent of Rouen.) In any event, Turgot did not agree with Gournay on the one doctrine that must stand as the true criterion for membership in the physiocratic fold. In the same Elegy, Turgot admits that Gournay believed manufactures make a net addition to real wealth,² whereas Turgot himself consistently argued for the unique productivity of agriculture. The greatest mass of his work is devoted to this theory, setting out its premises more clearly than any of his colleagues. It is impossible to evaluate the contribution Gournay might have made to Turgot's independent views on capital - if any - for he did not give permanent form to his ideas in the written word. And so we have no reason not to suppose that Turgot developed his distinctive views on this subject from the basic theory supplied by Quesnay. Much has been made of Turgot's complaint about the "sectarian spirit" of Quesnay's disciples. But one should keep in mind that the bone of contention was the Boisguillebert-Quesnay over-saving theory.³ It was on this matter and the related problems

2. Ibid., pp. 266-291.

3. Turgot, Reflections on the Formation and Distribution of Riches. W.J. Ashley translation. "Letter of Turgot to Dupont", March 23, 1770, p.112.

of capital formation that Turgot developed a body of theory vastly different from that of Quesnay - a formulation of the subject that is almost identical to that of Adam Smith. It actually seems to have prepared the way, at least in France, for the classical ideas on capital. For that reason we will find it convenient to consider Turgot one of the first prophets of Classicism, with some reservations of course, and on that basis compare his work with Quesnay's.

Recently there has been a revived interest in the physiocrats, much uninhabited praise being directed towards their economic model of general equilibrium, the tableau économique, which is regarded by many as exemplary of pure scientific reasoning.⁴ A good deal of what the physiocrats had to say, particularly about capital, is readily understood by a modern economist and its influence on the main stream of economic thought is easily detected. Yet, historiographers have generally been at a loss to explain the theory that is the beginning assumption of physiocratic analysis,

4. *Schumpeter says of the tableau économique:*

"Clearly bearing in mind the state of affairs in our field about 1750 we realize that we feel ourselves nowhere else in economic literature so near to creative genius as when we regard the conception of this work alone which, as Madame Pompadour correctly predicted, would appear to most critics as a harmless intellectual toy."

Joseph Schumpeter, Economic Doctrine and Method (London, 1954) p. 106.

the unique productivity of agriculture - the notion that all the non-agricultural sectors of the economy are supported by the income generated by agriculture. Rather than attempt a real explanation of this doctrine some authors have dismissed it as an inexplicable eccentricity or some sort of political subterfuge. But these easy answers are not in keeping with the intellectual tenor of men like Quesnay and Turgot. Though we end up by judging this doctrine harshly from our own canons of truth, we must try to isolate its assumptions and follow its line of reason. In some sense, we are told, everything lends itself to understanding, including sin and folly.

The one obtrusive fact that overshadows all other considerations in a pre-industrial economy is the diversion of a great share of the economic product, sometimes the largest slice, to payments for the use of agricultural land. Every pre-physiocratic economist whom we have bothered to mention up to now has acknowledged this, at least in a back-handed fashion, for they generally looked on the landlord as the most important consumer of goods and services. Cantillon, and Quesnay after him, were the first to think deeply about this phenomena, giving rigorous treatment to a body of theory that identified the emergence of rent and the creation of value and income in general with the production of agriculture's physical surplus. Quesnay's speculations

are the more involved of the two. He made taxation an adjunct of his theory of value and rent, whereas Cantillon never got around to considering taxation in his otherwise complete economic treatise. But, in addition to this complication, Quesnay brings into consideration an entirely incongruous set of facts, that in reality - though apparently he did not realize it - constituted a complete theory of rent from the demand side of the economic equations. Our only possible course is to consider these detached layers of analysis one at a time, and so we will start with that filiation from Cantillon and leave the second theory till the end of the chapter.

Cantillon's Essai sur la Nature du Commerce (1755) is something more than an ordinary treatise on economic theory. It was an attempt to link social and economic progress to the production of agricultural surplus; its author essayed the physical basis of society with his land-labour theory in much the same way that Marx used his labour theory of value to view capitalism from its sociological basis. The philosophic aura is the same. Cantillon observed that the whole development of society - the number of entrepreneurs and labourers who can be employed by commerce and manufacturers, the people active in the arts and the affairs of State, etc: the "free hands"

as Sir James Stuart calls them - is limited by the quantity of agricultural produce over and above that consumed by the farmers themselves. Discussions concerning this agricultural surplus became a standard subject in economic texts until the mid-nineteenth century and, before this, since the beginning of the agricultural revolution, economic writers were conscious of the meaning agricultural improvement would have for the future. But for Cantillon the very economic process was viewed as the production (Quesnay used the word "regeneration") and working up of agriculture's net material product. Briefly, this is the outline of Cantillon's analytical scheme - The quantity of land that is needed to support a single person is dependent on the state of technology and the standard of consumption, i.e., these are the factors that must limit the growth of population, for "Men multiply like Mice in a barn if they have unlimited Means of Subsistence"⁵. When he examined value, Cantillon usually thought in terms of normal price, barely linking it with the problem of market price. Following Petty's example, he reduced all values to labour and land costs⁶ and, adding a twist

5. *Essai*, Part I, Ch. XV. We will review this theory of population in Chapter IX, below.

6. *Essai*, Part I. Ch. X.

of his own, he reduced the former to the latter by reckoning the quantity of land required to support different classes of labourers.⁷ Such was his accountability of exchange value. And, applying this Land Cost Theory of value to the circulation of income and commodities, he says : "The proprietor has usually one third the produce of his land the farmer two thirds (and so) if we examine the means by which an inhabitant is supported, it will be found in tracing it back to its source, that it arises from the land of the proprietor, either from the two thirds that accrue to the farmer or the one third that remains with the land-lord"⁸. In his famous discussion of the three rents, he figures that the greatest part of the goods consumed by the farmers is the product of their own labour (which they may to some extent barter amongst themselves), and so, in the main, the free-hands are supported by the net rent alone.⁹ This seems to be the physiocrats' assumption in those instances in which they say these free-hands are supported by the produit net alone, though the tableau économique was more realistic in that it shows manufactures derive part of their income from sales to the farmers.

7. Essai, Part. I. Ch. XII.

8. Essai, Part I, Ch. XII.

9. Essai, Part I, Ch. XIII.

When he actually gets down to cases and tries to follow the circulation of commodities, Cantillon abandons his evaluation in terms of "acres of land" and accepts exchange value as the measure of farm income. And so we are left with the odd assertion that all incomes, expressed in monetary values, can be traced back to farm income. The Physiocrats' own theory of value is an elaboration of this suggestion.¹⁰ What is really involved (and it is definitely an error) is the identification of value product with physical product. As Schumpeter says of Quesnay, "His starting point was physical productivity, that is the 'creation' of stuff and not of values. He took it for granted that the fact of physical productivity implied value productivity, and he shifted in mid-stream from one to the other".¹¹ To be more exact, the physiocrats, like Cantillon, assumed that agriculture's physical product would command a value product exactly equal to the incomes of

10. Incidentally, those who are interested in the influence Cantillon had on the physiocrats should compare his Essai with Turgot's Reflections sur la Formation et Distribution des Richesses, (1770). In particular, compare their theories of value, capital, interest and social evolution. The cast of Turgot's work bears Cantillon's fingerprints as certainly as one can identify specifically Marxist or Keynesian ideas when encountered in an unknown author. Both Mirabeau and Gurnay gave enthusiastic praise for the Essai some time before it was finally published in 1755, and so it is hardly likely that any of the physiocrats could have remained uninfluenced by this great theorist.

11. Joseph Schumpeter, History of Economic Analysis, p.238.

all other sectors, and in fact these sectors obtained their income by means of sales to agriculture.

For the purpose of following the physiocrats' own argument, we might for the moment accept this asserted equality between agriculture's physical and value product. We are still left with an unanswered question - "How were goods and services which are several steps removed from the source of wealth to embody the primary values produced in the agricultural sector?" The answer is simple. Their value, the physiocrats reasoned, is the sum of primary commodity values used up in their production. The physiocrat's reasoning is exactly analogous to that of the labour-cost theorists, except labour costs themselves were reduced to the value of primary commodities consumed in the process of production. We will quote Mercier de Riviere to represent the physiocrats' thoughts on this matter. (His numerical example is more explicit than that given by Quesnay himself.)¹² -

L'industrie est créatrice des formes, et ces formes, ces formes ont leur utilité. C'est en raison de cette utilité que celui qui veut jouir de ces formes nouvelles, que l'industrie donne aux matières premières, doit l'idemniser de toutes ses dépenses, de toutes ses consommations, et en consequence consent à cette addition des

12. For Quesnay's discussion of this subject see, *Daire, Physiocrates* (Paris, 1848). pp. 188-189.

plusieurs valeurs pour n'en plus composer qu'une seule, qui devient ainsi le prix nécessaire de l'ouvrage qu'il veut acheter. Le terme d'addition peint très bien la manière dont se forme le prix des ouvrages de main-d'œuvre: ce prix n'est qu'un total de plusieurs valeurs consommées et additionnées ensemble; or, addition n'est pas multiplier. 13.

His numerical example :

Un tisserand achète pour 150 francs de subsistances, de vêtements, et pour 50 francs de lin qu'il vous revendre en toile 200 francs, somme equal a celle de la dépense. Cet ouvrier dit-on, quadruple ainsi la valeur première du lin; point du tout; il ne fait que joindre à cette valeur première une valeur étrangère, qui est celle de tout les choses qu'il a consommées nécessairement. Ces deux valeurs ainsi cumulées forment alors, non la valeur du lin, car il n'existe plus, mais ce que nous pouvons nommer le prix nécessaire de la toile, prix qui, par ce moyen, représentent; 1. la valeur de 50 francs en lin; 2. celle de 150 francs en autres productions consommées. 14.

Thus, according to Riviere, the value of a manufactured article is simply the composite of pre-existing raw material values. The economic service performed by the manufacturers (and other "sterile" labourers) does not, so Riviere propounds, represent a creation of values, though he does admit that they create

13. Ibid., p. 599.

14. Ibid., p. 598.

new forms and utilities. As Quesnay himself phrases it, the labour of artisans n'est que conservation de riches.¹⁵ Henceforth we will refer to these notions as the Primary Commodity Cost Theory of Value, or simply the physiocrats' theory of value. In every ordinary sense, this does constitute a theory of value. First of all, it pretended to find in the circumstances of agricultural production the genetic cause that drives the economic machine. And secondly it was thought that exchange value, or at least normal prices, could be ultimately reduced to the value first embodied in agricultural produce. These preconceptions were formalized by that scheme of circulation depicted by the tableau économique, in which the whole income of the manufacturing sector was derived from sales to either the farmers or landlords and all manufacturing costs were incurred in the farming sector.

The error of this theory of value and circulation should have been obvious enough, though it seems to have been missed by most of the physiocrats' contemporary critics - - - This line of reason breaks down completely once one admits that the exchange value of an individual manufactured commodity may embody costs of goods purchased within the manufacturing sector. For after all,

15. Ibid., p. 191.

transactions within this sector form incomes just as certainly as do intra-sectorial transactions with agriculture.¹⁶ However, for those who have become accustomed to thinking in terms of self-contained economic models in which all but perhaps ten per cent of the income is produced by transactions within the commercial and manufacturing sectors, it should be pointed out (as pertaining to the historical relativity of preconceptions) that this was not so obvious when agriculture in reality produced the greater part of most national incomes.

The physiocrats did not admit these objections. For them, (allow us to repeat once more) the economic process began with the production of agriculture's physical surplus, which alone is allowed to represent a net creation of values.

Our criticism of these assumptions brings us to another problem that is an adjunct to the same body of theory - the physiocrats' theory of rent which identified

16. It was an inadmissible question to ask, "Which individual sector is the ultimate source of income?" The creation, destruction, and circulation of income is a continuous process that occurs in all sectors simultaneously. It is nonsense to trace a quantity of value through a number of transactions to a particular sectorial source, for all income, considered as a flow, may at one time or another pass through any single sector on the same principle that "A bad penny always turns up." (Income being considered a flow of goods going in one direction which is evaluated in terms of monetary values going the opposite way). For that reason, one must examine the net formation of income in each sector during a definite period of time. Otherwise one might just as well trace the flow of all income to the manufacturing sector, instead of to agriculture, as did the physiocrats.

its emergence with the production of the same agricultural surplus. A few brief quotations from Turgot can illustrate this theory (he develops it more concisely than his colleagues). "The Husbandman", writes Turgot, "is the first mover in the circulation of labours * * * * What his labour causes the land to produce beyond his personal wants is the only fund for the wages which all the other members of society receive in exchange for their labour * * * As soon as the Labour of the Husbandman produces more than he wants, he can, with the superfluity that nature accords him as a pure gift, over and above the wages of his toil, buy the labour of the other members of society * * * He is therefore, the sole source of riches, which by the circulation, animates all the labours of society * * *"¹⁷ And, a few sections later, he associates the existence of rent with this beneficence of nature: "that independent and disposable part which the land gives as a pure gift to him who cultivates it, over and above his advances and the wages of his trouble (peins); (and this) is the portion of the Proprietor, or the revenue (revenu or produit net)". Now, it would of course be asking too much of the reader to expect him to get the feeling for a system of thought from the few quotations we can offer here, but it is, I believe, quite obvious when these selections are read in their context, that when Turgot attributes rent to a "gift of nature", he has in

17. *Turgot, Reflections on the Formation and Distribution of Riches*
W.J. Ashley translation, pp. 7-9.

mind a net physical product --- so to speak, that heap of grain that is left over after the husbandman's bread for the following year has been provided for --- and he at once identifies the income derived from its sale with the circulation that "animates all the labours of society".

Strictly speaking, the physiocrats did not usually, as did Turgot above, equate the net rent, the produit net, with the net agricultural surplus. As we have mentioned before, in the circulation of income depicted by the tableau, part of the exchange value derived from the sale of the agricultural surplus was retained by the farmers as a return on their capital and used to purchase manufactured commodities. Even so, reasoning by analogy from the commonplace fact that a physical surplus must be produced for rent to emerge, the physiocrats usually (with important exceptions which we shall consider later) took it for granted that rent will increase with the growth of agriculture's physical surplus. Obviously, this association of rent with physical productiveness cannot stand up to a retrospective historical examination of the matter. In most technological advanced nations, the agricultural surplus has greatly increased since Turgot's time, and it is precisely for that reason that rents have gone down.

At this point we should arm ourselves with a theoretical appraisal of this historical change in the distribution of income;¹⁸ we will have more than one

18. *This is all the more necessary because agricultural ground rent has become such an insignificant entity in the economic structure of some technologically advanced nations as to be hardly ever discussed, even in elementary text books, with the result that some economists lapse into Ricardian theory when they have occasion to bring the subject to mind.*

occasion to refer to this issue.--- For our purposes we shall define agricultural land rent (or for that matter the economic rent of any other factor of production) as a payment in excess of that required to call forth the requisite supply. All that is necessary to explain its existence is land's scarcity and productiveness in respect of value product when used in combination with other productive factors. When the combined supply price of all other factors of production --- capital, labour, and entrepreneurial talent --- is less than the value product of these factors plus land, competition amongst entrepreneurs will give the surplus to owners of land. Only in cases where land has an alternative use can the landlords demand a minimum supply price in excess of the equilibrium level which would be established by its agricultural employment. Alternative uses will, by withholding land from this employment, tend to maintain the relative scarcity of agricultural commodities and thereby support any rental differential between the combined supply price of productive factors other than land and the value product of agriculture. Moreover, looking at this problem in a dynamic context, the continued existence of rent depends upon elasticities of demand that afford high prices in the face of increasing productivity. The main thing we wish to point out by this digression is simply that, given the scarcity of land/^{and}the current state of technology, consumer demand is the main variable that affects the level of

rents. Therefore, the high rents that prevailed in pre-industrial economies can be accounted for by the fact that the inferior productiveness of technology had not begun to saturate the demand for agricultural commodities, and for that reason the prices for these commodities were high enough to afford a comparatively large rental differential between the combined supply price of productive factors other than land and the value product of agriculture.

A little reflection on these considerations is sufficient to make one realize that the celebrated West-Ricardo theory, which hoped to explain net rent by decreasing returns (implying that if there were no external margin there would be no rent) was a completely inadequate solution of the problem. The reader should be impressed with the completeness of Ricardo's failure.¹⁹ Throughout the heyday of the landed class, no one succeeded in popularizing a generally valid theory of rent (i.e. valid according to our own standards of criticism outlined above). But that is not to say that demand considerations went completely unnoticed. Ricardo's opponent on the subject of rent Malthus proffered a theory that stressed this side of the economic equations. And, what is important for our thesis: he apparently got his ideas from a most unexpected source --- Quesnay's many-sided speculations on this same subject. Strange as it may seem, these discordant comments on rent made Quesnay his own best critic. But

19. Schumpeter gives a straightforward judgement on this matter: "As has been stated we need nothing beyond the productiveness and the scarcity of land to explain why there is such a thing as rent. Neither the facts to be explained nor the explaining facts have anything to do with decreasing returns." Joseph Schumpeter, History of Economic Analysis (New York, 1954), p.265.

first, before exploring this matter, we had best complete our examination of the more usual physiocratic frame of reference.

Having made our criticism of the physiocrats' theory of value and circulation, it might be worthwhile to try to recount the special historical circumstances that might in some measure account for this peculiar view of the economic process. To begin with, one must consider that the structure of a pre-industrial economy actually suggests that agriculture is the prime-mover of the economic machine. This impression is especially pronounced when one stresses, as did the physiocrats, the relatively great quantity of aggregate demand generated by the reproduction of this sector. The greatest bulk and value of both consumer and producer goods in such a society is slightly processed agricultural produce, and so the output of these commodities is an approximate index of the economic product. Any cause that adversely affects agriculture would have immediate repercussions throughout the whole economy. As Professor Labrousse has pointed out, a mere under-production of agricultural raw materials, either as the result of exogenous influences like the weather or causes indigenous to the economic process itself, would necessarily effect a general contraction of economic activity.²⁰ Most manufacturers were dependent on an abundance of producers' goods of the sort supplied by agriculture --- the clothiers upon wool,

the vintners upon grapes, and the millers upon grain --- the most important producer or consumer good, according to how one chooses to classify it, being foodstuffs. A lesser production of these agricultural commodities, the physiocrats reasoned, must be a basic feature of any depression, occasioning a general destruction of values throughout the economy, a veritable drying-up of the source of income.²¹ It was with this knowledge in mind that the physiocrats defined economic activity in terms of the production and working up of primary commodities. Though, certainly, they abstracted away some basic truths, their preconceptions brought to the surface of theoretical consciousness --- admittedly, in a grossly exaggerated guise --- some of the main features of a pre-industrial economy.

20. *Professor Labrousse shows that the most characteristic crisis of a pre-industrial economy is initiated by agricultural under-production. Nearly every detail of his theory of pre-industrial crises, and something more besides, was explicitly presented, or at least implicit, in Quesnay's tableau-analysis. Labrousse's superb statistical analysis would tend to confirm much of the physiocrats' theoretical speculations concerning the nature of economic decline that begins in the agricultural sector. Labrousse says concerning the under-production crises:*

*"la crise des sous-production agricole entraîne une sous-consommation de produits industriels et déclenche la crise de sur-production industrielle relative. Née dans la campagne, la crise gagne la ville, la manufacture * * **

*"La condition de l'ouvrier des villes apparaît pire que celle journalier: car le chômage est pire, et la mobilité du taux du salaire très supérieure. En même temps le prix du pain progress; de 50%, de 100%, comme dans les campagnes! La réduction du pouvoir d'achat des villes contribue de son côté à réduire la consommation des produits industriels. La crise nourrit la crise. Tout le commerce urbain souffre * * * "*

C.E. Labrousse, La Crise de l'Economie Française à la Fin de l'Ancien Régime (Paris, 1944) pp. 175-176.

21. *This would also, they speculated, result in a disproportionately small reproduction of agricultural income relative to the income of other sectors, and thereby, according to that theory they inherited from Bois-guillebert, would occasion a progressive destruction of income throughout the economy.*

Notwithstanding all the strange ideas that might be logically deduced from the Primary Commodity Theory of Value, the physiocrats did not allow it to impose inhibitions on their appraisal of the facts of production. Their examination of capital is a case in point. Though Quesnay's followers applied his theory of capital to industry at an early date (Turgot in his Réflexions written in 1766 and Baudeau in his Prèmiere Introduction a la Philosophie Économique, 1771), they apparently did not feel that their discovery of profits on industrial capital invalidated their theory of value. Even in his Oeuvres des Turgot (1809-1811), Dupont still sympathized with this theory, which he interpreted in the orthodox physiocratic way as meaning that the fundamental value (valeur fondamentale) of a manufactured article is merely "l'addition des valeurs préexistantes qui avaient concouru à la former, sans accroissent réel des richesses", even though he admitted the existence of a pure profit or interest. The fundamental value of a piece of cloth, he goes on to say, must include the value of (1) the raw materials (2) the portion of the tools used up in its manufacture (3) the consumption made by the workers and the entrepreneur, and (4) the interest on the advances of the entrepreneur, or the capital he is obliged to devote to this manufacture.²² Eugene Daire points out that the

22. *This notation was reprinted by Eugene Daire in his Oeuvres de Turgot (Paris, 1848) pp. 266-267. Dupont credits Quesnay with these insights on industrial capital. Quesnay may have realized that his theory of capital could be applied to manufactures as well as agriculture and suggested this to Baudeau and Turgot, but we have no way of knowing for certain, since Quesnay always seemed to assume a pre-capitalistic organization of manufactures in his own writings.*

physiocrats reconciled their theory of value with capitalistic production (at least in their own minds) by reducing capital itself to values derived from the land. "Cette théorie", writes Daire, referring to Dupont's commentary on the composition of the fundamental price, "savamment développée par les physiocrates et surtout par Turgot, ne les empêche pas d'admettre la distinction, conçue plus tard par Ad. Smith, entre la terre, le capital, et le travail, comme éléments de la richesses. Mais ils ne la considèrent que comme un artifice de method, parce que, selon eux, le capital dérive de la terre, et que le travail industriel (manufacturier et commercial) n'est qu'un moyen pour conserver et distribuer la richesse, et non pour la produire."²³ This peculiar artifice de method proved relatively innocuous for reasons that might be better understood by comparing it to another theory of the same order --- a labour-cost theory of value of the sort proposed on occasion by Adam Smith.²⁴ Both theories pretended that, on some abstract plane, they had reduced all values (we mean to say, normal prices) to the value product of a single original factor of production. This is an impossible pretension for, in an accounting sense, neither a

23. Daire, Oeuvres des Turgot, pp. XLVII-XLVIII.

24. Though one might be tempted to compare the physiocrat's or a labour-cost theory of value with Marx's, either in respect of methodology or philosophical animus, this should not be carried too far, since only in the most primitive economies could the value structure be reduced to raw material or labour costs, whereas all the facts needed to explain a capitalistic society can be included within Marx's concepts of surplus value, and constant and circulating capital.

labour-cost nor a raw material-cost theory would give anything more than a crude approximation of the facts to be explained in the most primitive economic model Quesnay could have had in mind, considering he admitted the existence of interest and mercantile profits. The intrusion of capitalistic industry with its greater income-generating capacity would only make such theories more untrue. Yet, on a more mundane level, the authors of both theories were able to ignore their fallacious assumptions and perceive all the more significant facts concerning the productive factors other than the "original" factors.

Up to now our observations on the unique productivity doctrine have been confined to that level of analysis that restricted the creation of wealth to the production of agricultural commodities, the creation of stuff. This brings us to Quesnay's single-tax theory --- the idea that all taxes ultimately fall on the net rent of land, no matter how they are assessed. Quesnay considered this a theorem of his unique productivity doctrine, but actually the reasons he gave for taxes being passed on to the landlord do not depend upon this theory of value. The asserted fact that all taxes fall upon the net rent gave him additional reason to suppose that land is the unique source of wealth, and not the other way round. We will in reality be examining a separate level of analysis.

I. The Single Tax.

The premise that all, or at least most, taxation must ultimately fall upon the land has been the usual opinion in pre-industrial societies. Some such notion seems to have been held, by many British parliamentarians well through the eighteenth century, and indeed, even after the industrial revolution had begun to force the pace of economic development. The reasoning behind this idea was not often explicitly stated, though it was obviously based on the common-sense proposition that the agricultural sector of a pre-industrial economy is by far the largest, and affords the greatest surplus available for tax purposes. Some of the leading lights amongst the physiocrats' predecessors, including Charles Davenant, Boisguillebert, and John Locke, were convinced single-taxers; that is, they thought most taxes would in any event fall upon the landlord, and so he would be better off to accept the whole burden of taxation in the first instance, so as not to invite the great expenses usually associated with indirect taxation. We might quote Locke on this matter, if only to show that Les Economists were not alone in this belief:

When a nation is running to decay and ruin, the merchant and the monied man, do what you can, will be sure to starve last; observe it where you will, the decays that come upon, and bring to ruin any

country, so constantly first fall upon the land for he [the country gentleman] will certainly find, when the decay of trade has carried any one part of the money out of the kingdom and the other is kept in the merchant's and tradesman's hands, that no law he can make, nor any little arts of shifting property amongst ourselves, will bring it back to him again: but his rents will fall, and his income every day lessen, till general industry and frugality, joined in a well-ordered trade, shall restore to the kingdom the riches and wealth it had formerly.

This, by the way, if well considered, might let us see, that taxes, however contrived, and out of whose hands soever immediately taken, do, in a country, where the great fund is in land, for the most part terminate on the land. Whatsoever the people is chiefly maintained by, that the government supports itself on; nay, perhaps it will be found, that those taxes which seem least to affect the land, will most surely of all others fall the rents. as an ease to himself, the landlord is always forward to lay it upon commodities he will find he buys this seeming ease at a very dear rate for a tax of that nature cannot be levied by officers, to watch every rivulet of trade without a great charge Let us see now who,

at long run, must pay It is plain, the merchant and the broker, neither will, nor can; for if he pays a quarter more for commodities than he did, he will sell them at a price proportionally raised. The poor labourer and handicraftsman cannot; for he just lives from hand to mouth already, and all his food, clothing and utensils, costing a quarter more than they did before, either his wage must rise with the price of things, to make him live, or else, not being able to maintain himself and his family by his labour, he comes to the parish, and then the land bears the burthen a heavier way.²⁵

Although the arguments of the single-taxers are not identical in every respect, they have several premises in common. Notice, Locke makes it plain that agriculture (presumably in England) is the largest industry, and therefore, must support the bulk of taxation. The State had not as yet perfected the means for disciplining the citizenry, and consequently, indirect taxation involved great administrative expenses which would be passed on to the landlord in the form of increased prices. The poor

25. John Locke, Consequences of the Lowering of Interest and Raising the Value of Money (dated 1691), reprint in J.R. McCulloch, Principles of Political Economy (London 1825), pp. 256-257

labourer and handicraftsman cannot bear the burden of taxation, since they are already living at the lowest possible standard of living. Nor can the broker or merchants, since presumably, their remuneration is just sufficient to make them willing and able to perform their economic functions. Only the landlord is in the unfortunate position of not being able to resist taxation. As it stands this argument leaves many theoretical questions unanswered but, with a greater or lesser degree of elaboration, it is the main drift of all pre-industrial single-tax theories, including that of Quesnay. This sort of argument requires no particular theory of value. It rests on the assumption that competition reduces the payments to all factors of production except land to their supply prices, causing taxes to be passed on to rental income. This would indeed be the case if land were the only factor of production to receive an economic rent as we have defined it above - that is a payment in excess of the sum required to call forth the requisite supply. Locke's argument often suggests that he included subjective costs within the necessary supply price (something comparable to Marshall's Real Costs), particularly when he discusses interest. The physiocrats' cost accountancy is more explicitly subjective. They talked about labour-pain (Travail penible)²⁶

26. See footnote 35 below.

which they considered a cost different in kind from rent, for the latter "se payerait sans expense".²⁷

When Locke writes that the labourer or broker cannot be taxed, he only means to say that for various reasons these economic classes will withdraw part of their economic service if they were to receive a lesser payment. In other words, to the extent he committed himself to an opinion on the matter, he maintains that the supply of labour and capital varies directly with their payments. However, not all pre-industrial economists were of this opinion. David Hume thought that a reduction in real wages would spur the labourer to greater productivity. In his disputation with Turgot over the single-tax, he advanced this argument,²⁸ but Turgot would have nothing to do with it. And quite understandably so for, if this were true, a tax on labour would be conducive to the maximization of the economic product.²⁹ For reasons of this sort the single-tax presupposes certain ideas about the factors of production. The physiocrats had fairly sophisticated theories on rent, capital, and labour, which in their entirety represent

27. Taken from quotation below.

28. Turgot, *Reflections* (Letter in appendix of Ashley edition), pp. 105-107.

29. The physiocrats made profit maximization a basic postulate of their economic theory. See Chapter 6, the first half.

a comprehensive analytical scheme. We will examine their ideas on capital and labour in the two subsequent chapters, and we still have more to say on rent in the present chapter. But for the purpose of explaining their single-tax theory, the following passages from Quesnay's article Impôts should be concise enough to show that they generally believed in the Economy of High Wages for those factors of production that can vary in quantity. The reader should in particular note the assumptions he makes on entrepreneurial labour, capital, and rent.

The profits of the farmers and the earnings of the men whom the farmers employ at husbandry must be distinguished from the income (des revenus) that the same husbandry (culture) returns annually to the landlords; because they are the expenses and profits of the agriculturalists (colons) which assure the husbandry and the income.

It is the wealth (richesses) of the farmers that fertilizes the land; the farming of the land involves great expenses, and the more the expenses are multiplied, the more land is fertile, and the more it produces wages for the farm labourers, profits for the farmers, and income for the landlords.

And so, it is not on productive wealth (richesses productives) of the agriculturalists

that one should assess the taxes, because this will destroy the means necessary for the production of the annual income (richesses annuelles) of the nation.

The richer the farmer, the more he will be excited by profit, the more husbandry will be assured; the country will be rich in flocks; the land will be covered with rich harvests; the peasants will be employed and their earnings assured, and wealth (revenus) will multiply itself. One should not envy him [the farmer], nor wish his wealth diminished; it [his wealth] should be privileged, because it is the essential principle of the very wealth of the State

The taille [a tax] proportional to the income of the landlords, imposed on the farmer in accordance with the price of the rent as fixed by the lease and conforming to the rules expounded in the article Grains, will pay itself without expense, and will not prejudice the farmer, because he takes it into account when leasing the farm; the farmer finding security in this regard, makes openly and with peace of mind the expenditure necessary for the animals and labour which are required for the most advantageous husbandry; the lands of the landlords will always be maintained to the highest

degree of improvement, and it will always attract (tirerait) at each renewal of the lease the capital (revenu) commensurate with the good state of the land; his income [the farmer's] will be assured, because husbandry itself will be assured; the profits of the farmer will not be taken from the fund of the landlord, because they will be the fruits of the farmer's expenses. The competition of the farmers at the renewal of the lease will always carry the income of the landlord to the proportion of the product of the land. The tax proportional to the income of the land does nothing to affect the status of the landlord, because it is always the productivity (fonds) of the land which pays the taille; the farmer can be saved only [by this expedient] from the abuse of arbitrary taxation.³⁰

In this passage Quesnay is pre-occupied with the problems of the farmer-entrepreneur almost to the exclusion of everything else (this over-emphasis being his worst personal bias), but, nonetheless, he and his disciples eventually applied the same principles of economic behaviour to the whole of society. The most distinctive and original

30. Quesnay, "Impots", Francois Quesnay and La Physiocratie (Institut National d'Etudes Demographiques,) 1958, Vol. II pp. 594-597.

characteristic of this vision is the recognition of the productiveness of capital and the understanding that, economically speaking, the farmer must be enticed (tired) to meet this cost by a reward, a profit. Others, notably Boisguillebert and Cantillon, had already made this common-place discovery, had even theorized upon it. But Quesnay put so much weight behind the idea as to make it a new idea in kind; he was the first to theorize about a specific situation which afforded an opportunity to increase significantly the economic product by intensive investment in fixed capital (as opposed to mercantile capital). And, equally impressive he and his disciples had no little insight into the sociological organization that this development implied. It is obvious from the quotation above that he thought agriculture should be under the management of capitalist farmers, i.e. entrepreneurs who set their own capital to work in enterprises large enough to employ wage labour. He makes it plain that the farmer must receive some minimum rate of profit on his investment, a rate which he says will be set by competition amongst the farmers at the renewal of the leases. Moreover, the higher the entrepreneurial wage, the more labourous will be the farmer; "The richer the farmer" Quesnay argues above, "the more he will be excited by profit". The significance of all this is that, given these assumptions, any tax that reduces the pure profits of the farmer and

their entrepreneurial wage would be inclined to impair the supply of capital offered for economic use and dampen the enthusiasm of this managerial class. And so, rather than tax necessary costs of production, Quesnay recommended that all taxes be levied on rental income which (note the language used) "will pay itself without expense".

Obviously, the rationale of the single-tax on land rent is that it will fall on a Costless Income, an Unearned Increment. Quesnay is charmed by the idea that the natural forces of unfettered competition will separate out this disposable income. This is not to say he thought the landlord should or would be expropriated. He proposed that his scheme would stimulate economic activity in such a way as to actually increase rents.³¹

Turgot sums up the single-tax theory in a concise manner that lends itself particularly well for quotation. He went beyond Quesnay to explicitly extend this theory to cover all factors of production in industry and commerce, in addition to agriculture. He says of the landlord that he "enjoys a free income (revenu libre) which he takes up in a great parcel from the beneficence of nature, which is in no way the equivalent of his personal labour nor his immediate investment (avances)". "All that which the other

31. We will consider his reasons for believing this might be so in the final section of this chapter.

members of society receive", argues Turgot, "the farmers, the workers, the merchants, the capitalists, is the price of labour, of industry, of capital (avances) or of money loaned at interest at a price contested by opposing interests, and reduced, by competition, to the least possible rate, that is to say to that which is needed for the maintenance of husbandry, of the arts, of commerce, of circulation in the same degree of activity (mouvement) and the life of the body politic, cannot be diverted to other uses without harming the public prosperity, without drying up the source of wealth itself, to the prejudice of the landlords and the entire State..... **[Whereas]** a tax on the landlord only takes away a portion of the free income of which the disposition can vary without any change in the order and proportion of the parties active in society!"³² The reader should always bear in mind that rigorous competition - so rigorous that we might justly call it perfect competition - is the agency that was expected to reduce the payments made to all factors of production (except land) to their supply prices. "All the public charges", concludes Dupont in the Éphémérides, "are the responsibility of the landlords by what is right as they are in fact; because they **[the expenses]** turn everything to their **[the landlords']** great profit by the law of competition which obliges all

32. *daire, Œuvres des Turgot. Vol. I., p. 412.*

the other citizens to limit themselves to their wage (retribution) and a return (rentée) on their capital (avances)".³³

Having followed the physiocrats' argument this far, we must admit that, if payments to factors of production were actually reduced to their supply prices by competition, taxes assessed on them would be passed on to any individual factor which happened to accrue a rental income. The physiocrats, like most economists until the mid-nineteenth century, assumed that land was the only factor of production to receive an economic rent. For that reason, they argued that all indirect taxes³⁴ would be passed on to the landlord, either in the form of increased prices for the goods he consumed or in the guise of reduced rents caused by increased farming costs. To the extent that the capitalist, artisan, or even a barber, could not raise the price of his economic service, he would not pass on the tax, but his class as a whole would in the end offer a lesser amount of their particular economic service. We cannot outline in any detail Quesnay's reasoning concerning the effects

33. *Ephemerides du Citoyen* (Paris, 1766) Tom V., p.159

34. They considered any tax which was not directly assessed on the produit net an "indirect-tax"

of indirect taxation on each of these economic services until after we have studied his theories of capital and labour. But, as an example, he thought the wage-labourer would work harder as real wages went up - paraphrasing his statement about the capitalist-farmer: "The richer the labourer, the more he will be excited by wages". Moreover, he was of the opinion that the labouring poor would depopulate themselves if wages were reduced, which would be another factor causing the supply of labour to vary directly with wages. The physiocrats also took into consideration another sort of reaction to taxation. They were concerned that a tax which forced an increase in the price of a factor of production or a consumer good would reduce the effective demand for them. They were anxious, having acquired a profound respect for aggregate demand considerations from Boisguillebert, that all taxes should bare lightly, no matter where they might fall. We might quote any number of passages to show the different routes by which indirect taxes are passed on to the landlord, but we had best leave our few comments on this none-to-exciting topic for our chapter on Taxation and Economic Policy. For the time being we need only acknowledge that the single-tax theory follows logically from its premises and that the physiocrats were generally aware of the chain of causation involved.

Before we consider the physiocrats' speculations concerning the demand side of the economic equations,

we might make a few concluding remarks on the two aspects of the unique productivity doctrine we have just reviewed. It seems that the physiocrats advanced their theory of value on two very different levels of abstraction, never attempting to bring the two together. First, they identified the emergence of rent and the creation of values in general with the production of agriculture's physical surplus. And, secondly, they argued that all taxes fall on the produit net, which they accepted as further evidence that the Net Product was an exceptional kind of income. The physiocrats on different occasions stressed one and then the other claim for the uniqueness of agriculture's economic product. In his disputation with Hume, Turgot seemed to consider the physiocratic theory on the incidence of taxation sufficient proof of the proposition. The physiocrats ambivalent attitude towards the primary industries other than agriculture is indicative of their confusion on the subject. One might expect from their theorizing about the material surplus of agriculture that such industries as mining, fisheries, forestry, etc., would be considered truly productive, since they as well produced a net material surplus. Yet, they held reservations about these industries. They considered them productive only to the extent they produced a net rent disposable for taxation. And, then, what is one to make of their peculiar notions concerning the incidence of taxation? These notions

rest on the heroic assumption that perfect competition amongst suppliers of quantitatively-augmentable factors of production does in fact reduce payments to supply prices. This may have been true in some approximate sense but this sort of theoretical approximation is misleading for recommendations on such a practical concern as taxation, since the mere presence of friction in the system would be enough to form net incomes other than the net rent of land. To many of the physiocrats' contemporaries - Hume, Graslin, Galiani, Verri - this theory seemed entirely contrary to the facts at hand; they argued with good reason that nearly all incomes could be taxed to some extent without causing a reduction in the supply of economic services. Yet, despite these valid criticisms, Quesnay's single-tax had something to recommend it as a practical policy, considering the large economic surplus afforded by land rent and the disruption and expense associated with the usual "indirect taxes" of his day.

2. Value from the Demand Side.

Many critics of physiocracy have been inclined to dismiss the whole of their theory for no better reason than that the apparent confusion and erroneousness of their theory of value was presumed to prejudice anything else they might have to say. With some of the neo-classical economists and their disciples, the seeming

irreconcilability of the unique productivity doctrine with utility theory was enough to throw the physiocrats out of Court. The irony of such criticism is that the physiocrats were amongst the first and most enthusiastic proponents of the utility view of economic motivation. Though they always made their formal bow before the idea that the value of all goods and services can be reduced to primary commodity costs, they conceded that the very price of these commodities is set by the intensity of consumer demand, either directly for agricultural produce or for the goods manufactured from them. Utility theory in itself presupposes no particular theory of value, for at its best it is a convenient taxonomy (and it may be a superficial one at that) for grouping together various psychological and social motives of economic behaviour. (One is reminded of the quib that sinner and saint, the up-and-coming young man and Bowery bum, are all maximizing their utility). For instance, Marx could, and did, take subjective influences on price into consideration; the weight he saw fit to accord them is another matter. In one respect the animus of Quesnay's theory of value has something in common with that of Marx. Both looked beyond the satisfaction of consumer demand for the basic meaning of the economic process. Whereas Marx found it in the sociological arrangements of the class structure, Quesnay considered the agricultural surplus and land rent the basic facts of economic existence.

Yet, though Quesnay's theory of value was always something more than a theory of price, there is nothing about his theory to prevent him from emphasizing the subjective factors that might effect either the demand or the supply side of the economic equations. We have already mentioned that capital costs were seen to include something in the nature of Real Costs. And, equally significant, Quesnay sets up a rule of economic conduct that wears a distinctive hedonistic garb. He contends that "the obtaining of the greatest augmentation of satisfaction (jouissance) possible by the greatest diminution possible of expense, is the perfection of economic conduct", that is to say, "the greatest diminution possible of labour-pain (travail penible) with the greatest pleasure possible".³⁵ In the chapters on Capital and Labour, we will return to the subjects of the Capitalist's Real Costs and the disutility theory of labour implied by the foregoing rule, though for the remainder of the chapter we had best confine ourselves to the physiocrats' "Utility Theory" of Exchange Value and their subjective study of aggregate demand considerations.

