

A period of transition

With the ascendancy of Mercantilism, a wide variety of theories about how to achieve the desired goals began to appear. Included in these theories is that of production as a means to creating the largest possible surplus.

Sir William Petty wrote that “labor is the father and active principle of wealth as land is the mother.” Well before Smith celebrated the advantages of the division of labor in the pin factory, Petty observed that “cloth must be cheaper when one cards, another spins, another weaves, another draws, another dresses, another presses and packs, than when all the operations above were clumsily performed by the same hand.”

Methodological progress of transition writers

Many of the early inquires into economic matters and policy recommendations were based off arguments like this policy worked before or the current policies are not producing satisfactory results. These inquires lacked a systematic analysis and failed to identify the principles on which the recommended policies rest.

Sir William Petty was trained in medicine and served time in Royal Navy. After Cromwell’s victory in Ireland, Petty was tasked with surveying the land that was to be distributed to the soldiers. The experience in Ireland, not only earned Petty a vast estate in Ireland, but was also very influential in familiarizing him with land rents and taxes and in encouraging his pioneering of an empirical approach to economic inquiry.

Petty’s intent was not to rework and describe reality in terms of numerical variables, but rather to use them as abstractions to understand the relationships, facilitating more effective policy prescriptions. Chief among the policies Petty was attempting to formulate was a tax program to reinforce English dominance and prevent future Irish uprisings.

Changing concepts of the transition period

Petty demonstrates the changing nature of economic inquiry. While the industrial revolution had not yet happened, commercial capitalism was evolving into industrial capitalism. The relative importance of manufacturing compared to agriculture, the emergence of new products and modes of production, and the development of new credit facilities demonstrates the change that society was experiencing.

Under commercial capitalism, trade and the growth of merchant capital through profitable exchange were the central problems; the growth of industry shifts the focus from exchange to production. Accompanying the transition was a change in the understanding of the nature and source of wealth. A favorable trade balance as the source of a nation’s wealth was challenged. Petty stated persuasively that the appropriate measure of the increase in England’s wealth and power is evident by the abundance of its “people, building, shipping, and the production of many useful commodities.”

Sir William Petty

In last week’s reading, Mun argued that trade was the route to building England’s wealth, specifically in building the stock of precious metals held. Unlike Mun, Petty argues that wealth lies in arable land to

produce provisions and commodities, a growing population and increased stock of housing, the number of shipping vessels and their tonnage, coaches, and household furniture, etc...

Petty formulated his analysis with the intent of creating an effective tax policy to extract wealth from Ireland's population. While the motivation may be appalling, the lasting impact that Petty's empirical analysis would have extended into the 20th century as a forerunner to national income accounts that became central to empirical macroeconomics.

The problem of value starts to emerge during this time of transition. While not explicitly formulated as theory of value, Petty observed that the application of labor to land generated a surplus above the subsistence of the worker which was considered a cost of production. The monetary value of the cost of labor, according to Petty, is equal to the amount of gold that could be produced in the same labor time as that needed to produce the worker's food. Commodities which required equivalent amounts of labor time would be equal to each other in exchange. Labor becomes the common denominator for all values for Petty as it would for proponents of the labor theory of value associated with Smith, Ricardo, and Marx.

Petty also attributed some value to land and stated that all things should be measured by "two natural denominations, which is land and labor." Rent is a cost like wages; both are price-determining and thus are joint determinants of value.

Overview of classical

While the roots of economics reside in Greek philosophy, it was really with the renaissance and modern science that stimulated the rise of social science. Could laws like those that govern natural systems also be discovered for social phenomena.

The physiocrats were an early, influential, albeit short-lived group who scrutinized social processes motivated by the desire to discover causation and a principle of regularity. The physiocrats developed a system that sought to understand the laws governing distribution in France. Beginning with the physiocrats before developing into a dominant theme of Smith's *Wealth of Nations*, the theme of growth occupied a central place in the inquiry of the classical thinkers.

The first major theme of classical economists is the social surplus generated by capitalist production, conflict over the distribution, and how capital accumulation and consumption affect the economy's ability to reproduce and grow. A second major theme emphasizes the cost of production, not utility, in determining value.

Origins and philosophy of physiocracy

Mercantilism relied upon restrictive economic policies in pursuit of treasure. In the 18th century a growing movement against the fusion of economic decision making and the state would become violent, more so in France than in England. At this time France was primarily an agrarian economy. The French had greatly diminished their wealth through unsuccessful colonial wars and extravagant expenditures domestically. Taxes were relied upon in an attempt to restore the state's wealth; however, difficulty in assessing taxes and exemptions for clergy and nobility disproportionately burdened those at the bottom of the social hierarchy, creating tension that ultimately culminated in the French revolution of 1789.

Francois Quesnay, the figurehead of the physiocratic school of thought, drew on his belief in the primacy of nature and his knowledge of the circulatory system in seeking to understand the nature and creation of wealth and the relationship that the mode of its circulation bears to the well-being of the economy. Unique to the physiocrats, was their articulation of a theoretical system that explained the creation, circulation, and reproduction of the nations wealth. Additionally, their analysis was based on the premise that the existing class structure would remain as it was part of a natural order of divine providence.

