

HOW ENTREPRENEURSHIP THEORY CREATED ECONOMICS

CHRISTOPHER BROWN AND MARK THORNTON

ABSTRACT: Richard Cantillon is credited with the discovery of economic theory and was the first to fully consider the critical role of entrepreneurship in the economy. Cantillon described entrepreneurship as pervasive and he casted the entrepreneur with a pivotal role in the economy. Using a sample of models from Cantillon's *Essai*, we provide evidence that his theory of entrepreneurship was the fundamental tool by which he constructed economic theory and that absent his theory of entrepreneurship his theoretical constructions fail. We believe this discovery both highlights the importance of entrepreneurship and contributes to our understanding of the nature of economic theory.

KEYWORDS: Richard Cantillon, entrepreneurship theory, economic geography, labor markets, intrinsic value, circular flow model, price-specie flow mechanism

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Christopher Brown, MBA, Ph.D., (chrisbrown77@gmail.com) is owner of Smile Right Solutions, a dental practice management company. Mark Thornton, Ph.D., (mthornton@mises.org) is Senior Fellow at the Ludwig von Mises Institute and serves as book review editor of the *QJAE*.

1. INTRODUCTION

Richard Cantillon (168?-173?) is widely considered the father of economic theory for providing the first theoretical analysis of commerce in his *Essai sur la Nature du Commerce en Général*, posthumously and anonymously published in 1755.¹ The *Essai* was the springboard for the first-generation of economists, including David Hume, Adam Smith and the Physiocrats. However, Cantillon and the *Essai* were soon forgotten, only to be rediscovered by economist William Stanley Jevons in the late 19th century. He dubbed the book, “more emphatically than any other single work, the cradle of political economy” (1931 [1881], p. 342). His assessment comes from the recognition of Cantillon’s myriad theoretical contributions, ranging from basic methodology to complex macroeconomic models that include the circular-flow model and the price-specie flow mechanism.

In addition to the economic contributions of the *Essai*, Cantillon is credited for developing an important—and in many ways wholly modern—theory of entrepreneurship (the forerunner to Knight and Mises). Indeed, Cantillon has received increased attention and recognition, primarily in the entrepreneurship literature, as *the* original thinker on entrepreneurship (Murphy et al., 2006). Although the introduction of the term “entrepreneur” was originally attributed to Jean-Baptiste Say, it is now known that Cantillon was the “first significant writer to make frequent and obtrusive use of the term in a semblance of its modern form” (Hébert and Link, 2006, p. 589; also see Ebner, 2005; Formaini, 2001; Hamilton and Harper, 1994) and particularly as a concept for formal theoretical purposes (Hébert and Link, 2006; Long, 1983). Despite this deserved recognition, Cantillon’s theory of entrepreneurship has long been thought of as merely one isolated component of his many contributions to economics rather than as the basis of his method and construction of economic theory. We believe that understanding the indispensable role of the entrepreneur in Cantillon’s economic treatise provides a “new” way to approach economic problems.

While most scholars recognize that entrepreneurship is the driver of economic growth and progress (Bosma, Wennekers & Amorós,

¹ For a complete biography of Cantillon, see Murphy (1986).

2011), Holcombe (2007) points out that it also creates information, knowledge, and even economic wisdom. Although he does not link entrepreneurship with the development of economic theory, he does identify a problem of entrepreneurship and its relationship to modern economic theory:

The problem, then, is not that no economists recognize the role of entrepreneurship, but rather that entrepreneurship remains outside the basic framework of mainstream economic analysis, and especially the mainstream economic analysis of growth. (Holcombe, 2007, p. 5)

It is hardly the case that the concept of the entrepreneur merely became antiquated and was replaced with a better and more modern concept or technique. Holcombe (2007, p. 8) finds that the absence of entrepreneurship strikes at the *raison d'être* of economic analysis and that, "because of its assumptions, the neoclassical framework has serious deficiencies for analyzing the underlying causes of prosperity. The neoclassical model does not provide the appropriate vantage point for looking at this issue." With the exception of the work of Knight, Mises, Kirzner, and Foss and Klein, few attempts have been made within economics to "fit" entrepreneurship into an economic framework. We have discovered evidence that Cantillon should be credited with redefining the term entrepreneur to its modern conception and that he did so based on personal experience long prior to writing his *Essai*. It is not a great leap of faith to imagine that he must have developed at least a rough theory of entrepreneurship before undertaking the writing of the *Essai* (Brown and Thornton, 2013).