It is difficult to trace the descent of the physiocrats' disposition for subjective analysis, but there is some reason to believe that they were influenced by their lively critic L'Abbé Galiani. Turgot mentions

35. *Daire, Physiocrates, p. 102.*

Galiani's Della Moneta (1751) in his own Valeurs et Monnaies and quotes with approval the Abbé's maxim that "the common measure of all value is man".³⁶ The writings of Quesnay and Mirabeau occasionally have a ring reminiscent of the Neapolitan's works. "Goods (biens) are not riches (richesses)", writes Mirabeau, in what sounds like a paraphrase of Galiani's maxim, "than by reason of the demand which men have for them. Water by its nature, one of the primary forms of wealth (premières biens), is only riches in a place where its rarity gives it a price. Men are then the first principle of riches, and they exist only because of their wants (besoins). The wants are nothing else than the necessity for expenditure (dépenses); and for that reason expenditures have a direct connection with the riches of a Nation. If one takes expenditure where there are goods to consume, he will convey riches there; because this expenditure gives the goods an exchange value (valeur venale), by which the linking itself transforms goods into riches".³⁷ The similarity of Mirabeau's train of reason to the utility theory of his contemporaries, notably Galiani and Verri, is obvious enough. In the article Hommes, Quesnay discusses, in a manner similar to Galiani, the difference between use value (valeur usuelle) and exchange value (valeur venale). He notes that the use value of food is much greater than

36. *Daire*, Oeuvres des Turgot, p. 83.

37. Mirabeau, Philosophie Rurale (Amsterdam) 1764, Vol. II. pp. 223-224.

that of a diamond, and yet, only in periods of dearth does the exchange value of food approximate its use value.³⁸ This discussion, which continued throughout the next century, is not what it seems at first glance, i.e. complete nonsense; its authors were actually reaching for an idea analogous to Marshall's Consumer's Surplus. The Utility Theory of Exchange Value had a much larger following on the Continent than is generally realized, since many authors used words other than "utility" to convey the same idea. Quesnay, Mirabeau, and Turgot employed the word jouissance where Galiani, Verri, Condillac, and their fellow physiocrat Le Trosne, used the word utilité, but the meaning was broadly the same. We might quote Le Trosne to illustrate the physiocrats' awareness of the influence utility has on exchange value. His subjective theory is usually somewhat more concise than that of his cohorts. -

Man is the prisoner of wants (besoins) which occur every day: some are imperious and indispensable, which he is forced to satisfy, under the pain (peine) of suffering and death; some are less urgent, though very necessary; some are simple pleasures and comforts which he cannot think of satisfying until his mind is

38. Quesnay, "Hommes", Francois Quesnay and La Physiocratie (Institut National D'Etudes Demographiques, 1958), Vol. II. pp. 526-527.

is at rest about the first³⁹

There are various causes that combine to determine value, and it is from their concurrence that it results; it is first of all founded on value in use (*propriété usuelle*).

In effect, a thing which does not have any utility cannot have a value, but this utility is only relative, (for) the same thing can be reputed useful by one and useless by others. It suffices that it should be known to be sought by a certain number of persons for it to have a value in the eyes of those who do not esteem it, and who can receive it [the value] in exchange when they wish to dispose of it.

Tobacco was a plant which did not have any value before man found a use for it (*propriété*). The new want which they created has given cause for a new culture, and by consequence an increase in population, which, by means of exchange, finds a way to live on this new product. This want, far from being a cause of impoverishment, is a new cause of riches (at least for those countries where the culture and sale of these plants are free).

39. *Daire, Physiocrates*, p. 887. *The following passages are our own translation.*

Although value supposes some sort of utility, it does not follow that it is proportional to the degree of utility, because there are still other causes that determine it⁴⁰

[The] value of primary commodities (productions), founded first of all on their use value and the expenses required to obtain them, is modified by rarity or abundance of which the proportion is relative to the competition of sellers and buyers and the state of consumption, which itself is determined by whether the faculty for paying for them is more or less extended; whether it is restrained, to the great prejudice of reproduction [that is agriculture], by indirect taxes and prohibitions, or whether it is at its natural rate, which is alone favourable to the producers, the landlords and the consumers, namely under the absolute rule of liberty.⁴¹

This is the same Le Trosne whom Stanley Jevons thought had a good deal to say on the utility theory of value. Though, it is obvious, even from the brief quotations above, that this is something different - in a

40. *Ibid*, pp. 890-891.

41. *Ibid*, p. 903.

way something more - than the usual utility theory of exchange value.⁴² Le Trosne insisted on looking at demand and supply at one and the same time in somewhat the manner Alfred Marshall envisioned in his famous illustration of the scissors. "The value of primary commodities", he tells us above, "is founded first of all on their use value and the expenses required to obtain them", or as he says previous to this summary, "the indispensable costs".⁴³ One is led to understand, on reading through the whole of his work that, in the state of perfect competitive equilibrium, exchange value as determined by the demand side (i.e. normal price) will precisely correspond to the costs of production, the wage of an artisan or the profits of a capitalist being included within the indispensable costs.⁴⁴

It is significant that the physiocrats always, as did Le Trosne and Mirabeau in the foregoing quotations,

42. Le Trosne makes it clear that he is defining value in terms of exchange value:

"Les productions acquièrent donc ^{dans} l'état social une qualité nouvelle, qui naît de la consommation des hommes entre eux: cette qualité est la valeur, qui fait que les productions deviennent richesses, et qu'il n'y a plus proprement de superflu, puisque l'excédant devient le moyen d'obtenir ce qui manque."

"La valeur consiste dans le rapporte d'échange qui se trouve entre telle chose et telle autre, entre telle mesure d'une production et telle mesure des autres."

"Le prix est l'expression de valeur: il n'est pas distinct dans l'échange, chaque chose est réciproquement le prix de la marchandise; dans la vente, le prix est en argent." Ibid., p. 889

43. *Ibid.*, p. 893.

brought the level of effective demand into their study of exchange value. There are two reasons for this. First of all, they were concerned with the problem of economic fluctuations, and could never allow themselves, even for the sake of abstract argument, to take full employment for granted. But, in still another sense they and most of the other subjective theorists of their day, notably Verri and Galiani, used utility theory to study the factors that determine the level of consumer demand. They were interested in historical changes in social psychology as it affects a people's desire for goods and willingness to work for them. Verri's great enthusiasm was his theory that the influx of precious metals from the New World had stimulated economic activity and broadened the market and thereby created new wants.

44. *Some of the other physiocrats state this explicitly (though of course their concept of natural price was complicated by the notion that all costs can ultimately be reduced to primary commodity values, no matter how they might be affected by what happens on the demand side). Mercier says :*

Je commence par observer que le prix des ouvrages de l'industrie n'est point un prix arbitraire, qui puisse augmenter au gré de l'ouvrier, ou diminuer au gré des acheteurs: nous devons au contraire le regarder comme étant un prix nécessaire, parce qu'il est nécessairement déterminé par toutes des dépenses dont il faut que l'ouvrier soit indemnisé: dépenses qui sont elles-mêmes réglées par le concurrence, de manière que chaque ouvrier n'est pas libre de les augmenter selon sa volonté. Le prix nécessaire de chaque ouvrage n'est donc autre chose qu'un somme totale de plusieurs dépenses additionnées ensemble, et dont le vendeur de l'ouvrage a droit d'exiger des consommateurs le remoursement, parce qu'il est réputé les avoir faites, dès qu'elles n'excèdent point la mesure fixée par la concurrence des hommes de sa profession. Ibid., p. 587.

And his compatriot Galiani delighted in speculating on what would happen if a Moslem community were converted to Christianity and acquired a taste for wine. Le Trosne's discussion about the introduction of tobacco is another example of this sort of reasoning. Their talk almost reminds one of Bernard Mandeville's lectures about private vice being a public virtue.

In any event, there is nothing to the charge, frequently made, that the unique productivity doctrine prejudiced the physiocrats against commerce and industry. They were only concerned that these two sectors of the economy should not be subsidized by policies that would be harmful to agriculture. Their theory of consumer demand gave them positive reason for thinking that commerce, industry, and agriculture, are complementary to one another. They consistently argued that the broadening of the market, occasioned by a proportionate development of industry and expansion of trade, would create new wants with nothing but beneficial results; as the Austrians would have it, economic motivation would be imputed from consumer goods of the first order to raw materials of the N-th order. The following quotation, illustrating this perspective, might be better understood in the original French :

Le Commerce & l'Industrie n'ajoutent rien
au produits; ils leur donnent la valeur; rien
quant au fond, mais tout quant à la forme,

rien à leur qualité de biens, mais ils peuvent seul lui attribuer de richesse

Le Commerce est donc le truchement & le colporter des besoins des hommes; il est l'aigillon de leur desire, & par là même de leur travail. Il donne du prix à tout, en offrant partout en échange d'un inutile superflu, quelque chose qui recoit un prix de la nécessité & de l'opinion. C'est ce prix qu'on appelle valeur, c'est cette valeur qui constitue la richesse; & ce n'est que sur cette richesse, que le fisc peut s'asseoir & regner avec regle & puissance. C'est par là que le Commerce, travail second, est le moteur du travail premier, & qu'il oblige l'homme à provoquer, par les plus continuel, & plus opiniâtres efforts, les produits, seul biens d'ici-bas.⁴⁵

Mirabeau accepts the fact that commerce and industry provide new use values (forme). He says they produce no material product (produits), no real wealth (biens); yet, only these two kinds of "sterile" labour can give this real material wealth the attribute of exchange value or income (valeur, richesse). He argues that commerce is the spur to man's desires and by the same token to his industry. Like most of his contemporaries, he propounded

45. Mirabeau, Theorie de l'Impôt (Paris 1760), pp. 93-99

the thesis that the function of commerce is to provide a market for an actual or potential "useless surplus"; in other words it broadens the market. Commerce, he says, is le moteur of primary labour (i.e. agricultural production). Mirabeau is as enthusiastic about the productive stimulus induced by commerce and industry as his contemporaries Count Verri and Abbe Galiani but, admittedly, for reasons peculiar to the physiocrats. He desired the prosperity of these sectors not merely for their own sake, but because they provide an imputed value for agricultural commodities, the production of which provides an income to which all other sectors are stipendary. All inquiry into value returns to this first assumption.

3. Demand Schedules and Quesnay's Ideas on Rent.

We have observed that the physiocrats usually associated the emergence of rent with the "creation" of a surplus physical product in the agricultural sector. The uniqueness of this material product was confirmed in their eyes by the knowledge that under certain conditions all taxes would fall on the net rent of land. The most that can be said for this body of theory is that it provides the first premise for a complete theory of rent. The one particle of truth intimated by the physiocrats' talk about rent being a "gift from nature" (a truly unfortunate use of language) is the recognition of the productiveness of land. No one would ever deny

that the production of an agricultural surplus is necessary for rents to be paid. But this is merely a necessary condition and not a sufficient condition. To Quesnay's credit, he went a long way towards providing a more complete theory of rent. Contrary to what one is taught to expect from a physiocrat, he advanced the theory that the amount of rent paid to a landlord during the period of a lease depends upon the intensity of demand for agricultural produce prevailing through the period, using demand schedules to define demand conditions.⁴⁶ For agriculture to afford a rent, the intensity of demand would have to be of such insatiability as to maintain prices in the face of increasing production (which, of course, was one of the aims of his economic policy). This required a certain price-quantity relationship in the demand schedules for agricultural products, which Quesnay thought could only occur were France to allow free domestic and international trade for its grains (grain being its most important agricultural commodity). We need only reproduce his two demand schedules, one for

46. *The demand schedule was first conceived by Gregory King, though it is likely Quesnay acquired his knowledge of it from Davenant. It is nearly the same thing as the Marshallian schedule which shows the functional relationship between the quantity of a commodity supplied and the price offered for it as of a moment of time. The King-Quesnay device pretends to be a statistical demand schedule; the functional relationship between quantity and price is collected for different years. Quesnay used this time dimension to bring dynamic problems into consideration. For instance, it allowed him to ask how increasing agricultural production occasioned by the accumulation of capital would affect rents.*

France where the commerce of grain was restricted and the other for England where it was free, to show that meaningful conclusions can be readily drawn from this analytical device :

Pour déterminer avec d'exactitude le prix commun du blé dans l'état actuel de la grande culture en France, lorsque l'exportation est défendue, il faut faire attention aux variations des produits des récoltes et du prix du blé, selon que les années sont plus ou moins favorables à nos moissons. 47

<i>ANNEES SEPTIERS par arpent</i>	<i>PRIX du septier</i>	<i>TOTAL par arp.</i>	<i>Frais par arp.</i>	<i>RESTE par arp.</i>
<i>Abondante 7 liv</i>	<i>10 liv.</i>	<i>70 liv.</i>	<i>60 liv.</i>	<i>10 liv.</i>
<i>Bonne 6</i>	<i>12</i>	<i>72</i>		<i>12</i>
<i>Moyenne 5</i>	<i>15</i>	<i>75</i>		<i>15</i>
<i>Faible 4</i>	<i>20</i>	<i>80</i>		<i>20</i>
<i>Mauvaise 3</i>	<i>30</i>	<i>90</i>		<i>50</i>
<i>—</i>	<i>—</i>	<i>—</i>		<i>—</i>
<i>Total pour les 5 années 25</i>	<i>87</i>	<i>387</i>		<i>87</i>

He introduces his second demand schedule with a short discussion of the conditions which influence the intensity of consumer demand.

Pour déterminer plus sûrement le prix commun du blé, l'exportation étant permise, il faut faire

attention aux variations des produits récoltes et des prix du blé selon ces produits. On peut juger de l'état de ces variations dans le cas de l'exportation, en se réglant sur celles qui arrivent en Angleterre, où elles ne s'étendent, depuis nombre d'années qu'environ depuis 18 jusqu'à 22 liv. Il est facile de comprendre pourquoi ces variations y sont si peu considérables: l'agriculture a fait de très grands progrès dans ce royaume; les récoltes, quelque faibles qu'elles y soient, sont toujours plus que suffisantes pour la subsistance des habitants. Si notre agriculture était en bon état, nous recueillerions, dans une mauvaise année, à peu près autant de blé nous en fournit aujourd'hui une bonne récolte. Ainsi, on ne pourrait, sans des accidents extraordinaires, éprouver la disette dans un royaume où les moindres récoltes, jointes à ce qui resterait nécessairement des bonnes années seraient toujours au-dessus des besoins des habitants. On peut en juger par l'exposition que nous allons donner des variations des récoltes que produit une bonne culture, selon la diversité des années. On y remarquera qu'une mauvaise récolte de dix millions d'arpents donne quarante millions de septiers de blé, sans la récolte d'une même quantité d'arpentsensemencés en grains de mars.⁴⁸

<i>ANNEES SEPTIERS</i>		<i>PRIX</i>	<i>TOTAL</i>	<i>FRAIS</i>	<i>RESTE</i>
		<i>du septier</i>	<i>par arp.</i>	<i>par arp.</i>	
<i>Abondante</i>	8 liv.	16 liv.	128 liv.	66 liv.	62 liv.
<i>Bonne</i>	7	17	119		53
<i>Moyenne</i>	6	18	108		42
<i>Faible</i>	5	19	95		29
<i>Mauvaise</i>	4	20	80		14
	—	—	—		—
	30	90		<i>Total</i>	200

Now there are several things that can be readily seen in these demand schedules. In the case of France a large harvest will cause profits and rents to fall, while for England the case is reversed. "In the actual large-scale farming (*grande culture*) in France", says Quesnay in a note referring to the second table, "it has been noted above, the farmer loses in the good years; here he profits, but he loses in the bad: and so, he has an incentive that there be a great deal of grain, as opposed to, in the other case, where the abundance ruins the farmer, since in this latter case he will only profit a little in the bad years".⁴⁹ Capital investment will obviously, in the case of France, decrease rents and profits for agriculture as a whole, whereas in England there is real incentive to improve agricultural methods.

49. *Loc. cit.*

Above all, Quesnay was interested in ascertaining the conditions under which investment would afford adequate profits and increased rents. In order to do this he had to abandon his usual preconceptions and take into account the distinction between the physical and value product of land (employed with capital and labour). Land's scarcity was implied, or rather, taken for granted. Rent is paid to the landlord argues Quesnay (See the quotation on page 85 to 87 of this chapter), when competition for land obliges the capitalist-farmer to supply the factors of production at a price less than the market value of the produce. He simplified his demand-schedule explanation of rent, by assuming all agricultural land is of equal quality. This does not mean that he did not realize better land will receive a premium for its differential productivity.⁵⁰ It was simply that he found the level of rents to be chiefly determined by these other factors.

We have said above that Quesnay was his own best critic on the subject of rent. He usually stressed land's productiveness in terms of physical product, but seldom did he completely lose sight of demand. He was too worried about the level of aggregate demand to be remiss on that score. To his credit, he provides us with this

50. *Ibid.*, pp. 259-262.

demand-schedule explanation of rent in one of his first articles Fermiers. Moreover, we have good reason to be pleased for this theory generally agrees with our own ideas on this subject. Possibly, it is more just to say he understood all the relevant facts about rent but stressed the physical productivity of land for peculiar reasons of his own. And we certainly have a good idea what these reasons were, seeing that he viewed the economic process itself as the production and working up of raw materials.

As it stand, Quesnay's demand schedule analysis is much superior to the West Ricardian theory. At least it said nothing that is definitely wrong. His technique, if understood, could have clarified those confused post-Ricardian speculations as to whether or not, or under what conditions, the application of capital to land would increase rents. Unfortunately, this use of demand schedules did not attract the attention of Quesnay's successors. In fact, none of Quesnay's disciples, except Turgot,⁵¹ appreciated its usefulness. As for the other physiocrats, their verbal analysis suggests they had some such framework in mind, but the quality of their work suffered by not employing it. Quesnay found only one successor to carry on with this approach to the problem of rent, Thomas Malthus. The Ricardian theory was to dominate the next century. We shall defer our comments on the Malthusian theory of rent until the final chapter.

51. See Turgot's "Lettres sur la Liberté des Grains", reprinted in Daire, Oeuvres des Turgot.

CHAPTER 3**CAPITAL**

Quesnay's theory of capital laid the foundations for modern thought on this part of economic theory. The modern economist, discovering here in the works of Quesnay reasoning on the subject similar in kind to his own, often credits him with the first detailed study of capital. In a broader sense this is not quite true, since the mobilization of mercantile capital was a primary concern of mercantilist theory and policy. Quesnay's original contribution was his exposal of the nature of Real Capital, the factor of production, as opposed to capital in its monetary aspect. He was the first economist fully to appreciate the significance of England's agricultural revolution and thereby became the first (Cantillon and Boisguillebert's passing mention of fixed capital notwithstanding) to theorize on a specific situation in which intensive investment in the capital means of production would gain a great increase in wealth. He ascertained the economic conditions necessary for the accumulation of capital and to some extent perceived the sociological implications of capitalistic agriculture. The reader may find it hard to reconcile this pre-occupation with the accumulation of capital with his statements to the effect that land is the source of all

production and values, but, as we have suggested in the preceding chapter, owing to hasty reasoning similar to that of the labour-cost theorists, he simply did not notice that his Commodity-Cost Theory of Value was at variance with the facts of capitalistic production, and so, on a more mundane plane was able to proceed with a confident examination of these facts.

This inquiry into capital grew naturally from Quesnay's diagnosis of the economic ills of the Ancien Régime. Following Boisguillebert, he surmised that France had been passing through an almost continuous economic decline since the Golden Age of the Sun King and, like his progenitor, he put most of the blame for this state of affairs on the rapacious system of taxation. It was not simply that taxation was excessive but, more important, it was wrongly assessed. The existing types of taxation lent themselves to evasion and corruption and, according to his ideas on their incidence, all the unnecessary expenses thereby incurred would fall upon land rent. The landlord, Quesnay reasoned, would try to maintain his income at the expense of his tenants. The peasant or capitalist-farmer, as the case happened to be, would find it impossible to maintain his flock, herd, and working animals, to keep up the necessary improvements on the land and farm buildings etc.; in a word, the assessment of taxes was such as to deplete capital.

Moreover, Quesnay wanted to go beyond the mere restoration of agriculture to its former state of prosperity. He was greatly impressed by contemporary reports on English "high farming". Briefly, these are the essentials of the new technology, as Quesnay understood them. First of all, the grande culture,¹ as he called it, as opposed to Petite culture, utilized horses rather than oxen. He thought horses worked faster and saved labour. In the long run, they were more economical, but, characteristic of this mode of farming, they required a greater initial investment. Grains and livestock were to be farmed together, since these two main crops, along with turnip culture and improved forage, had a symbiotic relationship by which a greater production of both could be achieved than if each were farmed separately. Animal husbandry provided manure, and, in turn, improved crops and methods of cultivation produced animal food in an abundance that could not be obtained by the less-rationalized, small scale French agriculture. All this presupposed of course that the open-field system, which was still common in many areas of France, would give way to enclosure, so that the farmer could accommodate technological and commercial exigencies. Quesnay saw many economies of large-scale production. Certain fixed costs, such as the employment

1. See the articles Grains and Fermiers. These articles contain most of Quesnay's arguments for the grande culture. They were first published in Diderot's Encyclopédie, 1756. Republished in Eugene Daire, Physiocrates (Paris, 1846), and A. Oncken, Oeuvres de Quesnay (Paris 1888).

of a shepherd, might be spread over a greater number of units,² and the diversification of crops provided insurance against a low price for grains.³ In sum and substance: the introduction of this profitable technology would not be just a matter of increasing productive expenditure on the existing economic units; the grande culture was by its nature large-scale production which would require a farming class which could amass large quantities of capital.

Quesnay looked at the circumstances of the depression and the prospects for the introduction of the grande culture in a very distinctive light. He was impressed by the material nature of agriculture's means of production. Productive wealth was seen as an accumulation of material improvements on the land and physical possessions such as cattle and working animals. The productive process, as described by the tableau, was started by an original amelioration of the land and sustained by annual capital advances. The avances foncières were the initial investments in clearing the land, in buildings, draining and the like, that occur only once or after long periods of depreciation. The avances primitives are fairly long term investments like cattle and farm machinery, and the avances annuelles are those that occur annually or frequently, e.g. seed and labour. And the avances souverains are public expenditures on roads, canals, experiment stations etc.

2. *Daire, op. cit.*, pp. 139, 274.

3. *Ibid.*, pp. 232, 233.

which provide external economies for agriculture's production and the marketing of its produce. In essence, he visualized capital as productive stuff, to live on or to work with. He expressed its value in terms of money, but still he neglected its monetary aspect, with prejudice. The uniqueness of this perspective can be better seen by comparing it with the mercantilist's or banking theorist's view of the subject. The latter were accustomed to thinking of capital in its monetary meaning, a quantity that fluctuates with the currents of trade and the availability of credit. The main function of capital, in their view of the matter, was to facilitate the flow of commodities, to enable the merchant to buy goods from the producer and display them before the customer. The middleman, the huckster, provided the pulsating force that impelled circulation through the economic body. They generally assumed production (primitive as it was) would take care of itself, provided a market for commodities could somewhere be found. In contrast to this evaluation of a particular historical situation, the conditions for production brought in by the agricultural revolution accentuated the importance of real capital. The physiocrat, asked to explain the technological facts accounting for the growth in the capital establishment, would dwell on the breeding of horses and the cultivation of grains. The similarity of this view of the matter to the preconceptions on capital

that followed/ⁱⁿthe 19th century is immediately apparent when one reflects that, with the industrial revolution, economists began to associate the accumulation of capital with the making of machines, in other words, another type of Real Capital. As we have pointed out before, this emphasis on these new conditions for production was not at all incompatible with most of what the monetary theorists had to say on the subject of capital; these two schools of thought should have complemented one another. But Quesnay was so pre-occupied with the new technology, of which the main limitation to the increase of wealth was the material means of production, that he neglected to follow this line of inquiry. Anyway, the schemes of John Law & Co. were suspect as an immoral attempt to get something for nothing.

Here, a few words might be said about the methodology by which Quesnay conceptualized his theory of capital. One is immediately impressed by his fact-mindedness, the afore-mentioned articles Fermiers and Grains being good examples of the genre of his work. Quesnay's ability to generalize from what might be described as institutional studies gives his work a greater catholicity than could be achieved by the purely statistical methods of his forerunner Boisguillebert. One can easily follow the development of this theory of capital from his minute examination of the details of the grande culture -

the types of crops and farming techniques, the yields per acre and the expenses of cultivation, etc.; and, on the sociological level, he even examined the personal qualities that would be desired for the capitalist-farmer. The monologues that some of his lesser followers submitted to the Éphémérides du Citoyen⁴ are positively academic in their search for wisdom by circumscribed study of such topics as the cultivation of turnips or the churning of butter. This level of inquiry was often similar in spirit to that of the German historical school, but the best of it is different in one important respect: whereas men like Schmoller disapproved of an "isolating" analysis of economic phenomena, the physiocrats generalized their factual studies into abstract theory, as a matter of course. Though Quesnay himself was not self-conscious concerning his methodology, he would have recognized the methodenstreit between Schmoller and Carl Menger, the critic of historicism, for what it was (a meaningless controversy), for he himself displayed the positive virtues of both the institutionalist and theorist. Strictly speaking, neither Quesnay nor any of his disciples had a true historical perspective; an inability to visualize the economic model that the mercantilists had in mind may in part account for the prejudiced reception of their monetary theory. Yet, if the reader will allow a statement

4. A perusal of this same journal is enough to impress one with the extent English agronomy influenced the physiocrats. Andre J. Bourde has made an excellent study of the influence English agriculture had upon scientific and popular opinion in eighteenth Century France. The Influence of England on the French Agronomes (Cambridge 1953).

that is not easily proven: their broad examination of the social process enabled them to discern developments that were to have much meaning for the immediate future. It is no accident that Baudeau and Turgot applied Quesnay's theory of capital to the manufactures of France before this sector had been generally organized under the aegis of capital.

Following Cantillon's example, Quesnay gave the entrepreneur a governing role to play in his economic order. He had no patience for any farming class other than well-to-do, profit-motivated, capitalist-farmers who were in a position to employ considerable quantities of labour and capital. "We do not envisage here the rich farmer as a labourer who works the land himself"; says Quesnay, "he is an entrepreneur who manages and makes his enterprise profit by his intelligence and his wealth. The agriculture managed by the rich farmer is an honourable profession, reserved for free men in a position to make advances of the considerable expenses which are necessary for the cultivation of the land, and who employ the peasants and always procure for them a proper and assured wage."⁵ What is more, Quesnay makes it a maxim "That each should be free to cultivate on his land those crops, his faculties, and the nature of the land suggests to him in order to obtain the greatest product possible."⁶ In one respect his understanding of the entrepreneur's

5. *Daire, op. cit., p.275*

6. *Ibid., pp. 91, 92.*

role differed from that of Cantillon. The latter stressed the risk-bearing function of the entrepreneur, who was seen to commit himself in advance to certain contractual payments in expectation of a future uncertain income,⁷ whereas the very purpose of Quesnay's programme was to ensure a secure income for the capitalist-farmer so as to promote the accumulation of the means of production. Both writers assigned to the entrepreneur the task of co-ordinating economic activity and, as he did in the quotation above, Quesnay made the maximization of the economic product a basic assumption of economic activity.⁸ As can be gathered from the two foregoing quotations, Quesnay based his hopes on the emergence of an intelligent and facile farming class which would have the drive and ability to combine land, labour, and capital, into that productive organism which would "obtain the greatest product possible." Quesnay was inclined to stress the personal qualities of the managerial class rather more than Adam Smith, but, typical of his age, he under-estimated the social rigidities that might have to be overcome for this managerial elite to evolve. Furthermore, he and his disciples were somewhat undecided concerning which of the existing classes in French society could be expected to advance the necessary supply of capital.

7. *Cantillon, Essai sur la Nature du Commerce, Part I, Chapter XVIII.*

8. *For a more explicit statement on profit maximization see Chapter 4, pp. 179, 180.*

Generally they maintained that the landed proprietor's had made the original avances foncières, and they occasionally raised this as a justification for their rental income.⁹ In some cases they suggested that the land owners should keep up the avances foncières or even make the avances primitives.¹⁰ But they complained bitterly about the landowners' failure to fulfil these duties. By and large, the physiocrats had little faith in the parsimoniousness or economic efficiency of the Nobility and other absentee landowners. They frequently mentioned owners of small estate as aspiring to rise into the capital-directing classes, which suggests that they hoped to recruit the grandes fermiers from the lower and middling ranks of society. "There amongst the lower classes (le bas peuple)", Quesnay assures us, "are those who provide the State labourous and profitable men."¹¹ Quesnay took it for granted that, if the peasant were ensured a secure income, he would accumulate capital and increase the scale of his enterprise. From what we know of the French peasant, he might be expected to salt away a hoard, but it is presumptuous to assume that he will risk his monetary reserve in a way of farming that is a complete break with his traditional social patterns.

9. *Daire, op. cit.*, pp. 827, 828.

10. There are elaborate discussions of the entrepreneurial function and the various classes of capital in most the major physiocratic works. The selections in *Daire's* collection (including those of Quesnay) discuss these topics in detail.

11. Quesnay, "Hommes", Francois Quesnay & La Physiocratie (*Institut National D'Études Démographiques, 1958*), Vol. II, p. 541.

Quesnay was nearly oblivious of the political and social consequences of his Programme. Incongruously, in the face of this rising managerial class which was to direct the grande culture, the prime mover of the economic machine, he accorded to the Nobility and Church all positions of prestige and political power. Yet, he could hardly avoid the implication that the landowning classes had, and would become more effete. Once he actually admitted that "The proprietors are only useful to the State by their consumption,"** the service Malthus attributed to the unproductive consumers.

As a matter of course, the prophets of this new capitalistic order found reason to provide the farming elite with a compensation for its economic services. All one has to do, Mirabeau assures us, is to "Procure prosperity for the Cultivators; the attractiveness of a decent profit will do the rest. They will take advantage of this prosperity to procure large advances, to employ them with constancy, energy, and economy."¹² Granted, this intelligence that the farmer must obtain a surplus, if he is to accumulate capital, is important knowledge for economic analysis, but Quesnay was inclined to take the existence of this profit too much for granted. Still, it would be unjust to say a theory of profits was completely lacking. Two situations in which profits might arise were explicitly examined. -

12. Mirabeau, Philosophie Rurale (Amsterdam, 1764) Vol. II. p. 197.

** Ibid. p. 582.

(1) An individual farmer could accrue an entrepreneurial profit by introducing improved farming technique.¹³ And (2), in the event that the price of agricultural commodities happened to rise during the tenure of a lease, the farmer would gain a "windfall profit", though it would eventually be absorbed into rental income at the renewal of the lease owing to competition amongst farmers.¹⁴ It might have been valid to have explained all profits in terms of entrepreneurial gains, but Quesnay went on to imply the more usual idea that the farmers as a class would have to obtain a normal "pure profit" over the long run in order to promote the accumulation of real capital. He generally assumed that an interest of about ten percent should be normal for this class of investment. In his Analysis du Tableau Économique (and in other works given to tableau - analysis), Quesnay mentions only that this interest must cover depreciation and insure against the element of risk.¹⁵ Marx pointed out that, according to this analysis of the tableau, the intérêt would include no surplus value,¹⁶ but, bearing in mind his Programme, Quesnay could not have meant that the farmer would never accumulate a real economic surplus. In this particular instance, he seems to have been merely assuming the existence of a stationary state (porté à son plus haut degré d'agriculture, so he phrases it) in order to simplify his explanation of the tableau. In the

13. *Daire, op. cit.*, pp. 226, 265, 266n.

14. *Ibid.*, pp. 123, 124.

15. *Ibid.* pp. 62, 63.

16. *Karl Marx, Theories of Surplus Value* (London 1951), p.69.

same article, he says that the farmers must accrue an interest at least as great as that paid by the idle investors, an interest that allows them to improve their enterprise:

We have said before that funds placed so advantageously for a nation as those of the advances for this farming should of themselves yield clear (net) to the farmers, who contribute their labour and the employment of their intelligence, an annual interest at least as great as that paid by the idle rentiers (rentiers fainéants).

The sum total of these interests are invested (se dépense) annually, because the cultivators never allow them to lie idle, since, in the intervals when they are not employed for repairs (réparations), they will not hesitate to employ them at a profit by increasing and ameliorating their culture, without which they cannot withstand great misfortunes. That is why the interests are included in the sum of the annual expenses.¹⁷

Though he is intent on impressing upon the reader that the interest is needed to provide a fund to equalise out losses, Quesnay does imply in the above statement that there can be a normal equilibrium rate of profit between the different employments for capital, so it is to be presumed that the farmer has just as good a chance of

17. *Daire, op. cit., p. 63.*

becoming rich as the usurer. (The reader has no doubt gathered that Quesnay uses the word intérêt as a synonym for profit.) As we had occasion to point out in the last chapter, Quesnay had solid theoretical grounds for thinking that intensive investment in agriculture would not yield a profit to the farmers as a class unless certain policies were adopted, the most important being free trade in grains --- for otherwise an adequate price for grains could not be maintained in the face of increasing production.¹⁸ In the context of this specific situation, he could not take it for granted that the farmers would normally gain a positive rate of profit.¹⁹ However, in the event enlightened measures were taken to make agriculture prosper, the farmers would obtain a sufficient profit to warrant continued investment in their enterprises.

if the commerce of grains were free, if the
 X draft spared the children of the farmers, if forced
 labour (*courvées*) were abolished, great numbers of
 taxable landowners, refugees in the cities without
 occupation, would return to the countryside to make
 their wealth profit and participate in the profits
 of agriculture. It is by the well-to-do citizens

18. See chapter 2, part 3.

19. Quesnay was often given to theorizing about the facts of a particular problem of policy. Contrasting him with Cantillon, we might say he was inclined to be a particularizer rather than a generalizer. However, this concern with policy led directly to some outstanding theoretical discoveries — among the most interesting being his demand schedules.

who would leave the cities with security, that the countryside will be populated with cultivators in a state to re-establish the cultivation of the land. ****

Self-interest makes one seek honourable and lucrative enterprises. Nowhere is there a gain more certain and irreproachable than in agriculture, if it is protected: and so, it will be completely re-established by men in a position to carry capital (richesses) where it is needed. It will at the same time be conducive for favouring the nobility and agriculture to permit the gentlemen, who manage their land (*qui font valoir leur biens*), to augment their employment by consolidating their land and paying a tax in proportion to the rate of rent; they will obtain a great profit and contribute a great deal to the progress of agriculture.²⁰

Thus, at least under these advantageous conditions, the capitalist-farmer will accrue a pure profit which will permit him to contribute to the progress of agriculture. And, to the benefit of the grande culture, secure profits will encourage the nobility and other absentee landowners to return from the city (where they flocked to seek preferment, especially exemption from taxation) and employ their wealth and talent on the land; that is, they will become

20. *Daire op. cit.*, pp. 282, 283.

capitalist-farmers themselves. Nowhere does Quesnay say in so many words that the farmers normally obtain a pure profit commensurate with their capital investment, though many passages like that above suggest that he has some such idea in mind.²¹ Still, the idea is very near the surface of his writings, and we find Baudeau and Turgot using the concept just a few years after they came under Quesnay's tutorage. "Justice tell you, Madame," says Baudeau addressing his Explication du Tableau Économique (1770) to Madame X, "that this original investment [the farmer's], his capital of thirty thousand pounds, should on the whole be augmented rather than diminished; because, in short, all toil (peine) is worth a wage, every investment of funds requires a decent interest, all the usual risks and perils demand a compensation in good times and bad: these principles do not have need of a proof."²² He goes on to argue that this profit should be over and above the principal of the farmer's capital investment, which in any event should be returned to him by the end of the lease. He lists three determinants of profit: (1) toil (peine), (2) risks and (3) the decent interest required for every investment of funds; the interest which Quesnay grants to all idle investors.²³

The physiocrats were prone to explain the need for profits in terms of subjective psychology,²⁴ though they did not consistently give a single shotgun answer like

21. The reader might recall a passage we quoted in the previous chapter. See Chapter 2, pp. 85-87.

22. *Daire, op. cit.*, pp. 832, 833.

23. *Loc. cit.*

abstinence or disutility. A case in point is their use of the word peine, which connotes a meaning somewhat akin to "disutility of labour". We have already had occasion to mention Quesnay's rule of economic conduct: that one should "obtain the greatest possible diminution of labour-pain (travail-penible) with the greatest pleasure possible." This perforce led him to conclude that "The measure of expenditure that pays the artisans, indispensably obliged to labour in order to obtain their subsistence, is always more limited than the needs that compel them to labour imperiously."²⁵ This is a backhanded way of saying that, because of the irksomeness of toil, the intensity of artisan labour can only be increased by raising its recompense. This undoubtedly represents sophisticated theorizing, but, historically, it looks back on artisan industry rather than forward to the new era of capital-intensive production. As it stands, this rule has reference only to the artisan's wage of supervision and craftsmanship: of Baudeau's three determinants of profit, it can be extended

24. *This subjective view of capital might have owed something to Cantillon. He explained interest as a profit "proportionate to the needs of the Borrowers and the fear and avarice of the Lenders". Essai sur la Nature du Commerce (London 1755) Henry Higgs edition (London 1931), p. 201. Least the reader minimize the insight gained in explaining profits by psychological states such as avarice, risk, peine, etc. it should be pointed out that their author's attention was thereby directed to changeable attitudes that affect capital costs within a business community. And, as well, it could never be forgotten that the economic progress of a nation had something to do with national and class character.*

25. *Daire, Physiocrates, pp. 192, 193.*

by direct analogy only to cover toil (peine) and says nothing about risks and the equilibrium rate of pure profit. But, even granting this, the rule suggests a more general application, for it gives grounds that the physiocrats' use of the word peine in connection with the work of labourers, farmer-entrepreneurs, capitalist manufacturers (by Baudeau and Turgot), etc., might be taken to imply fairly refined subjective reasoning concerning these economic services. And, more than this, both the maximization and disutility concepts were presented in a form that might have been readily applied - though unfortunately it was not done - to the supply of all other factors of production. In passing, one should reflect that everything we have examined pertaining to the supply prices of capital and entrepreneurial labour is consistent with what must be a basic assumption of the single-tax theory: that is, the supply of these factors vary directly with their rates of payment. This assumption concerning capital is necessarily implicit in Quesnay's intimation of an equilibrium rate of profit between sectors,²⁶ as is the same functional relationship implicit in his talk about high agricultural profits encouraging the lower class and nobility to become capitalist-entrepreneurs.

It is pertinent for our study to try to account for Quesnay's poor showing when he came to discuss what was

26. See the quotation on page 125 of this chapter.

going on in the industrial and commercial sectors of the economy. It cannot be said that he was unaware of the need to complete his study of the economic organism, for he published a Dialogue sur le Commerce and a Dialogue sur le Travail des Artisans about the same time Turgot was writing his Réflexions. His imagination being what it was, he could never write anything that was trivial, yet his total view leads one to believe that he had a minimum of firsthand knowledge concerning these sectors. The general level of his analysis does not nearly approach the heights of his forerunner Cantillon, and little is left except an attempt to prove the questionable doctrine that all incomes (and for that reason all profits) are paid by agriculture. In any event, his knowledge was not so complete that he could anticipate the capitalistic development of industry, as did Turgot and Baudeau. One possible reason for Quesnay's one-sided pre-occupation with agriculture is that he and most of his associates in the Court of Versailles, as a class and individuals, had a personal economic interest in it. Many of the articles published in the physiocratic journals by some of the lesser lights of Quesnay's circle displayed an expert knowledge of agriculture; intellectually speaking, one would suspect them of being specialists, with all that implies.

Moreover, manufactures were not as yet generally organized on a capitalistic basis and so there was no

pressing need to account for profits on capital. Artisan manufactures employed relatively little capital and so the difference between paid-out costs and price could be conveniently regarded as a sort of superior wage. As well, the distinction between wages and profits was not immediately obvious, because the industrial scene was not as yet dominated by the capitalist-entrepreneur. The master artisan had risen from the ranks of the journeymen and still participated in the actual process of production.²⁷ It is quite obvious that Quesnay had this sort of pre-capitalistic manufactures in mind. Notice, above, he talks about an expenditure that pays the wages of the artisan, providing his subsistence. This is not to say that this superior wage theory accounted for all the facts at hand. The master artisan had to advance raw materials to his journeymen and his place of business might represent an appreciable fixed investment. He would demand a return on this investment, whether it was formally conceded by economic theorists, or not. Possibly, the economist's advocacy of the superior wage theory owes as much to the filiation of intellectual preconceptions as it does to the circumstances of a

27. *The foregoing considerations on the historical relativity of the superior wage theory has been borrowed from Ronald L. Meek's article "Adam Smith and Profit", Scottish Journal of Political Economy Vol. I. pp. 138-153.*

of a particular historical reality. It was first articulated by the Scholastics who had more of an eye to consideration of economic and political justice than to economic theory per se. It was a conventionalized formulation, pressed into service to explain a different kind of problem.

The concept of pure profit is more fully developed by Turgot in his Réflexions sur la Formation et Distribution des Riches (written in 1764) than by any of his colleagues. The reason for this may have been that Turgot, following patterns of thought suggested by Cantillon,²⁸ was interested in distribution in its own right, while Quesnay, pre-occupied with practical problems of policy, was concerned with the circumstances in which profits arise in the short run. Turgot outlined the equilibrium between the profits for the different employments of capital, a subject that was to become a standard topic in 19th century texts. "In a word, as soon as the profits resulting from an employment of capital,

28. Here we might point out another similarity between the Essai and the Réflexions. In these works neither Cantillon nor Turgot allowed themselves to be diverted by beating drums for a particular economic policy and thereby gained the freedom to examine general cases as well as special cases. And, above all, these works are systematically developed treatise and so one is not confronted with piecing together theory from a hodgepodge like Quesnay's Maximes Générales du Gouvernement.