Philosophy and Quesnays method

Quesnay and his followers were the first to use abstraction to posit a system of principles according to which economic phenomena behave, paving the way for future systematic studies of social phenomena. Following Petty, the physiocrats were also some of the earliest adopters of the use of data, albeit hypothetical, in their economic model, now known as the *Tableau Economique*.

According to their model, labor produces a surplus only when applied to land.

Concepts

The Physiocrats argued that wealth consists of goods produced with the aid of nature. Their conception of wealth emerges from their belief that land is the ultimate source of wealth.

The economy consists of three social classes: landowners, farmers, and the sterile artisan class. Each class is understood in relation to the net product which is the surplus in excess of the subsistence of labor. Given that land is the source of wealth, only the farmers are capable of being productive. Artisans create a finished product whose values exceeds the raw material, but only by as much as the labor expended in the transformation. There is no surplus associated with this sterile class—the surplus only originates in the primary sectors.

The Tableau Economique

The economic table illustrates how the net product circulates through the economy to sustain the three classes. This rather impressive model demonstrates the production and circulation of goods and the associated monetary flows. In so doing, the table demonstrates the interdependence of economic classes.

Assume that

- the economy is closed
- land is privately owned and worked by a tenant class who supply their own capital, employ wage labor, and pay rent to the landowners
- all exchanges are inter-class

The table has 3 columns: expenditures by farmers, expenditures by landowners, and sterile expenditures.

1. We begin with the additional assumption that 2000 livres were invested, denoted as annual advances and that the annual advance allows farmers to produce a net product of 2000 livres.

The assumption that the productive sector generates a surplus of 100% is maintained through all transactions.

2. The entire net product is paid to the landowners in the form of rent.
3. The landowners spend the net product equally between agricultural and non-agricultural products. The assumption of an equal split of expenditures between sectors extends to the sterile sectors expenditure decision.
4. The 1000 livres spent by landowners on agriculture facilitates the creation of a net product of 1000 livres which is then again paid as rent to the landowners.
5. The landowners would once more split their revenue equally on expenditures between the other two sectors. The flow to agriculture generates a net product of 100% which then flows back to the landlord in the form of rent. Each subsequent expenditure to the productive sector reproduces itself in the same way. However, note that in the table presented here, we only trace the circulation of the initial 2000 livres.
6. The artisan class, in receipt of 1000 livres, is assumed to direct their expenditures equally between the sterile and productive sectors just as the landowners did and as will the productive sector. The line moving diagonally, sloping downward from right to left represents the sterile sectors purchase from the productive agricultural sector. Whereas the downward sloping diagonal line from left to right represents the productive sectors purchase of manufactured consumption goods from the sterile sector. Each of these lines represents a flow of money and commodities.
7. All expenditures on products from the non-sterile sector are shown on the left-hand side of the table. Flows to the productive sector contribute to the creation of the net product, recalling that Quesnay assumes the net product is 100%.

If society increases the share of expenditures on consumption goods and services provided by the sterile class, it reduces primary production and hence reduces annual reproduction. If society reduces the share of revenue spent—that is if society wants to save or hoard—the net product will be shrink. This result demonstrates the systematic relationship between expenditures and income and is very similar to the conclusion reached centuries later by J.M. Keynes, saving reduces effective demand and thus reduces output.

The surplus and growth, tax reform, and trade

1. Economic growth requires the economy to produce a surplus— output above subsistence requirements.
2. Not all sectors are productive and capable of generating a surplus.
3. Growth requires a share of the surplus be reinvested and specifically that the share is greater than the minimum required for reproduction.

From here it becomes clear that growth is endogenous and depends on using the surplus productively. Quesnay's net product informed Turgot's surplus theory of entrepreneurial profit.

Tax reform

Understanding the table is greatly enhanced when paired with the physiocratic tax reform proposal. The physiocrats proposed the elimination of the clergy's and nobility's tax exempt status, replacing the entire

tax code with a single tax. The proposed tax would be levied on landowners according to the respective of the net product held.

Since only land is capable of producing a surplus and since wages are tied to the value added by the worker, any tax levied on workers would ultimately rest on the only possible source of payment, the surplus. Any tax on workers reduces expenditures to or by the productive sector, thus reducing the net product.

Trade

According to the physiocrats, traders are unproductive as they exchange equal values. How does this contrast with the mercantilists?

Even though traders are unproductive, the physiocrats supported free trade. Their reasoning called for exporting agricultural goods and importing manufactured goods.

Turgot

Reflections on the Formation and Distribution of Wealth was published in 1766 and was written as a tutorial for students. Themes found in this text the division of labor, origin and use of money, improvement of agriculture, nature and employment of capital, interest on loans, and rent of land.

Turgot reaches a different conclusion on money and interest than that reached by following the Schoolmen's theological argument. Money is conceived of as a means of payment which is distinguishable from money as capital. In the latter, money employed in advances in agriculture, manufacture, and commerce procures a profit. The profit includes an interest component as an advance and an additional component for the assumed risk of purchasing capital.

The French theorists convincingly demonstrated that the economic process consists of both a flow of goods and a flow on income. This contribution forms the basis for the now accepted equivalency between total income and total product. Moreover, these early analytical beginnings represent an early view of the economy as a self-sustaining, equilibrium-seeking system.

For most of the physiocrats, value was determined by the cost of production. Turgot was, however, a bit more advanced in his thinking; he recognized that there were other factors that may affect value and/or prices. Regardless, the formulation of a subjective theory of value was still a century away.