In this paper, we seek to understand the role that Cantillon's theory of the entrepreneur plays in the development of his theoretical contributions to economics. We give an overview of Cantillon's contributions to economic and entrepreneurship theory, followed by an examination of a sample of five cases from the *Essai* that illustrate how Cantillon used his theory of entrepreneurship to construct economic theory. We provide evidence that Cantillon's theory of entrepreneurship is not merely an isolated brick in his system of economics, but in fact is better understood as the tool used to build a brick wall. Not only is the entrepreneur critical for building his economic models, but in the absence of the entrepreneur, none of Cantillon's theoretical constructions would work. Therefore, his

theory of the entrepreneur should not be viewed simply as one aspect among many, but rather as *the foundation* for understanding economic phenomena. This point, we believe, is not currently recognized in either the economics or entrepreneurship literatures.

At first this might seem like a “chicken and egg” circular argument in that you cannot separate his view of entrepreneurship from his perspective on the economy. However, we show that our central finding is a matter of cause and effect, and thus it is more like a lock and key proposition. It is his theory of the entrepreneur that unlocks the mystery of how Cantillon created so much of the foundation of economic theory.

2. CANTILLON'S CONTRIBUTIONS

Historians of economic thought have dusted off an important and long neglected year on the historical timeline—1730—that is just as crucial as 1776 (Adam Smith), 1871 (the Marginal Revolution), 1936 (Keynes), and 1947 (Samuelson). Before 1730, when Richard Cantillon is thought to have completed his *Essai sur la Nature du Commerce en Général*, there was precious little in the economics literature that could be described as economic theory; after 1730, there was a burgeoning output of economic writings that became increasingly more theoretical and systematic. During this ensuing progress, the Physiocratic, French Liberal, and British Classical schools developed, all having acknowledged roots in Cantillon's influential work.

Prior to Cantillon, the economics literature consisted largely of the reflections of religious thinkers and philosophers. Noteworthy among them were the Spanish Scholastics. They were among the first to systematically incorporate economic issues into their philosophical and religious paradigms. Also noteworthy were the Mercantilists, but they suffered from a dearth of theory and organizing principles. The Mercantilist writings are generally thought to have been motivated by their self-interest in business and trade and they did not produce a systematic approach for understanding and describing the nature of commerce. Anti-mercantilists also made contributions to economics, most notably in France, but they also lacked theory and a systematic approach for explaining economic phenomena. The anti-mercantilists' galvanizing force

was their opposition to the mercantilist policies of the ruling elite. They were like the Scholastics in that they were motivated by the fairness of things, such as taxes, rather than with economic questions, such as the efficiency of different tax systems.

Cantillon should be seen as having made a revolutionary break with these schools of thought. He removed the ethical and political concerns in order to focus specifically on “the economic features of human action” (Rothbard, 1995, p. 348). When the *Essai* was finally published in 1755, economics took a giant step forward and became a more scientific, systematic discipline in its own right.² In addition, it helped inaugurate the Physiocratic School of economics in 1756. Cantillon was also an acknowledged influence on the French liberals, including Turgot and Condillac, as well as Classical economists David Hume and Adam Smith (Thornton, 2009b). Arguably, many of those influenced by Cantillon took their economic thinking in wrong directions and ended up in intellectual dead ends, but this should not diminish the fact that it was Cantillon who placed economics on scientific foundations (Thornton, 1998 and 2007b). Thanks to Murphy (1986) we know a great deal about why Cantillon wrote the *Essai*, but it has remained a puzzle as to how he was able to independently create so much of what economic theory would come to be.