Turgot may have also gained something from his acquaintance with Adam Smith, made during the same year (1764) that he was writing his Réflexions. However, it might be more reasonable to presume the filiation went the other way. First of all, there is no evidence that Smith had as yet developed theoretically articulate ideas on capital, and secondly, it is unlikely that Turgot could have mastered the Turgot-Smith theory of capital in a few months time.

whatever it may be, increase or diminish", he reasons, "capitals turn in that direction and withdraw from other employments, or withdraw and turn towards other employments; and this necessarily alters in each of these employments the relation between capital and annual produce".²⁹ He writes that money invested in the land which is leased is bound to accrue the least return, since it is the safest and most agreeable employment (LXXXV). Money placed on loan is bound to bring in more because of the greater risk involved (LXXXVI). And money invested in agriculture, manufacturing, and commercial enterprises must produce an even greater profit, since - "besides the interest of his capital the undertaker should each year draw a profit to recompense him for his care (peine), his labour, his talents, and his risks, and furnish him in addition that wherewith he may replace the annual wear and tear of his advances"³⁰ Thus, he outlines the distribution of profits throughout the economic organism and not just in agriculture.

This is not to say that no one before the physiocrats theorized concerning the importance of real capital and the emergence of pure profits as such. Cantillon, the most articulate on this subject of the physiocrats' predecessors, says, "If the Farmer have

29. *Turgot, Reflections on the Formation and Distribution of Riches* (1770) W.J. Ashley edition 1898, p. 84.

30. *Ibid*, p. 83.

enough capital to carry on his enterprise, if he have the needful tools and instruments, horses for ploughing, cattle to make the land pay, etc. he will take for himself after paying all expenses a third of the produce of his farm".³¹ But this theory was not framed within the context that Quesnay had in mind, in which investment opportunities offered by the agricultural revolution motivated farmers to accumulate capital out of their income. He observes that the "greatest number of Farmers in all Countries" spend this profit "on living more comfortably instead of saving it".³² When he examines manufacturers, like Quesnay after him, he selects as a representative example production under the direction of a master craftsman, in this case a master hatter: "Again, a master Hatter who has capital to carry on his manufacture of Hats, either to rent a house, buy beaver, wool, dye, etc. or to pay for the subsistence of his workmen every week, ought to find his upkeep in his enterprise, but also a profit like that of the Farmer who has his third part for himself."³³

Now, as we have said before, pre-capitalistic modes of production need not necessarily imply any lack of economic growth and development. Cantillon's contemporary John Law, the reader will remember, took it for granted that considerable credit could be manufactured

31. *Cantillon, op. cit.*, p. 201.

32. *Ibid.*, p. 123.

33. *Ibid.*, p. 203.

without causing inflation, for this expansion of credit would be used to multiply the number and range of enterprises and put to work and organize more productively the plentiful supply of underemployed labour which is usual in preindustrial societies. However, as the 18th century moved on and the 19th century began, economists tended to give less weight to industrial and commercial organization³⁴ and became more impressed with the potentiality of factory production and the machine. Baudeau and Turgot were the first economic theorists to see the promise of capitalistic industry, probably because they saw the analogy between it and the grande culture.

Though factory production was as yet nowhere typical, Baudeau considered it a norm by which efficiency should be judged: "Now, it is reasonable that objects are fashioned much better, at less expense, in a manner more prompt and less variable in a large factory supplied by an advance of raw materials, of extensive and heavy instruments, under the direction of an able master, than they can be on a small scale by a simple workman destitute of technique (art) and means."³⁵ Baudeau understood that the machine is the primum mobile of the factory system and, presciently, he foresaw that it would lend itself

34. *In this respect, Adam Smith's unparalleled emphasis on the division of labour is an anachronism; or in any event, it is a somewhat mis-directed appraisal of the essential changes that were occurring in industry.*

35. *Daire, op. cit., p. 714.*

to proliferative development, which would make this form of industrial organization even more significant for the future. Like moderns, he used the word "invention" almost as a synonym for industrial progress,³⁶ and, typifying the physiocrats' zeal to further the ascertainable course of history, he helped to found the Société Libre D'Émulation, which was to encourage inventors.³⁷ He gave as examples of machine production the large bakery, machine knitting, and printing.³⁸ Baudeau tries to impress upon the reader that production en grand, in both agriculture and industry, requires the direction of a class of capitalist-entrepreneurs, and, as well, a docile labour force. "Let us observe, first of all, a distinction which must be found more or less evident in the great civilized States", he writes, "between the chiefs and directors of labour of this kind, and the simple workers or manual labourers who operate under their orders. The chief makes the advances and the preparations for manufacturing, he courts the risks, he manages and directs by his technological knowledge (art); the simple worker executes and receives his wage."³⁹ In short, Baudeau had a firm comprehension of both the technological and sociological nature of capitalistic industry.

36. Ibid., pp. 716-725.

37. Ibid., p. 652.

38. Ibid., pp. 714, 715, 720, 721.

39. Ibid., p. 714.

Baudeau may have acquired this advanced view of industry from his cohort Turgot whose Réflexions, written in 1764, had finally been published the year before the work we have just quoted (Introduction à la Philosophie Économique, 1771). Turgot had already found "enterprises of Manufacture * * * * to present a more striking example of the necessity and effect of large advances"⁴⁰ than agriculture. He reasoned that the progress of both industry and agriculture generally called for greater specialization and a larger scale for each producing unit (Réflexions, II, III, IX). "Everyone profited by this arrangement", he says of the division of labour between the cultivators of different crops and other parts of society, "for each by devoting himself to a single type of work succeeded much better."⁴¹ What is important, he catches the very significant point (Smith was hardly less explicit) that the continuation of this sort of improvement in industrial organization would generally require more capital-intensive enterprises. This must be so, he argues by analogy, for individual home-production is necessarily very inefficient: "If the man who causes the land to produce all these different things and uses them to supply all his wants were himself obliged to put them through all the intermediate stages, it is certain that he would succeed very badly * * * take for example the preparation of hides; what labourer could attend to all the details necessary in this operation,

40. Turgot op. cit., p.55.

41. Ibid., p. 6.

which lasts several months and sometimes several years? If he could, would he be able to, for a single hide? What loss of time, of space, of materials, which might be served at the same time or successively to tan a greater quantity of hides."⁴²

This discussion of the operation of a tannery brings us to the subject of the physiocrats' theory of capital (distinguished from their theory of profits), that is to say, the reasons they gave for the productive-ness of capital. We might quote this discussion at length, for it presents their theory in its most developed form: "whoever has seen the establishment of a Tanner realizes the absolute impossibility of one poor man, or several poor men, providing themselves with hides, lime, tan, utensils, etc., getting the buildings erected which are necessary for setting the Tan-house in operation, and living during the several months until the leather is sold. * * * Who will get the canals, market halls and all the different kinds of buildings constructed? Who will enable the great number of workmen to live until the leather is sold, of whom none could prepare a single skin of himself? * * * It will be one of those possessors of capitals, or of moveable accumulated values, who will employ them, partly in advances for the construction of the establishment and for the purchase of materials, partly for the daily wages of the Workmen who labour in the preparation (of these commodities). It is he who will wait for the sale

42. Ibid., p. 5.

of the leather to return to him not only all his advances but a profit in addition, sufficient to make up to him what his money would have been worth had he employed it in the purchase of an estate; and, furthermore, for the wages due to his labours, he cares, his risks, and even his skills; for doubtless, if the profit were the same, he would have preferred to live without any exertion on the revenue of the land he could have acquired with the same capital. As fast as the capital comes back to him by the sale of the products, he uses it for new purchases in order to supply and maintain his manufactory by this continued circulation: on his profits he lives, and he places on one side what he can spare to increase his capital and put into his business, adding to the amount of his advances in order to add still more to his profits!"⁴³

Within the limitations of our study, we can do no more than outline the general character of this theory of capital.⁴⁴ In its essentials it is the line of reason

43. *Ibid.*, pp. 52-54

44. *The historiographer must admit from the very beginning that, with physiocracy, economics had already become a scientific discipline employing such an elaborate and refined body of abstraction that in no sense can one make an exhaustive study of any economist worth mentioning; he can only chose the scale of his study, whether in inches or in miles. To understand why this is so, all one has to of is read Marx's lengthy discussion on circulation as described by the tableau Economique. All of it was valid, even significant, and it seems to have influenced Marx's own thoughts on the subject; yet, it is such a minute-scale examination that it is of interest only to the specialist and to Marx himself.*

adopted by Adam Smith and infused by him into the main stream of economic thought, either from his reading of Turgot --- of which we have no documentary evidence ---, his conversations with Turgot, or more likely his own interpretation of Quesnay. The idea behind it all is summed up by Turgot's use (after the example of Quesnay) of the word "advances". In essence, Turgot argues that capital yields a profit because it must be called forth to bridge the temporal gap between productive effort and the final sale of the product. Real Capital is, in its physical form, simply the material means of production (both raw materials and machines) required to bridge this temporal gap. Turgot also considers another type of capital, what Marx would call variable capital: the wage fund used to buy "subsistence" goods for the maintenance of labour. The economic process begins, or at least, with capital-intensive technique is dependent upon advances made by the capitalist-entrepreneur who, fulfilling the duties of his calling, collects his principal and profit from the flux and reflux of these advances and compulsively reinvests them in his enterprise. True to the bias of physiocracy, these advances, money to begin with, become completely embodied in material things --- goods to produce with or to live on: a stock of raw materials, machines, and "subsistence" goods. The physiocrats, of course, gave this material-based plane of logic a twist of their own: the income of all sectors and the capital that might be accumulated therein was thought to

be constituted from a physical and value surplus that could only be produced by industries aided by the natural agents. Since only material stuff could be considered Read Capital, it could only, they reasoned, be accumulated by not consuming the whole of the annual physical production. It was this fact that inspired their mistaken renunciation of the banking theorist's schemes to manufacture monetary capital.⁴⁵ In retrospect, this advance-theory of capital may seem a simple enough insight, but it is an owl-eyed truth. Basically, it is the same idea Bohm-Bawerk made so much of with his talk about capitalistic production being a round-about process. The most obvious implication of this advance-theory of capital is that its accumulation requires saving. Moreover, in real terms the accumulated capital appeared as a stock of material means of production. Turgot (and occasionally Quesnay⁴⁶) referred to such commodities

45. *It is certainly true that part of the physical surplus of agriculture had to be given to the production of Real Capital for this factor of production to be accumulated, but the Real Economist went too far when he went on to conclude that there is so little slack in the economic machine that capital can only come into existence by a conscious decision to consume less of this physical surplus. The manufacture of monetary capital, independent of the process of exchange, allows one in certain circumstances to have his cake and eat it too, for it may provide a greater quantity of ingredients with which a larger cake can be baked.*

46. *Quesnay leaves us in doubt as to what he means by this word. Daire, op. cit., p. 69. But Riviere uses it to convey a meaning similar to that of Turgot, which we examine in this paragraph. He apparently considered as "moveable riches" any possessions that can be readily transformed into exchange value and are therefore a potential source of capital. Ibid., p. 475.*

by the generic name "moveable riches" (richesses mobilières). "When the produce they gathered was difficult to keep", says Turgot in reference to the landowners, "they must have sought to procure for themselves in exchange articles of a more durable nature, whose value would not be destroyed by time, or which could be employed in such a fashion as to obtain profits which would repair the loss of value with still further gain. Possessions of this kind, resulting from the accumulation of annual produce not consumed, are known by the name of moveable riches. Furniture, houses, plate, commodities in warehouse, the tools of each trade and cattle belong to this wealth. It is even necessary that in every trade the workmen, or the Undertakers⁴⁷ who set them to work, should have a certain fund of moveable riches accumulated beforehand."⁴⁸

The reader will notice that this list is a discontinuous range of "capital" goods. The cattle and tools of trade can definitely be considered Real Capital; they are material means of production used in expectation of a

47. Turgot uses the word Entrepreneurs, which W.J. Ashley consistently translates as "Undertakers". This just goes to show that a particular concept need not presuppose a given bit of jargon. The physiocrats had what in recent usage might be broadly referred to as a "theory of entrepreneurial labour"; that they occasionally used words other than "entrepreneurs" to convey the same idea does not matter. And, as we have pointed out before, Quesnay and Mirabeau can be credited or blamed for an utility theory of value to the same measure as Le Trosne, though the former usually used words other than "utility" in this particular context.

48. Turgot, op. cit. pp. 43-44.

future profit. But, as well, he has included other possessions which are not productive goods in their own right, but are used to contract credit, i.e. the plate can be pawned or melted down, houses and furniture mortgaged, and commercial paper issued on commodities in warehouse. This consideration ties together his theories of capital, profit, and interest. The rate of interest, which is a factor of that equilibrium he saw established between all profits,⁴⁹ is not simply a function of the quantity of money and its velocity as Locke and Law suggested, but more precisely a function of the whole accumulation of moveable riches, whether in the form of specie or effects readily convertible into money. "The price of interest" writes Turgot, "depends immediately upon the relation between the demand of the borrowers and the offer of the lenders; and this relation depends chiefly on the quantity of moveable riches accumulated, by the saving of revenues and of annual products, to form capital withal, whether these capitals exist in money or any other kind of effects having a value in commerce. It is indifferent whether these values are in metal or in other effects, provided that these effects are easily convertible into money. It is far from being the case that the mass of metal existing in the State is as large as the sum of the values lent on interest in the course of the year; on the contrary all the capital

49. See pages 132 and 133 of this chapter.

in furniture, in merchandise, in tool, in cattle, take the place of silver and represent it. A paper signed by a man who has well-known effects worth a hundred thousand francs, and who promises to pay a hundred thousand francs at such a date, passes for a hundred thousand francs until that date..... It is not, therefore, the quantity of silver existing as metal which causes the interest of money to rise or fall, or which brings into commerce more money to be lent; it is simply the sum of capitals to be found in commerce, that is to say, the actual sum of moveable riches of every kind, accumulated, saved bit by bit out of the revenues and profits, to be employed to obtain for the possessors new revenues and new profits."⁵⁰

By and large, this is a more sophisticated rendition of that theory of capital usually associated with Adam Smith.⁵¹ Here, for comparison, the reader is not left in doubt why the purchase of durable things like houses,

50. Turgot, *op. cit.*, pp. 43-44.

51. It should be made clear that Turgot's work on capital cannot, on the basis of what he actually accomplished, be considered primitive, even by modern standards. Schumpeter says, and it can hardly be contested, that Adam Smith's performance, "though infinitely more prolix, falls far short of Turgot's It is doubtful whether Alfred Marshall had advanced beyond it, certain that J.S. Mill had not. Böhm Bawerk no doubt added a new branch to it, but substantially he subscribed to Turgot's propositions. the theory was not only swallowed by the large majority of economists: it was swallowed hook, line, and sinker".
History of Economic Thought, pp. 324, 325.

plate, and furniture, is more conducive to economic progress than gluttony and the keeping of servants. The theory reviewed in this paragraph was not developed systematically by the other physiocrats. Following Boisguillebert, they all stressed the importance of commercial paper issued on readily transferable property. But a theory of interest is non-existent, or rather, to the extent they have one, it lapses into the more inane foibles of Scholastic opinion.

Turgot was the first economist to put such a tremendous emphasis on saving. He was hardly less disapproving than Adam Smith of wealthy people who spend their principal on foolish expenses instead of employing it at a profit.⁵² Granted, frugality had always been a by-word of the commercial ethos in England, as elsewhere. Locke, for example, could not help but be aware of the trivial fact that money must be saved if it is to be lent, but, typical of the mercantilists, he was not nearly so concerned about an inadequate propensity to save as he was with the effect international monetary flows would have on the ability to save. David Hume emphasised saving, as such, rather more than most of his contemporaries, but it is first with Turgot that the act

52. Reflections, LXVIII, LXXVIII.

of saving is linked to the accumulation of Real Capital, as opposed to mercantile capital, and thereby to technological progress itself.

1. The Difference between Quesnay and Turgot:

So far, we have directed most of our attention to Turgot's work on the subject on capital and have barely mentioned Quesnay in connection with profits. We have several reasons for doing this. First of all, Quesnay's theory is incomplete in several respects. Among others, his work on interest fell so far below that of even his forebear Cantillon that no useful purpose can be gained by bringing it to light. But, more important, Quesnay's own ideas on capital are so distinctive that the best approach to their understanding is to first plant the reader on the antipodal, though familiar, grounds of Turgot's Smith-like theory. Of course, both Turgot and Smith, were students of Quesnay, and for that reason, all three economists have a good deal in common - in particular many facets of truth suggested by the word advances. Though, in two respects Quesnay explored different levels of reality. Most unique, he examined capital in the process of formation within individual sectors; this sectorial analysis revealed insights that were not brought out by a study of capital in general of the Smith-Turgot genre. It proved, more conclusively, Boisguillebert's

contention that there must be a proportionate growth of the different economic sectors. It will be more convenient to study this aspect of his theory within the context of the analytical tool with which it was presented, the tableau économique, and so we will slight over the subject for the present. But in still another respect, a comparison of Quesnay's theory with that of Turgot and Smith highlights the distinguishing biases of the two. After Boisguillebert, Quesnay established an anti-hoarding tradition in his circle, whereas the latter were of the opinion that this is a groundless fear for, so they argued, capitalists will always find it possible to invest any amount of savings "immediately" (without lag). "What is saved", Smith tells us, "is as regularly consumed as what is annually spent". That is, Turgot and Smith assumed this particular necessary condition for full employment, whereas Quesnay examined the formation of capital when this condition is not fulfilled.

Quesnay adopted Boisguillebert's over-saving theory of crises, complete with the multiplier. Quesnay could never be accused of having less than his rightful quota of theoretical imagination, being in every sense an original, but, when it came to applying theory to practical problems, he often showed a distinct lack of common sense. The most deplorable example of this is the facetious policy recommendations inspired by his

understanding of Boisguillebert's multiplier. He thought that the multiplier had such great and immediate force that any decrease in spending, no matter how momentary, would precipitate an extended economic decline. Ironically, for that reason alone, he feared any mobilization of capital that requires - as it always must - a lag between the act of saving and ultimate investment. Quesnay made it a maxim "That the entirety of the sums of the revenue should return into the annual circulation and travers there in all its extent; that it should never form pecuniary fortunes, or at least that there should be a compensation between those that are formed and those which re-enter in circulation; because otherwise these fortunes arrest the distribution of a part of the annual revenue of the nation, and withhold the money of the kingdom to the prejudice of the reflux (rentrée) of the advances of agriculture, of the retribution of the wages of artisans, and the consumption which the different classes of men should make who exercise the profitable professions: this interception of money diminishes the reproduction of revenues and the fund for taxation."⁵³ This is one of his reasons for his dislike of indirect taxation; he lists among the more important causes of economic decline the amassing of pecuniary fortunes by the tax farmers; "The pecuniary fortunes, which

53. *Daire, op. cit.*, pp. 87,88.

multiply themselves by the profits of financiers who contract the indirect taxes; that which arrests and holds back the circulation of money and stops the annual return to agriculture".⁵⁴ Though he seemingly admits that no harm can be done provided there is a compensation between "sterile savings," as he calls it,⁵⁵ and savings re-entering into circulation, like Boisguillebert, he thought excessive saving was an ever present danger. Quesnay had the notion that the services of the financier could be done away with altogether and the lag between saving and investment largely eliminated if only competition were allowed free sway and his tax scheme - which he thought conformed to the Natural Order of things - were adopted, for this would ensure all sectors of the economy sufficient income to advance an equilibrium amount of capital out of current, personal receipts. He insisted on this nominal order, making it a first assumption of his theoretical work, more or less ignoring the theoretical aspects of interest and credit institutions in general, despite the fact that successful banking enterprises had long been a fait accompli. Turgot took this for what it was - an extreme anti-saving bias. We have to allow genius its opinions; still, this is

54. *Ibid.*, pp. 140-141.

55. *Ibid.*, p. 100.

precisely the sort of etherial-headedness that has done much to discredit economic theory in the eyes of the general public, and, in this case, Quesnay's absurd opinions prejudiced over savings theories, as such, even in the company of theorists.⁵⁶

The physiocrats' contribution to the theory of economic crises was of varied quality. They took up Boisguillebert's principle that the growth of each particular sector must be proportionate to the demand for its products derived from the income generated in all other sectors. They went on to tie this idea to the accumulation of capital, using the tableau économique to argue the specific case they had in mind: that mercantilist policy had forced a sectorial over-accumulation of capital in the manufacturing and commercial sectors. They never allowed themselves to forget that consumption and production were complementary parts of the same process, increasing and decreasing together.

56. We might take this opportunity to point out that Quesnay is troubled about the possibility of an inadequate aggregate demand and not simply a reduction of specie in circulation. The proper distribution of purchasing power per se has nothing to do with the quantity of money in circulation. Considering this, the reader will be able to reconcile the apparent contradiction between the over-saving theory and the contention (common to both Quesnay and Boisguillebert) that in the long run there will be a sufficient value of specie, no matter how small its absolute quantity may be. Even in the short run Quesnay was inclined to minimize the importance of the quantity of specie in circulation, because he thought a sufficient amount of commercial paper could always be issued to transact any amount of business. See Quesnay's comments on money in his Analyse du Tableau Économique, Reprinted in Daire, Physiocrates, pp. 74-78 and notes.

"Although everything proceeds from production", writes Le Trosne, "because it is what fixes consumption and the means for paying for it, the two causes react on one another. Production (La reproduction) is the measure of consumption and consumption is the measure of production because production and consumption have a reciprocal effect on one another, one can not ameliorate the one side without ameliorating the other".⁵⁷

Statements of this sort might have suggested to the physiocrats' successors general over-accumulation theory of a Malthus-like "general glut" kind,⁵⁸ though to the extent the physiocrats are at all explicit as to their precise meaning, they definitely have a sectorial over-accumulation theory. We will discuss this theory in our chapter on the tableau économique. Quesnay's theory of income and capital formation accepted as one of its basic hypothesis Boisguillebert's principle that all incomes are interdependent, the dictum that "consumption and income are one and the same thing". —.... that is to say, the principle that one person's expenditure becomes another's income. This concept is relevant of course both to the sectorial equilibrium of incomes of their Disproportionality Theory of Crises and the Keynesian-like train of reason mentioned above.⁵⁹ The best exposition of both theories is contained in

57. *Daire, op. cit.*, p. 898.

58. See the statement by James Mill quoted in Chapter 7, p.303.

Philosophie Rurale, written by Mirabeau under Quesnay's direction. Mirabeau gives us a verbal explanation of the picture of general equilibrium depicted by the tableau, stressing the interdependence of production and consumption and expenditure. He employed the word dépense (generally used to mean productive expenditure) in a generic sense that might be translated "aggregate demand", because, says he, when one looks behind monetary phenomena, most expenditure is for goods that are soon used up.⁶⁰ The tableau économique should

59. The tableau in the state of full employment assumes what we might call the Keynesian condition for full employment: that planned investment equals planned savings. The reader might be interested in a few passages from Rurale Philosophie. (Amsterdam, 1764):

"It suffices therefore to expose in detail the annual product of these riches, to have entered into the detail of the annual expenses; because all should be spent in order that it be possible to reproduce. Thus it happens, as one has said, that consumption and revenue are synonymous. [He is referring of course to Boisguillebert].

One sees at the base of the Tableau that, following the order of the expenditure of revenue which is traced there, the reproduction of revenue is equal to the revenue spent, and that the land moreover restores the annual advances of the Cultivator which have been spent besides, and that as well it rewards the Cultivator at ten per cent for the capital of his annual advances and his primitive advances.

The revenue is then properly speaking the basis (canevas) of the expenditure. It is important that the revenue should be spent, because all saving on the revenue is a diminution of expenditure and by direct consequence of population and revenue. The person who saves on his revenue can certainly augment his own funds, but, saving is to that extent a seizure of the general returns (rentrée) We are not confounding here with sordid saving the prosperity of individual who accumulate by the employment of their riches [that is to say those who accumulate from their own productive investment] But the miser necessarily does harm to the public and to society as much as his vice can spread itself.

It is important then that the revenue should be spent, but it is necessary that it be in the direction marked by the tableau"
 Mirabeau, op. cit., These passages have been taken from two different contexts: the first two paragraphs were from Vol. I, pp. 301, 302, and the rest from Vol. I, p. 112.

have been a splendid tool for examining the multiplier, yet Quesnay and Mirabeau never went beyond a demonstration that an initial reduction in agricultural income would reduce investment in that sector, which would cause a sustained decline of the same order - the case to which Riviere refers when he says that "the diminution in the advances occasions one in the products, and the latter occasions another in turn in the advances."⁶¹

Very often the physiocrats failed to make a clear distinction between their two different theories of economic crises, but then, even J.M. Keynes occasionally lapsed from his over-saving theory to an over-accumulation theory of the sort usually associated with such names as Malthus, Hobson, and Luxemburg.⁶² Quesnay himself did not seem to give much weight to his over-saving theory; neither he nor any of his disciples ever bothered to show how over-savings might disrupt the equilibrium of the tableau. But we have special reasons for giving a disproportionate amount of attention to the matter. Turgot went to great lengths to refute this theory. We will hear his case because: first of all, it brings out some essential differences between the Turgot-Smith theory of capital accumulation and that theory propounded by Quesnay and his more faithful followers, and, secondly, Turgot gives arguments purported to prove the impossibility

60. *Mirabeau, op. cit.*, pp. 9, 10.

61. *Daire, op. cit.*, p. 898.

62. *In particular, Keynes confuses the two cases in the General Theory the last few paragraphs of the eighth chapter.*

of over-saving, which were to be used throughout the next century.

It is quite easy to understand why Turgot would find fault with his colleagues more unrealistic apprehensions concerning the activities of Les financiers. He had a broader worldly and economic experience than Quesnay and most of the other physiocrats, having served with distinction as intendent of the district of Limoges (1761-74), and, on the merit of this success, a much historified twenty months as Controleur General des Finances: all of which brought him in closer contact with economic realities. In heated correspondence with Dupont he accuses his fellow physiocrat of having confused "saving and hoarding" and of defending "certain mistaken expressions which fell from the pen of the good doctor in his earlier writings (with) a sectarian spirit."⁶³ One might well imagine that this hostility to the over-saving theory might have been provoked by Quesnay's inane prejudice against the mobilization of monetary credit. Whatever the reason, Turgot failed to see the difference between bad theory and the unrealistic use of valid theory.⁶⁴ If nothing else, the over-saving theory was logically tenable. Unfortunately,

63. Reprinted in Turgot, *op. cit.*, p. 112.

64. That would make him the counterpart of the person who does not know the difference between theory and economic reality and persists in blaming theory for being unrealistic.

it is much easier to evaluate a theoretical system on this basis than to test its relevancy to a specific economic context; ingenious theories are always a dime a dozen. Turgot was able to give solid theoretical reasons for breaking with the over-saving tradition of Quesnay's circle. First of all, as we have shown above, he supplied weighty proof (more conclusive than any other author up to his time) that saving is necessary for the accumulation of capital. Quesnay would not quarrel with this analysis. But the two part company when Turgot asserts that there is no possible situation that could give grounds to fear over-saving. He does not give very convincing proof of this in the Réflexions, his chief contribution to the theory of capital; he simply maintains that "none of the undertakers make any other use of it (their savings) than to convert it immediately into the different kinds of effects upon which their undertaking depends."⁶⁵ It is interesting to note that Adam Smith used the word "immediately" in the same theoretical context.⁶⁶ Were we so sure as Adam Smith and some of his followers that savings are converted into capital without a time lag, we could let the matter rest. But then, we are not. However, to his

65. Turgot, *op. cit.*, pp. 98 - 99.

66. Turgot uses the word *sur-le-champ*, with italics, for which the exact translation would be Quesnay's "immediately" (Wealth of Nations, Chap. 3. Book II). Professor Schumpeter observes: "That such a slip should occur independently in two different texts is indeed quite possible; but it is not likely." For this reason he says "some doubt may assail us concerning Smith's independence". J. Schumpeter, History of Economic Analysis, p. 324 n.

credit, Turgot went beyond Adam Smith and showed that there are compensatory mechanisms that would tend to keep the economic system fully employed.

Turgot's remarkable monograph Observations sur un Mémoire de M. Saint-Péray was the first work to advance several arguments that are now associated with what J.M. Keynes referred to as the "Classical theory of employment". He makes it clear that this body of theory is meant to refute the over-saving theory of his fellow physiocrats (he calls them Les partisans de la Philosophie Rurale). "But, it has been said", he writes, "the money not put into circulation, diminishes the exchange values and by multiplie causation (coudre-coup) the maintenances of the farmers who when they come to sell less dearly than than they had reckoned, pay the price of their rent by depleting their capital establishment".⁶⁷ This description recognizes all the essential characteristics of Quesnay's version of the over-saving theory, including the multiplier. The physiocrats, as did their progenitor Boisguillebert, employed the word coudre-coup as a short hand notation for any protracted economic decline set off by an intial reduction in income. Turgot goes on to give five arguments against the over-saving theory:

His first rebutal is only of historical interest to the modern economist. He contends that the partisans of the

67. *This and the following quotations from Observations sur un Mémoire de M. de Saint-Péray have been taken in consecutive order from pages 426 to 432 of E. Daire's Oeuvres de Turgot (Paris, 1848).*

Philosophie Rurale are inconsistent in that; on the one hand, they argue that the international transfer of precious metals has no important effect on the level of economic activity (their neutral money theory); and, on the other hand, they argue that all money should be returned to circulation. However, it should be pointed out to Turgot (if we may intrude in this partisan argument) that in the latter case Mirabeau and Quesnay are talking about the quantity of aggregate demand (despite their unfortunate use of the word argent), which may or may not be affected by the absolute changes in the quantity of specie.

Confident that he had found the source of error in his adversaries' reasoning, Turgot proposed an alternative theory of employment revolving around three propositions that were to become accepted Classical dogma. First of all, he proposed that international monetary flows regulate the price level within each country, bringing national prices in line with an international equilibrium; and, thereby, everything else remaining equal, these same monetary flows fix national production by their effect on the vendibility of export goods. He says: "The natural course that commerce gives to money tends to that universal level such that money proves in the long run to find itself dispersed over the whole country in proportion to the sum of the annual production of each canton. Money having become common (he says of nations possessing mines of precious metals), endears commodities; before long

they cannot be supplied at the same price to the nation which owes a balance in money, and the nations where money is more rare obtain the preference. The nation which has acquired a super-abundance of money is itself obliged to acquire a part of that which it consumes from other nations poorer in money. And so, the money spreads itself little by little into all nations according to their greater or lesser proximity to the nations where there are mines". This mechanism will eventually establish what he chooses to call a "perfect equilibrium". This is by now an old refrain and so we need not quote more. Of course this automatic mechanism did not originate with Turgot; most of the mercantilists were moving towards it and it appears in full-flower in Hume's works which, incidently, Turgot translated. But Turgot gives it a new importance. He had such implicit faith in its effectiveness that he thought the level of employment (for both capital and labour) could never fall so low as Quesnay imagined it to be. Was it not reasonable to expect low prices to stimulate foreign demand? The point is, no writer before Turgot, not even Hume himself with all his over-emphasis on price changes as the equilibrating vehicle, held the opinion that this automatic foreign trade mechanism could set a comparatively high lower-limit to economic decline. This idea was not seriously entertained by any number of economists until the next century.

Turgot found in changes in the rate of interest a second equilibrating mechanism. He was of the opinion that aggregate investment is exactly equal to aggregate saving, since the only motive for saving is to invest in one's own enterprise, or alternatively, loaning at an interest. The latter course, he reasoned, must increase competition amongst creditors and reduce the rate of interest and thereby stimulate a corresponding act of increased investment. This theory was to dominate the next century; in its several variations, it is what Keynes broadly referred to as the "Classical theory of interest" :

Returning to the question of the necessity of causing to return to the Cultivator all the money which he has given out: I say that, if the quantity of money taken by saving from immediate circulation is inferior or likewise is not superior to the quantity of money introduced each year by the course of commerce, commodities will conserve their exchange value, the cultivators will employ in the reproduction the same amount of money as in the preceding year, and there will not be any decline in wealth; the saving will harm, then, neither reproduction nor the revenue. Not only will it not, but it will procure an increase, since its effect is always in the last analysis to augment the mass of capital and the sum of advances, and to lower the interest of money. If it really takes away from circulation

the money which it sets in reserve, it would stop the augmentation of the price of commodities resulting from the introduction of money, would conserve in the nation the ability to sell its superfluous commodities to the money possessing foreigner, would reduce the necessity of buying from the less-moned foreigner, the things necessary for its consumption, which its own workers can no longer furnish at so low a price. Even when the effect of saving is not to take money out of circulation, it compensates, by the low price of the interest of money and by the diminution of the indispensable repairs of the entrepreneurs, for the increase of the price of labour which occasions the augmentation of the exchange value of the commodities. They take away from the super-abundance of money all its conveniences, in order that its advantages might remain. Who does not know that in Holland the endearment of wages suffices to contract commerce, if the low price of interest, and the activity which is consequent, does not compensate over and above this cause ?

In summation, the two agents which determine the level of production within a country are the foreign trade mechanism and the quantity of accumulated savings. The latter, Turgot reasoned, would of itself, as an end result, always lower the costs of production by occasioning more

capital-intensive modes of production (which from his view of the matter generally meant more economical technology).

Moreover, as is intimated in the foregoing quotation, Turgot was of the opinion that deflation (whatever its cause) would on balance tend to stimulate production by lowering production costs. Generally, this predilection for price reduction has been the bias of most economists who are thinking in terms of a situation in which foreign trade is of major importance for a country's welfare and/or the foreign demand for export goods is elastic as to price. Quesnay was not inclined to go along with the latter proposition. He was mainly concerned with the exportation of grains, for which he thought there would always be a bon prix somewhere owing to some chance crop failure. But, in addition to this, there is a more important difference between the two economists. Quesnay feared any deflationary situation as such, since all profits - especially the farmer's - were subject to contractual commitments. The failure of just a few entrepreneurs would spread by countre-coup to others. This is one reason why he opted for high prices in his well-known maxim: "Abundance and non-value is not wealth. Dearth and dearness is misery. Abundance and dearness is opulence."⁶⁸ The other reason was that low prices (so much the worse if they were artificially low)

68. Daire, Physiocrates, p. 98.

worsened the terms of trade. Turgot, in contrast, seemed to believe, though he did not state it directly, that a contraction in demand would lower prices which, since consumers and users of producer goods act favourably to price decreases, would significantly tend to reverse that same decline in aggregate demand. In any case, he stands firmly behind the presumption that price adjustments, when enforced by a purely competitive order, would be such that no sector of the economy would for long produce either below or above what he calls the "fundamental" value, i.e. the costs of production plus normal profits. Quesnay would go along with this advocacy of pure competition, though in his eyes it was merely a necessary condition and not sufficient condition for full employment. Turgot's fifth objection to the over-saving theory is simply a re-assertion that every saver converts nearly all his savings sur-le-champ into capital, almost raising this course of action to the standing of a psychological law.

2. The Limits of Capital Accumulation.

Both Quesnay and Turgot, and Adam Smith after them, took it for granted that there was a potential profitable outlet for the greatest possible amount of capital accumulation. Even in the short run, economic stagnation was considered unlikely; though of course, with Quesnay, the gears of the economic machine had to mesh properly for the promise of continued growth to be

fulfilled. There are two reasons why few economists of the time found occasion to worry about a stagnationist situation (Malthus was one of the first). First of all, from the demand side of the economic equations, it was observed that the populace was inclined to increase several fold its consumption of the contemporary range of goods (especially agricultural goods) as its income rose. Secondly, from the supply side, the advent of the agricultural revolution and the beginnings of capitalistic industry seemed to hold in store tremendous investment opportunities - the means for supplying this pent-up demand. Capitalistic industry had begun to make its presence felt, but still (and this is important), the emphasis was placed on agricultural production - even with such advanced thinkers as Baudeau and Turgot. The consumer goods they considered really important were surprisingly few in number and characteristically contain a high value of agricultural produce, e.g. bread, flesh, drink, and woollen cloth. "It is to be observed", Cantillon tells us, "that the poor labourer may maintain himself, at the lowest computation, on the produce of an acre and a half of land if he lives on bread and vegetables, wears hempen garments, wooden shoes, etc., while if he allows himself wine, meat, woollen clothes, etc., he may without drunkenness or gluttony or excess of any kind consume the produce of 4 to 10 acres of land of ordinary goodness"⁶⁹ Man's stomach,

69. Cantillon, Essai sur la Nature du Commerce (Henry Higgs edition, London, 1931.), p. 37.

agricultural economists are fond of telling us, has only a limited capacity, but there is no doubt that he will spend his last copper to fill it when it is only half full. The market for "subsistence" goods, Mirabeau argues, is based "on the most common need which necessitates the most prompt sale, the strongest demand for raw materials, the most punctual and equal payments, the greatest investment, and as a consequence the most complete production".⁷⁰

For these Reasons, Quesnay could take it for granted that the grande culture would absorb a relatively unlimited supply of capital. But, though this may be true for a large economic sector under these special conditions, it cannot be true for an individual enterprise. It was left for Turgot to show that the productivity of capital when applied to land is subject to decreasing returns. He discovered the intensive margin of the Ricardians as distinct from the extensive margin of inferior land, of which all the physiocrats and even Boisguillebert were aware. He points out that when homogeneous units of capital are successively applied to a fixed amount of land, the ratio between the increment of capital and the increment of product increases towards a maximum point and then the increment of product decreases towards zero. This invention was an extremely brilliant

70. *Mirabeau, Philosophie Rurale, pp. 99, 100.*

idea of itself,⁷¹ but, equally impressive, Turgot followed this line of reason so as to indicate the capitalist-farmer's point of profit maximization. This single tour de force is sufficient to rank Turgot amongst the most original theorists of all time:

Production supposes advances; but equal advances on land of unequal fertility give very different products, which is enough in itself to show that products cannot be exactly proportional to advances; they are not likewise, when placed on the same land, and it can never be supposed that double advances give a double product. The land certainly has a limited fertility, and in supposing it worked, marled, drained, watered, weeded, as much as is possible, it is evident that all additional expenses will be useless, and such augmentation can even be harmful. In this case, the advances will augment without the product doing so. There is then a maximum of production which is impossible to surpass, and when one reaches it, the advances not only do not produce 250 for 100, but produce absolutely nothing.

If instead of augmenting the advances by equal degrees beyond the point where they return the most, they are diminished; one should find the same change in the proportion. It is not only conceivable, but it is even certain that very weak advances give a much lesser profit than the very strong advances.

If 2,000 pounds return 5,000, 1,000 will not return 1,500 and 500 will not return 600.

Seed sowed on naturally fertile land, but without any preparation, will result in an advance being almost entirely lost. If one adds only one unit of labour, the product will be more; a second, a third unit of labour can not only double and triple, but quadruple and multiply by ten the product, which augments thus in a proportion much greater than the advances increase, and, in this manner, up to a certain point where the product will be greatest that is possible, compared to the advances.

Past this point, if one augments the advances still more, the products will augment still more, but less and less, and always less until that point at which the fertility of the land will be exhausted and art cannot add any more; a surplus of advances could add absolutely nothing to the product

I should observe that it would be an error to imagine that the point where the advances return the most possible will be the most advantageous that agriculture can attain, because, although new

71. This concept is on the highest level of abstraction in every way; it is as far removed from what one actually observes as the physicist's elastic materials that do not stretch. Units of capital can be considered homogeneous only for the sake of theoretical reasoning. More capital-intensive production generally entails a change in technology, a different kind of real capital, rather than the multiplication of identical tools and machines. Therefore, agricultural production being what it is, it is difficult to differentiate increasing or decreasing returns to a homogeneous factor from historical increasing returns owing to the introduction of improving technology.

increments of advances do not return in total as much as the preceding increments, if they return enough to increase the produit net of the soil, it is of advantage to make them, and this will always be money well placed. If for example, one supposes with the author [Mirabeau, Philosophie Rurale] that the annual advances of a good culture return 250 for 100, an increment which returns 250 for 100 will be infinitely more profitable. For the interest of the primitive advances were already set aside beforehand on the 250 for 100, and this deduction still allows a very decent produit net, so much as one deducts from the product of the new advances 100 for their annual renting and 10 for the interest of the first placing, which becomes an increase of the first advances, of which the advances of the first year are always a part; if then one deducts this 110 per 100 on the 250 products of the new advances, one will have a produit net of 115 of new advances, which one does add to that of the 250 per 100 of the first advances; and so on for the rest.⁷²

Thus, Turgot found the solution to two theoretical problems, for which the works of his fellow intensive-farming enthusiasts manifest a crying need; in one bold stroke his principle of diminishing returns showed the limitations to the profitable employment of capital in individual enterprises, the point of profit maximization,

and thereby, as well, the allocation of capital amongst alternative uses,⁷³ though he did not go on to develop this latter idea. This was a much more difficult achievement than it seems in retrospect. Diminishing returns are obscured when one is thinking in terms of expanding technological horizons. Witness, the modern industrialist who finds it hard to conceive of a period short enough to produce anything but decreasing cost curves. And most economic theorists (especially Quesnay) were conceptualizing on the premise of economies capable of relatively unlimited growth - that is, until the Napoleonic Wars crowded English agriculture against the

72. Daire, Oeuvres des Turgot, "Observations sur un Mémoire de M. de Saint-Péray", pp. 420-422.

This article, which we have quoted previously in connection with Turgot's criticism of the over-saving theory, fills in some of the blanks in his theory of capital as outlined in the Réflexions. Probably, more than any other work it shows the stature of the man. There is little direct evidence that the work had much influence of successors, though it can scarcely be believed that it went completely unnoticed after being published in Duponts Oeuvres des Turgot (1809-1811). However, Turgot's objections to the over-saving theory did supply some of his successors (at least in France) with reasons for dismissing this theory. In point of fact, Turgot prepared the way for the triumph of the Classical theory of capital in France. The Observations definitely gives Turgot priority over West and Ricardo in discovery of the case of diminishing returns. One might even argue that his statement on the matter is superior to theirs, which would indicate they discovered the principle independently. Besides, Ricardo was always more than generous with acknowledgments, and so the fact that he did not mention this work argues that he did not know about it.

73. We have already pointed out that Quesnay, and Turgot after him, took into consideration the influence that the demand side of the economic equations have on the allocation of capital, summarizing this intelligence in their demand schedules.

extensive margin of inferior land. Unfortunately, Turgot restricted diminishing returns to agriculture - an oversight that limited its usefulness for distribution theory. But, then, when one comes to think of it, the concept has only been extended to cover industry within the last half century, which goes to show that it is not the sort of idea that is immediately obvious.

In conclusion it might be helpful to give a resume of the chapter. - Quesnay's main personal contribution to the understanding of capital was to bring into theoretical consciousness the import Real Capital had for the agricultural revolution. To a limited extent he even perceived the sociological implications of this new order and, as we shall see in a later chapter, he had more than an inkling of what its political requirements would be. Some of his younger disciples, notably Baudeau and Turgot, generalized these concepts to cover the incipient capitalistic industry which was about to break its bounds. Quesnay's theory of capital is epitomized by the many aspects of truth connoted by his use of the word avance - the idea that, behind the monetary veil, capital is in fact an advance of goods, to work with and live by, provided by the capitalist to bridge the temporal gap between productive work and the final product. Quesnay himself developed this idea into an exacting study of the flux and reflux of capital and circulation in general. Regrettably, we can

only give a sketch of this work, for it is not a subject that lends itself to an economy of words. We have chosen to slight over the matter in the present chapter because it more properly belongs in the context of the circulation of the tableau économique, the analytical device with which it was presented. We have devoted a good deal of our attention to Turgot; if only because of the stature of the man, we could hardly have done less. And, for the very reason that he stands alone amongst the physiocrats on the subject of capital, he provides us with a standard of comparison by which we can understand and evaluate the ideas of the more orthodox physiocrats. And, as well, bearing in mind the similarity of Turgot's and Smith's theories of capital formation, this arrangement suggests to us that classical theory had its beginnings in Quesnay's work. This is so obviously the case that it hardly matters whether Smith reached his conclusions independently or borrowed his ideas from Turgot. The greatest intellects are those that pose the significant questions; there is always a wealth of more pedestrian minds to explore any number of possible answers.

The next chapter will be given to a brief essay on labour so as to complete our study of the factors of production.

CHAPTER 4

LABOUR AND POPULATION THEORY

For the purpose of our study we have organized related material according to the triadic division of the factors of production - the natural agents, capital and labour. This is not to imply that the physiocrats had the same formal organization in mind. But, nonetheless, they always admitted the productiveness of labour and capital, at least when they are employed in agriculture. That this is so is proven by Turgot's discussion of decreasing returns for capital and labour and Quesnay's comparison between the physical and value productiveness of the capital-intensive grande culture and the petite culture. "The land is the source of production"; writes Mirabeau, "but it produces to the tastes of our needs only by the means of labour and the faculties of those who cultivate it".¹ What Mirabeau really means to say is not (as some critics believe) that land is the single productive factor, but something very different: that agriculture is the only productive sector and that labour and capital can produce new increments of value only in this industry. This theory of value creation and the circulation of income is

1. Mirabeau, *Philosophie Rurale* (Amsterdam, 1764) Vol. I. pp. 5, 6.

definitely wrong for the several reasons we have given in the second chapter. Still, despite the several strange ideas suggested by the unique productivity doctrine, this theory imposed few inhibitions on practical inquiry into the facts of production - thanks, we might add, to the physiocrats' disregard and inconsistent application of it. Witness the heights reached on the subject of capital.

Though he was aware that the grande culture implied the proletarianization of the peasants, Quesnay directed most of his attention towards agricultural managerial labour - whether at the moment it happened to be personified by a freeholding peasant, the capitalist-entrepreneur or the landlord himself. Indeed, it might be truthfully stated that he gave the farmer-entrepreneur the status of a separate factor of production. Turgot simply collected together the various services which Quesnay himself attributes to this class when he says that the entrepreneur must be compensated for "his talents, his labour, and his risks".² There are several reasons which account for Quesnay having neglected proletarianized labour. First of all, he seemed to think that the labour force would, sociologically speaking, be a passive tool which would take its place in a harmonious capitalistic society and offer no opposition to his Programme. That is, this left him with only the problems of the farmer-entrepreneur to be solved for capitalism to evolve. Secondly,

2. Turgot, Reflections on the Formation and Distribution of Riches, Ashley ed., LXXXVII.

his theoretical apparatus emphasized the division of economic functions between industrial sectors rather than between social classes. The tableau économique is a map of income flows between sectors of the economy which do not in every case correspond to the sociological economic class structure. Income flows from the farmer to the landlord, and the latter in turn spends part of it in the manufacturing sector and part in the agricultural sector. The net rent accrued by the landlord is a payment made for the use of a factor of production, while the recompense made to the farmer and manufacturer are the gross receipts of two different orders of entrepreneur. And so, wages become an undifferentiated category submerged in the total of business expenses. The third reason (and probably the most important) for the lack of a clear distinction between entrepreneurial and wage labour is that the techniques of agriculture, especially as it was actually practiced at the time in France, do not allow a complete separation of the factors of production. For instance, the land-owning peasant, or even the farmer-entrepreneur, may represent to varying degrees the person of the wage-labourer, capitalist, landowner, and entrepreneur. Moreover, manufacturers were organized on a new capitalistic basis to an even lesser extent, and so in this area, as well, there was no pressing need to account for profits on capital or to make a clear distinction between profits

and wages. Certainly, Quesnay perceived that the new techniques of agricultural production implied the apportionment of the economic functions amongst specialized economic classes, but, as things stood, the peasants, the nobility, and the city bourgeoisie, had still to be cajoled and habituated to the new economic order. In any event, when the physiocrats discussed labour they usually theorized in such a general sense that their ideas could be applied equally well to the artisan, the peasant, or even the proletarian or entrepreneur.

Most modern theories of labour (Jevons, Marshall, Hicks, etc.) are some elaboration of a marginal productivity theory.³ Marginalism does not enter into the physiocrats' explanation of the distribution of wages, Turgot being the only member of the school to apply this mode of thinking even to capital. Inasmuch as they had a distinct theory of wages, it can be divided into simple elements of supply and demand. However, as Professor Schumpeter has quite rightly pointed out, the supply and demand apparatus can by itself be used to explain much of the determination of the wage rate.⁴ There are, reasoned the physiocrats, two main factors affecting the supply side -

3. *In essence, they assumed a fixed technology and perfect competition and equilibrium, such that the monetary wage of every type of labour equals the marginal physical product of the final increment of labour applied, multiplied by the equilibrium price of the product.*

4. *Joseph Schumpeter, History of Economic Analysis, p. 942.*

population and the willingness to work; the latter being considered a function of the wage rate. We will take up the subject of wages first, because it bears several analogies to the theory of profits we have just reviewed.

The physiocrats generally held, or at least it is implied in their works, that the quantity of capital supplied would increase with higher profits and decrease with lower profits. Analogously, almost without exception, they maintained that the supply of the other factors of production, with the notable exception of land, would vary directly with the rate of payment. Presently, we will give specific reasons why Quesnay thought this would be true for labour. First, it should be made clear that this assumption about the functional relationship between the quantity or intensity of labour supplied and the wage rate must stand or fall on empirical observation of each particular society. Sir William Petty, along with a number of other 17th and 18th century economic writers, disagreed with this opinion, being an advocate of the economy of low wages. He thought high wages merely encouraged the working poor in the vice of idleness and drink. This opinion should not be dismissed as a rationalization of the employers' interests. Petty gives us to understand that it was based on his personal experiences in Ireland. And, we must admit that such behaviour, producing a backward-bending supply curve for labour, is not unknown in some present-day societies that

have other than an economic orientation. As for Quesnay, he cannot logically support the economy of low wages, because this situation would argue against the single-tax. Only once does he abet the notion that low wages act as a spur to greater productivity.⁵ For the sake of consistency it is well that he usually supports the opposite point of view - that a raise in wages increases the supply and/or productivity of labour. Otherwise, during periods of high wages, wage earners would accrue a surplus that is disposable in the sense that it can be taxed without reducing the supply of labour power offered for economic use; in fact taxation of labour might increase both its supply and productivity.

We are not arguing that Quesnay was conscious of all the situations that might invalidate his single-tax theory, but only that he said very little that is inconsistent with our understanding of his theory.

As we have noted before, L'Abbé Baudeau made a more emphatic distinction than most of his colleagues between the entrepreneur and the proletarianized wage-earner. We might quote him to illustrate the physiocrats' opinion concerning the latter class. He argues that wages cannot be reduced without causing demoralization and depopulation. His argument is stated in such a manner as to imply that the minimum standard of living, below which these untoward consequences will occur, is in reality above that level of subsistence set by physical necessity.

The workers of agriculture and other productive enterprises, exploited and vexed by arbitrary charges, are either more dearly paid, or more discontented. More dearly, if it is necessary that the cultivator in chief [either the farmer or landlord] repay them to the extent of all the exactions which they suffer, and procure them a life that is still respectable (*douce*) and comfortable. Their wages should augment without cease if it is necessary that their lot should not be rendered worse. — In this case the culture is overcharged the whole of the tax and all the expenses which it costs to collect it, and this charge, supported first of all by the cultivator in chief, falls before long on the landlord himself, whose clear and net revenue is diminished at the lease of the farm; thus it is that the imposition and continual increase of taxes and the other charges on the rural workers makes the rents of land diminish, or stops the increase of their prices in the progression that should follow, an evident prejudice to the landlord. — Otherwise, one must suppose that this precious race becomes everyday more miserable, that his lot is rendered more difficult, his life more wretched and wearisome; in this sense, it is evident that they will depopulate themselves, that they will become discouraged, that they will lose their emulation, industry, vigour, that they can no longer produce recruits with wealth (*recues de bons*), with riches, able farmers or directors in chief of large scale enterprises. 6

5. Apparently he got carried away by his advocacy for a bon prix for grains: "C'est d'ailleurs un grand inconvénient que d'accoutumer le peuple à acheter le blé à trop bas prix; il en devient moins labourieux, il se nourrit de pain à peu de frais et devient paresseux et arrogant; les laboureurs trouvent difficilement des ouvriers et des domestiques; aussi sont-ils fort mal servis dans les années abondantes. Il est important que le petit peuple gagne davantage, et qu'il soit pressé par le besoin de gagner. Dans le siècle passé, ou le blé se vendait beaucoup plus cher, être plus labourieux et plus à son aise.

Daire, Physiocrates, p. 302.

Besides being inconsistent with the single-tax theory, this statement is arrant nonsense. The workers are not going to make anyone more prosperous by working at a lower real wage except their employers. Quesnay is as insistent on complete harmony between the classes as some authors are on the contrary opinion.

6. Daire, Physiocrates, pp. 709, 710.

Baudeau states that any tax paid, by the workers, must be compensated for by an equivalent raise in wages, and, since the entrepreneur cannot assume this added expense without despoiling his stock of productively employed capital, the burden finally falls on the net rent. The labourer cannot, or more accurately will not tolerate a lowering of his standard of living; this adversity would cause him to become dissatisfied (*malheur*); he will become less industrious, and lose his compulsion for emulation (*perde l'émulation*), and depopulation will ensue. L'Abbé suggests that the workman must have a decent standard of living (*un vie douce et commode*) in order to keep him content with his lot and encourage him to work hard. He indicates that the normal wage structure should give the farm worker the opportunity to elevate himself into the ranks of the directeurs en chef of large scale enterprises. The gist of this passage is that Baudeau has isolated causes that would make the supply of labour elastic, varying directly with the wage rate. He couches his theory in terms of psychological motive and behaviour. In the parlance of the hedonistic calculus, he suggests that the disutility of labour is relatively high. The point is, this discussion gives plausible reason why the supply of labour would have that functional relationship he had in mind, and therefore, taxes that fell on workers would in reality tend to be passed on to a factor of production whose supply is

inelastic to price; in the physiocrats' scheme, land. Further, one should understand that it is not logically inconsistent with this theory to argue that the labouring classes might resist a reduction in wages even to the extent of wilful depopulation, long before they are finally depressed to the physically-minimum standard of living.

Least we be misunderstood, it should be reiterated that this subjective analysis is not a superficial aspect of this system. The physiocrats' basic assumptions rest upon it and their characteristic conclusions flow out of it. They are the most articulate "pleasure and pain" theorists up to their time (and this is not slighting Galiani or Verri). In order to show why this is so, we will quote more extensively a passage to which we have already had occasion to refer in reference to capital. Speaking in the person of his pseudonym M.N., Quesnay says in his Dialogue sur les Travaux des Artisans :

M.N. - I wish to say still more, my friend; because not only do I wish the greatest possible diminution of expense, but, as well, the greatest possible diminution of labour-pain (travail penible) with the most satisfaction (jouissance) possible. It seems to me that this desire is general in mankind; those who are able to obtain this advantage legitimately profit by it the most they can, and at the same time they profit without prejudice to the general good. The measure of expenses which pays the artisans, indispensably obliged to labour

in order to obtain their subsistence, is always more limited than the needs which subject them to labour imperiously. The rich are for their pleasures (jouissances) the dispensers of expenses with which they pay their workers; it will cause a great deal of harm to the workers if they (the rich) labour in order to save (gagner) this expense, and they will do the same to themselves by subjecting themselves to a labour-pain (un travail pénible) which will be for them a diminution of pleasure; because that which is irksome (pénible) is a privation of satisfying pleasure. And so, they would not obtain the greatest possible augmentation of pleasure by the greatest diminution of expense. It is not less true however that in order to reunite these two things one profits from the competition of those who compete amongst themselves for employment (s'entredisputent le travail): let him profit by this, I say, in order to save as much expense as possible, and to extend satisfaction as much as possible. But also this saving has its limits; all labour is inseparable from expense, and one does not give himself over to it except to satisfy needs; competition, it is true, sets the price of labour at a minimum (au rabais), but the gain that it is necessary to procure by labour, in order to satisfy his needs, stops imperiously the disordered degradation of the price of labour incited by competition; and so, the maxim of obtaining the greatest possible augmentation of pleasure by the diminution of expense, is ruled by sovereign and inexorable laws of the physical order most advantageous to men united by society. Follow, then, in its detail, the relation and application of the principles of economic science, and then you will perceive no contradictions. 7

Quesnay leads one to understand that the irksomeness of labour accounts for the economy of high wages. In the above passage, he implies, though he does not say so in so many words, that the quantity or intensity of labour increases with a higher wage rate, for the reason that the aversion to labour-pain must be overcome by the promise of a higher wage. In addition, he links two other theorems to this

theory. First, that a rich person is not going to perform his own labour services, because he will not be obtaining the maximum pleasure at the least expenditure of labour-pain. And, secondly, the same rules of economic behaviour indicate the forces that fix the minimum below which wages cannot be reduced by competition. This subjective theory of artisan labour can be readily generalized to cover any other kind of labour. The previous quotation from Baudeau shows that he had some such notion in mind when he came to examine the case of the farm workers. In the passage above, Quesnay defines labour costs in a way exactly analogous to the Marshallians' Real Costs. Needless to say, this quotation adds weight to our interpretation of the physiocrats' statements to the effect that only land affords a costless income.⁸ It is interesting to note that Quesnay suggests that the pure logic of economic theory is a maximum problem. He actually propounds the doctrine that was to become the first canon of faith for the neo-classical economist: that under conditions of pure competition, individual self-seeking will maximize each person's profit and satisfaction of economic needs, and in the end have the same felicitous result for society as a whole. This proposition was taken up in a somewhat muted form by Adam Smith and thereby placed in the main stream of economic thought, which is of sufficient importance to make Quesnay one of the founding fathers of utilitarian economic theory. Neither Quesnay nor Smith attempted a proof for this satisfaction-maximization doctrine.

8. See Chapter 2, pp. 88,-89.

Perhaps Smith should be praised for not attempting to assert too much; in most cases he hardly went beyond the homely truth that we owe our bread to the baker's self-interest and not his benevolence.

The reader is probably aware that the foregoing interpretation disagrees with the usual commentary on this subject. Most authors blame the physiocrats for having a "subsistence" theory of labour.⁹ Even if this were true, this so-called theory is nothing more than the specific assumption that there are forces which tend to drive the wage rate down to some minimum level. This proposition does not in itself constitute a theory of wages, but can be made a specific case of any broader explanation, including the one we have outlined above. In any event, all the physiocrats, including Turgot,¹⁰ expressed the opinion that it would be advantageous for the workers to receive a high wage because this motivates them to work harder. Admittedly, Quesnay often makes statements to the effect that the recompense of the salaried classes (*classe de salaries*) are reduced to the lowest possible level by competition. To begin with, such statements have little to do with labour considered as a separate factor of production. He means by salaried classes all who are stipendary in the sense that they are paid out of the produit net; in his scheme this

9. e.g. See the relevant sections of Schumpeter's History of Economic Analysis, and, Gide and Rist, A. History of Economic Doctrines.

10. Daire, Oeuvres des Turgot, p. 437.

includes merchants, artisans, and everyone else outside agriculture. Thus, this recompense must in part include payments for the use of capital, no matter how primitive the state of economic development. Even so, it might be instructive to quote one of these passages :

One would object only in vain that the salaried persons (salaries) can, by restricting their consumption and depriving themselves of pleasures (jouissances), pay the taxes that one would demand of them, without them [the taxes] falling on the first distributor of expense [i.e. the landlords] the salaried persons suffer, by the effect of the tax which destroys the subsistence, a suppression (une extinction), an irritating (fâcheux) entrenchment of pay, which reduces them to misery, and which necessarily diminishes their population. The price of salaries, and consequently the pleasures (jouissances) that the salaried persons can procure for themselves, are fixed and reduced to the lowest possible rate by the extreme competition which occurs between them. If one wishes, in a nation, to compel them by tax to reduce by a half their pleasures, they will emigrate to other nations where their subsistence is more assured and their industry more protected. Then the small number of those who remain in the country will find themselves troubled less by competition 11.

11. *Daire, Physiocrates, p. 134.*

He says that salaries are already so low that to reduce them by a half would cause their recipients to depopulate or emigrate. By a half? One is hardly surprised! This loose language notwithstanding, it is quite certain from his use of the word "pleasure" that the minimum standard of living, which cannot be lowered without causing these harmful results, is something above that required by this class for its biological needs. Certainly, his psychological rule of economic conduct - that men try to minimize labour-pain, i.e. the disutility of labour - provides a positive force that would tend to keep the minimum standard above the subsistence level. It would be easy enough to interpret the statement above this light. In any event, in view of this subjective approach to labour-motivation, Quesnay could not lose sight of the fact that these psychological functions might vary from one country to another and even change within a given country. For this reason, he could not doubt that the usual minimum-standard of living was in reality a conventional standard to which a class became habituated over time:

It is the state of prosperity which invokes labour, because men enjoy the well-being it procures them, which accustoms them to the comforts of life, to good food, to good clothing; and because they fear misery, they raise their children in the same habits of labour and well-being; they double their pains and toil in order to establish in their small estate whatever faculties facilitate and extend the profits

of their labour; the hope of prospering sustains their pluck, and success satisfies their fondness and self-conceit. There amongst the lower classes (le bas peuple) are those who provide for the State labourous and profitable men.

Never does the state of prosperity make the lower classes lazy; this state is too precious to be taken away from them 12

So much for the notion that the physiocrats had a subsistence theory of wages. This is probably the appropriate place to make a short digression on a subject that has been forever bobbing to the surface of our narrative - their theory of population.

Inquiry into the subject of population - i.e. concerning the factors that attend the increase or decrease in the number of a country's inhabitants and the concomitant effects on the production and distribution of wealth - had already produced a fairly articulate body of theory by Quesnay's time. Many writers on economic and social topics, from Botero at the end of the 16th century to Petty and Cantillon, expounded on the idea that human fecundity tends to force population growth towards the limit imposed by the want of food. Richard Cantillon

12. *Francois Quesnay, "Hommes", Francois Quesnay & La Physiocratie, (Institut National D'Etudes Demographiques), Vol. II. p. 541.*

expressed the idea with the picturesque statement that "Men multiply like mice in a barn if they have unlimited means of subsistence". Moreover, he stands favourable comparison with Malthus, for he had the good sense not to conclude that population increase is necessarily associated with actual or potential misery. Among other reasons, he observed that the minimum standard of living may be set by convention rather than by rigorous necessity: in some countries even the peasants were not content "to live the most poorly and consume the least produce of the soil".¹³ Most of the physiocrats' immediate predecessors, especially the English mercantilists, found positive reason for optimism. The greatest bulk of mercantilist literature was devoted to the possibilities for introducing new industries and improving technology generally. The majority of the pre-physiocrats, both English and continental, were populationists: i.e. for one reason or another they favoured a rapid increase in the numbers of mankind. Popular opinion supported the notion that the increase in the number of bodies and souls is, in itself, a justifiable object of economic policy, either as a basis for military power or for religious reasons. But as well they had purely economic motives for for such a policy. The stock in trade of the populationists was the dictum - "Population is the source of wealth". They seemed to consider labour power the primary factor to be increased in order to produce greater wealth; the

13. Richard Cantillon, *Essai, sur la Nature du Commerce*, Henry Higgs ed. p. 83.

increase of labour power being in the main limited by the production of subsistence goods, especially food.¹⁴ Some of the populationists had the premonition, so common to American chambers of commerce, that population growth would increase per capital income. For most authors this idea was based on historical observation rather than abstract argument; though Petty, amongst others, occasionally expressed the idea (which was certainly correct for its time) that population growth would afford external economies to transport, marketing, education etc.

The physiocrats were probably influenced most on the subject of population by Cantillon, though they were acquainted with most of the French and English writers who have any theoretical pretensions on the matter. We have already mentioned that Mirabeau somehow acquired the manuscript of Cantillon's Essai and incorporated some of its ideas into his own L'Ami des Hommes. Mirabeau gave the Irish banker's teachings a populationist slant. He argued that population was a desirable aim in itself - apparently, for the usual religious and military reasons. He propogandized against the excessive use of horses and equipages, a sin he compared to incendiarism and parricide, because it wastes food that might sustain a number of souls. He thought a populationist policy would somehow favour the prosperity of the masses, but he gives only the vague reasons for this opinion.¹⁵ Quesnay disagreed with Mirabeau's thesis that population growth is the primary

cause of prosperity, though he himself was a populationist of sorts. Quesnay supported Boisguillebert's contention that the population of France had declined since the reign of the Sun King, and he wanted the loss made up, if only for reasons of national power. As in England, in the absence of statistical fact, there was a controversy going on as to whether population had increased or decreased during the last hundred years. Whatever the facts, the important consideration for our study is the causes to which Quesnay attributed this supposed decline in heads. Like his instructor Boisguillebert, he puts most of the blame on a long period of agricultural depression, which he theorized had been caused by a contraction in effective demand and the lack of productive incentive - the pernicious effects of excessive and badly administered taxation. In effect, Quesnay reversed Mirabeau's chain of causation;

14. *Mirabeau says: "La nourriture, les commodités and les douceurs de la vie sont la richesse. La terre la produit, and le travail de l'homme donne la forme. La fonds & la forme sont la terre & l'homme La population & l'agriculture sont donc intimement & necessairement liées la subsistance est la mesure de la population Augment des subsistances accorissement de population". Mirabeau, L'Ami des Hommes (La haye, 1763), Vol. I, pp. 25, 15, 49.*

15. *Mirabeau has a remarkable Programme:*

"Je vais créer une infinité d'hommes; que d'embrarras pour les gouverner ! Je vais les rendre laborieux & riches; combien de gens m'ont dit sagement qu'il ne falloit pas que le peuple connut une aisance qui le rendoit insolent ! Je vais diminuer le nombre des chevaux & des équipages, & mettre leur augmentat enfin, oui, demontrer que le luxe est, proportion gardée l'abîme d'un grand etat plutot encore que d'un petit."

Mirabeau, L'Ami des Hommes, Vol. I. p. 8.

he accused his convert of having harnessed the plough before the oxen. Mirabeau recanted his populationist notions in the sixth volume of l'Ami des Hommes and announced his conversion to the physiocratic doctrine that it is "les revenus qui sont la source de la population."¹⁶ Regrettably, this splendid insight is marred by the unlikely doctrine that the produit net is a unique income, which, alone, supports the different classes in all sectors of the economy other than agriculture. But, to his credit, Quesnay links the production of "subsistence" goods to those purely economic vagaries that cause the trade cycle and influence the rate of economic growth.

Of course, this is not to say that Quesnay denied that population can be a contributing factor to economic growth or development, either of which might actually occasion an increase in per capita income. He certainly realized that a growing population would provide a market for expanding agricultural production and might encourage the development of the grande culture. All the major physiocratic works stressed the obvious relationship between the number of mouths and aggregate demand for farm commodities. Quesnay's article Hommes, particularly, has almost a populationist character. Using the word "man" (hommes) in a quantitative sense he says :

16. *Ibid.*, Vol. VI, p. 282.

It is a man himself who constitutes the power of States: it is his needs which multiplies wealth; the more nations increase the production of which they have need, and the more they consume them, the richer they are. Without use (jouissance) and consumption, productions would be useless goods. It is consumption which renders them commerciable, and which maintains their price; and it is the decent price (bon prix) and the quantity of productions which forms the Revenue or the annual riches of each nation. And so, man, in multiplying and consuming productions, is himself the primitive cause and constitutive of Riches. 17.

Here Quesnay states explicitly the relationship between population and aggregate demand.¹⁸

Although the physiocrats appreciated the buoyant effects of population growth, several functions of their system gave reason why it should not be so excessive as to be incompatible with high per capita income. Their theory that the supply (and/or productivity) of entrepreneurship, capital, and labour, varies directly with their payments,

17. Quesnay, "Hommes", pp. 511, 512.

18. Here is another passage of a similar persuasion :

/Les terres, je répète, ne sont des richesses que parce que leurs productions sont nécessaires pour satisfaire aux besoins des hommes, et que ce sont ces besoins eux-mêmes qui établissent les richesses; ainsi, plus il y a d'hommes dans un royaume dont le territoire est for étendu et fertile, plus y a des richesses. C'est la culture, animée par le besoin des hommes, qui en est la source la plus féconde et le principal soutien de la population; elle fournit les matières nécessaires à nos besoins, et procure des revenus au souverain et aux propriétaires. La population s'accroît beaucoup plus par les revenus et par les dépenses, que par la propagation de la nation même".
Daire, Physiocrates, pp. 299,300

gives sufficient cause for desiring high personal income. Furthermore, one of the peculiarities of physiocracy is that the net rent is considered the only real income that can go to the maintenance of the non-agricultural classes. On the basis of this mistaken theory, the physiocrats argued that the produit net must increase if living standards are to raise in any real sense. "One should be less attentive to the augmentation of population than to the increase of revenues (i.e. produit net)," says Quesnay in one of his *Maximes*, "because there will be more resources for the needs of the State when the people are more prosperous and as well, more means to make agriculture prosper (i.e. capital)".¹⁹ Moreover, the increase of per capita income would, assuming as Quesnay did in his demand schedules a high income elasticity for agricultural commodities, tend to increase rents.

Our study has shown quite conclusively that the physiocrats wished prosperity for all classes and, specifically, believed in the economy of high wages. When they talk about subsistence they seem to mean that minimum labour payment that will call forth the requisite supply of labour power. What then is the grounds for that interpretation, given by Professor Schumpeter amongst others, which blames the physiocrats for having a subsistence theory of wages and a Malthusian-like theory of population. The answer seems to be that Quesnay made

19. *Ibid.*, p. 101.

a few statements that over-stated his position.

Schumpeter points out that Quesnay expresses the opinion that population always tends to go beyond the limits imposed by the quantity of subsistence.²⁰ The statement to which he refers was made in the work Despotisme de la Chine. Quesnay says: "Population always exceeds riches in good and in bad governments, because population has no limits other than subsistence, and it always tends to pass beyond it: everywhere there are men in indigence."²¹ However, he is discussing the situation prevailing in China, and in the very same section he shows that this tendency need not necessarily be consummated. He proposes that the Chinese relieve population pressure by emigration or deferred marriage. Quesnay over-stated his meaning. He simply is not so conscious of verbal contradiction as modern students of semantics and symbolic logic. Still, such faults notwithstanding, it should be appreciated that his thinking on population was more meaningful than that of Malthus, if only because he kept an eye on the effect numbers would have on quality - that is to say, on the health and economic vitality of a people.

20. Schumpeter, History of Economic Analysis, p. 257.

21. Aguste Oncken, Oeuvres Economique et Philosophique de F. Quesnay (Paris, 1888), p. 635).

CHAPTER 5

THE TABLEAU ECONOMIQUE

The tableau économique represents a most penetrating inquiry into the interdependency of the economic process - that is to say (using the phrase broadly), into the conditions of general equilibrium. The zig-zag diagram itself is modest in its design, as indeed it had to be because of the very limitations of the diagrammatic method. Still, the verbal discussion, which expands on its meaning, broaches the interdependency of the economic process on at least three different levels of abstraction. To begin with, the physiocrats' subjective theory of consumer demand suggests that jouissances are imputed from consumer goods to producer goods; the dictates of the consumers give direction to economic activity and integrate it into a unified whole. It was in following this line of reason that Mirabeau advanced the theory: "That the more needs multiply themselves, the more capital (dépenses), riches, and population increases."¹ We have already given this idea (which has some primitive similarity to the Austrians' theory of imputation) all the attention it merits² - or at least all it merits in this unrefined presentation.

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1. *Mirabeau, Philosophie Rurale (Amsterdam, 1764) Vol. I., p.51.*
 2. *See Chapter 2, pp. 101-105.*

Only the reader should keep in mind that the physiocrats (particularly Mirabeau in Philosophie Rurale) considered this one of the more important truths to be gained from the tableau. And so, this chapter shall in the main be concerned with two other, more explicit levels of analysis: first, the general equilibrium of incomes between industrial sectors (the input-output idea, first suggested by Boisguillebert); and, secondly, the reproduction of capital within the context of the process of circulation, as it was depicted by the tableau.

We would have been obliged to explain the tableau économique, if for no other reason than that the physiocrats themselves attached great importance to it. But, now, in recent years, this analytical device has gained a good deal of attention because it presents several important insights that are once again given a weighty analytical import by theorists - the most important being the concept of general equilibrium in its several aspects. Strangely enough, the tableau was largely neglected by the physiocrats contemporaries and immediate successors. Adam Smith quoted, with a certain sense of ridicule, Mirabeau's hyperbole that the Economic Table can be enumerated, along with the invention of money and writing, as one of the great discoveries of mankind. There are several reasons for this disdainful attitude and neglect. First of all, the tableau économique's portrayal of circulation reproduced all the freakish preconceptions of the unique productivity doctrine.

But this might have been passed by. Probably the more important reason was simply that the tableau represents an extremely rarefied order of thought that simply could not be understood by economists with a less abstract turn of mind. Much of what Quesnay had to say, particularly on the subject of circulation, must have impressed his readers as a triumphant discovery of the obvious. Yet, most scientific discovery is just this order of plain-minded achievement. Karl Marx was the first major economist to rediscover the great merit of this tableau-analysis. In many ways, his evaluation of the tableau is still the best to date. He says :

Quesnay's Tableau Economique portrays in a few bold strokes how the yearly output of the national production, determined according to its value, is distributed in the process of circulation in such a way that, all other conditions remaining unchanged, the simple reproduction of itself can proceed, that is reproduction on the same scale It was an attempt to present the whole productive process of capital as a process of reproduction, with circulation merely a form through which this reproduction took place; and the circulation of money merely as a phase in the circulation of capital. 3.

This statement points out several important characteristics of the tableau. First, it is a typical example of

3. Karl Marx, Theories of Surplus Value, Trs. Bonner and Burns, (London 1951), pp. 67, 71.

what we have chosen to call Real Analysis: commodities acquire their value in the process of reproduction; money is allowed to play no tricks of its own. (For that reason it will not be necessary to study the tableau's circulation of money as such; with each transaction, money simply goes one way as commodities go the other). A second remarkable thing about this analytical device is that it is the first conscious attempt (before J.S. Mill and Marx himself) to show the economic process as it would occur in a Stationary State. Marx himself credits Quesnay with being the first to look into the facts of simple reproduction⁴ - that is to say, the case in which reproduction is carried on on an unchanging scale.

This concept of simple reproduction within the context of a Stationary State was certainly one of the more unique and important premises of the tableau. To a certain extent Quesnay realized that he was using an exceptional methodology and was careful explicitly to state his assumptions. He tells us in his Analyse du Tableau Economique that his analysis assumes pure competition (libre concurrence)⁵, security of property, etc.; his phrase for the Stationary State was "ungrand royaume porté à son plus haut degré d'agriculture".⁶ Quesnay was not simply defining a future reality in which the grande culture would become

4. *Karl Marx, Capital.*

5. *This phrase is most accurately translated "pure competition", because only a very rigid order of competition could, as the physiocrats assumed, reduce the payments made to all factors of production to their supply prices.*

6. *Daire, Physiocrates, pp. 58-59.*

the universal mode of production, occasioning a saturation of capital. He uses his formulation of the Stationary State as a conceptual construction in order to observe ever present phenomena which can best be seen within the context of an unchanging economic process or as a deviation from an unchanging process. In this way, he examined disproportionality crises (of the Boisguillebertian kind) caused by disequilibrating sectorial distribution of income. He was able to employ this conceptual model for this purpose, because one main feature of this or any other simple reproduction model is that it defines an equilibrium of incomes such that the aggregate demand of all sectors (in the schemes of J.S. Mill and Karl Marx, the aggregate demand of social classes) is sufficient to provide for cost-covering production in each and every other sector.

Production always begins with an advance of capital and proceeds through the reproduction of capital. This takes place within each of the three economic sectors into which Quesnay and Mirabeau divided their model of the French economy (despite the seeming impossibility of this, were the physiocrats rigidly to apply their unique productivity doctrine). "The production of goods," writes Mirabeau, "is obtained by capital (dépenses), and the capital should return with a surplus by reproduction." That is to say, the total annual reproduction, produced by agriculture, returns the substance (le fond) of the three sorts of capital (depenses); that of the revenue (i.e. invested

by landlords), that of cultivation, and that of industrie The circular flow of capital (*dépenses*) is what one calls circulation."⁷ By now the reader will have some idea as to how he can interpret this brief statement. However, a few of our previous observations on capital might bear repeating before we proceed with our examination of the tableau. As in the foregoing statement the physiocrats usually used the words dépense or avance (less often capital) as generic terms to mean any productive expenditure, whether used to pay wages or entrepreneurial labour or invested in capital accumulation; the same dépense appeared from the demand side of the economic equations (when added to rental income) as the total aggregate demand.⁸ This very broad concept did not preclude a division of capital into more restrictive categories for the purpose of analysing specific problems. We shall presently consider an instance in which the physiocrats distinguished manufacturing from agricultural capital in order to show that there could be such a thing as relative over-accumulation of capital (unproductive investment) in a single sector. We have already mentioned that they separated farming capital into classes - generally fixed and circulating capital, though they called

7. *Mirabeau, Philosophie Rurale, p. 175.*

8. *This is the meaning behind Mirabeau's statement that: "The miser thinks that circulation is for the purpose of favouring the hoarding of money, and for the object of saving; this implies a contradiction in the economic process (marche); because all saving on capital expenditure (dépenses) is a diminution of circulation".*

Philosophie Rurale, Vol. I, p. 175.

them by different names. This was not barren taxonomy; they wanted to make it clear that the new technology called for a greater ponderence of fixed capital. What matters, it should be appreciated (in case there are still people like Böhm-Bawerk looking for ultimate definitions) that the physiocrats are above criticism in this pragmatic use of concepts. Interpretation of the tableau requires that one should not confuse the meaning and intent of these several meanings given to the concept capital.

Quesnay divided his economic model into three parts: agriculture (the productive sector); manufacturing (the sterile sector); and the landlords. Annual production of new values was thought to be limited to the total product of that labour and capital employed on the land; only agriculture and the other primary industries were considered productive. The annual reproduction of income in the productive sector included the returns on capital plus the rental surplus - the produit net, the so-called "pure gift" of nature. Agricultural production was considered the genetic cause upon which depends the functioning of all other sectors. Only the immediate transactions which gave value to primary commodities were esteemed capable of producing a net increment of value. This meant that the income of the sterile class was limited to that received from its sales to the farmers and the landlords; that is to say, all non-agricultural incomes must be paid out of that income that has its

origin in the agricultural sector. For these reasons, neither the government services supported by taxation on the produit net nor manufactured products were regarded as a net addition to the economic product. The economic activity of these sectors was made possible by the provision of primary commodity values, and so to reckon the payments made to these goods and services "Real income" would be double accounting. We have already pointed out the basic error of this view of value creation and circulation - briefly: the physiocrats were wrong in their assumption that no values (exchange values) are created within the sterile sector; each exchange of goods and services within this sector causes a multiplication of income, just as does the farmers' sales to the sterile class. Still, despite this very basic error, the tableau économique represents a tremendous advance in analytical technique, considering the state of economic theory at the time.

We will not attempt to reconcile the several different renditions of the tableau - for reasons of space. We will restrict our study to Quesnay's two monologues Analyse du Tableau Économique and Formule du Tableau Economique and the versions of the tableau supplied in Philosophie Rurale.

Circulation begins with the farmers making rental payments totalling 2,000 (billions) livres to the landlords (See Table I, p.202, Mirabeau's version of the tableau taken from Philosophie Rurale). The farmers receive no

goods or services in return; this is merely to gain access to the land. The landlords spend half their income in the manufacturing sector and half in the farming sector. Both the sterile and productive classes then proceed to spend half their income in their own sector and half with the other. This leaves both classes with 500 livres income. Again they spend half of this, that is 250 livres, within their own sector and half with their opposite number. This process continues within the year represented by the tableau until the initial receipts of 500 livres, received by the farmers from the manufacturers and vice versa, are multiplied in both sectors by a multiplier that progressively approaches 2.

The only circulation completed on the face of the tableau is the 2,000 livre intra-sectorial flow of rental income from the farmers, through the hands of the landlords and manufacturers, and back to the farmers. In his précis of the tableau (See table 2, page 203), Mirabeau tells us that the manufacturers use their working capital (annual advances of 1,000 livres) to buy raw materials from the farmers.⁹ This still leaves 2,000 livres of the farmers' income unaccounted for, since reproduction on the same scale requires that the farmer accrue 3,000 livres "for his advances and the interest on his primitive advances"¹¹

9. In other contexts, the physiocrats say that this 1,000 livres is used to buy agricultural subsistence goods as well as raw materials, which would have to be the case if the sterile class is to eat. But this is a small consideration in that it is still consistent with the preconceptions of the unique productivity doctrine concerning the creation and circulation of values.

Table I. THE TABLEAU ECONOMIQUE

PRODUCTIVE EXPENSES (DEPENSES)	EXPENSES OF REVENUE	STERILE EXPENSES
Relative to Agriculture, etc.	The tax included, is divided between the productive Class and the Sterile Class.	Relative to Industry, etc.
Annual Advances in order to produce a revenue of 2000 <u>livres</u> are 2000 <u>livres</u> .	Annual Revenue of 2000 <u>livres</u>	Annual Advances for the Works of Sterile Expenses are 1000 <u>livres</u> .
2000 <u>livres</u> produces a surplus.	2000 <u>livres</u>	
Productions		Manufactures
1000 — A surplus is produced	1000	1000
500 — A surplus is produced	500	500
250 — A surplus is produced	250	250
<hr/> Total		<hr/> Total
2000		2000
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Table 2. THE PRECIS GIVEN BY MIRABEAU.¹⁰

The total reproduction is equal to all the sums that are spent with and accumulated by the productive class, namely:-

The advances of the productive class	— — — —	2000
The portion of revenue which passes immediately to the productive class.	— — — —	— 1000
Total payments of sterile class to productive class.	— — — —	— 1000
The advance of the sterile class employed to purchase raw materials from the productive class.	— — — —	— <u>1000</u>
TOTAL	— — —	5000

And so, the total reproduction is 5000, of which the cultivator accrues for his advances and the interest of his primitive and annual advances — — — — — 3000

The remainder for the revenue	— — — —	<u>2000</u>
TOTAL	— — —	5000

The total quantity of Riches included in the Tableau:

The total reproduction	— — — —	5000
The specie (l'argent) of the revenue	— — — —	— 2000
The advances of the sterile class, always conserved by the Agents of this class.	— — — —	<u>1000</u>
TOTAL	— — —	8000

10. Mirabeau, Philosophie Rurale, Vol. 1, p.279.

in addition to the 2,000 livres yearly rent. The remaining 2,000 livres may in part be accumulated in natura by individual farmers from their own production of seed, foodstuffs, etc., but, as well, part of this must be monetary income generated within the farming sector itself, for the farmers always spend half the money they are paid by the manufacturers within their own sector.¹²

The reader should not become confused because our explanation of the tableau makes no distinction between income in goods and income in money. For all practical purposes they can be considered one and the same thing. The physiocrats always equated physical productivity with value productivity (exchange value) --- or at least they always do in their tableau-analysis. Money is never allowed to play tricks of that sort conjured by the mercantilists. With each transaction, commodities go one way and money goes the other --- except, of course, for the transactions involving rental income.