Cantillon’s *Essai* represents a deep reflection on and rejection of existing economic knowledge. In Part 1 of the *Essai*, he began by discarding the mercantilist notion that money was wealth and then began to build his analysis of commerce from the ground up with an analysis of the property rights of landowners and the establishment of villages, market towns, and cities. Next, he provided an analysis of labor and wage rate differentials that concludes with the remarkable finding that the true cost or “intrinsic value” of something is its opportunity cost. He showed that there was a mutual interdependence among the economic classes and that the economy would be self-regulating because entrepreneurs would obey the command of price signals. He then provided a population theory that predates and exceeds that of Malthus and integrated it into his theory of wealth. In Part 2 he analyzed barter, market prices,

² The *Essai* circulated in manuscript form among many individuals, including David Hume, prior to its publication.

money and its velocity, and changes in the quantity of money and its relation to changes in the interest rate. Part 3 explains foreign trade, exchange rates, banking, inflation, and the business cycle.

Cantillon is credited with many contributions, including location theory, population theory, the price-specie flow mechanism, the circular-flow model, business cycle theory, methodological individualism and subjectivism, abstraction, the *ceteris paribus* assumption, closed- and open-economy models, as well as methodological innovations like the separation of positive and normative economics. We argue that Cantillon's wide-ranging experience as an entrepreneur led him to a theory of the entrepreneur that he then used to construct economic theory. It is in his theory of entrepreneurship that Cantillon seems to have had no prior influence (Brown and Thornton, 2013).

There are three main actors in Cantillon's economy. Property owners are the main consumers and all production in the economy (supply) is an attempt to meet their desires (demand). The two remaining actors are primarily distinguished by the nature of their income, which leads to *the* major characteristic of Cantillon's entrepreneur: living on uncertain income, rather than on fixed income. While wage laborers are on fixed wages, entrepreneurs have no guaranteed income. In addition to this feature, the entrepreneur is responsible for the production, circulation, and exchange of goods in the economy as they attempt to meet the demands of property owners and other consumers. Thus Cantillon's theory of the entrepreneur is distinctly supply-side (Hébert and Link, 2006). In this capacity the entrepreneur acts on perceived arbitrage opportunities: "[Entrepreneurs] will buy at a low price the products of the villages and will [transport them] to the Capital to be sold there at a higher price" (Cantillon, 1931, p. 151).

Cantillon's theory of entrepreneurship is that entrepreneurs function by bearing risk under uncertainty. They buy goods at known (fixed) prices in the present to sell at unknown prices in the future. According to Hébert and Link (1988, p. 21):

An important aspect of Cantillon's theory is that it stresses the *function*, not the personality of the entrepreneur. His idea is sweeping in its application, embracing many different occupations and cutting across production, distribution, and exchange.

For Cantillon, entrepreneurship is pervasive in the economy. The term “entrepreneur” is mentioned over 100 times in the *Essai* and is widely applied to both producers and exchangers (Hébert and Link, 2006), including entrepreneurial activities all along the supply chain, from the production of raw materials to the retail distribution of finished products. For example, he considers as entrepreneurs producers of all kinds, including farmers, wholesalers of wool and grain, and manufacturers. Retailers, such as restaurateurs and shopkeepers, were considered entrepreneurs. Owners of mines, theaters, and buildings are entrepreneurs as well, as are merchants of myriad varieties, including artisans, bakers, butchers, and drapers. Entrepreneurs of all kinds are mentioned in the *Essai*: chimney sweeps, shoemakers, tailors, carpenters, painters, physicians, lawyers, supervisors, miners, and brewers.

Cantillon’s theory of entrepreneurship is therefore narrowly defined but broadly applicable. Anyone who invests (in the sense of acquiring and employing resources) with the purpose of selling goods in the future at an uncertain price is an entrepreneur. Therefore, his theory is in the same lineage as Knight and Mises, but differs greatly with Schumpeter and others.

3. USING ENTREPRENEURSHIP TO DEVELOP ECONOMICS

Let us now take Cantillon’s general theory of entrepreneurship and see how it is the key that Cantillon used to unlock the door to economic theory, which he then used to explain phenomena of the real world. We proceed by describing and evaluating five examples of economic phenomena that Cantillon developed in the *Essai*. As we examine Cantillon’s contributions to economics we will highlight three features. First, entrepreneurship plays a pivotal and necessary role in his theoretical constructions. Second, Cantillon illustrates his theoretical constructions with examples of entrepreneurial plans, actions, and constraints. Third, absent the entrepreneur the theoretical constructions or models would fail.