11. *This phraseology suggests that Mirabeau took it for granted that pure profits were being accrued by the farmers, though he allowed them to be submerged in the total advances (possibly as a simplifying assumption).*

Quesnay says in his first edition of the tableau that he left these profits (interets des avances) out of his calculations in order to avoid numerical complications. Explication du Tableau Economique (Republished for the British Economic Ass.,), p.iiij.

12. *Quesnay says in the Explication that about half of this sum is used for the nourishment of animals and about half to pay the wages of men occupied at production labour. Explication, p.iiij.*

The reader might better understand this exposition if he will pause to compare the tableau (Table 1, p.202) with the Formule du Tableau Economique (Table 3, p.206), the expository device Quesnay himself used to clear up the sequence of circulation. It is to be observed that the tableau and the formule seem to be based on identical facts, postulates, and figures.¹³ Now that the reader has these two diagrams in mind, we will consider circulation as it appears from the manufacturing sector.

The manufacturers use up two-thirds of the 3,000 livres worth of raw materials and subsistence goods which are sold to other sectors by the farmers, the classes maintained by the rental income consuming the remaining subsistence goods to the value of 1,000 livres. At the beginning of the year, the sterile class spends their working capital, which by the end of each year has been returned to them in the form of monetary values by their sales to the landlords, in order to buy 1,000 livres of raw materials from the productive class. Notice, this is the only intra-sectorial transfer which is not represented by a broken line on the tableau. It is important that one should understand that, because of this, the

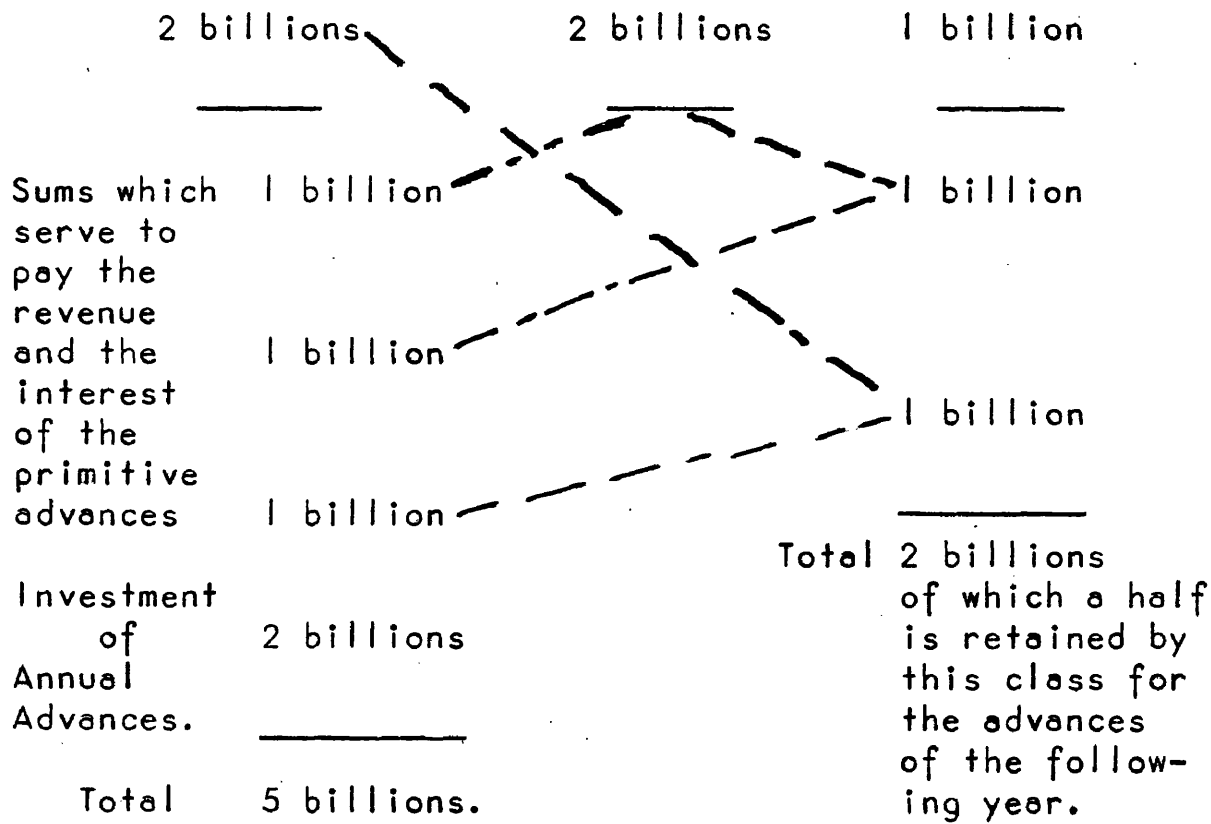
13. To my knowledge Dr. Henri Woog was the first to show conclusively that the tableau and the formule are an identity, though Marx seemed to have taken this for granted. See, Henry Woog, The Tableau Economique of Francois Quesnay (Bern, 1950).

In the main, I have followed Karl Marx's path-breaking study of the formule, because he reduced it to the wonderfully simple picture of circulation that it actually is.

Table 3. FORMULE DU TABLEAU ECONOMIQUE.¹⁴

Total Reproduction: 5 billions

Annual Advances of the productive class.	The revenue for the landlords, the Souverain, and the parish.	Advances of the sterile class.
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14. Daire, Physiocrates, p.65.

tableau économique does not represent a complete process of circulation: the farming class puts into circulation every year 3,000 livres (2,000 in rental income and 1,000 owing to its progressional purchase of manufactured goods) and only receives 2,000 livres in return (1,000 from the sale of subsistence goods to the landlords and 1,000 from the progressional sale of subsistence goods to the manufacturers). Whereas, the sterile class receives an income of 2,000 livres (1,000 from the landlords and 1,000 from the farmers' progressional purchase of manufactured goods), while they spend only 1,000 livres for their progressional purchase of subsistence goods from the farmers. Thus, the manufacturers' purchase of raw materials to the value of 1,000 livres, as shown in the formule, is needed to return to the farmers the full 3,000 livres put into circulation on the tableau. Once this transaction is included on the tableau (and after all Mirabeau told us that it occurs behind the scene),¹⁵ the zig-zag is reconciled in every respect with its formule --- all intra-sectorial circulations on both being completed.

At the beginning of each year, the sterile class always has 1,000 livres working capital on hand which it uses to purchase raw materials from the farmers. During the course of the year, it buys 1,000 livres worth of subsistence goods from the farmers, which we might assume are represented by the progressional transactions of the

15. See Table 2, p. 203.

tableau. These two items constitute their total annual expenditure of 2,000 livres. At the beginning of the year, the sterile class sells 1,000 livres worth of manufactured commodities to the landlords and as the year progresses makes sales totalling 1,000 livres to the productive class. Annual expenditure is equal to annual receipts, and so by the end of the year the sterile class will have accumulated a monetary fund totalling 1,000 livres (the same amount with which it began the year), and so this class will have the means with which to continue reproduction at the same scale during the following year.

This picture of circulation greatly simplifies the actual course of events; indeed, this was necessary in order to limit the zig-zag lines to a manageable number. One should always interpret analysis of this sort generously, because it is nearly impossible to enumerate all the simplifying assumptions that have to be made. For instance, the manufacturers receive no income that is specifically devoted to the maintenance of their fixed capital. Perhaps this was because Quesnay found only a negligible fixed capital in the sterile sphere in the stage of economic development he observed. But, in any event, it is easy enough to imagine that a part of the subsistence goods and raw materials purchased by this class would be utilized for this task and the depreciation on this fixed capital establishment included within the value of the

finished product. Similar allowances can bring this picture of circulation in line with modern preconceptions, except for those few peculiar biases introduced by the unique productivity doctrine. We will return to this subject later.

Now, we cannot pretend that the sequence of circulation, as we have outlined it above, is exactly as it presented itself in the minds of Quesnay and Mirabeau. We have only tried to recapture their broader view of things. The details of circulation differ in their own explanations of the tableau. Indeed, there is no reason why the sequence of circulation should have been always explained in exactly the same way, for the reproduction of capital is a continuous process (a fact rubbed in by the zig-zag lines of the tableau); and so this process can be broken down from any arbitrary beginning. Anyway, no matter how inconsistent its details, this analytical technique conveys a very essential truth about capitalistic production: it shows graphically that the farmer-entrepreneur and manufacturer had to be provided, beforehand, at each period of time, with the monetary means to buy all sorts of producer goods that, as well, had been produced previous to the production under consideration. This requires an accumulation or continuous flow (according to how one chooses to define sequences in time) of producer goods and monetary income in order that the temporal gap between productive effort and final sale of commodities

might be bridged. The very economic process is manifest in the reproduction of capital. "The reproduction of goods", Mirabeau tells us above, "is obtained by capital, and the capital should return with a surplus by reproduction."¹⁶ Herein lies the reason for the productiveness of capital. This view of the subject gave Quesnay's theory of crises, as we shall presently see, the great merit of placing the final locus of disarrangement within the process of capitalistic production itself, where it really belongs; that is to say, all crises, whatsoever their first cause, culminate in a retardation of the flow of producer goods and monetary capital and finally occasion a lesser reproduction of capital and accrual of profits.

At first glance, the tableau économique looks like nothing so much as the Keynesian money-flow diagrams that have found their way into elementary texts. Though, actually, monetary analysis per se is non-existent in physiocratic works, or --- to be more exact --- monetary analysis of that particular level of abstraction found in mercantilist literature is non-existent. Money is not considered an independent causative force: the tableau assumes a constant price level which has been determined by the usual supply and demand mechanism acting directly on the process of reproduction; and so such purely monetary phenomena as "forced savings" and the effects of monetary capital impinging on under-employed resources

16. See citation 5 above.

have been written off from the start. Moreover, when they come to examine the circulation of specie, the physiocrats' analysis is none too exacting. Quesnay and Mirabeau generally assumed, as did the latter in his precis, that the whole intra-sectorial circulation is facilitated by 2,000 livres in specie. They inferred that this amount would be required to circulate a produit net to the value of 2,000 livres. However, we have discovered that, starting from agriculture, 3,000 livres income make a complete circuit. This has led some commentators to suggest that 3,000 livres in specie should be required to make this circulation possible.¹⁷ Nonetheless, one should bear in mind that the circulation of specie is not the same thing as the circulation of income, particularly in the physiocrats' frame of reference; for, following Boisguillebert, they held that the quantity of money in circulation is of little consequence, since any lack of it will be compensated for by the use of commercial paper. This theory inspired a flippant regard for monetary problems, throughout.

Of recent years, many commentators have speculated about the nature of the multiplier depicted on the tableau; both the farmers' progressional purchase of manufactured goods and the manufacturers' progressional purchase of subsistence goods involve a multiplication of income that approaches 2. This is a real multiplier, though of course, it is a multiplier in a rather special sense, since, in spite of this multiplication of income, the income of each

17. *Henri Woog, op. cit., p. 55*

class of the nation as a whole remains precisely the same from year to year. Still, the mechanism is the same, for initial acts of spending occasion a multiplication of income, just as it does in the case where overall income increases. The only difference is that there is a greater multiplication of the initial input of income in the latter case. The reader may wonder just what it is that sets a limit to the multiplication of each initial act of spending? One commentator has argued that the zig-zag is an example of a sectorial multiplier with a value of 2 (or a propensity to spend of .5). He maintains that one half of each previous transaction is withdrawn from productive circulation for the next round.¹⁸ Thus, he proposes that the propensity to save is the factor that limits the multiplication of income. Most other authors have tended to favour some such interpretation of the tableau's multiplier. However, this clearly violates Quesnay's original intent; he intimates, and Mirabeau tells us explicitly that, following the order of reproduction on the tableau, "the reproduction of revenue is equal to the revenue spent"¹⁹; this means that all income recipients spend the whole of their annual income, i.e. the annual propensity to spend is 1. One should bear in mind that the multiplier of the value 2 seen on the face of the tableau can only be approached by

18. Leslie Fishman, "A reconsideration of the *Tableau Economique*", *Current Economic Comment*, Vol. 20, Feb., 1958, No.1, p.46.

19 See footnote 58, Chapter III.

assuming a near infinite number of transactions between farmers and manufacturers during the course of the year. Clearly, Quesnay, could not have been of the opinion that this were possible any more than Keynesians believe that all income not withdrawn from circulation goes through that infinite number of transactions that would be required for their multiplier equation to reach its total sum.²⁰ Quesnay wanted to say nothing more than that farmers and manufacturers exchange with each other commodities to the value of 2,000 livres while, at the same time, depicting the general manner by which the multiplication of income occurs. Then, just what does set a limit to the multiplication of each initial input of income, if it is not saving, if the annual marginal propensity to spend is 1? Clearly, it has to be the velocity of exchange. Were this not the case, we would have that situation imagined by some wags in which a marginal propensity to spend of 1 produces an unstable system (run away inflation?). The velocity of exchange limits the multiplication of each initial input of income, because in reality the formation of income is nothing more than the exchange of commodities and services for commodities and services. A situation could never arise in which the marginal propensity to spend (as represented by the Keynesian multiplier formula) approaches 1 (while at the same time income in the aggregate achieves more than a relatively small number of transactions), for the simple reason that the velocity of exchange is limited by the production of these goods and services.²¹ In any

20. An infinite number of transactions are required for the usual Keynesian equation of the form —
$$S = \frac{I \times \text{Increment of Expenditure}}{I - \text{Marginal Propensity to Spend}}$$
 to reach its total sum.

event, the physiocrats themselves were not confused as to the facts of the matter. "Reproduction is the measure of consumption", Le Trosne reminds us, "and consumption is the measure of reproduction".²² The tableau shows explicitly that this must be so; there is no real mystery as to why the dimensions of the tableau have circumscribed limits. We will presently refer to a case in which the physiocrats describe explicitly the workings of an inverse multiplier: in which an initial destruction of income is multiplied as it is passed from one income recipient to another.

This is not to say that we completely approve of the physiocrats' overall understanding of the formation of income. Granted, they have a limited understanding of the multiplier, but it was forever entangled in the fallacious preconceptions of the unique productivity doctrine. An instance of this is a statement Quesnay makes in his Analyse du Tableau Economique. "Each sum which the productive class receives supposes a double value", he writes, "because where there is a sale there is a purchase, and consequently the value of that which is sold and the value of the sum which pays it; but there is no real consumption other than the value of the five

21. *If one wishes to strike a compromise, he might use the usual formula for the geometrical progression to show the sum of income reached by the Keynesian multiplier after an n number of transactions in the aggregate. (Of course, n need only be a relatively small number in order to approach the final sum of the geometrical progression):*

$$S_n = \frac{a_I(g^n - I)}{(g - I)}$$

S_n = The sum of income after n transactions.
 a_I = Initial input of income.
 n = Number of transactions of income in the aggregate.
 g = The marginal propensity to spend, i.e. the marginal propensity to consume plus the marginal propensity to invest.

billions which form the total receipts of the productive class."²³ Thus, he admits that each exchange of commodity for commodity causes a double formation of value (exchange value), but he does not follow the idea to its logical consequences; he always brings us back to the contradictory doctrine that the flow of income and value -- in his opinion the two are the same thing --- originates wholly in the agricultural sector. So what? Does his Commodity Cost Theory of Value impose any inhibitions on his examination of the facts of production? Let us consider what occurs in each of the three sectors of the tableau.

Nothing happens in the farming sector that should upset our non-physiocratic sensibilities. The farmers put into circulation 3,000 livres and 3,000 livres are returned to them. Of the additional 2,000 livres reproduced annually by the farmers, part is formed by the 1,000 livres which they spend within their own sector and part may be reproduced in natura by individual farmers. The sector composed of landlords and other classes maintained by the produit net spend the whole of it on subsistence and manufactured goods. A modern economist computing GNP would add this 2,000 livres rental income to the farmers' reproduction of 5,000 livres, since the class receiving this payment presumably contributes general administrative services to the value of 2,000 livres. Quesnay

22. *Daire, Physiocrates*, p. 898.

23. *Ibid.*, p. 64.

would disagree with this as a matter of definition, but he would never deny that these services were actually being performed and thus, so far, he would be saying nothing that is clearly contrary to economic fact. But, then, when he comes to examine circulation within the so-called sterile sector, his theory of value leads him completely astray.

The reader will remember that the basic assumption of physiocratic value theory is that agricultural production is the single source of new values. This value is a material substance that can only be produced in those economic sectors aided by the natural agents; the manufacturer cannot increase the mass or value of this stuff; he can only change its form. Admittedly, the manufacturer's final product has a utility of its own and an appropriate exchange value, but this never represents a net creation of new values, for --- so Quesnay tells us --- these values are merely the sum of subsistence goods and raw material-values used up in the process of production. The tableau and analyse follow these preconceptions faithfully. Marx (apparently basing his study on the analyse) maintains that the total reproduction is equal to seven milliards and not merely five milliards, as the physiocrats defined income: five being produced by the productive class and two by the sterile class.²⁴ Nevertheless, were the value of the manufacturers' production only two

24. Marx, Theories of Surplus Value, p.70.

Note, Marx refers to milliards of livres, giving the original figures presented by the analyse. In Philosophie Rurale, Mirabeau reduced these numbers to thousands, presumably for the convenience of working with smaller numbers on the zig-zag.

millards, we might allow Quesnay to say, purely as a matter of definition, that this production represents no net creation of value. But the zig-zag of the tableau poses a situation that completely undermines the physiocrats' Primary Commodity Theory of Value: the productions of the sterile class obviously have a value in excess of three millards. During the course of the year, the sterile class sells: (1) one millard of manufactured goods to the farmers; (2) one millard of manufactured consumption goods to the landlords; and (3) of the one millard income they receive from their sales to the landlords, they spend half within their own sector and, as well, they spend half of their receipts from their progressional sales to the farmers within their own sector. In all, we are told they spend one millard within their own sector, which we might suppose forms (one millard + X) income, depending on the number of transactions that subsequently occur within the sterile sector as a result of this initial input of income. Thus, as soon as Quesnay admitted in the third edition of the tableau²⁵ that the manufacturers buy goods within their own sector, his whole theory of value was put on a very precarious footing, for the value of manufactured goods can no longer be reduced to the sum of primary commodity costs but, as well, has to include the cost of manufactured goods used up within the sector. As we have suggested more than once, the

25. *Francois Quesnay, Explication du Tableau Economique (British Economic Association), pp. ii, iii.*

economic structure of the time may have, to some extent, obscured the fact that manufacturers produce value in their own right: most of the expenses of this sector were in fact commodity costs. But even so that extension of the tableau-technique should have made it clear that income is produced by inter-sectorial transfers. The Primary Commodity Cost Theory of Value was never more than a gross approximation of the conditions of production; industrialization only increased the degree of error. As it was, the physiocrats had some uncomfortable thoughts about this theory of value. Marx has pointed out that Baudeau fell back on the subterfuge that the sterile class was able to retain part of its own production "by raising the price of commodities above their value"²⁶ --- that is to say, he realized that the supply price of manufactured produce could not possibly be reduced to the value of primary commodity costs. Even old Mirabeau had to admit (with some embarrassment) that the exchange value of some manufactured goods, especially luxury goods produced by exceptional craftsmen, could not be reduced in its entirety to wages (i.e. subsistence goods) and raw materials but, in addition, these babioles were given an uncommon exchange value which he sourly maligned le prix d'opinion.²⁷

Still, allowance being made for these peculiar physiocratic preconceptions, the tableau portrays circulation much as a modern might, were he to use the same dia-

26. Karl Marx, Theories of Surplus Value, p.71

27. Mirabeau, Philosophie Rurale, Vol.III, p.82.

grammatic method. Of course, the dimensions given the various sectors belong specifically to the agrarian economy of 18th century France. This economic model necessarily gave much greater weight to agriculture and rental income than we would today. In contrast, the modern input-output model is primarily concerned with transactions between different sectors of industry; the mere fact that most income is produced in the industrial sectors gives obvious refutation to the physiocrats' theory of value. All this notwithstanding, the tableau still reveals certain relationships common to both agrarian and industrial economies.

Quesnay constructed his tableau in order to solve certain problems of capital accumulation associated with the introduction of the grande culture. His picture of general equilibrium brought to light some problems that were necessarily obscured by the Turgot-Smith type of theory in which capital was studied as a general entity. In particular, Quesnay and his closest disciple Mirabeau saw distinctive problems pertaining to the sectorial accumulation of capital. The whole economic process, both in prosperity and crises, was seen to be inseparably tied to these facts of capital accumulation. This consideration brings us to the final topic of this chapter. Now that we have made a general study of the tableau's construction, we will go on to examine the several theories of crises presented and analysed by this versatile tool. We have already reviewed at some length Quesnay's passing mention of the oversaving crises. Besides this, Mirabeau lists some two dozen cases of economic crises (dépérissement) in his

Rurale Philosophie and in the sixth volume of L'Ami des Hommes. Fortunately, it will not be necessary to go into the details of each of these cases. The most important can be considered under the general headings of ruinous luxury (lux ruinous) and destructive taxation (l'impôt destructif). We will consider the former set of ideas first.

As we have mentioned more than once, the physiocrats regarded the net rent of land as the only fund disposable for consumption --- that is the only fund that can be used for non-productive employments without causing a depletion of the capital establishment. They considered to be "ruinous luxury" any unproductive consumption, no matter how little it might be, that ate into the accumulated supply of capital. The rationale of this concept of disposable income is quite understandable considering the nature of rent --- rent being a payment to a factor of production in excess of the remuneration required to call forth the requisite supply. Thus, any burden or circumstance that lowers the income of farmers or manufacturers would ultimately reduce the supply of capital offered for economic use (assuming as the physiocrats did that pure competition fixes payments to factors of production, other than land at their supply price). Certainly, there is a good deal of truth to the idea that rental income is more expendable than wages or profits for certain purposes such as taxation in support of non-productive labour. However, we must always keep in mind that the physiocrats and

several other pre-industrial economists (Locke, Cantillon, Steuart) advanced a peculiar rendition of this idea that is not so Simon-pure. They identified the emergence of rent with agriculture's physical product. All the non-agricultural classes, they reasoned --- the "free hands" as Steuart calls them: the landlords and their retainers, the Court and Bureaucracy, the manufacturers and merchants --- are in some sense maintained by the physical and value surplus of agriculture. Following this line of reasoning, the physiocrats argued that these kept-classes are, or can and should be, limited to a total income which is not in excess of the produit net. Obviously, this is a mistaken rendition of the disposable rental income idea, if only because (for all those reasons we have already mentioned) the so-called sterile sector is not completely dependent for its support on agriculture's rental income and, in some situations, may derive no appreciable income from this source. Still, broadly speaking, there remains an element of truth in this concept of "disposable income" and the attendant definition of "ruinous luxury".

Admittedly, the physiocrats' exposition of agriculture's disposable rental income had more immediate relevance to their own society than it would to a modern industrialized state. But it was based on another idea that has more universal application: their distinction between those economic activities that reproduce capital with a profit and those that do not. Baudeau advises

us on this matter:

That excessive multiplication of labour of purely sterile expenses, which is made at the expense of labour useful and necessary for the maintenance of production, is precisely that which one should call luxury, in the case of governments or private persons. Because by luxury one means an excess of sterile expenses. When one says an excess, one supposes a rule, a measure. Now, there arises from this one essential, evident physical manifestation, and here it is: all that which is necessary for the sovereign advances of the State, for the landed advances of all estates, for that of the primitive and annual advances of all productive employments, is not disposable, that is to say it cannot nor must not be utilized by anyone whoever it might be, for purely sterile pleasures; it has its predetermined employment, its indispensable use. If we divert it from its purpose, we exceed the measure of the disposable income. That is the true definition of luxury.

One should not for that reason deceive himself as to the character of public or private luxury. If it causes for States or private persons a passing flourish, it is only in the course of bringing about and consummating their inevitable ruin. 28

Broadly speaking, this is what Adam Smith meant by luxury. Luxury is associated with an excess of unproductive labour, or, viewing the matter from a cognate standpoint, unproductive consumption (Baudeau says "unproductive expense"). Now, interpreting his statement generously, Baudeau's argument seems to imply that productive labour should always yield, and the entrepreneurs should be allowed to retain, a sufficient income to reproduce (with a profit?) the capital that employs the labourers. To the extent that there is a surfeit of unproductive labourers employed by the state (nobility, bureaucrats, buffoons, academic economists; all those employments that do not reproduce capital) and to the extent productive labourers, for whatever reason, do not gain sufficient income to repro-

duce capital with a profit; the means for future production will be exhausted and annual income will decline year by year. Of course, this definition of productive labour (after Marx) gives the physiocrats more than their due; even in the writings of Adam Smith and most of his 19th century successors, this matter was never completely resolved. However, this interpretation brings out the substance of what the physiocrats were trying to define and shows the general tenor of this second meaning given to the phrase lux ruineux. So far we have considered two different meanings for this phrase. We have yet to add one more. The physiocrats, following Boisguillebert's theory of proportionate sectoral growth, maintained that the value product of any sector must be proportionate to the demand for its product which is derived from the income generated in all other sectors. It was in this sense that they regarded as an excessive social luxury the mercantilists' programmes for forcing the development of the manufacturing and commercial sectors of the economy: these policies disarranged the sectorial equilibrium of incomes. The physiocrats very often confounded these three distinct kinds of "luxury" and so it is sometimes nearly impossible to determine which cause of economic dislocation they happened to have in mind. Of course, it is possible for all three causes to be in effect at one and the same time. The foregoing quotation from Baudeau concerning the distinction between productive and

unproductive labour was taken from a context in which he had reference to unwarranted growth of the sterile sector.

The physiocrats were of the opinion, as was their preceptor Boisguillebert, that the economic difficulties of France were to a large measure caused by mercantilist-like policies calculated to force the growth and development of the commercial and manufacturing sectors. In order to discover the exact nature of this economic crises, they divided the economic organism into separate sectors after the methodology of their preceptor. This approach revealed what they called an equilibre between the three sectors of the tableau --- an equilibrium of income-flow. Mirabeau tells us: "distribution of the revenue of the proprietor, by means of his expenditure, is the thing that makes the mechanism of circulation work."²⁹ An understanding of this aspect of general equilibrium is evident in Boisguillebert's verbal discussion of the disproportionality crises, but the physiocrats went on to add two further refinements. --- (1) They constructed the tableau économique so as to represent an unchanging process, the case of simple reproduction. Mirabeau makes this clear by the assumptions on which he basis the tableau: "The expense (dépense, i.e. capital) of 2,000 livres of advances of the productive class reproduces the same 2,000 livres of advances. That of the 2,000 livres of revenue reproduces 2,000 livres of revenue. That of the 1,000 livres of advances of the sterile class regenerates 1,000 livres of the interest of the primitive and annual advances of the cultivator."³⁰

29. Mirabeau, L'Ami des Hommes, Vol. VI, p.232.

30. Mirabeau, Philosophie Rurale, Vol. III, p.31.

Economic growth or decline was analyzed as a deviation from this conceptual model. And (2) the physiocrats' firm comprehension of capital enabled them to perceive the basic facts of economic growth and decline. The former was manifest by an accumulation of capital and the latter by its depletion. Furthermore, their sectorial economic model had the superior merit of showing explicitly that accumulation in each sector has to be balanced by accumulation in others. To illustrate this perspective, we might quote Mirabeau's discussion concerning the policies and situations that can disrupt this equilibrium.

*And so one sees not only that the excess of luxury can never be advantageous to the sterile class, but moreover it is impossible for it to enrich itself at the expense of the annual reproduction; either (1) by the augmentation of the returns to this class (reversemens sur cette classe); (2) by the reduction of the price of primary commodities in order to give the Manufacturers a better buy at the expense of the revenues of the Nation, (3) by retaining within the Kingdom raw materials for manufactured works, which causes a loss to the productive class on its sales ** **; (4) by taxation on the entry into the Kingdom of foreign manufactured merchandise * * *; (5) and finally by putting the burden of the State on the Agents of the productive class, and all such harmful expedients for an agricultural Nation.*

The advances of the sterile class, which are augmented in the first instance by the increase in luxury, afterwards rapidly decline by continuation of the same excess of luxury. In the case of an increase of luxury, which we suppose here, they diminish by the second year by 106, and this diminution is a complete loss, such that the other classes suffer a progressive decline, and this proportionally extends itself year by year on the sterile class.

The excess of luxury is an expense very prejudicial to the sterile class itself. Those who protect or encourage it for the benefit of manufacturers achieve on the contrary its ruin and that of the State. Luxury and frugality are the father and mother of poverty in an agricultural Kingdom. ³¹

31. Ibid., p. 34.

In the first paragraph Mirabeau mentions five different cases of "ruinous luxury". Each of these cases might be expected to display a somewhat different order of decline, but, quixotically, he proceeds to show the quantitative effects of all five with one numerical argument.³² However, in fairness to Mirabeau, we must allow that the items two to five are similar situations; all four cases are concerned with government policies that effect an initial increase in manufacturers' income at the expense of the agricultural sector. Presumably, the farmers' real income per unit of physical product is reduced; thereby, the sectorial terms of trade are tilted in favour of the manufacturing sector, upsetting the equilibre between these sectors (as it is defined by the relationships of simple reproduction). Obviously, Mirabeau had his eyes on a problem that may in certain circumstances become a significant cause of economic decline. In modern times we are familiar enough with ill-conceived attempts to force the pace of industrialization in underdeveloped countries, that are, in the end result, largely unproductive for the reason that these countries' broader basis of agricultural and extractive industries have been neglected and are not, for the lack of income, able to respond with a sufficient demand for those manufactured commodities produced. This sectorial over-accumulation

32. *The numerical argument referred to in the next few paragraphs is found with an explanatory discussion in Philosophie Rurale, Vol.III, pp.29-34.*

It is not clear as to what Mirabeau has in mind by his first cause of disequilibrium - i.e. an augmentation of returns to the sterile class. Occasionally he suggests that the consumers, even given free choice and pure competition, may by their very choice cause a disequilibrating distribution of exchange values. We refer to a modern rendition of this train of reason on page 223 of this chapter.

of capital may not be caused by the identical government policies that Mirabeau had in mind, but the reasons for the unproductivity of capital are the same.

Mirabeau's numerical exposition of sectorial over-accumulation crises is difficult to follow in all its details, owing to several ambiguities and omissions, and so, for reasons of space, we can only describe it in a very general way. His analysis is complicated by having to show, at one and the same time, several different relationships that come into play in the sort of economic crises which he had in mind. Moreover, he confuses the sequence of the decline by assuming that "luxury" increases by a seventh each year, making it impossible to isolate the total effect through the years of the initial cause of dis-equilibrium. Worse for precision, he leaves us in the dark concerning the many circulation-sequences that occur during the course of any one year, only giving figures for total income and capital investment as they appear in the sectors of the tableau at the end of annual periods. In any case, the diagrammatic method of the tableau never lends itself to an economy of explanation (even in the case of simple reproduction), and so, we will have to leave it to the reader to try to figure out for himself, from Mirabeau's own text, this even more complex case of economic contraction. Still, despite all these shortcomings, this tableau-analysis is a surprising methodological tour de force --- the first explicit period analysis. Not only does it show that there

must be a precise proportionality between the values that arise in the different sectors, but also that the smooth functioning of the economic machine requires timely sequences. The tableau économique was the first explicit period analysis in this modern sense of the phrase. We will try to summarise³³ the general sequence of decline initiated by an initial instance of "ruinous luxury".

The first time period is represented by figures for a tableau in perfect equilibrium. An initial shift from equilibrium of the intra-sectorial terms of trade increases the real income of the sterile class by X and decreases the income of the agricultural sector by the same amount. Agriculture's loss is shared equally by the farmers and landlords. On the other hand, the whole of the X amount gained by the sterile class will be invested in a larger accumulation of capital (advances). Now, in these assumed conditions, this accumulation of capital by manufacturers cannot increase the production of wealth. To the contrary, it will be a primary cause for a progressive destruction of income. "The advances of the sterile class", Mirabeau tells us above, "which are augmented in the first instance by the increase of luxury, afterwards rapidly decline by continuation of the same excess of luxury. In the case of an increase of luxury which we assume here (320 livres are shifted from the productive to the sterile class), they (the advances) diminish in the second year by 106, and this proportionally extends itself year by year on the sterile class." Here, Mirabeau makes very bold assertions about

33. *This summary will try to abstract away the several complications mentioned in this paragraph. Besides all that, his analysis is made*

the nature of over-accumulation. Over-accumulation is not just a secondary effect of economic crises (which is the only importance Keynesians would give it); it is the primary cause itself. Mirabeau does not say why this must be so (he regarded it as being self-evident), but the reasons for it should be immediately obvious, considering the equilibrium of incomes which are explicit in the simple reproduction of the beginning period. From this beginning, any additional accumulation in the manufacturing sector, which is not balanced by accumulation in the agricultural sector, must necessarily occasion its own destruction, because it is by its very nature productive capacity in excess of that warranted by the demand for its product derived from the income generated in the agricultural sector. Any shift in the sectorial terms of trade in favour of manufacturers manifestly takes away from agriculture that quantity of income from which an equilibrating intra-sectorial demand for manufactured goods must be derived. This will cause a depreciation of capital values in the manufacturing sector. This depreciation or destruction of capital values will of itself bring about a fall in aggregate demand, for the manufacturers will find it impossible to meet current commitments and continue reproduction on the same scale. This will, as Mirabeau

33 (contd.) even more complex by bringing into play the decline of agriculture's physical and value product (owing to its falling income). He added this order of decline to the initial destruction of income caused by the first disruption of the intra-sectorial equilibrium.

intimates, lessen the demand for commodities produced outside the manufacturing sector and cause all "other classes to suffer a progressive decline". The financial embarrassment of the latter will in turn result in a lesser demand for manufactured goods. This crisis, Mirabeau tells us, will gradually relent owing to the "diminution of riches".³⁴ This period analysis gives a creditable explanation of the inverse multiplier.

As can be gathered from the foregoing quotations, the physiocrats, like Boisguillebert, thought that effective competition could of itself distribute income between sectors in such a way as to provide for a cost-covering, equilibrium quantity of production in each and every sector. "Industry, considered in all its extent," writes Mirabeau of the equilibrium between industry and the agricultural sector, "and conforming to the needs of man, and in the proper proportion in regard to the expenditures (dépenses) which support them in the economic order of an agricultural Nation, will establish itself symmetrically of its own accord, by reason and in proportion to the income (revenu) of the countryside, when its natural progress is not disarranged by the political Government."³⁵ Adam Smith intimated a similar kind of reasoning, but he did not, nor did many

34. *Mirabeau, Philosophie Rurale, Vol. III, pp.37, 38.*

35. *Ibid., Vol. III, pp. 13, 14.*

Probably the best exposal of this concept of intra-sectorial income equilibrium is given in the chapter of Philosophie Rurale from which this quotation and the foregoing discussion of the sectorial over-accumulation crisis was taken, "Rapports des Dépenses avec l'Industrie".

economists before input-output analysis, see quite so clearly as did the physiocrats the problem of balanced sectorial development.

All this is not to deny that the physiocrats' Primary Commodity Theory of Value gave a distinctive bent to their concept of income equilibrium and related theories. According to their scheme of things, the sterile class could never for long accrue a total income for their goods in excess of the value of primary commodities used up in their production. To the extent they accrue more, there would be an insufficient market for manufactured goods within the agricultural sector, which could not be compensated for by sales to non-agricultural sectors; for, according to the physiocrats, the flow of income originates in the agricultural sector and no other sector can produce income to make up the deficit of aggregate demand.³⁶ We have already pointed out more than once that this could never be true even in the most under-developed countries, because income (i.e. exchange value) is always created in the manufacturing sector to the extent transactions are completed therein.

36. *Le Trosne says on this head:*

"In effect, one must consider that a person cannot buy except through the agency of a previously completed sale; the landlord, the labourer, the merchant, the shipper, the rentier, are all sellers. One does not have to prove that the sellers of farm produce are interested in a decent price. But those who are sellers of labour and services are not less (interested) in it, because the price of labour is regulated according to that of the farm products (des productions), and, since they cannot produce their retribution on their own, the sum of salaries which can be spent in their favour is determined by that of the reproduction of which the state depends upon the value in primary commodities (en premier main). The more nearly this value is maintained at the natural level by the liberty and faculty of exchange, the more there will be opportunities for traffic, of sales for manufacturers, of employment for labourers, of consumption of all kinds, of surety for the payment of rents, of wages for those who have only their hands, of succours for the infirm and indigent."

Daire, Physiocrates, p.969.

Still, whatever its specific context, the physiocrats' concept of income equilibrium has a universal meaning for any system of general equilibrium. It is not within the scope of this thesis to elaborate on physiocratic ideas that may have relevance for modern conditions. Yet, the reader may find it easier to understand their theory of sectorial over-accumulation, were we to bring to mind a modern problem that is analogous to those that worried the physiocrats. No doubt, every one has heard the opinion expressed, from one source or another, that certain conditions of supply and demand may cause a sharp contraction of income within an individual sector (most often within agriculture or primary-commodity-producing nations considered as an entity) such that a multiple contraction of income is precipitated and extends itself through all contiguous sectors.³⁷ It should be obvious enough that this belief must premise a notion of income-equilibrium analogous to that of the physiocrats' sectorial over-accumulation theory. The main difference between the two is that the primary disequilibrating cause is not the same; the former theory finds the competitive mechanism itself a source of instability, whereas the physiocrats have faith that the same mechanism will make rapid and felicitous adjustments towards cost-covering equilibrium. Yet, the similarity of their frames of reference shows the universal relevance of the tableau - technique.

37. *This speculation might suppose that prices for the product of a single sector (for instance agriculture) are reduced sharply by a sudden increase in physical productivity in the face of inelastic demand. As a first effect, this shift in the inter-sectorial terms of trade would give the non-agricultural sectors a greater real income which would become effective demand as, and to the extent, increased values of goods and*

We will return to the subject of sectorial over-accumulation when we consider the similar theories of Say and Ricardo in the last section of the final chapter. But, now we will briefly mention the use of the tableau for analysis of taxation. The most concise analysis of this kind was made by Quesnay himself in his Second Problem Economique.³⁸ He tried to prove that indirect taxation on commodities is a greater burden on the economic organism than direct taxation on the produit net. Again, this sectorial analysis is necessarily complex, and so, we will have to limit ourselves to a few verbal observations as to its interpretation.

Quesnay begins by showing two tableaux, both of which are in that state of prosperous equilibrium in which capital is reproduced in such proportions as to "ne causerait aucun dépérissement dans la reproduction annuelle."³⁹ The first tableau depicts a situation in which the landlords consume for their own benefit the whole of the produit net; half is spent for manufactured goods and half for agricultural

37 (contd) *services are purchased with this windfall of real income. This force would tend to offset any multiple contraction of income caused by the initial reduction of agriculture's real income and destruction of capital values. The final result would depend on the magnitude of these two opposing forces and the sequence in which they take place. The analysis of this would require the construction of sequence-models.*

38. *This essay has been reprinted in both Daire's Physiocrates and Oncken's Oeuvres de Quesnay.*

39. *Daire, Physiocrates, p.130.*

goods. In the second, taxation is assessed on the produit net. This gives the government an X real income and takes the same amount away from the landlords. The government continues to distribute expenditures between the productive and sterile sectors in the same proportion as did the landlords, and so, in the end result there is no change in the income and capital establishment of these two sectors; simple reproduction continues on the same scale as it did before the intrusion of taxation.

The third tableau attempts to show that this maximum-output stationary state will decline when a part of this X quantity of taxation is taken off the produit net and laid on commodities in the form of a purchase tax. The price of commodities must rise to the full amount of the taxes they bear, since it is always assumed that the costs of sterile and productive classes are fixed by competition at their supply prices. Therefore, this tax must fall on the farmers, manufacturers, and landlords alike, in proportion to the value of their purchases of these commodities, and so the two former classes will be forced to deplete their capital establishment by the value of the fall in their real income. (Quesnay and Mirabeau, it would seem, always reduce the figures of the tableau to real income after price changes). Quesnay inadmissibly exaggerates the harmful effects of indirect taxation in this tableau-analysis for, the government does not return into circulation the income it has appropriated as it did in the tableaux depicting the

case of direct taxation. Even so, given Quesnay's assumptions, his analysis is generally valid. A redistribution of the tax burden in the manner he describes will in fact result in a lesser reproduction of income owing to the forced depletion of capital. And of course we are willing to concede that it might be true that, as Quesnay goes on to suggest, that the initial depletion of capital and decline of incomes will cause "deteriorations which are successive and in a geometrical progression". Regrettably, Quesnay did not, as he did in the case of "ruinous luxury", portray this geometrical decline as it would appear on several successive tableaux.

In reality, Quesnay does not prove his case against indirect taxation as such. He is discussing a situation in which the tax burden is shifted from the produit net in such a way that it will fall on capital advances. However, we might expect that over the long run a new cost-covering equilibrium should adjust itself to this intrusion of indirect taxation. In fact the physiocrats should expect this to happen, for they always maintained that all taxes will in the end be passed on to the produit net. Thus, these temporary disruptions aside, the only remaining objection to indirect taxation is that, owing to special historical circumstances, it may have required greater expense in its administration.

CHAPTER 6

TAXATION AND ECONOMIC POLICY

The physiocrats were, by bent of intellect, the most naively uncompromising of theorists. All questions of theory and policy were decided according to the logic of their nominal economic model. They had such artless faith in the universal validity of their generalizations that they would never fall back on anything so lowly as intuition or common-sense "rules of thumb"; nor did they ever, like Adam Smith, intimate some element of doubt or hide it behind a guarded phrase. The reader may number amongst his contemporaries a few possessed of a similar degree of confidence (and thereby have some understanding of this type of personality), but this trait was much more common in the so-aptly named Age of Reason. The physiocrats were followers of the natural law philosophy of the time. Their basic premise was that the whole of nature and society ran according to well-ordered principles of movement, that it was, so to speak, one gigantic clockwork. Moreover, the workings of this system, or so Quesnay tries to convince us in his article Droit Naturel, is uncomplicated enough that diligent study should make it understandable to every one. The physiocrats were confident that they had discovered the key to the study of the social sciences. To begin with,

they thought their mathematical reasoning had placed their New Science on the highest possible scientific plane. Mirabeau describes the tableau-analysis as "calculs & raisonnemens Metaphysicogeometrics."¹ "Les calculs", wrote Quesnay for Mirabeau's benefit while his disciple was working on Philosophie Rurale, "sont à la science économique ce que les os sont au corps humain. Sans eux, elle serait toujours une science indéterminée, confuse, et livrées partout à l'erreur et au préjugé. Sans eux, tout est doute, tout est contestable ici * * *"² Of course the diagrammatic analysis of the tableau économique cannot be considered mathematic analysis as such, but it pointed in that direction. And one could hardly expect the first discoverers of the analogy between economic theory and 17th and 18th century physics to take themselves any less seriously than do the similar enthusiasts of today. Besides this, the physiocrats had still other reasons for their overweening intellectual conceit. The very foundations of society, they reasoned, were built of that economic material --- the physics of which they were so sure they had explained. "Le fondement de la société", Quesnay tells us in his article Droit Naturel, "est la subsistance des hommes, et les richesses nécessaires à la force qui doit les défendre * * *"³ This idea suggested

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1. Mirabeau, Éléments de la Philosophie Rurale (Haye, 1767), p.172.
 2. Quoted from George Weulersse, Le Mouvement Physiocratique en France (Paris, 1910), Vol. II, p.144.
 3. Eugene Daire, Physiocrates (Paris, 1846), p.54.

to them that the whole of history could be given an economic interpretation,⁴ though none of them actually got around to pursuing this train of logic. The wide vistas revealed by their several methods was enough in itself to inspire their great enthusiasm for the New Science. But, as well, we should always keep in mind that they were political propagandists preaching a controversial Message of Salvation. A political message cannot be compromised by "if's" and "but's". This latter motive was bound to introduce a dogmatic tendency of yet another sort.

The whole of the physiocrats' applied economic analysis begins with the assumptions of the tableau as it is presented in the state of perfect equilibrium. Though they had a fairly good understanding of the evolution of economic institutions (or at least they understood the development towards more capitalist agriculture and industry), one of their most characteristic faults is too great abstraction from the changing economic scene they say before them. For instance, the tableau assumes capitalistic modes of production in agriculture and pure competition in all economic sectors, whereas in reality capital-intensive agriculture was far from being the prevailing mode of cultivation

4. Quesnay himself argues for the rewriting of history. He writes on the manuscript of Mirabeau's Philosophie Rurale:

*"Les historiens ne s'attachent quaux expéditions militaires, quaux merveilles, pour amuser et intéresser leur lecteurs, comme les temps de guerre amusent les nouvelles. Les auteurs ignorent le joy, la conduit, les avantages, et les desavantages de gouvernements, les états de prospérité ou deperissement des royaumes, les changements dans les moeurs des nations et les autres objects les plus fondamentaux de l'histoire d'ou dependent les événements, les revolutions, et tous les parts, le bonheur, les malheur des peuples * * *".*

Georges Weulersse, Manuscripts Economique de Francois Quesnay et de de Marquis de Mirabeau, p.17.

in France and competition was greatly restricted by paternalistic government. Abstraction of this sort is, of course, necessary if one is to devise conceptual tools, but one must make allowances in his use thereof for this abstraction from reality. The physiocrats did not. A lamentable example of this is their assumption of perfect competition when dealing with such a practical matter as taxation.

The physiocrats were of the conviction that the tableau économique proved the absolute harmony of all individual interests. The prosperity of each sector was seen to depend upon the complementary prosperity of every other. As did every thing else, this physiocratic Natural Order required absolutely free and effective competition. "La concurrence seule regle les prix courans:", Mirabeau writes, "c'est cette loi seule qui doit décider dans les marchés public & particuliers, & vous ne devez point abuser du besoin pressant, ou de l'imbecillité d'autre, pour me souffrir dans vos achats, ou pour surfaire dans vos ventes; encore moins vous servir de votre crédit, de votre ascendant ou autorité, pour empiéter sur les droits de votre prochain * * *"⁵ Thus, effective competition would prevent any one from driving a hard bargain by taking advantage of his financial power or authority, or another's credulity or misfortune. The physiocrats, like some economist of a more recent vintage had a fond predilection for competition as the arbiter of economic conflict. Possibly, it is not wholly unfair to suggest that, for some persons of happy

5. Mirabeau, Éléments de la Philosophie Rurale, p. lxxxix.

or reticent disposition, this conveniently precluded the unpleasant problems of economic power. The physiocrats also managed to ignore the interests of the emerging proletarian class, despite the attention Boisguillebert directed to the matter. They even went so far as to extend this idyllic order of pure competition to foreign commerce; as it were, they included the whole world within the felicitous fold of a single tableau économique. "La Paix * * *", Mirabeau tells us, "comprend non-seulement la liberté, mais encore l'amitié & confraternité qui est de droit naturel entre les hommes. Or, non-seulement c'est renier tout amitié, mais c'est attenter à la liberté de vos voisins, que de leur prohiber l'échange de leur biens avec des vôtres."⁶ The physiocrats did not make a special case of foreign trade, possibly because restrictions on domestic trade (particularly on the grain trade) created a situation, as between different districts of France, somewhat akin to that of foreign trade in which there is immobility of factors of production and fetters restraining the free flow of commodities. They seemed to assume that all such problems would vanish, once the world was converted to free trade. They never bothered to devise theory that would take into account immobility, frictions, or government restraints of any sort.

This espousal of Harmonism was supported by a proposition that Alfred Marshall was to call "the doctrine

6. *Mirabeau, Théorie de l'Impôt (1760), p. 100.*

of maximum satisfaction" --- that, given perfect competition, "a position of stable equilibrium of demand and supply is also a position of maximum satisfaction."⁷ We refer the reader back to Quesnay's statement that one's economic behaviour is such that he strives to obtain "the greatest possible diminution of expense * * * with the most satisfaction possible."⁸ Quesnay goes on to intimate that, when all members of society are allowed to act on this principle, the sum total of hedonistic income for society as a whole will be maximized. Mirabeau suggests the same idea, but in a less scientific manner that reminds one of Adam Smith's statements on this head. "La liberté doit être abandonnée", he writes, "à la sagacité des Ouvriers, des Entrepreneurs & des Commerçants dont l'intérêt particulier agit toujours, par la liberté générale de la concurrence, à la avantage du Public."⁹ Quesnay gives fairly sophisticated proof for the Doctrine of Maximum Satisfaction, or at least he pointed the way towards most thinking that has been done on this subject. The recompense for an economic service, he gives us to understand in the context quoted above, is reduced by competition to the lowest possible Real Costs in terms of labour-pain or other subjective motivations. Each purchaser of goods and services tries to obtain from suppliers maximum satisfaction at the lowest possible costs. The only important consideration that is missing from Quesnay's formulation of the maximization

7. Alfred Marshall, *Principles of Economics* (Fourth Ed., 1898) pp. 531-533.

8. See chapter 4, pp. 179-180.

9. Mirabeau, *Philosophie Rurale* (Amsterdam, 1764), Vol. III, p. 99.

problem is an explanation of consumer choice. Quesnay accepted this doctrine so uncritically as to almost make it a canon of faith, as did most non-socialist economists throughout the next century. This doctrine is, as every one realizes by now, subject to several damaging qualifications (in addition to those admitted by Marshall),¹⁰ the most important being that competition can never be so effective as to reduce all factor payments to Real Costs; every class of income recipient may, in some number of circumstances, accrue an unearned increment.

For all these reasons, the chief task of economic theory and policy was seen to be a maximization problem --- to achieve full employment of all factors of production and to promote the greatest possible accumulation of productive wealth and the most efficient direction of economic activity. Translated into a plain statement of economic policy, this meant, more than anything else, the introduction of the grande culture. The experience of the English agricultural revolution had shown that agriculture was the most promising sphere for gaining a large, immediate increase in economic product; especially so, since it was by far the largest single economic sector. Quesnay and Mirabeau were pre-occupied with the problems of the farmer-entrepreneur, almost to the exclusion of everything else, but Baudeau and Turgot went on to extend the same principles of capital-intensive production to cover capitalistic industry, which was then undergoing a period of accelerated development. Verily,

10. *This doctrine must, Marshall says, make the unrealistic assumption that equal sums of money measure equal utilities for all concerned; moreover, improved modes of production may allow a fall in prices that does not injure the producer. (Also both producers and consumers may accrue an unpaid surplus of hedonistic income.)*
 Marshall, *loc. cit.*

the immediate purpose and import of physiocratic policy can be summed up in a single sentence: it was to promote the development of Capitalism. Even the physiocrats' advocacy of despotic monarchy, as Professor Schumpeter has pointed out,¹¹ can be understood in this light, for vested interests' opposition to reforms could only be neutralized (without a revolution) by forming an alliance with strong monarchy. This alliance was not therefore, as one might suppose, inconsistent with their championing of "economic liberalism" and hostility to privilege, but to the contrary the very reason for it. The physiocrats were at one with the mercantilists in this desire for a strong central government; the two schools of thought only disagreed as to how regal power could best be used in order to foster conditions favourable to economic growth and development.

The physiocrats gave two very different reasons why a purely-competitive economic order should promote a maximization of the economic product. First of all, competition would force prices to be reduced to the lowest possible economic costs. Moreover, it would give motive for technological innovation. Secondly, only pure competition, the physiocrats reasoned, could be trusted to distribute income between different economic sectors in such a way as to stimulate the greatest possible intra-sectorial exchange of goods. (That is to say, only pure competition could ensure against disproportionality crises.) Mercier

11. Joseph Schumpeter, History of Economic Analysis (New York, 1954) p.229n.

says on these subjects:-

*La concurrence des agents de l'industrie les force de vendre leur ouvrages au rabais; dès lors ils sont dans l'impossibilité de ne pas faire valoir les production au profit de ceux qui les font renaître annuellement: d'un autre côté, la concurrence des vendeurs de ces productions offre pareillement au rabais leur marchandises à la classe industrielle; il sont donc contraints de l'associer à leur jouissances, tandis qu'ils les augmentent par son entremise. Il est clair que, par ce moyen, chacun achetant aussi bon marché qu'il doit acheter et vendant aussi cher qu'il doit vendre, il en résulte pour les uns et pour les autres un grand intérêt à multiplier les choses doit ils soit vendeurs. C'est ainsi que la concurrence, régnant paisiblement dans le sein de la liberté, règle sans violence * * * * 12*

It should be appreciated that the physiocrats insisted on a bon prix, a cost-covering equilibrium price, for the goods and services of all sectors; this was not, as has been occasionally aspersed, merely a slogan for high agricultural prices. The physiocrats were in agreement with Adam Smith's cheapness-and-plenty doctrine --- or, more truthfully, filiated it. Quesnay's well-known maxim that "Abundance and dearness is opulence" is, contrary to what it seems at first reading, a political statement of the same persuasion. This maxim was directed against the many schemes of the time for forcing down the price of grains which were calculated to succour the poor and stabilize wages as a discriminatory aid to manufacturers. Quesnay

wished to make agriculture's claim for cost-covering prices, and nothing more.¹³ All the physiocrats' theorizations (including Quesnay's demand schedule analysis) supports this interpretation. The physiocrats were not therefore, as some have been led to believe, inflationists simply because they insisted on a bon prix for agricultural and manufactured goods. Moreover, that they were not inflationists should not be taken to imply that they were deflationists. To the contrary, they feared deflation as such because they thought it must necessarily cause bankruptcies in view of the entrepreneurs' heavy burden of contractual commitments. For that reason, Quesnay never, as did Adam Smith and Turgot, considered a fall in prices a desirable equilibrating movement, whatever the circumstances; falling prices, he reasoned, could only be desirable when they are the result of increasing productive efficiency.

13. In passing it might be mentioned that several commentators on the economic stagnation of 18th century France gave an explanation for it similar to that given by Quesnay, though without the proof of his comparatively refined input-output reasoning. James Perkins writes: "The commercial policy of Colbert was continued after his death, but we find no signs of increasing prosperity. French industry, which had always been thought to owe its first great development to this influence, continued to diminish instead of increase for more than thirty years after he died * * * * The trouble with French manufacturers was * * * * a lack of demand. The farmers were too poor to be large consumers. A barefoot peasant, clothed in rags and living on chestnuts and black bread, had no money with which to purchase either the luxuries or the comforts of life." France under the Regency with a Review of the Administration of Louis XVI (Boston and New York, 1892), pp. 113, 114.

The physiocrats accorded the capitalist-entrepreneur the central position of economic power in this competitive economic order. The economic man, attuned to an expanding economic universe, had been the prototype for all the merchant-writers on economic subjects (ever since European scholarship had ceased to be the monopoly of the clergy). But the physiocrats gave the entrepreneur a new importance. First of all, he was accorded greater powers and duties with his directorship of the growing accumulation of Real Capital. The physiocrats were amongst the first (and certainly the most articulate) to make the entrepreneur the primary agent that directed all those production-alternatives that lend themselves to human direction --- for the rest, trust was given to the inexorable arbitration of the competition-driven price mechanism. The entrepreneur's chief aim in life should be the improvement of his estate. Above all, he should be alive to the opportunities offered by advanced technology. "Il nous faut", writes Baudeau, "un race nombreuse de fermiers ou cultivateurs en chef, qui aient acquis les connaissances de leur art, qui soient animés par une grande émulation à mettre leur savoir en usage, et qui possèdent de grands moyens d'exercer cet art productif, de le maintenir, de le perfectionner de plus et plus."¹⁴ Le cultivateur en chef (or fabriquer en chef or entrepreneur) would advance all the means of production (including the wages of labour) which ---

14. Daire, Physiocrates, p.700.

as Baudeau so pithily states it --- he conducts as productive ensemble (ensemble de l'exploitation). "Le cultivateur en chef," Baudeau tells us, "est celui qui fait à ses dépens, à ses risques, périls et fortunes, les avances de ces préparatifs et de ces procédés; qui en dirige par son savoir tous les travaux journaliers, qui dispose des instruments, des animaux et des hommes, qui ordonne l'emploi de leur temps et de leur forces; qui conduit enfin, pour son propre compte, tout l'ensemble de l'exploitation."¹⁵

The capitalist-entrepreneur's personal drives were formalized for the purpose of economic theory by the dictums of self-interest that underlie the Doctrine of Maximum Satisfaction. It would be contrary to his personal interest, Quesnay suggests, for him to do manual labour himself because he would gain a greater satisfaction by hiring others.¹⁶ It was expected that the capitalist-entrepreneur should have no loyalty for the paternalistic economic order of the past. He was to destroy by enclosure the last remnants of feudalism in agriculture and subvert the privilege of the guilds in manufactures. His only master was to be the competition-driven price mechanism ordered by impersonal rules of economic contract. It was obvious enough, at least to these far-seeing theorists, that capitalistic industry and agriculture, under the direction of the capitalist-entrepreneur with his vast productive resources, had such

15. *Ibid.*, p. 697.

16. Again, we refer the reader to that quotation from Quesnay that we have translated in Chapter 4, pp.179-180.

enormous advantages that it would completely supersede all existing economic organization, were only it permitted to show what it could do. For these reasons, physiocratic reform was more than anything else a campaign of destruction directed against economic institutions that had already served their purpose. Once the rubble had been cleared away, the entrepreneur, operating within the competitive mechanism, was expected to provide the only economic planning needed for future progress.

The physiocrats were by no means the first votaries of the Competitive Order. England produced at least a few economic theorists who were to varying degrees free traders, such as Child, Davenant, Barbon, and North. In the early 1750's Herbert (possibly following Boisguillebert's example) made his famous advocacy for the unrestricted cultivation of vines and for free national and international trade in grains. His chief argument was that this policy would ensure a more stable price and abundant supply of agricultural products than regional or national autarchy; the physiocrats added little to these arguments that was new. A climate of opinion favourable to "liberal economic policies" arrived somewhat later in France than it did in England. The economic liberalism of Boisguillebert, a mere sixty years before the physiocrats, was completely out of step with the times. Still, it is not difficult to account for the reaction against government sponsorship of industry and paternal-

istic economic organization that occurred in France during the last half of the 18th century. It simply came to be realized at this later date that some very vigorous economic growths had taken root (both under the aegis of mercantilist policy and of themselves) that would best prosper if left alone. There was a growing clamour in both France and England, as the 18th century progressed, against the surfeit of bureaucratic over-administration, particularly on the part of individually oppressed merchant-capitalists. There was, in France, a broad protest against the guild organization of manufactures, generally on the grounds that it constituted monopole which resulted in unjust profits. In the main, the physiocrats merely summed up the arguments of their predecessors and contemporaries, but they made a real subjective contribution in that they were the first to perceive that the development of more capital-intensive modes of production, in both industry and agriculture, was giving greater weight to these same arguments.

The physiocrats' Programme for the agricultural sector centred on the introduction of the capital-intensive grande culture. Apart from the disruption caused by the vicious tax system, the comparative barrenness of French agriculture could be chiefly blamed on the outdated open-field system of land tenure. The peasant holdings were too small for efficient production and grains were cultivated to the exclusion of other crops and animal husbandry.

The open-field system forced every member of the rural community to follow the slowest and most backward method of cropping. The elongated, scattered, unenclosed holdings caused the peasants to waste much time simply going from one field to another. The incessant cultivation of grains exhausted the soil and could only be perpetuated by the archaic three-field system of crop rotation. Wheat and rye would be sown one year, barley and oats the next, and the third year the land would lie fallow so that it might recover for the next crop. By August the grain crop had to be harvested because then the cattle and sheep were allowed to run free over the stubble. This practice of vaine pâtre continued until February and so no winter crop was possible. At that, the vaine pâtre and commons offered scanty grazing, and so the oxen used as draught animals were scrawny, and the sheep were of hardly any value except as manure producers. The unsegregated animals were susceptible to diseases and degenerated through promiscuous breeding. Worst of all, all plowing and harvesting had to be done at the same time in the open fields, and so it was foolhardy to try to introduce improved strains of grain for fear that they might ripen at a different time than those on neighbouring plots. This also accounts for the fact that such soil-building forage crops as lucerne (alfalfa) and sainfoin (lotus), and turnips, were not adopted, though their merits were well-

known. Furthermore, the absence of decent forage crops resulted in poor animal husbandry and a critical lack of manures. For all these reasons, the prevalent system of land tenure was so inflexible that it could not accommodate any considerable technological improvement; in a word, the farmer-entrepreneur did not have sufficient freedom to employ his managerial talents to advantage. Agricultural improvement, the physiocrats reasoned, could only be brought about by enclosure and the introduction of "high-farming" after the English experience. Granted, this was an excellent ready-made example for economic development, but the physiocrats seem to have been completely blind to social problems that are an inseparable consequence of this agricultural revolution. The peasants in particular could be expected to resist change; they were seldom prosperous, but at least l'ancien régime offered them a measure of security. The peasants had become habituated to a social and economic order that could only exist as an organic whole, no aspect of which could be modified without breaking up the entire complex. Notwithstanding this, the physiocrats took it for granted that this transition to capitalistic agriculture would occur of itself if only the way were prepared by removing government restrictions that artificially depressed the price of agricultural produce. This was not a completely unreasonable expectation in view of what actually happened in England,

but the same example should have shown the physiocrats an important exception to their theory of universal social harmony.

Government restrictions interfered in several ways with the entrepreneur's freedom of action. The most troublesome was the cheap grain policy. There were many attempts to restrict the cultivation of vines in order to divert more land to grain production. The price of grain was often directly controlled to the advantage of the consumer. Such discriminatory policies, the physiocrats argued, did nothing but harm, because they cut the farmers' income and ability to accumulate capital. For the long run, the accumulation of cost-saving capital was considered the most promising means for lowering the price of farm commodities. Moreover, poor transportation in the interior of France and internal tolls made intra-regional trade in farm commodities so uncertain that even local governments were compelled to try to achieve grain autarchy. They tried to prohibit the shipment of grains out of their districts during lean years. Herbert and the physiocrats pointed out that the normal price of grains would be generally lower and more stable for all regions, if unfettered and vigorous domestic competition in grains could somehow be brought about. Of course, this liberal grain policy presupposed that the government would use its authority to do away with internal tolls and take a firm hand in the improvement of transportation. The physiocrats

realized that effective competition for all kinds of commodities requires cheap transportation and so they were vocal proponents of road and canal building schemes of all sorts.

The physiocrats were proponents of free competition in the manufacturing sector for similar reasons. Quesnay and Mirabeau chiefly complained that the Court-maintained luxury-industries were an excessive burden on the country as a whole and that guild organization of manufacturers restricted competition and promoted monopoly prices. But Baudeau also argued that protection for the guilds restricted entry for capitalistic factory production. "La établissement des grands et forts ateliers, sous la direction de chefs opulents et industriels," he writes, "tend donc à procurer au même prix un plus grande somme de jouissances plus agréables * * * Mais si la distinction des ouvriers en maîtres, chefs ou directeurs des fabrications, et en simples manoeuvres ou compagnons, comme ils s'appellent, est purement factice; si elle est appuyée sur des prohibitions, des privilèges exclusifs, des formalités et des exactions, alors elle est nuisible au lieu d'être profitable puisqu'elle tend à diminuer les jouissances, à augmenter le prix et altérer la qualité, au lieu de procurer le bon marché des substances et leur amélioration."¹⁷ The physiocrats used their journals to direct an unremitting barrage of propaganda against the guilds. Though it is easy to belittle the influence of their pure economic theory on the

17. *Daire, Physiocrates, p.715.*

the actual course of French economic history, there is no doubt but that propaganda of this order had a telling effect on public opinion. The physiocrats' particular brand of economic liberalism received a sympathetic response amongst those mercantile and industrial capitalists who stood to benefit by their programme; the more so, because they offered commerce and industry complete immunity from taxation. That their slogans attracted a lesser following than those of Adam Smith is in part owing to the lower stage of development of the French as compared to the English economy.

The physiocrats were thoroughly conscious of the fact that balanced economic development required a considerable investment in the public sector, in avances souverains as they called it. We have already mentioned their interest in public transportation. But, besides this, they thought that the dissemination of technological knowledge was a primary responsibility of the government. The members of the physiocratic circle took a personal interest in the organisation and work of various agricultural societies. They proposed that enterprise in agriculture and manufacturers should be encouraged by a vast array of public honours, medals, bounties, etc. Their interest was by no means confined to agriculture alone. Baudeau in particular gained an appreciative audience amongst manufacturers. He was one of the founders of the Société libre d'émulation, a society devoted to

the encouragement of inventors.

We might make a few concluding remarks on the physiocrats' foreign trade theory before moving on to the many aspects of economic policy considered under the general heading of taxation problems. The physiocrats (with the exception of Turgot) showed little understanding of that foreign trade mechanism that regulates production for foreign trade between nations by the agency of the international money market. Their emphasis on commercial paper and notion that money is largely a neutral agent argued against changes in the quantity of money being a significant determinant of comparative prices. They were more interested in variations in the quantity and price of agricultural production caused by exogenous influences such as the weather. But it must be admitted that this emphasis was not completely misplaced at a time when trade in agricultural commodities still had such a great relative importance. Grain, one should remember, was by far the most important wage goods and so its price affected costs in every part of the economy. Many of the more important export manufacturers moreover, such as woollen and leather goods, vintry, etc., were still tied to the vagaries of the rural scene. Unfortunately, the physiocrats' reasoning on foreign trade, a good part of it valid as far as it went, did not go much further than this.¹⁸ They admitted

18. *Quesnay's comments on foreign trade in his article "Hommes" are representative of the physiocrats' reasoning on this subject.*

the possibility of an export surplus but did not enquire into reactions that might counteract it. They were content with the spurious argument that no nation should ever pursue a policy directed to obtaining an "excess" of money over and above that required to transact normal trade; such a policy would serve no good purpose, they reasoned, since consumption and not the accumulation of precious metals as such is the legitimate aim of all economic activity. In any event, the physiocrats were too concerned about another sort of problem to make much ado about the balance of trade. Their chief interest in foreign trade was to show that free trade in grains would, in view of the world pent-up demand for farm commodities, set an international common price (*prix communs*), in good and bad years alike, in excess of the basic price (*prix fondamental*) --- the basic price being that which covers the costs of production (excluding profits). Any price which "procured a gain sufficient to give motive for the maintenance or augmentation of production"¹⁹ was considered a bon prix. Grain autarchy would, Quesnay's demand schedules show us,²⁰ cause farm income to fall to such an extent in years of abundant harvest that there would be no incentive for increasing production. Whereas free trade would ensure that the price for grain would be high and comparatively inelastic in the face of increasing production;

19. Quesnay gives these definitions in article "Hommes", reprinted in Francois Quesnay & La Physiocratie (Paris, 1958), p. 529.

20. Similar demand schedules appear in the article "Hommes" and in the aforementioned article "Grains".

this would cause the surplus available for rents and profits (and further accumulation) to actually increase in abundant years, for there would be only a slight fall in the price of grains.

1. Quesnay on Taxation.

We have already reviewed the essential logic of the physiocrats' theory of taxation in previous chapters, and so, after a few summary remarks on the same, we will consider their application of this theory as a measure of reform. Many economic thinkers had already, in the historical context of pre-industrial societies, advanced the idea that all or, at least, most taxes finally fall on the land. Furthermore, some early economists, most notably John Locke, had already outlined the requisite conditions for this to be true. We might briefly list these conditions. First of all, land must be the only factor of production to accrue an economic rent. The physiocrats took this for granted. It was not until late in the 19th century that any number of economists ceased to regard rent as a unique kind of income. Not until then was it widely understood that the unearned increment paid to suppliers of economic services other than the natural agents (by right of monopoly control over a limited supply, no matter how temporary) is an income of exactly the same kind as land rent. Secondly, that a factor of production does not accrue an economic rent must mean that its supply offered for economic use varies directly with its rate of payment. John Locke simply observed that

this is generally true for both labour and capital. Quesnay, always the very model of a perfect theorist, cast these same observations into a theoretical formulation, propounding the theory that the irksomeness of labour (travail penible) accounts for the fact that one must pay a higher and higher wage to obtain the requisite amount and intensity of labour. His subjective theory was made largely complete, for the other factors of production, by such statements as that the capitalist-farmer must obtain a price for his produce which "procures a gain sufficient to give motive for the maintenance or augmentation of production." The third condition for the single tax theory is that competition amongst all kinds of labour, and every class of capitalist in every industry, must be so intense that the economic payments they receive are in fact driven down to the Real Costs of production. The physiocrats were well aware that this was not the case; hence, their complaints about monopole. Yet, throughout, they insisted on reasoning about practical problems of taxation on the assumption that their nominal, purely-competitive economic model corresponded to the real facts of economic existence.

At least we cannot quarrel with the formal logic of the single tax theory, given the physiocrats' assumptions. Taxes on non-rental incomes and commodities must raise the price of the corresponding economic services and these commodities to the full extent of the tax

(assuming, as the physiocrats did, that competition has reduced all payments to supply prices). The full sum of these taxes will be passed on to the landlord in two ways: first of all, in the form of increased prices for the commodities he himself buys; and, secondly, the same increase in the price of commodities and higher wages will add to his tenants' Real Costs, which must result in lower rents at the renewal of his leases. There are of course other kinds of reactions to increased commodity and factor prices. The consumer's lesser real income (after excise and income taxes) may force him to cut his demand for commodities and the entrepreneur's higher commodity and labour costs may force him to deplete his capital establishment. The physiocrats especially feared the latter eventuality in view of the entrepreneur's heavy contractual commitments. Quesnay's article "Impôts" (which, incidently, was not published in his own lifetime) is a fairly complete summary of the Master's own understanding of the single tax theory. It outlines the greater part of the formal logic of the theory and most of its implications for policy.

The physiocrats are generally reputed to have dogmatically asserted that the only legitimate tax is a direct tax on the net rent of agricultural land. This is not quite true. Although most of Quesnay's disciples were uncompromising in this belief (Turgot more than any other), he himself and Mirabeau, his closest collaborator, frequently

advocated taxation on a wide range of things from salt basins to city property. This cannot be dismissed as an aberrational opinion expressed in a period when they were formulating their doctrines; indirect taxes of this sort are recommended by Quesnay himself in his articles "Fermiers" and "Impôts", and they are still given support in the physiocrats' text book on taxation, Théorie de l'Impôt (1760), which was written by Mirabeau under Quesnay's editorship. How is this policy to be reconciled with the more usual assertion that the produit net should be taxed directly? The answer is simple enough. Quesnay had no doubts but that the produit net was the only surplus disposable for taxation. But, assuming that it were really true that all taxes, in every case, ultimately fall on the pure rent of land, it could hardly matter how they were charged; the end result is the same. The only objections one could have to indirect taxation are frictional maladjustments occasioned by their initial assessment and excessive administrative costs that might attend their collection. Bois-guillebert and the physiocrats estimated that the administrative costs for some excise taxes were several times the net revenue. Thus, supposedly, the chief advantage of direct taxation on net rent was that it saved the landlord the burden of unnecessary administrative costs that would in any case be paid by him like any other government expense. The point is that any indirect tax which did

not involve excessive administrative costs would weigh no more heavily than a direct tax on the net rent, and besides, such taxes might be expedient for political reasons. Quesnay's admits this line of reason in his article "Impôts":

Qu'importe sur quels objects on établisse les impôts? Ils protent toujours sur le même fond et ce sont toujours les revenus des biens qui les fournissent; ainsi tout l'attention du gouvernement économique doit tendre à l'accroissement et à la perpétuité de ces revenus: tous les autres avantages qui en dépendent, augmenteront et se soutiendront d'eux mêmes.

Le sel, le tabac, le marchandises de nos colonies et des autres marchandises étrangères peuvent contribuer au impôts, pourvu qu'on évite les grands fais de perception qui retombent sur l'État, et qui sont toujours en perte pour le souverain et pour le peuple.

Le sel, le tabac, les denrées de nos colonies qui se sonsonment en France peuvent à leur origine, ou à leur entrée dans les royaume, être assujettis, pour les droits qu'ils payeraient, à une régie bornée et de peu de frais, et être ensuite livrés à un commerce libre. Ces droits levés à peu de frais seraient peu onéreux et n'exciteraient pas les fraudes; les pays qui jouissent du privilège de franc-salé n'achèteraient pas les sel assez cher pour se plaindre d'un arrangement établi pour le bien général, et qui leur serait si peu préjudiciables. D'ailleurs ils en seraient suffisamment dédommagés par la suppression de autres droits qui leur sont beaucoup plus onéreux que la petite augmentation qu'il payeraient sur le prix du sel. 21

Here Quesnay makes it quite clear that he does not consider all indirect taxes at variance with his practical objectives. He admits that taxes on salt, tobacco, and colonial imports are proper, provided they are managed in an orderly, economical manner, so as not

21. Quesnay, "Impôts", Reprinted in Francois Quesnay & La Physiocratie (Paris, 1958), pp. 605, 606.

to entail unnecessary expenses. At least this policy is not inconsistent with the formal logic of the single tax theory as we have interpreted it.

We have already on several occasions given our objections to the single tax theory. We might only note that several of the physiocrats' contemporaries criticised their ideas on the incidence of taxation for much the same reasons as we did. Two of the most noteworthy were the English agricultural writer Arthur Young and Jean Granslin, who was probably their most effective critic. (Hume's disputations with Turgot should also be mentioned.) Their most telling criticism was that the payments to every class of income recipient may be taxed to some extent, at least in some situations, without causing them to lessen their productive contribution (in other words, for one reason or another, they receive an economic rent). Granslin made a very acute observation about the physiocrats' definition of income. "Mais il paroît qu'il se trompe encore," he says, commenting on Mirabeau's Théorie de l'Impôt, "en confondant la richesse de l'État, considérée comme la collection de richesses particuliers, avec la richesse de l'État, considérée comme le revenu du souverain."²² He himself defined income as total income inclusive of all expenses including wages, in contrast to the physiocrats (and some economists of a more recent date) who give an undeserved importance to economic surplus.

22. Jean Granslin, *Essai Analytique Sur La Richesses Et Sur L'Impôt*, p.248.

Arthur Young could not believe that the physiocrats themselves actually considered their own tax-theory to be a serious scientific argument. "Upon the whole," suggests Young, "this gentleman (M. Dupont) and the Marquis de Mirabeau with many other French writers seem to have recommended the abolition of taxation on consumption in favour of the simple land tax, rather for the sake of getting rid of the farmers of the revenue, and other great abuses, than for any positive conviction of the excellence of the plan * * *"²³ A number of other writers have also accused the physiocrats of politically-inspired dissemblance. But, actually, there is nothing to suggest that the physiocrats were insincere. Their peculiar brand of dogmatism is that of abstract theorists lost in their own world of thought. Still, one has to admit that there is some approximation of the truth behind each of those assumptions upon which the single tax theory is based. The idea that all taxation should be laid on the pure rent of land at least has more to recommend it than the more recent proposals of a similar kind (such as Henry George's), considering that land rent was then such a large "unearned increment" and not directly taxed at all.

Moreover, if one discounts the question of the political expediency of a single tax on the income of landlords, as the physiocrats so unrealistically did, it seems

23. Arthur Young, Political Arithmetic (London, 1774), p. 236.

an especially attractive rationalization of the disruptive and destructive tax system of the time. There can be no doubt but that the rapacious tax system of the old regime in France was one of the principal causes for economic stagnation. The chief source of ordinary revenue was the *taille*. The total amount of the *taille* for any one year varied with the needs of the central government. Its total was divided amongst the generalities and the intendant of each generality was trusted to apportion his share amongst the elections and parishes. Corruption of the intendant's trust often resulted in unfair apportionment between parishes. Influential landlords obtained preferential treatment and feudal custom gave exemption to the nobility and clergy. The collectors of the parish were non-paid elected officials, who often found their unwanted office an onerous drain on their own resources. The *taille* was supplemented by sales taxes (*aides*) and internal and external duties (*duanes*). The collection of these taxes was contracted out to tax farmers, traitants as they were called, who paid a contracted price for the right to collect a specific kind of tax. The tax farmers bought influence to obtain these contracts at the lowest possible price and generally exacted all that the traffic would bear. The duanes were not only collected on goods that passed into and out of the country, but also on those that passed from province to province, no matter how short the distance. This of course

restrained the free flow of commodities and the effectuality of competition.

The arbitrary apportionment of this easily-corrupted tax system made it impossible to introduce the capitalistic rationale of commercial contract. It was difficult to make any sort of entrepreneurial calculation of future prospects; the more so, because the government made no attempt to stabilize the tax burden over the years. "Il est encore à remarquer que la augmentation et diminution de la masse de l'imposition sur les paroisse," Quesnay argues, "détruisent entièrement l'aspect et les effects de l'imposition proportionnelle; car elles s'opposent à tout arrangement régulier entre les propriétaires et les colons, parce que les variations annuelles des cotes troublent la sûreté de colon qui se charge du payement de la taille. * * * Un fermier, par exemple, qui afferme pour neuf années une terre, n'a point de règle pour traiter avec sûreté pour le fermage et pour la taille; il risque d'être ruiné pendant le cours du bail par les augmentations d'imposition auxquelles il s'expose; c'est pourquoi l'état de fermier est devenu si dangereux et a si fort diminué dans le royaume, que les propriétaires sont réduits presque partout à livrer leur terres à la petite culture; il est donc nécessaire, pour la sûreté de fermiers, et pour les multiplier, de ne point varier l'imposition. * * *"²⁴ The arbitrary, inconsistent, and unfair apportionment of taxes, Quesnay

24. Quesnay, "Impôts", p. 616.

protests, makes it impossible for the farmers to accumulate capital and, generally, their situation became so bad that many fled to the cities and took their capital with them.²⁵

In the foregoing quotation Quesnay seems satisfied with a *taille* on the farmer's income rather than the usually recommended direct tax on the produit net. However, this is a matter of little importance for, as he suggests, the farmer will always make his contract with the tax in mind. So, even in this latter eventuality, the tax will still "pay itself without expense" from the "gift of nature", provided, of course, the farmer's taxes do not increase during the period of his lease. And finally, Quesnay seemed to believe that a *taille* on the farmer's income would involve no greater administrative expenses than a direct tax on the landlord's income, which would remove his last practical objection to the *taille*. Even so, Quesnay had a fond preference for the system of land tenure whereby the capitalist-farmers rented land from landlords, for this haply specialization of economic function not only produced the greatest possible economic surplus disposable for taxation, but also left no doubt concerning the size of the surplus. "Le fermage", he tells us, "fournit la règle pour établir l'imposition proportionnellement au produit, car le propriétaire et le fermier veillent également à leur intérêt dans leur

25. *Ibid.*, pp. 610, 611.

conventions."²⁶ Still, he realized that the prevalence of metayage made it necessary to compromise this ideal. He writes: "Mais la plupart des biens sont cultivés par des métayers qui partagent les récoltes avec le propriétaire et, dans ce cas, le métayer ne contribue guère à la culture que par ses travaux; c'est le propriétaire qui en fait les principales dépenses: alors, il est difficile de connaître exactement le revenu que le bien rapport au propriétaire et de démêler ce revenu d'avec le frais; c'est pourquoi on impose la taille sur la portion de récolte qui revient au métayer. Les terres traitées par cette espèce de cultivateurs produisent très peu; la portion de gain qui revient au métayer est presque entièrement consommée par son subsistance et celle de sa famille; en estimant la valeur de sa petite récolte, on s'aperçoit qu'il peut payer, pour la taille et la capitation, qu'environ deux ou trois sols par livre, c'est-à-dire environ le 1/6 ou le 1/7 de la valeur de sa portion de récolte."²⁷

The physiocrats were also worried that indirect taxation (with its great administrative expenses) would raise the price of commodities to such an extent as to drastically reduce the demand for them. This deteriorative effect, from the demand side of the economic equations, would in turn lessen the quantity of warranted

26. *Ibid.*, p. 614.

27. *Ibid.*, pp. 611, 612.

capital accumulation justified by aggregate demand. The physiocrats made specialized studies for several French industries. One of the more interesting is Le Trosne's book Les Effets de l'Impôt Indirect, Prouvés par les deux Exemples de la Gabelle & du Tabac (1770) which deals with indirect taxation on salt and tobacco. Le Trosne argued that these taxes were bound to give rise to tremendous administrative expenses because their very nature was such as to tempt evasion. The great army of tax collectors which were required constituted an enormous diversion of labour to unproductive employment. All, or at least most of these administrative expenses, were added to the price of salt and tobacco, resulting in a much diminished consumption. The gabelle, the salt tax, had particularly disastrous effects. It raised the price of French salt so high that it was priced out of the foreign market; it increased an important cost of French fisheries; and, worst of all, the high price of salt made it impossible to establish a flourishing animal husbandry. Le Trosne proposed a direct tax on salt basins (le marais salants). This reform was expected to cut administrative costs and allow the rate of taxation to be reduced. The absolute net return, Le Trosne assures us, will grow by leaps and bounds owing to increased demand for salt. The physiocrats generally assumed a high price elasticity of demand for most commodities, especially if there were a foreign market. Their first principle for all indirect taxation was, therefore,

that the per unit rate of taxation should be low so as to foster greater production and distribution, which would maximize tax receipts by encouraging a greater turnover. Le Trosne proposed that prohibitions against the cultivation of tobacco should be done away with, for this would permit the introduction of a profitable industry that would eventually provide a source of revenue superior to the high duties on the importation of English tobacco. The physiocrats discussed the problems of the wine industry in great detail. They thought this industry gave promise of great immediate growth, provided the rates of taxation on wines were reduced and the cultivation of vines freed of all those prohibitions calculated to force the cultivation of grains. Quesnay propounded that the increased income generated by an unfettered wine industry would result in a greater demand for the products of every other industry and, thereby, a greater production of these products. Most especially, it would achieve the aims of the "cheap grain" legislation, for it would bring about a greater consumption and production of grains.²⁸

At this point we might make a few final comments on Quesnay's distrustful attitude towards the activities of Les financiers who farmed the taxes. As we have mentioned before, he feared that their amassing of pecuniary fortunes would somehow arrest and hold back the circulation of money and stop the annual return to agriculture.²⁹ This opinion was given so little explanation

28. *Ibid.*, pp. 599, 600.