Economic Geography and the Entrepreneur

Cantillon offers four short chapters (3–6) in the *Essai* on economic geography and location theory. It is in chapter 4 in particular where

Cantillon first employs the term entrepreneur in referring to the entrepreneur's crucial role in spatial economics. For Cantillon, there are villages, market towns, and cities in a state, all of which are interrelated and depend upon the decisions of the entrepreneur for their size, location and proximity to one another.

The size and location of a village is determined by the entrepreneurial production decisions of the property owners. These decisions determine both the types of production and the quantity of labor required. They also determine the number of farmer-entrepreneurs and the number and type of artisan-entrepreneurs that will live in the village. If the owner decides to live in the village then this will also affect the size and composition of the population of the village. Thus, in order to satisfy the demand of the property owners, villages are located in surrounding areas with their size and location determined by entrepreneurial decisions. Cantillon also highlights the role of transportation costs in economic geography:

To whatever cultivation land is put, whether pasture, corn, vines, etc. the farmers or laborers who carry on the work must live near at hand; otherwise the time taken in going to their fields and returning to their houses would take up too much of the day. (Cantillon, 1931, p. 9)

The size and location of villages are therefore the result of the entrepreneurial decisions of property owners, farmers, artisans, and in this case even the common wage laborer, largely based on the goal of reducing transportation costs and maximizing productive time. If the property owner decided not to produce anything, the village would not exist.

Market towns develop in the center of a group of villages and have a marketplace that operates at least one day a week. The location of the market town is determined by the entrepreneurial decisions of artisans regarding where to locate their business. The size of the market town is a function of the aggregate size of the surrounding villages. Market towns provide a benefit by reducing overall transportation costs, facilitating exchange by reducing uncertainty and transaction costs, and by providing an auction-like environment that facilitates the setting of prices. As Cantillon explained:

A market town being placed in the centre of the villages whose people come to market, it is more natural and easy that the villagers should bring their products thither for sale on market days and buy the articles they need, than that the merchants and factors should transport them to the villages in exchange for their products. (Cantillon, 1931, p. 11)

Thus market towns develop as a result of entrepreneurial activity. The entrepreneur's function consists of three exchanges: (a) purchasing products from the villagers for local resale and export to the cities; (b) purchasing products in the city in order to sell them to the villagers; and (c) producing goods and services to be sold in the market town.

Cities are a further step in geographical agglomeration that appear when property owners find a particular location to their liking and cause a larger and more diverse group of entrepreneurs to collect at that location. Cantillon observed that bakers, butchers, and brewers are entrepreneurs who will locate in cities in order to serve the noblemen and exchange with other entrepreneurs. Therefore the size of a city is a function of the number of property owners who choose to live there as well as the size of surrounding market towns and villages.

Cantillon's contributions to economic geography, location theory, and transportation economics are all related to the decisions of the entrepreneur about where to profitably locate. While the property owner is responsible for the initial production decisions in Cantillon's economic framework, the entrepreneurs determine how to carry out such decisions and where villages and market towns will be located. Indeed, when enough entrepreneurs settle down and locate in a village to serve the villagers, Cantillon says it *becomes* a market town. Most importantly, the driving force of the size and location of villages, towns and cities is the transport and transaction cost decisions of entrepreneurs. Absent the entrepreneur there would be no factor in the model to make the necessary decisions that determine the size and location of settlements. Therefore, it should be clear that entrepreneurs are the fundamental driver in urban economic development and that their absence would make the provisioning of large concentrated population centers difficult, if not impossible, to imagine.³

³ In Cantillon one can find all three aspects of Alfred Marshall's theory of agglomeration. Marshall (1920) put forth three theories of industrial agglomeration that

Labor Markets and the Entrepreneur

In chapters 7–9 of Part One of the *Essai* we can see how the entrepreneur and entrepreneurship also play the role of prime movers in labor markets. Cantillon states that skilled labor is better paid than unskilled labor because there is an opportunity cost of time in learning the skill. Within the skilled labor category, incomes will differ based on quality, cost of training, the risks and dangers of a profession, and the amount of trust that must be placed into the worker's hands. For Cantillon, risks go hand-in-hand with rewards. Therefore the amount and type of training to obtain a certain skill in the present must be offset by enhanced, although uncertain, wages in the future. Artisan-entrepreneurs, for example, are at risk that market wage rates for their profession might be lower in the future once additional artisans are trained and ready to trade. Thus, the number of artisans in a particular line of work must be proportioned to the demand so that if too many exist in a particular location, income will fall and some of them must either leave to find work elsewhere or find another line of work. Cantillon explained:

It often happens that laborers and handicraftsmen have not enough employment when there are too many of them to share the business. It happens also that they are deprived of work by accidents and by variations in demand, or that they are overburdened with work according to circumstances. Be that as it may, when they have no work they quit the villages, towns or cities where they live in such numbers that those who remain are always proportioned to the employment which suffices to maintain them. (Cantillon, 1931, p. 25)

For Cantillon, then, employment and wages are the result of the interplay of decision-making by various entrepreneurs.

Cantillon illustrates his theory of labor and wages with the example of a father's decision to have his son trained in a profession.

include transportation costs, the labor force, and intellectual spillovers. Cantillon included all three aspects in his location theory, including the obvious emphasis he placed on transportation costs and labor force determination. In terms of intellectual spillovers, Cantillon's discussion of how prices are set on market days is clearly a reflection of an intellectual spillover or "meeting of minds." Cantillon's analysis is in terms of a pre-industrial economy, as we understand it, and is entirely choice motivated. Marshall's analysis is in terms of the modern industrial economy and is partly driven by random constraints.

Here the father has to evaluate the present costs of training versus the projected future income earned in the profession, which is uncertain. He remarks later that if the king had many people trained in high paying jobs, it would be useless if there were no demand for them, and that if there were demand, it would be supplied by entrepreneurs. The entrepreneur obviously plays many essential roles in labor markets and it would be difficult to imagine a labor market functioning in the absence of Cantillon's entrepreneurs.

Entrepreneurship, which takes account of costs and benefits, produces balance and harmony in labor markets and makes adjustments to changing conditions over time. At a time when the economy was transitioning from a relatively static feudal order to the more dynamic economy of emerging capitalism, Cantillon's explication of labor markets driven by entrepreneurship was a breakthrough.

"Intrinsic" Value

There was a long-standing debate over the nature of Cantillon's theory of value. Was it a labor theory, a land theory, or a labor and land theory of value? Or was it similar to Adam Smith's distinction between market price and natural price? The history of this debate is described by Thornton (2007a). Through a combination of Cantillon's own description of intrinsic value, the definition of "intrinsic" circa 1730, and the examples of intrinsic value given by Cantillon, Thornton concludes that Cantillon's concept of intrinsic value is actually opportunity cost and that Cantillon had a subjective theory of value.

In Chapter 10 Cantillon makes a useful distinction between the "intrinsic value" of a product and its market price. For Cantillon, the intrinsic value of any good or service is the amount of and quality of the land and labor required to produce goods and the values of these inputs are related to their alternative uses. Therefore intrinsic value, the anathema of the modern economist, is actually the equivalent to the modern concept of opportunity cost. For Cantillon, the intrinsic value of a product never changes once it has been produced, but the market price changes according to "the humors and fancies of men" (Cantillon, 1931, p. 29) and is uncertain since it will occur (or possibly not occur) in the future. The difference between the actual market price and the opportunity

cost is the true measure of profit and loss for the entrepreneur. Therefore, not only is Cantillon credited with the discovery of the concept of opportunity cost, but we find it in the essence of his theory of entrepreneurship.

Cantillon uses several examples of entrepreneurs to illustrate the concept of intrinsic value-opportunity cost. In one important case, Cantillon discusses a farmer-entrepreneur who invests in land and labor to produce crops. Farmers could earn profits or losses based on the crops planted, growing conditions, and changing market prices. The land and labor are the farmer's intrinsic value-opportunity cost and the quality of the land and labor are important considerations. The farmer's income is dependent on future market prices and is therefore uncertain.

In another important example, Cantillon wrote about a homeowner who could profit or lose from the improvements made to his land upon selling his property:

If a gentleman cuts canals and erects terraces in his garden, their intrinsic value will be proportionable to the land and labor; but the price in reality will not always follow this proportion. If he offers to sell the garden possibly no one will give him half the expense he has incurred. It is also possible that if several persons desire it he may be given double the intrinsic value, that is twice the value of the land and the expense he has incurred. (Cantillon, 1931, p. 29)

Cantillon's concept of intrinsic value-opportunity cost fits hand-in-glove with his theory of entrepreneurship. Intrinsic value is not simply a certain quantity of land and labor but also accounts for quality and is therefore the true opportunity cost of making a good. The difference between intrinsic value-opportunity cost and market price yields economic profit or loss. The distinction between intrinsic value and market price is so intimately related to his theory of entrepreneurship that it rules out the absence of entrepreneurship.