29. See Chapter 3, section 3.

that it is difficult to ascertain precisely what Quesnay had in mind. Boisguillebert, the reader will remember, feared the hoarding of specie as such, especially in periods of economic uncertainty. But at its best, the theorizing on this matter of both Boisguillebert and Quesnay was unfinished, for their neutral money theory abstracted away most of the important facts relevant to the theory of money and interest. The only attempt made by Quesnay and Mirabeau to outline a general theory of interest is a confused performance in Philosophie Rurale. Yet, in his article Observations sur l'Intérêt de l'Argent, Quesnay talks intelligibly about interest and a particular kind of financial crisis connected with the activities of the tax farmers, even though he does not provide us with complete theory of interest (i.e. it would not stand comparison with that of Turgot).³⁰ Quesnay seems to hold the theory that the rate of interest is chiefly determined by the supply of loanable funds and the demand for them. He observed that a kind of financial crisis can

30. Quesnay had the peculiar idea that there is a natural rate of interest equal to the return that one gets from the purchase of an estate. He thought that any interest in excess of this return would prove an excessive burden for capital users. Turgot pointed out that one must expect the purchase of land given out to tenants to give the lowest return of any class of investment for the simple reason that it is the safest and most agreeable employment for capital.

be brought about by the tremendous borrowing of the central government when it causes the rate of interest to rise so high as to acutely embarrass the commercial classes that depend upon the capital market.³¹ In other words, government borrowing can divert an excessive share of capital to non-productive employment. In the same article Quesnay proposes that the government should make an effort to hold down the rate of interest whenever it rises excessively. This of course need not imply that he did not see the difficulty in enforcing such restraints. Some present-day nations, especially those with a peasantry which as yet lacks commercial guile, have found controls on interest desirable for reasons similar to those that must have appealed to Quesnay.

2. The Superior Productivity of Agriculture and the Allocation of Capital.

Some commentators on physiocracy have been very critical of the physiocrats' contention that agriculture is more productive of wealth than manufacture.³² But actually, there is, at least in the circumstances the physiocrats had in mind, an important truth in this thesis which does not in any way depend upon the Unique Productivity Doctrine. Quesnay was greatly impressed (and indeed he had every right to be) by the fact that capital

31. Quesnay, "Observations sur l'Intérêt de l'Argent". Reprinted in Francois Quesnay & La Physiocratie, pp. 766, 767.

32. Henry Higgs says that "no competent economist would defend the thesis today that agriculture is "more productive" of wealth than manufacture." Henry Higgs, The Physiocrats (London, 1897) p.127.

invested in the grande culture produced a much greater economic surplus than could reasonably be expected from investment in any other sizeable industry. His tableau économique shows that every sum that goes to the farmers doubles. This may have exaggerated the potentiality of the new technology, but his point is well taken. Neither commerce nor industry could give a return anywhere near this, since capital invested in agriculture not only accrued the normal rate of profit but, in addition, a considerable rent. Of course, some other industries may have accrued a comparable economic rent for some period of time but, generally, such rents were neither so large nor persistent as those of agriculture. Moreover, as we have already noted more than once, Quesnay's demand schedules give a pretty good explanation of the demand conditions necessary for land rent to emerge. First of all, the price for French grain had to remain high in the face of increasing production. Given the existing circumstances, demand conditions conducive to high rents could only be brought about, Quesnay reasoned, by a policy of free exportation for grains. The stabilizing influence of the foreign market would ensure high prices that are relatively inelastic to the supply of grain offered on the market. The emergence of rent was not entirely owing to the scarcity of land. The new agricultural technology promised Increasing Historical Returns --- i.e. increasing

returns to technological progress. This would lower costs and, given the demand conditions assumed, increase the surplus available for profits and rents. Quesnay's demand schedules have shown us³³ that the petite culture, coupled with a policy of grain autarchy, will produce in the average year, for a total expense of 60 pounds (livres), 5 septiers of wheat, which would be sold for 15 pounds per septier; this gives a comparatively small surplus of 15 pounds for profits and rent. In contrast, the grande culture, coupled with free trade in grains, will produce, for a total expense of 66 pounds, 6 septiers of wheat,³⁴ which will be sold for 18 pounds per septier; this gives a much larger surplus for profits and rents of 42 pounds. These demand conditions are such that considerable investment can be made in the more productive grande culture without causing more than a small fall in the price of wheat. As a consequence, improved technology can offer the generality of farmers entrepreneurial gains, which will provide incentive for further accumulation. They will continue to invest as long as increasing returns to technology and high prices promise them entrepreneurial gains during the period of their lease. It should be noted in passing that the self-interest of the farmers and landlords may be in conflict. The farmers will take advantage of every cost-saving technique and in the process generally increase the quantity of farm produce offered on

33. See Chapter 3, section 4.

34. These demand schedules suggest that Quesnay saw greater promise from the increase in the price of grains than from Increasing Historical Returns. But it should be kept in mind that the grande culture

the market. This may eventually satiate the pent-up demand for farm commodities and cause rents to fall. In the extreme case, pure rent may disappear altogether. The generality of farmer-tenants can, of course, only accumulate capital to that point where the usual marginal costs are equal to the usual marginal revenues. Since rents may be fixed by long leases or tend to assume a rigid customary rate, the payment of rent may, and often does, tend to restrain the accumulation of capital, even though the ordinary increment of capital still returns an economic rent over and above the normal rate of profit; for, as far as the individual farmer is concerned, the current rate of rent is always a necessary cost, unless of course, he owns his own land and is willing to supply this factor of production for a lesser payment. But, over the long run, as in fact has generally been the case with the great progress in agricultural technology since the 17th century, individual entrepreneurs introduce cost-saving innovations, causing agricultural prices and rents to fall, despite any and all social rigidities that may resist the lowering of rents. In conclusion, it should be reiterated, once again, that capital employed in agriculture does in fact have a superior productivity as long as demand conditions are such as to provide an economic rent over and above normal profits.³⁵

was a mixed-farm technology in which animal husbandry and the cultivation of inferior grains would supplement the income received from wheat. In addition, the new technology eliminated the need to fallow every third year and so would increase the physical productivity of agriculture by at least a third.

35. *Of course, as has been admitted before, superior lands of any given type will always accrue a differential rent, even though rents*

3. The Practical Influence of the Physiocrats' Programme for Reform.

We have, perhaps somewhat unfairly, described the physiocrats as uncompromising theorists of a very abstract turn of mind. This is not meant to imply, however, that they were merely abstract philosophers who had retreated into an ivory tower, away from all intercourse with the workaday world. We have shown, I believe, that their economic theory was developed from a detailed study of the actual facts of economic existence and was concerned with the most pressing economic problems of their day. We do not mean to be derogatory by calling their theory "abstract"; it was the most abstract theory up to their time because it was the most developed. Their chief fault was that they applied their theory too rigidly. But still, it should be appreciated that most of Quesnay's circle were practical men of affairs and can be credited with very solid achievements of a practical kind.

The physiocrats had, in several different ways, a considerable influence on the actual course of economic history. Of major importance is their dissemination of

on the ordinary land of that type have fallen to zero. Moreover, all this is not to deny that farm land will always have a value, even in the case where farm income is not sufficient to warrant rental payments for the use thereof, if only because the land is kept for some non-productive purpose (e.g. a home for ex-presidents or a conventional hedge against inflation). Regarding the use of land as an inflationary hedge, we might say, employing John Law's definition of money to advantage, that the value of land as a form of money is just as real as its value as a commodity (i.e. as a factor of production).

agricultural knowledge, much of it of a very technical nature, by means of their several journals and work with agricultural societies. The physiocrats also took an active interest in the technology of manufacture. We have already mentioned Baudeau's society for the encouragement of inventors. Another good illustration of the practical side of the physiocrats' character is Mirabeau's project for the setting up of economical flour mills and bakeries.³⁶ When in 1767 a bad harvest had driven up the price of bread, Mirabeau proposed in an article, Avis aux honnêtes gens qui veulent bien faire, that a new system of milling would produce more flour from the same amount of corn. Mirabeau established one of these fours économique on his estate near Paris. He sold bread for one third less than the current price. The millers were quick to follow his example. It is interesting to note that another physiocrat, Dupont de Nemours, was to become, of all things, yet another industrial entrepreneur by right of the role he played in organizing gunpowder manufacture in the United States. His enterprise eventually expanded to become that famous chemical firm that bears his family name.

The physiocrats can also be credited with personally-directed reforms in a few other spheres. The corporation of butchers had been compelled since 1743 to take loans of capital at high rates of interest from a body of financiers that had been given a monopoly privilege.³⁷ Baudeau argued the complaint of the butchers

36. Henry Higgs, The Physiocrats (London, 1897) pp. 82, 83.

37. Ibid., p. 84.

before a tribunal of the Parliament in 1776, winning the case in opposition to the famous advocate Gerbier.

The practical influence of the physiocrats cannot be judged by a balance sheet of the quantity of "physiocratic legislation" that was enacted in their own time or soon after. In point of fact, it is difficult to think of a reform that can be put into this category for the simple reason that the physiocrats advanced little in the realm of economic policy that was completely new, unless it was Quesnay's over-accentuated version of the old single-tax idea. And, at that, the impôt unique was tried only on an experimental scale by Karl Freidrich of Baden-Durlach and Peter Leopold, Grand Duke of Tuscany. But still, the ideological influence of the vast physiocratic literature on economic policy can hardly be exaggerated. Though they had little personal success with their Laissez faire Programme, the physiocrats did prepare the way for Adam Smith's version of these same arguments in countries as distant as Russia and Poland.

The physiocrats' programme of reform was frustrated by the inertia of a rigid social structure and the opposition of vested interests. Moreover, the general public was unsympathetic, not yet having had time to become ideologically attuned to the needs of emerging Capitalism. The nature of these reactionary forces can best be understood by their opposition to the measures

introduced by Turgot while he was intendant of Limoges from 1761-1774 and Controller General of France from 1774 to 1776. In Limousin he abolished the corvée and had the roads repaired by government-hired workmen, but from the very beginning this incensed the ratepayers. The farmer-entrepreneur's predilection for a predictable order of commercial contract had not as yet come to the fore. When he became Controller-General, Turgot did away with the jurandes or guilds and a number of monopolies of various kinds. But all this was soon swept away by a reaction to his reforms. An unfortunate bit of bad luck was the immediate cause that precipitated his fall from favour --- his free grain measure happened to coincide with a bad harvest. This aroused the resentment of the rural proletariat who feared for the price of his bread. And this same accident provided the opening for the counter-attack of the vested interests. Within three months of Turgot's fall, the corn laws, the corvée, and the jurandes were once again the order of the day. The only power capable of reform was the forceful use of royal prerogative --- thus the physiocrats' admiration for despotic monarchy. But this power was not used drastically enough by Louis XVI who, after all, was not a despot. More than a decade was required for the physiocratic cause to gain a sufficient number of recruits and even then the proselytes had to be prepared by the purgatory of revolution.

CHAPTER 7

SOME SELECTED PHYSIOCRATIC FILIATIONS

In recent years there has been an increasing awareness of the physiocrats' influence on subsequent economic thought. Though, it goes without saying, historiographers have never completely lost sight of their influence. Their contribution to capital theory has generally been recognized by all economists from Adam Smith on. As well, it is appreciated that their doctrine incited much inquiry into the subject of value. Mainly, physiocracy posed questions on this head that later economists tried to answer in their several distinctive ways. But, besides this order of influence, there often remained in studies on the source of wealth a distinctive physiocratic residue. By way of an important example, there is a physiocratic aspect to Adam Smith's Wealth of Nations --- a physiocratic bias so worrying that it provoked Smith's first theoretically-adept critic Lauderdale to reconstruct a new system of value expressly designed to eliminate the erroneous doctrine of Doctor Quesnay. The first task of this chapter will be to try to ascertain the exact nature of Smith's physiocratic passages. For the most part, we will not attempt to review the broad heritage of physiocracy. We have already said a good

deal on their more generally accepted contributions (particularly on the subject of capital) in previous chapters. Rather, we will comment on several influences on the main stream of economic thought that have escaped the notice of most critics by reason of the physiocrats' abstract reasoning and unfinished workmanship. The two other subjects which we have chosen are (1) Malthus' theory of rent and (2) the controversy between the "general glut" theorists and the proponents of other theories of crisis of that day. We have purposely limited our study, for reasons of space, to these selected aspects of the work of Adam Smith and his immediate successors. Still, this arrangement should show that the physiocratic heritage is on a broader front than is generally realised. The Wealth of Nations affords an example of a work that had not as yet completely broken away from the influence of basic physiocratic preconceptions. Malthus's theory of rent gives an indisputable instance in which Quesnay's discussion of the demand side of the economic equations made an impression on a successor. And, finally, we will try to relate the controversy over the "general glut" to the Disproportionality Theory of Crisis of Ricardo and Say. This latter theory is of special interest to us because it describes a kind of general equilibrium similar to that depicted by the tableau Économique.

1. The Influence on Adam Smith of Quesnay's
Scheme of Circulation.

"Land, mines, and fisheries", writes Adam Smith in the Wealth of Nations, "requires all both a fixed and circulating capital to cultivate them: and their produce replaces with a profit, not only those capitals, but all others in society. Thus the farmer annually replaces to the manufacturer the provisions which he has consumed and the materials which he has wrought up the year before, and the manufacturer replaces to the farmer the finished work which he has wasted and worn out in the same time. This is the real exchange that is annually made between those two orders of people.* * *"¹

Just what significance do such statements have for the broad context of Smith's system? Are we to despair with his critic Lauderdale that --- "Indeed, there is no opinion that has anywhere been maintained on the subject of the sources of wealth, which does not appear to have been adopted in different parts of the Inquiry into the Wealth of Nations."² Today, most critics are inclined to interpret Smith generously. They are accustomed to regard him as the great eclectic who reconstructed a synthetic system from the materials, generally the best, that his predecessors had to offer him, modulating in his work the extreme biases of both

1. Adam Smith, Wealth of Nations, Cannan Edition, Vol. I, p.266.
2. Lauderdale, Public Wealth (Edinburgh 1804), p.116.

mercantilists and physiocrats. Such statements as that above are often disregarded as undigested physiocratic tappings to which no importance should be attached. But is this true? Or, going directly to the heart of the matter, does Adam Smith's view of the origin of wealth admit the preconceptions of the unique productivity doctrine?

We have, the reader will remember, come to the conclusion that the most unique aspect of the physiocrats' system lies in their view of circulation. They thought that the flow of income had as its only source the primary industries - the greater part from agriculture. Stating the matter negatively, they had the idea that no economic sector other than agriculture receives an income in excess of its receipts from other sectors. As we have said more than once, this premise could never be reconciled with the facts, even in the most primitive economy, for the manufacturing and commercial sectors always create income (exchange value) to the extent commodities and services are exchanged within these sectors. Could it be possible that Adam Smith did not understand this? The foregoing statement argues that he was confused on the matter. It says, unequivocally so, that all capital - no matter where it is accumulated - is replaced with a profit by the flow of income provided by land, mines, and fisheries. This one statement is not, of course, sufficient to make Smith a physiocrat; as well, he would have to support the idea that all labour costs are replaced by primary industries.

But it should be appreciated that on no occasion does Smith make a statement that directly contradicts the idea that the income flow has its origin in the primary industries. Many authors have, purporting to show the degree Smith had broken with mercantilist and physiocratic errors, quoted as evidence such statements as the following :

"Wages, profit, and rent, are the three original sources of all income as well as of all exchange value. All other revenue is ultimately derived from some one or another of these."³ However, this statement is related to the distribution of income and has nothing at all to say about its sectorial source. The physiocrats themselves (particularly Turgot in his Reflections) had the same distributive scheme in mind.

Smith discusses the subject of intra-sectorial circulation only once (in his chapter on "Agricultural Systems"). He attempts to refute the unique productivity doctrine but in reality does nothing but quarrel over matters of definition - in the end conceding to the physiocrats all their basic assumptions.⁴ It might do to quote Smith at length :

The capital error of this system [the physiocratic system], however, seems to lie in its representing the class of artificers, manufacturers and merchants, as altogether barren and unproductive. The following observations may serve to show the impropriety of this representation.

3. Smith, op. cit. Vol. I., p. 54.

4. Lauderdale was the first critic to point out that Smith's ideas on circulation conceded all the essentials of the physiocrats' unique productivity doctrine. Lauderdale, op. cit., pp. 138-140.

First, this class, it is acknowledged, reproduces annually the value of its own annual consumption, and continues, at least, the existence of the stock or capital which maintains and employs it. But on this account alone the denomination of barren or unproductive should seem very improperly applied to it. We should not call a marriage barren or unproductive, though it produce only a son and a daughter, to replace the father and the mother, and though it did not increase the number of the human species, but only continued as it was before. Farmers and country labourers, indeed, over and above the stock that maintains and employs them, reproduce annually a neat produce, a free rent to the landlord. As a marriage which affords three children is certainly more productive than one that affords only two; so the labour of farmers and country labourers is certainly more productive than that of merchants, artificers, and manufacturers. The superior produce of one class, however, does not render the other barren or unproductive.

Secondly, it seems, upon this account, altogether improper to consider artificers, manufacturers and merchants, in the same light as menial servants. The labour of menial servants does not continue the existence of the fund which maintains and employs them. Their maintenance and employment is altogether at the expense of their masters, and the work which they perform is not of a nature to repay that expense. That work consists in services which perish generally at the very instant of their performance, and does not fix or realize itself in any vendible commodity which can replace the value of their wages and maintenance. The labour, on the contrary, of artificers, manufacturers, and merchants, naturally does fix and realize itself in some such vendible commodity. It is upon this account that, in the chapter in which I treat of productive and unproductive labour, I have classed artificers, manufacturers and merchants, among productive labourers, and menial servants among the barren or unproductive.

Thirdly, it seems upon every supposition, improper to say that the labour of artificers, manufacturers and merchants does not increase the revenue of society. Though we should suppose, for example, as it seems to be supposed in this system, that the value of the daily, monthly, and yearly consumption of this class was exactly equal to that of its daily, monthly and yearly production; yet it would not from thence follow that labour added nothing to the real revenue, to the real value of the annual produce of the land and labour of society. While he has consumed a half yearly revenue of ten pounds of corn and other necessaries, he has produced an equal value of work capable of purchasing, either to himself or some other person, an equal half yearly revenue. The value, therefore, of which has been consumed and produced during these six months is equal, not to ten, but to twenty pounds. It is possible, indeed, that no

more than ten pounds worth of value, may have ever existed at any one moment of time. But if the ten pounds worth of corn and other necessaries, which are consumed by the artificer, had been consumed by a soldier and a menial servant, the value of that part of the annual produce which existed at the end of six months, would have been ten pounds less than it actually is in consequence of the labour of the artificer. Though the value of what the artificer produces, therefore, should not at any one moment of time be supposed to be greater than the value he consumes, yet at every moment of time the actual existing value of goods in the market is, in consequence of what he produces, greater than it otherwise would be. 5

(We have italicized the passages in which Smith suggests that he is making assumptions merely in order to follow the reasoning of the physiocrats.) Here, he has given three arguments against the unique productivity of agriculture. Contrary to what he expected, all three of these arguments have been turned against him, by various authors, as evidence proving a physiocratic bias in his work. But, in point of fact, the first two arguments are valid ideas that need not necessarily be associated with physiocracy. Actually, it is the third argument that concedes physiocratic preconceptions on the source of wealth. We have already had occasion to comment on the first argument.⁶ This statement as to the superior productivity of agriculture is, for that time, substantially true --- no matter how one examines the matter. Under conditions in which only the agricultural sector of the economy affords an appreciable rent, a given input of labour and capital (assuming uniform wages and profits throughout the economy)

5. *Smith, op. cit., Vol. II, pp. 172-174.*

6. *See Chapter 6, Section 2.*

manifestly produces the greatest income (i.e. value product) when employed in agriculture. Even from the perspective of welfare economics, this input of labour and capital would produce a greater hedonistic income, because it is precisely by reason of the relatively high marginal utility of the last increment of agricultural produce consumed that demand conditions offer a payment to land in excess of its supply price.⁷ The second argument turns on the distinction between productive and unproductive labour. We have already commented on the important truth contained in this line of reason, and shall have more to say on it presently. But, first, let us examine Smith's third argument.

"[If] wealth is regarded as dependent on exchange value", complains Lauderdale in reference to this third argument, "it is difficult to perceive how he [the artificer] should have deemed to have increased the national stock by such an existence."⁸ We can hardly quarrel with this judgment. Smith apparently agreed with the physiocrats' notion (or, at least, despite his reserve, does not contest it), that the total value product of the non-agricultural sectors does not exceed their expenditure for "corn and other necessaries" --- presumably, all of which are purchased from the agricultural sector. This is not to deny that Adam Smith always recognized that manufacturing labour adds value to raw materials. "The value which the workmen add to the materials", he says, "therefore, resolves itself in

7. We assume here, of course, that agricultural land has no alternative uses or, as another possibility, its agricultural employment is its most valuable employment.

8. Lauderdale, *op. cit.*, pp.140-141.

this case into two parts, of which the one pays their wages, the other the profits of the employer upon the whole stock of materials and wages which he advanced."⁹ Be that as it may, the physiocrats themselves never went so far as to deny that the sterile sector accrues wages and profits, but still thought it possible that these distributive payments could be resolved to the value of subsistence goods or, indirectly, to the value of raw materials and subsistence goods used up in the production of manufactured goods and the accumulation of real capital. That Adam Smith did not use the existence of manufacturing profits to argue against the unique productivity of agriculture, may suggest that he, as well as the physiocrats, had some such scheme in mind. Possibly, it was simply that he did not think intently on this matter of intra-sectorial circulation. Certainly, it is appreciated that he suggested several alternative schemes that point away from physiocratic preconceptions. Anyway, this is not given as anything more than a low-level critique of Smith's work. We simply want to show the exact nature of such physiocratic notions as remain in his work. Whatever its importance, the fact remains that he invariably chooses a physiocratic frame of reference whenever he comes to discuss the circulation of commodities and values between sectors. We might give one more example of this. "The commerce of every civilized society", he tells us, "is carried on between the inhabitants of the town and those of the country. It consists

9. *Smith, op. cit., Vol. I, p.50.*

in the exchange of rude for manufactured produce, either immediately, or by the intervention of money The country supplies the town with the means of subsistence, and the materials of manufacture. The town repays this by sending back a part of the manufactured produce to the inhabitants of the country. The town, in which there neither is nor can be any reproduction of subsistences, may very properly be said to gain its whole wealth and subsistence from the country."¹⁰

In any event, this physiocratic bias cannot be said to detract from Smith's substantial objective and subjective originality. It is hardly every the case that an innovator, no matter how original he may be, succeeds in completely breaking with the outmoded formulations of his predecessors. Physiocratic notions on the origin of wealth did not die with Adam Smith, though they were already moribund, but, as we shall see in the last section of this chapter, lingered on to give a peculiar form to the capital over-accumulation theories of Thomas Grey and William Spence. But, strangely enough, the erroneous assumptions of the unique productivity doctrine were never completely laid bare by most critics of physiocracy. The intrusion of capital intensive industry, with its tremendous income producing potential, quickly made the preconceptions of this theory unintelligible and remote, even for academic study.

10. *Ibid.*, p. 355.

Here, as in the quotation on page one of this chapter, Smith talks in purely physical terms about the circulation of income and capital, as though the circulation of exchange values involved no additional complications. In such instances, he fails to extricate himself from the physiocratic weakness for identifying the production of exchange value with physical productiveness.

It might serve some useful purpose to make a few additional comments on Adam Smith's distinction between productive and unproductive labour. Some critics seem to believe that the idea involves some sort of physiocratic error. Actually, this is a completely valid train of reason, developed from ideas suggested by the physiocrats' research on the nature of productiveness. The matter is simple enough. Smith perceived that society as a whole could either "live beyond its income", or the reverse, increase its income; the former situation he identified with the depletion of capital and the latter with the net accumulation of capital. His definition is readily understood if only one keeps in mind that, like the physiocrats, he included all productive agents, except land, under the generic heading of capital (either as fixed or as circulating capital),¹¹ for capital is needed to mobilize all the means of production - that is, employable labour, machines, and goods to work up and live on. This mobilization of productive agents necessarily involves accumulation, because (as Böhm-Bawerk would have it) the employment of capital is a roundabout process over a period of time, which involves, as a beginning, the accumulation of a capital fund, which is then invested in machines and the advance of a flow of wage-goods and wage-services. The quantity of capital, according to his view of the productive process, is the main

11. This does not mean that labour and capital are one and the same thing, but only that the quantity of productive labour effectively employed is limited by the value of circulating capital allotted to its maintenance. This very mundane truth is all the much-disputed Labour Fund Doctrine ever pretended to propose.

variable (in a sense, the only variable) that determines the productiveness of the economic machine. And so, for these reasons, Adam Smith frowned on the dissipation of society's accumulated principal destined to be embodied in these capital goods; it was almost as though he were looking at the process of capitalistic production from the ethic of an individual capitalist. In this light, he framed his definition of productive labour: productive labourers reproduce the value of the capital that employs them with a profit, whereas unproductive labourers merely sell their services or else produce something that does not gain a profit. "Productive labour" was given meritorious distinction simply because it reproduced the basic material of which the economic machine was constituted. Thus, he came to the conclusion that expenditure on manufactured or agricultural goods can effect a real accumulation of wealth, since the means for future production are conserved and, over and above this, disposable surpluses appear. On the other hand, expenditure for the services of menial servants and soldiers will, if carried too far, deplete the means of production and thereby reduce the actual rate of economic growth below the potential rate. "According, therefore," Smith tells us, "as a smaller or greater proportion of it (annual produce) is in any one year employed in maintaining productive hands, the more in the one case and the less in the other will remain for the productive, and the next years produce will be greater or smaller accordingly; the whole annual produce, if we except the

spontaneous production of the earth, being the effect of productive labour."¹² Smith, like the physiocrats (and to some degree the mercantilists), put economic growth above every other consideration. More capital intensive production, after Quesnay's example, was the means for achieving this end.

Cognate with this line of reason, Adam Smith entertained what he thought was an inseparable idea: that the maintenance of unproductive labourers "is altogether at the expense of their masters" - that is to say, at the expense of those who perform productive labour. This idea is of doubtful validity, for unproductive labourers create income by exchanging services for services and services for goods, just as income is created within the manufacturing and agricultural sectors by the exchange of commodities for commodities. Indeed, one might properly say that the farmers and manufacturers receive a part of their income from their sales to the soldiers and servants in exactly the same way as Smith says the latter pays the former. Smith generally assumed that productive labour (i.e. capital-reproducing labour) must necessarily involve the production of material commodities. This is not quite true, for all the service industries can be organized on a

12. Adam Smith, *op. cit.*, Vol. I, p. 341.

This distinction between productive and unproductive labour is a basic idea behind Marx's theory of surplus value. He gave Smith credit for having made this important distinction in his Theories of Surplus Value; though, in Marx's judgment, the issue was confused by several irrelevancies. Actually, the idea is quite clearly stated in the first paragraph of Book II, Chapter III, of the Wealth of Nations.

capitalistic basis. In any case, it is never meaningful to look for the source of wealth in any single sector, considering that the circulation of income is a continuous flow, without beginning or end. Still, there is something to Adam Smith's suggestion that an under-developed society that devotes its wealth to the maintenance of an inordinate number of retainers must necessarily remain poor; that is to say, there is a real significance in a distinction between material production and personal services. That something is just this: a personal service is a kind of economic production that cannot increase its labour productivity - a Francois Quesnay may make just as great contributions to economic knowledge as J.M. Keynes, and a Madame de Pompadour was at least as much of a grace to society as a modern movie star. But, in contrast, a productive labourer employed in the production of material commodities may increase both his physical and value productivity when aided by a greater accumulation of capital or a more productive range of capital.

2. The Demand Side of Malthus' Theory of Rent.

We have more than once found reason to complain that the physiocrats confounded, in certain contexts, physical productivity with value productivity. This confusion is especially distracting on the subject of value, but, contrary to what one would expect, their inquiry

into rent unearthed some of the most penetrating observations, up to their time, on the demand side of the economic equations. Regrettably, the most important of these insights fell under the shade of Ricardo's celebrated differential productivity theory of rent. Only Thomas Malthus, of the major economist of the next generation, understood the broader meaning of physiocratic demand theory. And, what was admirable, this unflinching advocate of unseasonable ideas was not at all embarrassed at laying credit before this unexpected authority. He says of the physiocrats' contributions to the theory of rent :

The fertility of land gives the power of yielding a rent, by yielding a surplus quantity of the necessaries beyond the wants of the cultivators; and the peculiar quality belonging to the necessaries of life, when properly distributed, tends strongly and consistently to give a value to the surplus by raising up a population to demand it.

These qualities of the soil and of its products have been, as might be expected, strongly insisted on by the Economists in the different parts of their works; and they are evidently admitted as truths by Adam Smith, in those passages of the Wealth of Nations, in which he approaches the nearest to the doctrines of the Economists. But modern writers have in general been disposed to overlook them13.

In this passage Malthus give his endorsement to two of the physiocrats' reasons for the emergence of rent. First, rent is dependent, he argues, on land's productive power to produce a surplus beyond the wants of the cultivator.

13. Thomas Malthus, Political Economy (London, 1820), p. 144.

Malthus was one of that number of writers (along with Petty, Cantillon, Mirabeau, Quesnay and Steuart) who looked upon the growth of the agricultural surplus as one of the most important facts of economic development. They all expounded ad nauseum that this is a necessary condition for the emergence of a rental surplus. But, though an agricultural physical surplus is a necessary condition, it is not, as Malthus realized, a sufficient condition. It also depends upon the quantity and intensity of demand for agricultural commodities. In the passage above, Malthus expresses enthusiasm for the physiocrats' insight into the effect that the number of heads has on the value of agricultural commodities.¹⁴ This consideration was tied to his overly-rigorous application of the Cantillon-Mirabeau theory of population. He predicted that the growth of wealth and population would rise the level of consumer demand to such an intensity that rents would increase in absolute value.¹⁵ The course of economic history has given important exceptions to this prediction, but, nonetheless, the reasons he gave for this opinion constitute a general theory of rent that can explain what has actually come to pass by giving a different weight than Malthus to several of his variables.

14. As we have already pointed out (See Chapter IX, Section 2.), the physiocrats were more cautious than Malthus on the subject of population. Generally, they merely presented the innocent idea that population will tend to increase towards that limit set by the supply of foodstuffs, but admitting at the same time the rigidity of the accustomed standard of living that might make this statement meaningless. Malthus argued, less cautiously, that this tendency would be consummated in a relatively short period of time.

15. Malthus, op. cit., pp. 215, 216.

Physiocratic influences on Malthus' theory of rent is evident in similar phraseology or identical use of words, and in certain distinctive, closely-reasoned conclusions which should have convinced everyone (though they did not) of the inadequacy of Ricardian theory. Following a train of reason similar to that of Quesnay in his demand schedules,¹⁶ Malthus propounded a theory of rent that admitted three capital causes as being relevant to its emergence:¹⁷ those two causes referred to in the foregoing quotation and one other. It might do to spell them out. First and foremost, he stressed the physical productivity of land (the property that accounts for the existence of an agricultural surplus); though, unfortunately, to the mystification of everyone, he used a particularly unfelicitous, physiocratic turn of words to convey the idea, speaking of the rental surplus as "a bountiful gift of providence".¹⁸ Secondly, the existence of rent must, he

16. *There is no evidence that Malthus was aware of Quesnay's demand schedules; he did not employ this very useful tool himself. But, once the demand conditions pertaining to population were brought to mind, it was very easy to see how he could be led to reconstruct a similar train of reason.*

17. *He says, enumerating the causes of rent:*

"The causes of the excess of the price of produce above the costs of production, may be stated to be three.

"First, and mainly, that quantity of the earth, by which it can be made to yield a greater proportion of the necessaries of life than is required for the maintenance of the persons employed on the land.

"Secondly, that quality peculiar to the necessaries of life of being able, when properly distributed, to create their own demand, or to raise up a number of demanders in proportion to the quantity of necessaries produced.

"And, thirdly, the comparative scarcity of fertile land, either natural or artificial". Malthus, op. cit., pp. 139, 140.

18. *Malthus, op. cit., p. 226.*

reasoned, be occasioned by a scarcity of land. And, thirdly, he brought into play demand conditions, which Ricardo, in contrast, did hardly at all. Of course, Malthus was well aware that land would be paid differential rates according to differential productivity on the external margin of inferior land. (Ricardo was so overly generous as to credit him with being the originator of the differential theory of rent). But, by the time he was writing his Principles, Malthus was mainly interested in convincing his adversaries (especially Ricardo) as to the importance of the foregoing three basic causes. Especially, he stressed demand conditions. He pointed out in no uncertain terms that the niggardliness of nature, as manifest in differential fertility and advantageousness of situation, could not be the only cause of rent, because rent would occur under certain demand conditions, even if all land in the country were exactly equal in quality :

Whatever may be the qualities of any commodity, it is well known that there can be no exchangeable value, if it exists in a great excess above the wants of those who are to use it, but such are the quantities of the necessaries of life that, in a limited territory, and under ordinary circumstances, they cannot permanently be in excess; and if all the land of such a country were precisely equal in quality, and all very rich, there cannot be the slightest doubt, that after the whole of the land has been taken into cultivation, both the profits of stock, and the real wages of labour, would go on diminishing till profits were reduced to what were necessary to keep up the actual capital, and the wages to what is necessary to keep up the actual population, while rents would be high, just in proportion to the fertility of the soil. 19.

Here, he propounds the idea that, since rent depends upon exchange value for commodities in excess of the costs of production, these commodities must be in such limited supply, in proportion to the demand for them, that they afford this surplus of exchange value. Herein lies the most relevant condition for the emergence of rent. It is a cause that operates independently of any differential productivity on the external margin. Malthus shows the facts of the matter by pointing out the familiar case of vineyards producing unique wines:

The produce of certain vineyards in France, which from the peculiarity of their soil and situation, exclusively yield wine of a certain flavour, is sold, of course, at a price very far exceeding the costs of production. And this is owing to the greatness of the competition for such wine, compared with the scantiness of its supply, which confines the use of it to a small number of persons that are able, and, rather than go without it, willing to give an exclusively high price. But, if the fertility of the lands were increased so as very considerably to increase the produce, this produce might so fall in value as to diminish most essentially the excess of the price above the costs of production. While on the other hand, if the vineyards were to become less productive, this excess might increase to almost any extent. 20

19. *Ibid.*, p. 186, 187. This case of vineyards which command exceptional rents has been noted by several writers including Adam Smith, (See Adam Smith, *Wealth of Nations*, Cannan Ed., pp. 62, 63.). However, even Smith's statement of this situation is largely barren. He rightly pointed out that these exceptional rents are owing to limited production, but neglected to show what would happen as production increases or decreases. Moreover, this isolated statement is not brought into accord with his more usual ideas on rent and value in general and so are of limited theoretical usefulness.

20. *Ibid.*, p. 146.

Thus, according to Malthus, increasing productivity will, given a fixed level of effective demand, lower the price of wine and thereby the rent of vineyards, while decreasing productivity will increase prices and raise rents. Of course, this statement of the matter is not quite true - for, as Quesnay showed with his demand schedules, rents may actually raise in the face of increasing production when physical productivity per unit of cost increases faster than the fall in prices. Nonetheless, Malthus was on the right track - thanks, one might suppose, to the tutorage of Quesnay. What is more, Malthus even admitted the theoretical possibility that a sudden increase in the production of necessaries, as well as luxuries, might lower their prices and the rent of land on which they are grown, though he did not carry this thought to its logical conclusion and show, once and for all, that this fall in rent may have nothing to do with the withdrawal of marginal land from production.²¹

This is not to say that the differential productivity of land has nothing to do with the level of rents. Better land does accrue a differential rent on the merit of greater fertility or more advantageous situation. But it is quite obvious, from the considerations that Quesnay and Malthus brought into view, that knowledge of this differential physical and value productivity does not provide a complete explanation for the existence of rent. This brings us to mention the basic weakness of the Ricardian theory.

21. *Ibid.*, p. 306, 307.

Ricardo assumed that agricultural production is pushed to a margin of cultivation where labour and capital costs are barely recovered and no surplus remains for rent. Given that the same capital and labour costs prevail throughout agriculture, the rent for each acre of land is identical with any value surplus over and above the product of this marginal land; only land of superior quality and situation will accrue a rent. "It is only because land is of different qualities with respect to its productive powers", Ricardo tells us, "and because in the progress of population, land of an inferior quality or less advantageously situated, is called into cultivation, that rent is ever paid for the use of it."²² Now, the falseness of this last statement is shown by the case of the vineyards which produce unique wines; the soil of all such vineyards has to be of exactly the same quality. Moreover, the rental payments for each acre of land is not identical with the value surplus over and above the produce of some imaginary marginally-producing land; it is typically more, for reasons we will now stop to explain. The Ricardian picture distorted the actual allocation of productive resources in several different ways. In the first place, Ricardo was mistaken to assume, even for the sake of abstract argument, that the whole product of agriculture is a single commodity (i.e. corn). There are many different agricultural products and they have distinctive demand curves - as Malthus' discussion

22. Ricardo, Principles of Political Economy, First Edition, p. 54.

on the case of unique wines would suggest. And, secondly, it is not at all common, where demand conditions generally afford a rent to land suitable for the production of a specific commodity or a specific range of commodities, for their production to be extended to an external margin of "rentless land", for the very simple reason that the soils suitable for a specific crop are of a more or less uniform type. It is conceded that certain lands of this type may be of a somewhat better quality or better situated in respect of markets, and on the merit of this will be paid a superior rent.²³ But this differential does not explain the existence of rent, nor is it identical to the rate of rent, for even the most inferior lands of this type will generally afford a rent along with the very best. When the demand for lamb and wool is sufficiently intense, all the grazing lands in the Highlands of Scotland will receive a rent, and, when the demand for swine and maize is sufficiently intense, all the suitable land in the "corn belt" of America will gain a greater or lesser rent. The fact that genuinely marginal land may actually be brought into cultivation is not usually an important consideration, for it is generally worked by people outside the main stream of commercial enterprise; like the mountain men of the Great Smokies, they characteristically employ an inferior technology of lesser productivity and have different supply prices for their capital and labour; therefore, their production can have little effect on the equilibrium level of rents in the main producing areas.

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23. *This very pedestrian fact could hardly escape the notice of even the most superficial survey of variations in the rate of rents and so was commented on by a number of economists and economic writer from Petty*

The generally uncritical acceptance of the Ricardian theory of rent --- even by many familiar with agriculture who should have known better --- causes one to reflect on man's awkwardness in forging new tools of thought and working them to effect. Innovation in abstract thought is difficult; even the most insignificant contribution is as unique and difficult to conceive as the invention of the wheel and the zero. One can almost forgive Mirabeau's overweening enthusiasm for the tableau économique. Considering this very abstract nature of economic theory, it is easy to understand the weakness for confounding different patterns of thought; our most common reproach to our predecessors is "That they failed to make the proper distinction * * *". As to the subject at hand, Malthus seemed to have been somewhat confused as to the exact point where the influence of differential productivity on the level of rent ceased to operate and only land's scarcity and value productivity are of relevance. In such cases one must evaluate a work, as we have done here, by isolating a line of reason and following it as far as the author is able to take us; in any event we can do nothing better. Confusion of this order is always evident when a thinker's mind is in a state of flux, moving towards some distant design. We can never hope to reconstruct the theory of predecessor in exactly the same way as it was presented in his own mind for, even in the minds of contemporaries

23 (contd) and Boisguillebert to Adam Smith. But this does not make them precursors of the West-Ricardian theory of rent. No writer before Ricardo and West made so great an error as to identify the absolute value of rental payments with that differential product over and above the value product of marginal land.

experiencing the same Zeitgeist, a truth never presents itself in exactly the same form.