The Circular-Flow Model

The final chapters of Part One of the *Essai* examine how everyone in a given state is "dependent" upon the property owner. The real point of the chapter is that working people do not just serve the property owners but also each other, and that there is a mutual

interdependence between the property class and laborers. In Chapter 3 of Part 2, Cantillon developed his circular-flow model of the economy to explain distribution. Here the entrepreneur is what gives impetus to the flow of goods where “each branch of the circulation in the cities is carried out by entrepreneurs” (Cantillon, 1931, p. 129).

Cantillon describes how the tastes of the property owners drive the market as a prime mover on the demand side of the economy. He then derives a circular-flow model of the economy involving goods, incomes, and expenditures to illustrate the mutual interdependence of the different economic classes. He begins with his model of the isolated estate, initially directed by the estate owner who has nothing until he hires labor, and whose return increases with the amount of labor that can be profitably employed. In short, the estate owner is only advantaged if he supports people who will carry out his “demands.”

As part of the labor force employed by the estate owner, Cantillon points out the role of supervisors of farm and artisan labor. The supervisors of labor *act like* entrepreneurs in satisfying the demands of the estate owners (see Foss et al., 2007 for further development of the Cantillonian idea of “proxy” entrepreneurship). Cantillon then changes the model so that everyone *actually becomes* an entrepreneur in their profession. Here nearly everyone but the property owner and wage laborer is an entrepreneur: wholesalers of wool and grain, bakers, butchers, transporters, manufacturers, and merchants of all kinds. As entrepreneurs, they are “working at risk, [and] some get rich and gain more than double their subsistence, [while] others are ruined and become bankrupt” (Cantillon, 1931, p. 41).

Cantillon used the farmer as an example of an entrepreneur: “The farmer is an entrepreneur who promises to pay the property owner, for his farm or land, a fixed sum of money [...] without assurance of the profit he will derive from this enterprise” (Cantillon, 1931, pp. 48–49). The farmer-entrepreneur hires and supervises labor and also buys goods from other entrepreneurs.

Cantillon described the entrepreneur as someone who uses “judgment, without being able to foresee which [product] will pay the best price” (Cantillon, 1931, p. 55), depending on factors of supply and demand. Cantillon also specified that the

entrepreneur can be seen as the owner of an enterprise operating under uncertainty. Entrepreneurs are those who “adjust themselves to risks in a state” (Cantillon, 1931, p. 53), namely bankruptcy and starvation.

Next, Cantillon induced a change in demand by the estate owner and explained how entrepreneurs working with the incentives provided by the profit and loss framework restore the model to equilibrium. With his model of the isolated estate he was able to show the circular flow of goods, incomes, and expenditures between property owners, farmers, farm labor, and entrepreneurs of all sorts. Indeed, Cantillon wrote that “all the exchange and circulation of the state is conducted by the actions of these entrepreneurs” (Cantillon, 1931, p. 57).

Interestingly, this is where Adam Smith found the model for his “invisible hand” (Thornton, 2009a). Ironically, the model is driven by entrepreneurship, though Smith himself downplayed the role of the entrepreneur within his own system and the entrepreneur is absent entirely in the modern-automatic circular flow model. Cantillon’s circular flow nature of the economy is dependent on entrepreneurs who are directed by prices to carry and adjust or regulate the flow to restore equilibrium. With the model of the isolated estate, Cantillon is able to show that in the absence of entrepreneurs society must revert back to feudalism where all decisions are made by the estate owners and their proxies.

The Price-Specie Flow Mechanism

Part Two of the *Essai* opens with a discussion of barter, money and market prices. For Cantillon, prices are based on supply and demand but are ultimately determined by the haggling of buyers and sellers. In the example he provided, price is set between two groups of entrepreneurs. Entrepreneurs also establish a system regarding the flow and timing of payments where, for example, farmers receive large payments from wholesalers and make large rent payments to property owners. Entrepreneurs make payments to wholesalers for their products after having collected numerous small payments from their customers. Cantillon even used the system set up by entrepreneurs to theoretically calculate the quantity of money.

Unlike the mercantilists who viewed money as wealth, Cantillon showed that an increase in the quantity of money had both seemingly beneficial effects as well as dangerous negative effects. By basing his analysis on entrepreneurs he was able to show that an increase in the supply of money could alter *relative* prices depending on how and where the money was injected into the economy rather than simply causing an overall increase in prices. Whoever received the new money would spend it, and what they spent it on would increase in price. As the price increased, domestic entrepreneurs would then begin changing the structure of production in the economy to address the new pattern of demand. These structural changes created by entrepreneurs are now called "Cantillon effects."

Furthermore, by explaining how money penetrated into the economy through entrepreneurs Cantillon was able to construct the price-specie flow mechanism. If money is relatively abundant, prices of domestic goods increase and people tend to buy more imports. Gold is then exported to pay for the increase in imports. The exportation of gold would cause domestic prices to fall and thereby bring the domestic money supply into equilibrium with the foreign money supply. Entrepreneurs adjust and coordinate their plans and actions to relative changes in the money supply. Therefore the price-specie flow mechanism is actually dependent on widespread entrepreneurial activity. Without entrepreneurs the mechanism would obviously fail to function.

3. IMPLICATIONS FOR THEORY AND PRACTICE

The examination of a variety of examples from the *Essai* shows that Cantillon's theory of entrepreneurship plays a key role in his construction of economic theory. We have found that insights derived from examples in the *Essai* have important implications for modern economics and entrepreneurship theory. However, despite Cantillon's treatise, the entrepreneur was later removed from economic theory beginning with Léon Walras (1870). Modern economics has continued this unfortunate trend where the entrepreneur is now largely missing from its models and textbooks (Kent and Rushing, 1999), to the point where economics has arguably become a sterile and unrealistic discipline. Neoclassical economic

theory, despite some attempts (e.g., Baumol, 1993; Kihlstrom and Laffont, 1979; Lazear, 2005), rarely even mentions the entrepreneur. We believe that economics can benefit from Cantillon's theory of entrepreneurship by viewing the actions of entrepreneurs as critical to an economy.

Also, our findings should provoke greater caution when using models of the economy that do not account for the entrepreneur. This is especially true as one goes from pure theory to economic analysis and the construction of economic policy. Economic models that exclude entrepreneurship will likely have important defects if used for "real world" policies. This is especially important given that many economists have removed the entrepreneur from their modeling because of the mathematical difficulties inherent in equilibrium frameworks (Cassis and Minoglou, 2005). When such equilibrium models are used for economic and policy analysis they will inherently contain defects that could be significant when applied in the "real world." Our finding provides one answer for the deficiency of such models and indicates a path towards improvement. Economic policy analysts would also be wise to visit Cantillon's treatise to understand economic phenomena as it actually occurs. Indeed, Professor Antoin Murphy (2010) provides a modern example of this when he uses the *Essai* to explain economic growth in China, stating that "Richard Cantillon can provide assistance in unlocking the paradox of China and its entrepreneurial class."

Cantillon's insights also provide important lessons for the teaching of basic economic concepts like supply and demand. In order to understand such economic models, students must understand the prime mover in the system—the entrepreneur—and static models of the economy do not fully depict the continuous changes and dynamic nature of the real world. Allowing for the entrepreneur (real people) and entrepreneurship (risk, uncertainty, profit and loss) to be a central focus of economics, it will be easier to give everyday examples of entrepreneurship to students who are required to take economics classes. Cantillon's robust theory of the entrepreneur helps resolve the problem of making economics lively and relevant to students and is able to explain everyday events.

Finally, we also believe that entrepreneurship scholars will benefit from this "new" perspective provided by Cantillon. For entrepreneurship scholars, a greater attention to basic economic

theory should result in better research and studies of entrepreneurs. They can also benefit from the knowledge of how pervasive entrepreneurship is throughout the economy. Such a view shows the relevance and importance of understanding the widespread effects of entrepreneurship. It can inspire confidence in those doing research in entrepreneurship, and it demonstrates the need for future studies.

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