3. The "General Glut" Controversy.

The physiocratic influence on those several theories of "general glut", which were advanced in the historical context of the Napoleonic War period of boom and bust, has by now been proven to the satisfaction of everyone.²⁴ What is more, this filiation of ideas had such strength as to superimpose itself on the systems of a number of economists who have little in common in the way of basis preconceptions, especially on the subject of value. Of the three we shall mention in this chapter: William Spence was an out and out physiocrat; Thomas Malthus proposed a theory of value that stressed the demand side of the economic equations as an explanation of exchange value; while Sismondi proffered a Ricardian-like labour theory of value. These differences, needless to say, gave individual form to the general meaning of their argument. But for our purposes it should not be necessary to describe at length the different theoretical models with which this theory of economic crises was presented. It will be more pertinent to the overall drift of our thesis simply to clarify the basis premises, filiated by the physiocrats, that all these authors have in common. In addition, we will take this opportunity to show that Say's Law, that much maligned proposition that many critics regard as being

24. See Ronald L. Meek, "Physiocracy and the Early Theories of Under-Consumption", *Economica*, Vol. XVII, No.71, Aug. 1951.

unequivocally opposed to all theories of crisis, did in reality outline conditions of disequilibrium similar to those described by Quesnay and Mirabeau in their tableau-analysis. The basic difference between Malthus and Say was that the latter maintained that over-accumulation of capital could only occur in individual sectors, whereas the former argued that general over-accumulation in all sectors is a likely possibility, given the normal social and economic proclivities engendered by capitalistic society. It is hoped that our commentary on Say's Law will give the reader a better understanding of the tableau Économique by formulating the essentials of Quesnay's equilibrium theory in a slightly different way.

James Mill, in his reply to Spence's physiocrat-like theorizations on economic crisis, makes a general statement about the physiocrats' theory that brings out the essential nature of their contribution to the general glut controversy:

The Economists and their disciples express great apprehensions lest capital should increase too fast, lest the production of commodities should be too rapid. There is only, say they, a market for a given quantity of commodities, and if you increase the supply beyond that quantity you will be unable to dispose of the surplus. 25

Actually, this summation on the matter is a little misleading, since the physiocrats never, as is implied here, expressed concern about a general over-accumulation of capital, but had the more particular worry that the government was carrying out policies that were forcing over-

25. James Mill, Commerce Defended (2nd Edit., 1808), p.30.

accumulation by the sterile class (considered as a single sector). Still, it is easy to imagine that the general over-accumulation theories of Spence and Malthus might have been inspired by this sectorial over-accumulation theory, since the physiocrats were the only previous economists to have a similar body of theory. In any event, what Mill says is true in a general way: at the very heart of most theories of crisis of his day is the proposition that capital goods can be accumulated too rapidly in relation to the demand for consumers' goods. One should not, as did Keynes himself, give this kind of theory a Keynesian interpretation; it introduces a source of disequilibrium that may come into play even though all Keynesian conditions for full employment are satisfied. All of these various over-accumulation theories turn on the idea that the prompt investment of savings may become a genetic cause of crisis by forcing the accumulation of the capital means of production beyond the quantity that can be employed at a profit. This is not merely an affirmation that there can be such a thing as excess capacity. One can hardly deny that something amounting to general over-accumulation may be in evidence in the depths of a great depression. But Malthus' argument is not concerned with cyclic phenomena but rather with stagnation caused, or so he tells us, by a persistent compulsion to save and invest which is disproportionate to the equilibrium demand for consumers' goods and services that would result in the maximum exchange of both producers' and consumers' goods and services.

Malthus held the opinion that capitalists are induced by their social ethic to force the accumulation of capital to such an extent that it accumulates in excess of the quantity warranted by aggregate demand. He argued that the wage earners alone cannot furnish an adequate aggregate demand for the consumer goods they produce. The labourers' demand is, he admits, supplemented by that of the capitalists. Moreover, he further admits that in each given period the capitalists' purchase of capital goods adds to the aggregate demand for commodities in general. But, still, the capitalists' pattern of expenditure is likely of itself, he affirms, to cause serious disequilibrium as between goods representing different stages of the productive process, i.e. between capital and consumer goods, because the capitalists as a class provide extensive means of production and consume relatively little. A contradiction of this nature could be resolved, were the capitalists to invest a lesser proportion of their profits and consume more. But, in Malthus' opinion, the necessary proportion between consumption and warranted investment can only be balanced, given the normal patterns of commodity demand, by the consumption of that unproductive class which does not ordinarily reproduce capital.²⁶ This doctrine was extremely confusing for the more orthodox followers of Adam Smith. Smith propounded that the greater the number of unproductive consumers, the less can be the net quantity of capital accumulation and the actual

26. *Malthus uses Smith's definition for productive labour (as opposed to unproductive labour).*

rate of economic growth. Then, along comes Malthus with his contention that, at any one period of time, the accumulation of capital is warranted only when consumer demand is sufficient to take the current production of consumer goods off the market. Indeed, it is impossible that the capitalists should exceed this necessary balance over any period of time, because such an excessive accumulation of capital will sink the value of commodities below the costs of production, with the result that they are no longer able to reproduce their capital costs. The following gives a fairly adequate summation of this theory:

*It is undoubtedly possible by parsimony to devote at once a much larger share than usual of the production of any country to the maintenance of productive labour; and it is quite true that the labourers so employed are consumers as well as unproductive labourers; and as far as the labourers are concerned, there would be no diminution of consumption or demand. But it is already shewn that the consumption and demand occasioned by the persons employed in productive labour can never alone furnish a motive to the augmentation and the employment of capital; and with regard to the capitalists themselves, together with the landlords and other rich persons, they have, by the supposition, agreed to be parsimonious, and by depriving themselves of their usual conveniences and luxuries to save from their revenue and add to their capital. Under these circumstances, I would ask, how it is possible to suppose that the increased quantity of commodities, obtained by the increased number of productive labourers, should find purchasers, without such a fall in price as would possibly sink their value below the costs of production, or, at least, very greatly diminish both the power and the will to save. * * * * ** 27

With regard to the capitalists who are so engaged, they have certainly the power of consuming their profits, or the revenue which they make by the employment of their capitals; and if they were to consume it, with the exception of what could be beneficially added to their capitals, so as to provide the best way both for an

*increased production and increased consumption, there might be little occasion for unproductive consumers. But such consumption is not consistent with the actual habits of the generality of capitalists. The great object of their lives is to save a fortune. * * * * 28*

In some ways this statement does not seem to say very much. One is hardly surprised to learn that unproductive labourers furnish part of the aggregate demand for the commodities supplied by productive labourers and, to the extent of their consumption, justify a greater warranted accumulation of capital. But, what is noteworthy is that Malthus' formulation of the matter highlights a disequilibrating bias that might distort the equilibrating rates of growth for the two kinds of industry. Malthus suggests, among other things, that capitalists have such an intense propensity for investment in productive industries that the growth of these capital-reproducing industries tends to outpace the unproductive sectors.²⁹ In any event, there is an element of truth to Malthus' charge that the capitalists (i.e. investors in general on the modern scene) may be possessed by an irrational compulsion for accumulation; especially when, as occasionally happens on the modern scene, none-too-well-informed small investors are taken in by entrepreneurs of the empire-building type. One might

28. *Ibid.* p.465.

29. *Recent commentators on the American scene (most of them economic journalists rather than theorists) have occasionally expressed opinions that argue the possibility of such a tendency: on one hand they observe that the development of non-capital-reproducing industries (education, city-planning, social services, etc.) is chronically retarded in regard to social welfare; while, on the other hand, they propose that the government should finance such services expressly for the purpose of providing an increased demand for the production of primary and secondary industries.*

interpret in this light the over-investment that occurred in American railroads before the turn of the century. "[Surely] it must be a most important error", Malthus warns us, "to couple the passion for expenditure and the passion for accumulation together".³⁰ This is the same sort of dualism of economic decision that gives the Keynesians reason to fear that planned saving might exceed planned investment.

Malthus was cautious enough to recognize the existence of equilibrating reactions that would tend to limit the actual extent of over-accumulation. He argues in the quotation above that the accumulation of capital tends to sink the value of commodities below the costs of production. This, he realizes, will lower the incentive and ability to invest, while the fall in prices will encourage a "natural tendency to spend more".³¹ This course of events may eventually bring consumption and warranted investment into line. But the very circumstances that promote the movement towards this new equilibrium constitute a genetic cause of economic decline.

Malthus was not always as clear as he might have been concerning the causal sequence by which the presence of surplus productive capacity brings about a general contraction of incomes, but, even so, the profession should have seen the validity of the case he had in mind

30. *Malthus, op. cit.*, pp. 365-366.

31. *Ibid.*, p. 516.

(which, after all, is not to admit that it was a common occurrence). His contention was simply "that no nation can possibly grow rich by the accumulation of capital arising from a permanent diminution of consumption; because, such accumulation being greatly beyond what is wanted, in order to supply the effective demand for produce, a part of it would very soon lose both its use and value and cease to possess the character of wealth."³² To prove this theory he has the reader imagine a two-sector economic model composed of farmers and manufacturers.³³ He assumes that this economic model begins in a state of equilibrium in which "the farmers were disposed to consume the luxuries of the manufacturers, and the manufacturers those produced by the farmers!" All will go well, for both the farmers and manufacturers precisely anticipate the demands of the other and both have the inclination and sufficient income to buy all the commodities produced by the other. Malthus then goes on to argue that, given this equilibrium, neither the farmer nor manufacturer should try to gratify his propensity for investment by foregoing his consumption of luxury goods. Each can gain a return on his investment only to the extent that he is willing to buy a greater value of luxury goods from the other as his own production and income increases. Were either to try

32. *Ibid.*, p.370.

33. *Ibid.*, pp.361-366.

This economic model is a conceptualization similar to the tableau-analysis of Quesnay and Mirabeau that showed the case of over-accumulation in the sterile sector.

to accumulate at a faster rate, his opposite number would not find a sufficient market for his production of luxury goods to justify the existing capital establishment devoted to that end.

This reasoning seemed somewhat less than prosaic to most of Malthus' contemporaries and successors. Does he not realize, they ask, that the demand for capital goods represents a demand for commodities in just the same way as does the maintenance of an unproductive labourer? Yes, that is true; Malthus concedes this point. But capital goods represent a special class of commodities. They are means of production used in the roundabout process of producing a future income. The current demand for capital goods must be complemented by a future demand for consumer goods; that is, the current production of the generality of consumer goods must be taken off the market at cost-covering prices. Were income recipients to decide at this last crucial juncture that they did not want to consume the whole of the current production of consumer goods but, rather, buy capital goods, the current production of consumer goods would not be sold at cost-covering prices. This will depreciate the capital value of all previous investment or, as Malthus states it above: "a part of it [the capital] would very soon lose both its use and value and cease to possess the character of wealth." This is the chain of causation by which over-accumulation (i.e. unproductive investment) brings about a sustained economic decline. This depreciation

or destruction of capital per se causes a fall in aggregate demand: the capitalists will not be able to meet current commitments and later will find it impossible to continue reproduction on the same scale. Malthus says on this matter:

*... if the capital of the country were diminished by the failure of some branches of trade, which before had been very prosperous, and absorbed a great quantity of stock; or even if capital were suddenly destroyed, and from peculiar circumstances a period were to succeed of diminished consumption and slack demand * * * * The remaining capitalists would be in no respect benefited by events which had diminished demand in a still greater proportion than they had diminished capital. Commodities would be every where cheap. Capital would be seeking employment, but would not easily find it; and profits of stock would be low. There would be no pressing and immediate demand for capital, because there would be no pressing and immediate demand for commodities; and, under the circumstances, the saving from revenue to add to capital, instead of affording the remedy required, would only aggravate the distress of the capitalists, and fill the stream of capital which was flowing out of the country * * * * (He goes on to speak of stagnation that prevailed after 1815) * * * this stagnation itself was much more disastrous in its effect upon the national capital, than any previous destruction of stock. * * * The failure of the home demand filled the warehouses of the manufacturers with unsold goods, which urged them to export more largely at all risks. But this more excessive exportation glutted the foreign markets, and prevented the merchants from receiving adequate returns * * * and the profits and consequent expenditure of merchants were proportionally lowered. 34*

Now, one can hardly deny that the production of income will be lessened by the circumstances of unproductive investment. Malthus' theory, therefore, at least has the merit of a theoretical exercise, for it shows certain

34. Malthus, op. cit., pp. 491-494.

boundaries of the economic process that should not be over-passed if it is to function smoothly. And to the extent a disproportionality between goods at different stages of the economic process occurs, no matter how short the period of time, it constitutes a break in the circulation of values and will result in a lesser reproduction of income.³⁵ Moreover, this may put into action an inverse multiplier that will contract income and consumption with the result that the existing capital establishment proves even less productive. This argues that over-accumulation may, depending upon the force of the inverse multiplier, cause a good deal of harm, even though investors do not persist in a policy of unproductive investment. But, now we must ask, whether or not it is at all likely, as Malthus suggests, that investors will persist in forcing capital accumulation in the face of falling or negative profits which excess capacity must necessarily bring about? Something of the sort occasionally happens in the retail trades, where small grocers might be continually living off their capital. Sismondi also suggest that the struggle for technological advantage

35. We might be able to explain what Malthus was driving at with the formula $M-C-G-M$. The transaction $M-C$ represents the purchase of capital goods (both fixed and circulating capital items) with money. This never involves any difficulties, because money is always immediately exchangeable into everything else. This purchase of capital goods, of course, augments the overall aggregate demand for commodities. $C-G$ represents the metamorphosis of capital into goods and $G-M$ the sale of these goods for revenue. It is at this last point that the circular flow of values (i.e. income) may be broken by unproductive investment. At this point, a prompt demand the specific commodities produced must be offered in order that reproduction should continue on the same or a larger scale. The reproduction of income is lessened to the extent

may motivate such a great accumulation of Real Capital that the generality of it eventually proves unproductive. Still, it might seem doubtful that these disequilibrating propensities can, at least in a competitive economy in which they could only be temporary, perpetuate the sort of protracted economic stagnation that Malthus had in mind. There is, however, as American labour leaders are always so quick to suggest, at least a theoretical possibility that the monopoly position of dominant corporations may provide, even in an economic downturn, profits in excess of the amount needed to maintain the warranted amount of capital accumulation. "Give labour higher wages", they say, "in order to re-establish the proper equilibrium." Certainly, such circumstances may lead to persistent over-accumulation (in the sense that less accumulation and more consumption will produce a greater total income) even though profits are far above the break-even point. This will however, in ordinary circumstances lead to over-accumulation as such only (though its effects may be harmful enough) to the extent capital reserves are held in the form of undistributed profits.

35(contd) capital values are not recovered by this transaction. We only mean to argue that it is possible to imagine a situation in which a greater value of transactions would have taken place had the investors spent more on consumer goods and a lesser amount for the production of consumer goods, for it is possible, in special situations, that the investors put a greater quantity of consumer goods on the market than is justified by the increment of income and consumer demand generated by the same investment. This sort of disequilibrium may be caused, among other things, by overly confident projection of past increases in demand on the part of businessmen; this may occasion a recession at the time they are finally forced to reduce stocks.

Moreover, it should be appreciated that Malthus came close to unearthing an important source of disequilibrium when he observed that the capitalistic ethos may engender, for some circumstances, an excessive propensity to save and invest. Even though (as he admitted) the incentive for capital accumulation may be limited by falling profits, there may still persist a compulsion to try to force saving in excess of planned investment. Unfortunately, Malthus did not go on to examine this latter possibility. It may have been that this "Keynesian" contradiction was to some extent obscured by the fact that the capitalist-entrepreneur of the economic model he had in mind chiefly invested from his own savings; just in the same way "over-saving" today may be obscured when it is owing to an attempt on the part of corporations to retain liquid reserves in the form of undistributed profits. But, even so, the Boisguillebert-Quesnay "hoarding" theory should have suggested to Malthus this other line of inquiry. In any event, Malthus had good theoretical reasons for arguing that there could be such a thing as disproportionality in the production of goods representing different stages of the productive process. Or, at least, his statement of this situation showed that his opponents (the most noteworthy being Ricardo and Say) were mistaken in their contention that no such disproportionality can exist: that any amount of capital could prove productive provided it were allotted in the proper proportionality as between industrial sectors. The modern economist is

likely to take exception to the latter opinion, if only because it does not take into consideration the "Keynesian" necessary-conditions for full employment.

Malthus was not the first to propound this kind of general over-accumulation theory, though he did provoke the most controversy. He was anticipated by Smith's critic Lauderdale,³⁶ and the neo-physiocrat William Spence, to whom we will give a brief mention presently. Their theory would have been more complete had they better understood the effect of the inverse multiplier. At their best, all three but dimly perceived that an initial destruction of income would cause a sustained decline of the same order (both Boisguillebert and the physiocrats were much more explicit). But, whether they envisaged the multiplier or not, one should not confuse the over-accumulation theories with over-savings theories of the Keynesian type. Malthus himself invariably assumed that all, or at least most, savings were immediately invested; throughout, he had little patience

36. *Malthus' precursor Lauderdale advanced this same theory within a sophisticated exposition of consumer demand. He says: "[If a] abstraction of demand from the articles of butchers-meat, wine and mustard, had been occasioned by the desire of the farmer to accumulate capital; that is, to hoard up a quantity of ploughs and other instruments of agriculture, greater than could be used; then, as the quantity of these articles would be increased in proportion to the demand for them, their value must be diminished, as well as that of the butchers-meat, wine, and mustard, from whence the demand is abstracted. Thus a diminution of value must be produced, not only in those articles for which parsimony occasions an abstraction of demand, but even in the article for which it creates a demand; and public wealth must severely feel the effects of the discouragement by this means given to the production of both. * * * The public must, therefore, suffer by this love of accumulation, if pushed beyond its due bounds; — 1. By the*

with authors who identified saving with hoarding.³⁷ Only Lauderdale came any where near the Keynesian theory of crisis. However, Malthus did allow the possibility of another sort of crisis: he admitted Say's contention that a sudden change in the patterns of demand (a transition from war to peace) may cause frictional disequilibrium until new channels of trade have become established.³⁸ We will consider this, theory presently, but, first, we will make a few general comments on the physiocrats' contribution to this controversy about over-accumulation.

* * * * *

Whatever injustice may have been done to the reputation of the physiocrats, it is certainly not all the fault of their immediate successors. Even Adam Smith, the most unsympathetic of persons towards his predecessors' claims to honour, gives them a grudging tribute. "This system, however," he says of physiocracy, "with all its imperfections, is, perhaps, the nearest approximation to the truth that has yet been published on the subject of political economy, and it is upon that account well worth the consideration of every man who wishes to examine with attention the principles

creation of a quantity of capital more than is requisite; - and, 2. By abstracting a portion of the encouragement to future production By the creation of a quantity of capital more than is requisite for the moment, a thing, however much esteemed, is produced in such a quantity, that the whole cannot be employed, - a part ceases to be an object of desire: and as things, when no longer scarce, can form no part of individual riches, so when no longer objects of desire, they form neither a portion of individual riches nor wealth".

Lauderdale, Public Wealth, (Edinburgh, 1804), pp. 219-221.

37. "No political economist of the present day", he wrote, "can by saving mean mere hoarding". Malthus *op. cit.*, p. 32

38. *Ibid.*, pp. 498-499.

of that very important science."³⁹ And it should be appreciated that many economists diligently pursued that study recommended by Smith. That physiocracy was generally given respectful consideration is indicated by frequent⁴⁰ and unembarrassed references, even to some of the most turbid physiocratic literature. In this connection we have already mentioned Malthus' praise for certain insights into rent (insights, we might add, that could only have been found by a persistent student). In any event, whatever his prejudices, the serious student of economics could hardly avoid making an acquaintance with physiocratic literature, if for no other reason than that many discussions on value began with critical comment on questions posed by the physiocrats. Moreover, the physiocratic remnants in Smith kept the whole issue alive.

It is quite easy to trace the physiocratic filiation of the early nineteenth century theories of under-consumption or over-accumulation (they might with equal justice be given either tag). Malthus himself on no occasion allows any indication that his theories might be of physiocratic origin. But he had at least two predecessors who gave the physiocrats their due. The most impressive was Lauderdale, who was one of the first economists to point out the egregious errors evident in the physiocratic view of circulation. The other

39. Adam Smith, *Wealth of Nations* (Gannan Ed.), Vol. II, p. 176.

40. That is to say what would be considered "frequent references" in the days before the advent of the academic writer with his multitudinous footnotes.

was the neo-physiocrat William Spence. Lauderdale is especially interesting on the subject of economic crises. He not only perceived the general over-accumulation case,⁴¹ but, as well, following Quesnay's lead,⁴² came very close to distinguishing the Keynesian over-saving situation. However, on the latter issue, he was not worried about private saving but rather government debt redemption by means of the controversial Sinking Fund.

The neo-physiocrat William Spence was a doctrinal fossil of a rather special sort. He made an unqualified defense of the physiocratic view of circulation, pointing out to all and sundry that no lesser authority than the Wealth of Nations and the earlier editions of Malthus' Essay on Population supported this understanding of the matter.⁴³ Malthus eventually saw the error of the Cantillon-Quesnay theory of circulation (probably from his controversy with Ricardo) and eliminated the physiocratic passages from the latter editions of the Essay. In any event, he was completely free from any misapprehensions on this subject by the time he got around to writing on the general glut. However, Spence formulated his theories too early to benefit from the authoritative criticism of such men as Ricardo and Say and so remained to the end entangled in the preconceptions of the tableau. Generally, his theory of

41. See footnote 36.

42. He quotes with approval passages from both Quesnay's Maximes and Philosophie Rurale in which Quesnay contends that the whole annual revenue should be returned to circulation. Lauderdale, Public Wealth p.248.

43. William Spence, Agriculture the Source of Wealth of Britain (London, 1808), Reprinted in Spence's Tracts on Political Economy (London, 1822), pp. 102-105, 128-133, 152.

over-accumulation expounded the essentials of that theory later adopted by Malthus, but was different in one important respect. Malthus relied on the consumption of the unproductive labourer to bring consumption in line with production, giving the term "unproductive" that Smithian meaning with which we are thoroughly familiar by now. In contrast, Spence (and possibly a few of his cohorts)⁴⁴ advanced a peculiar doctrine based on the physiocrats' disposable income idea. He argued, without giving any firm reasons, that the whole sum of rental income must be spent for consumption and not accumulated; otherwise over-accumulation will occur and circulation will not go in its proper train.⁴⁵ Even Quesnay thought it would be normally desirable for the landlord to invest a part of his income considering the inferior state of agriculture's capital establishment. Just why Spence fixed on this unvarying relationship is difficult to say; possible he thought the simplified order of circulation outlined on the tableau économique was an immutable statement of fact. Still, notwithstanding this odd opinion, a great deal of what he had to say is quite valid when superimposed on a more sophisticated economic model. Malthus did just this. His theory of over-accumulation seems to owe a good deal to Spence.

44. After the turn of the nineteenth century a host of critics arose to attack Smith's view on accumulation. Amongst those not mentioned in our text are Robert Owen, Thomas Chalmers, David Laurie, and Germain Garnier. And, undoubtedly, there were a good number more, for the public and press have always been given to explaining crisis by either monetary or under-consumption (over-accumulation?) theories. However, in all justice, it should be pointed out that Garnier, the French translator of the Wealth of Nations, was the only writer (or along with Spence, one of the few) completely taken in by the physiocratic theory of circulation.

45. William Spence, Britain Independent of Commerce (London, 1808) Reprinted in Tracts, pp. 29-33.

Sismondi was one of the more impressive contributors of the time to theories of economic crisis. He was highly original - if only on a vague, subjective plane; and so it is somewhat difficult to trace the influence that different predecessors might have had on his theory. He definitely inherited the general aspect of his system from Adam Smith (including his labour theory of value); though there is some internal evidence that his several distinct (though unsystemized) theories of crises may have been inspired by the tableau-analysis of Quesnay and Mirabeau. One thread of his analysis turns on an over-accumulation theory of the kind later expounded by Malthus.⁴⁶ His version of this theory had a somewhat firmer basis than that of Malthus, for he gave another reason, in addition to the natural acquisitiveness of capitalists, for believing that a considerable quantity of unproductive investment is always in the offering. He pointed out that the struggle between capitalists for technological advantage might in certain circumstances result in surplus capacity and, in the end, a broad destruction of capital values.⁴⁷ But, overall, he introduces

46. Sismondi says of the destruction of capital caused by over-production: "La surabondance des productions amène toutefois une consommation plus forte par la baisse de leur prix; mais le resultat n'en est plus avantageux. Si les producteurs apportent sur le marché deux fois plus des marchandises de luxe que ne monte le revenu des riches, et qu'il soient résolus à les vendre, il seront forcés d'en donner la totalité pour la totalité de ce revenu, c'est-à-dire, à 50 pour 100 de perte. Leur perte de 50 pour 100 sur la vente de production annuelle se répartira entre leur capital et leur revenu. En diminuant leur revenu, elles réduiront leur consommation de l'année suivante; en diminuant leur capital, elle réduira de demande pour le travail des pauvres, et elle diminuera leur revenu des toutes des années subséquentes."

Nouveau Principes d'Economie Politique (Paris 1819), Vol. I., pp. 117-118.

such a multiplicity of causal factors that it is impossible to give him a distinctive tag. Among other things, he thought that the improper distribution of income between social classes is in itself a basic disequilibrating factor. He was of the opinion that consumption might be more properly synchronized with production were it not that the capitalists have a compulsion to repress wages with the aim of forcing accumulation. But the most original aspect of his theory is his attempt at dynamic, period analysis. He was the first economist to make a pointed investigation of the synchronization of transitional states upon which the smooth functioning of the economic process depends (though we might give Quesnay and Mirabeau credit for having, in their tableau-analysis, an eye for the same set of facts). One example of this period analysis is his notion that the income generated by an earlier period of production might be inadequate to purchase the increasing production it may meet in a later period.⁴⁸ We cannot take time to examine the logic of this theory, but it should be appreciated that Sismondi was often thinking on an entirely different pattern than his contemporaries. It was Sismondi's wont, within the framework of his primitive period analysis, to dwell at length on all those obstacles that stand in the

47. "Nous avons vu", he writes, "que la lutte établie entre les producteurs pour s'enlever réciproquement leur pratiques, tendait à leur faire produire davantage à plus bas prix, sans égard à la demande du monde commerçant; et nous avons démontré que, si cette demande ne croissait pas, la concurrence qui enrichissait quelques individus, causait une perte certaine à tous les autres."

Sismondi, op. cit., Vol I, p. 374.

48. Ibid., pp. 119-121.

way of the smooth progression towards the theorist's long run equilibrium - all those time lags, shortages, and failures to anticipate the choice of the consumer and the actions and reactions of the other fellow. None of this was unimportant; Sismondi managed to keep a following amongst economic theorists until the end of the century. But, unfortunately, the man displayed a congenial incapacity to develop his many brilliant intuitions, and at its worst his analysis degenerates into pedestrian complaints about the anarchy of capitalism.

* * * * *

All the participants in the general glut controversy had at least a few basic premises in common. They all admitted that over-accumulation is possible (if only in individual sectors), and they all had the intuition, whether they bothered to look into the matter or not, that this is somehow a genetic cause of economic crises. Ricardo and Say would only admit that over-accumulation is possible in individual sectors, while their opponents Spence, Malthus, and Sismondi, argued the case of general over-accumulation. These differences arose because these two schools of thought were approaching common facts by different methods. We have already shown the basic difference between the methodology of Malthus and that of Sismondi. The former considered the relationships between the accumulation of capital in general and the aggregate demand for all consumer goods taken as a whole. Sismondi did basically the same thing, but he added another dimension to the analysis - time. He brought into

play the sequence of transitional states as it affects the formation of income and accumulation of capital. Contemporaneous with this, while these two men were building their own systems, J.B. Say had completed another, which in a way complemented those of his two contemporaries. Following the lead of Cantillon and Quesnay he introduced a broadening spacial dimension into the argument - the general equilibrium of incomes between economic sectors. This vision, embodied in the famous Say's Law, was used to argue that general over-accumulation is unlikely, but, this being so, the cause of economic crisis, Say reasoned, must lie in a disproportionality between the capital establishments of the different sectors or industries. This controversy over the general glut eventually fell into a barren disputation about methodology. This turn of argument might have produced meaningful results had the disputants unearthed the real differences in technique. But, largely, they merely dissipated their energy on the dispare of accusing each other of being "too abstract" and neglected the perfection of their theories. They seemed to have been of the mistaken opinion that it is useless to advance more refined arguments before agreement had been reached on basic principles.

It is easy to understand why the tremendously complex, economic model implicit in Say's Law did not gain universal understanding - the more so when one examines the primitive tools Say had at his disposal and his clumsy handling of the same. Say originally advanced his famous proposition to explain the plight of English export industries around 1810.

He theorized that the difficulty of finding markets was caused by under-production of foreign commodities for which English goods could be exchanged :

Cela étant ainsi, d'ou vient, demandera-t-on, cette quantité de marchandises qui, à certaines époques, encombrant la circulation, sans pouvoir trouver d'acheteurs ? Pourquoi ces marchandises ne s'achètent-elles pas les unes les autres ?

Je répondrai que des marchandises qui ne se vendent pas, ou qui se vendent à perte, excèdent la somme des besoins qu'on a de ces marchandises, soit parce qu'on en a produit des quantités trop considérables, soit plutôt parce que d'autres productions ont souffert. Certains produits surabondent, parce que d'autres sont venus à manquer. 49.

If the English exporter is unable to sell his commodities in Brazil, he goes on to argue,⁵⁰ the only remedy can be found by operating on this cause. The Brazilians must become more industrious in order to accumulate and invest capital in such industries as will provide goods suitable to English tastes. Say discussed this proposition in terms of barter, but what he really meant to say was that the current production of English export commodities would not be in over-supply had foreign countries more productive economies by which they could gain an income sufficient to buy them. He would agree with the popular opinion to the effect that "there would be no lack of export markets, were China with its vast population wealthy enough to buy from us". At first glance this statement seems trivial. But it shows, amongst other things, that Malthus, Spence, Sismondi and company, did not give the final word with their talk about disproportionality between different stages of

49. J.B. Say, *Traite d'Economie Politique* (Paris 1841), Sixth Ed. p.142.

50. *Ibid.*, p. 143 n.

production taken as a whole, i.e. between consumer goods production and capital goods production, because, as well, there may be disproportionality in the production of consumer goods on the same stage of production, e.g. between coffee beans and bicycles. However, this is simply a new dimension to the problem; Say had no valid reason for supposing that the later sort of disequilibrium excluded the possibility of the former kind. Say always argued that in reality a general over-accumulation of capital is unlikely, but in a sense he was wrong, for he is certainly mistaken in assuming that a properly balanced market basket will always attract an equilibrium quantity of consumer demand. The production of bicycles and coffee beans (and every other commodity) may be in the most perfect proportionality to attract the greatest possible quantity of consumer demand, but, even so, the investor's demand for bicycle factories and coffee bean plantations as an employment for their capital may be in excess of that warranted by the consumer demand for the output of this particular plant. One might even imagine a situation in which disproportionate production within the universe of commodities co-exists with excessive, overall, productive capacity in the generality of those industries producing these commodities. One should not worry about this apparent paradox. It arises because we are evaluating the same capital establishment by two entirely different optimums: (1) that optimum proportionality between consumer goods output and producer goods output that affords cost-covering production in all sectors

and (2) that equilibrium allocation of capital between sectors that provides for and stimulates the greatest possible intra-sectorial exchange of consumer and capital goods. Say had his eye on this latter proposition.

Say usually propounded this proposition within the context of foreign trade, tying this general principle to his favourite "hobby horse", the advocacy of free trade. He lost no time in pointing out that the international division of labour could never find its equilibrium in the face of restrictions. Largely, he frittered away his energy pleading this cause, but he did perceive that the proposition has a general application to domestic trade as well. He consulted the homely but weighty truth that, given the international or national division of labour, the only means one normally has for acquiring the monetary income with which to purchase the goods and services he wishes is to supply, or help produce, goods and services of equal value. On this level of reality, commodities are ultimately paid for with commodities, and so it is production itself that supplies the monetary income from which is derived the demand for each individual commodity. It is this theorem of Say's line of reason that came to be known as Say's Law; it is often represented by the dictum: "Production creates its own demand". A general over-accumulation of capital, Say reasoned, is impossible, because the single motive of each producer is to gain the wherewithal with which to purchase other commodities. This suggests that the only possible reason for goods remaining unsold is

that their producer has not catered to the wants of his opposite number. Say always simplified his explanations to such an extent that one is given the impression he is abstracting a barter economy in which tradesmen accumulate their own limited means of production and retail their own goods. Malthus was quick to point out the real world is not so idyllic and could not be so rational: the passion for production is not, in the capitalist realm, coupled with the passion for consumption as Say imagined it to be. What was worse from Malthus' point of view: Say only considered the proportionality between goods on the same stage of production - that is, only consumer goods. Still more, the present day Keynesian would raise the further objections that he neglected the role played by money and did not consider the possibility that planned saving might be in excess of planned investment. However, these objections merely show that Say's necessary condition may not be sufficient condition to ensure that supply actually does create its own demand. An important concept still stands which (if we understand it properly) boils down to this.⁵¹ When one considers, within the context of the intra-sectorial circulation of income, the position of a single-product industry which is too small to exert perceptible influence on economic aggregates such as factor costs and national income, it becomes apparent

51. I have borrowed a good deal of this interpretation of Say's Law from Professor Schumpeter's discussion in his History of Economic Analysis (New York, 1954).

that the demand and cost schedules for the product in question are derived from the income generated in all the other industries. This perspective makes it clear that the cost-covering output of this particular industry is relative to the income generated by each of the other industries, these industries' demand for this output for their own production, or their income recipients' demand for this output as a consumer good. The accumulation and investment of capital in any sector must, everything remaining equal within the confines of this model, be accompanied by a proportionate accumulation in all other sectors. Were any industry to accumulate in excess of this due proportion, its investment must in the end prove unproductive and the investors' reduced circumstances will ultimately lessen the demand for commodities in all other sectors. It is in this sense that Say envisaged the sectorial inter-dependence of incomes. Say's Law should, in final judgment, be credited as something more than a mere tautology. If it did not in any palpable way put the sectorial over-accumulation theories of Boisguillebert and Quesnay (and others of a similar kind)⁵² on a better footing,

52. *Economic journalists and politicians have from time to time come up with a good number of theories of this type. We might bring to mind the many attempts to stabilize domestic or international trade by the introduction of production controls (usually for agriculture or other primary industries). The basic source of disequilibrium that prompts these policies is generally the basic fact that a small increment of production will in some circumstances drastically reduce the price of these commodities below the cost-covering level. This fact is coupled with an intuitive knowledge of the equilibrium implicit in Say's Law. (Say himself usually assumed in his discussions of intra-sectorial equilibrium - probably for the sake of simplification - that physical productivity is the same thing as value productivity). The proponents of production controls generally reason something like this: were we to allow unlimited production in agriculture, the absolute monetary income of this*

at least it should be considered a continuation of the same heritage that bestowed subjective insight.

Say and those who followed his lead with this sort of theory saw a great number of forces that might upset this intra-sectorial equilibrium of incomes and allocation of capital. One of his followers, no lesser a person than Ricardo, harnessed all his horses to the so-called Disproportionality Theory of Crises - that theory that found the chief cause of crises in sudden changes in the channels of trade. The reader should have no difficulty in understanding how such circumstances, and many others, might disrupt that equilibrium presented by Say's Law and so we need not belabour the matter. Say himself took into consideration (at least in passing) all those disruptive eventualities that were previously blamed by the physiocrats - government interference with the free reign of competition, unequal assessment of taxes, crop failures, retarded development of specific industries or government policies directed to force the development of others, etc. "Le défaut de production, et par suite de débouchés", he writes, "vient quelquefois de ce que la production est rendue trop chère par les impôts excessifs ou une industrie imparfaite; quelquefois il vient d'une force majeure qu'il est impossible de surmonter. Quand les récoltes manquent, des manufactures ne vendent pas bien, parce qu'une partie du produit des manufactures est achetée avec le produit des récoltes."⁵³ In all essentials

sector will greatly decline; this loss of income will occasion a lesser demand for the products of all other sectors (both in physical and value terms) and this initial decline will be multiplied throughout all sectors by the agency of the sectorial multiplier.

53. Say, op. cit., p. 576.

Say theorized about the same disequilibrating causes as did the physiocrats, within a verbal exposition of a tableau-like analysis. The disequilibrium he had in mind resembles that case examined by Quesnay and Mirabeau in which a relative over-accumulation of capital occurs in the sterile sector owing to ill-conceived tax policies and/or government sponsored schemes to force the accumulation of capital in manufactures and commerce.⁵⁴ Both Say and the physiocrats lead one to understand that this excessive capital is necessarily unproductive, that is to say it cannot be reproduced with a profit for the simple reason that cost-covering demand schedules for its production of goods and services can only be derived from proportionate production in other sectors. (The physiocrats, of course, stressed the importance of agricultural income, and so does Say in the quotation above.) In several respects, Say's analysis is not so complete as that of Quesnay and Mirabeau; for instance, he just barely suggests the idea of a multiplier. Still, the general similarity of his system to that of the physiocrats argues that he owed them more than he was aware or prepared to acknowledge.

54. See Chapter 5, pp.

55. It should be understood that unproductive investment occasioned by disproportionate production of goods in the same stage of production will cause a destruction of capital values in exactly the same way as does disequilibrium between different stages of production. Say neglected this point.

The end result for both cases is that warranted investment is equalized with planned investment owing to the lessening generation of income and the final destruction of capital values embodied in the unproductive investment. Even in a situation in which the investors (either in an individual sector or in the generality of industries) persists in their unproductive investment (perhaps competition for technological advantage allows them no other choice), the force of the investors worsening circumstances will cause an equilibrium to be reached in which planned investment is in accord with warranted investment and no further destruction of capital values will occur.

SUMMARY OF THESIS

The physiocrats made several particularly significant contributions to economic theory. One of the most important and better known is Quesnay's theory of capital. Generalizing from the experience of the agricultural revolution in England and France, Quesnay theorized on this situation in which wealth could be greatly increased by intensive investment in Real Capital - that is to say, in the material means of production; subsistence goods for the maintenance of labourers, raw materials to be worked up, and machines, improvements on the land, and better and more numerous farm animals, all of which were needed to facilitate the more efficient production of the new farm technology. Real Capital was thought of as an advance of material stuff needed to bridge the temporal gap between productive effort and the final sale of consumer's goods. The physiocrats can be given almost the entire credit for this Advance Theory of the Productiveness of Capital. This is basically the same theory that was adopted and popularized by Adam Smith; it was to dominate all thinking on capital throughout the whole of the next century. Several of Quesnay's disciples went on to generalize this theory of capital so as to cover capital-intensive industry which was then emerging at a rapid pace.

It is first with the physiocrats that the accumulation of Real Capital (as opposed to monetary capital) comes to be considered the chief variable determining the productiveness of the economic machine. All other branches of their theory are tied to this one central idea. One of the more important examples of this is Quesnay's tableau économique, his diagrammatic picture of general intra-sectorial equilibrium. The process of simple reproduction as depicted by the tableau begins with an advance of capital and continues through annual advances. The concept of intra-sectorial equilibrium was not completely unknown when Quesnay formalized it by this diagrammatic model. It was at least suggested by Cantillon. And this kind of theory was a dominant theme in the work of their predecessor Boisguillebert who, moreover, applied it to the same problems as did the physiocrats. Boisguillebert and the physiocrats were of the opinion that mercantilist policy had forced the growth of the commercial and manufacturing sectors to such an extent that it had outpaced the growth of the agricultural sector. Discriminatory government policies (taxation policy being the most disruptive) had, they complained, so impoverished agriculture that it was no longer able to provide an equilibrium cost-covering demand for the goods and services of the non-agricultural sectors. This disequilibrium was the basic cause to which they attributed the persistent stagnation of the French economy. The physiocrats gave greater refinement

to Boisguillebert's original rendition of this Disproportionality Theory of Crises by explaining disequilibrium in terms of sectorial over-accumulation of capital.

Other parts of their theory, such as their theories of taxation and population, also gained by being joined to their insights on capital.

The one theory that sets the physiocrats apart from all other schools of thought is their unique productivity doctrine - the erroneous idea that the agricultural sector of the economy is the only source of wealth. This doctrine rests on two misapprehensions. Firstly, they failed to realize that exchanges within the industrial and commercial sectors create income (exchange values) in exactly the same way as income is created by exchanges between these sectors and agriculture. Secondly, they were inclined to identify value productivity with physical productivity, viewing the whole economic process as the production and working up of raw materials. However, Quesnay himself was not completely faithful to this latter train of reason; he had no compunctions about explaining the same economic process as the creation of utilities and market values. Quesnay's own explanation of the demand side of the economic equations is one of the best up to his time (the tour de force being his demand schedule explanation of the emergence of rent).

The physiocrats thought of their single tax theory as a theorem derived from the circumstances of land's unique productivity, though the reasons they gave for all taxes

falling on the pure rent of land do not depend upon this doctrine at all. Briefly, they argued that payments to all factors of production (except land) are reduced by pure competition to supply prices and the supply of these factors varies directly with these payments. This would, if true, tend to pass all taxes on to the landlord (including the great administrative expenses generally associated with the hated purchase taxes), no matter how they were laid. The error of this theory was, of course, that competition is never so effective as to reduce payment to all factors of production (except the natural agents) to their supply prices. Economic rents are, in fact, scattered throughout the whole of the economic organism.

In this matter of taxation and several other aspects of theory and policy, the physiocrats were prone to apply general principles too rigidly. This distracts from their performances as all-round economists. But, in the realm of pure theory, no other school of economic thought has supplied us with such a number of generally-applicable analytical tools.

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