

The Discovery Role of Disequilibrium Prices

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Abstract

Because prices are essential to the market process, price formation and adjustment have always been concerns for economists. An insight that has gained wide acceptance in the profession—most notably since the emergence of the economics of information and the resurgence of the Austrian School—is that prices perform an informational function by conveying relative scarcities (Hayek 1945). But most of the discussion surrounding prices is set against the backdrop of equilibrium analysis. The discovery role of prices has not been studied nearly as much. If actual prices are not equilibrium prices, what information do they convey to actors and what incentives do they present? These are the questions this paper seeks to engage. I propose that both information economics and Austrian economics provide insight into these questions. Specifically, Austrian price theory offers the best framework to understand the informational role of disequilibrium prices.

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I. Introduction

An insight that has gained wide acceptance among economists is that prices perform an informational function by conveying relative scarcities, a point first made explicit by Hayek in “The Use of Knowledge in Society” in 1945 or arguably even earlier in *Prices and Production* (McClure and Thomas 2019). Because of this informational function, prices help economic actors coordinate their dissimilar plans. Thomsen (1992) listed the three ways in which the informational role of market prices is understood within the economics profession:

1. Prices are knowledge surrogates. They can inform the actions of individuals without informing them of all details. I call this the *surrogate* role of prices.
2. Prices are signals. They can be read and used to infer or transmit information. I call this the *signaling* role of prices.
3. Price disparities may provide profit opportunities that spark the entrepreneurial discovery of new knowledge. I call this the *discovery* role of prices.

The surrogate and signaling roles of prices have been examined much more than the discovery role. This is a side effect of the concentration on equilibrium states in economic analysis.¹ There is no room for the discovery role in a framework confined to the static analysis of equilibrium. Adopting a framework in which markets are viewed as a dynamic process (Kirzner [1973] 2013) allows us to examine the discovery role of prices. Furthermore, since actual prices are unlikely to exactly mirror the prices in equilibrium models, Austrian price theory (or market-process economics) provides a backdrop for understanding the character of disequilibrium prices.

If actual prices are not equilibrium prices, what information do they convey to actors, and what incentives do they present? These are the questions this paper seeks to engage. I propose that both information economics and Austrian economics provide insight into these questions. Specifically, Austrian price theory offers the best framework to understand the discovery role of disequilibrium prices.

The paper proceeds as follows: Section 2 provides background on the informational role of prices. Section 3 describes the discovery role of prices presented in Austrian price theory and makes the case that it is most applicable to understanding the information and incentives provided by disequilibrium prices. Section 4 explains why understanding the discovery role of prices is valuable for understanding the process of appraisal (Mises [1949] 2010) and the interpretation of information (Lachmann 1986). Section 5 concludes.

II. The Informational Role of Prices

Prices are essential to the market process. Prices aid in exchange and decision-making. They help consumers decide what and how much to buy. They help producers determine what and how much to sell. Because of this primacy, price formation and adjustment have always been concerns for economists.

Adam Smith ([1776] 1982), David Ricardo (1817), and other classical economists explained the magnitude of prices by the amount of labor put into the production of goods, an idea later adopted by Marx (1867). The marginalists flipped the equation and explained the prices of goods by the utility the goods bring to the consumer (Jevons 1871; Menger [1871] 1994; Walras [1874] 2010). The New Institutionalists described prices from the vantage point of property

¹ Fisher (1983) offers an empirical analysis of the conditions under which disequilibrium prices converge to equilibrium.

rights theory and transaction costs theory (Coase 1937; 1960; Williamson 1979). The informational role of prices has been studied extensively, most notably since the emergence of the economics of information. This literature portrays economic agents as searching over a distribution of prices, and it led to the development of search theory (Stigler 1961; Machlup 1962; Alchian 1970).

Regardless of the framework, the idea that prices perform an informational function is broadly accepted. Hayek (1945) was the first to explicitly make this case. However, this case should be read in light of Mises, who was the first to describe the necessity of prices in the production process. Mises ([1920] 2014) argued that socialism makes establishing an effective production process impossible since, without market prices, it has no way of referring values back to a single unit. With no prices there is no way for entrepreneurs to determine relative scarcities. The socialist planner has no way of determining the best use of inputs for a given project. Thus, adjusting the output of goods of a higher order to fulfill the needs of lower orders fails. Production plans lose their feedback mechanism. In addition to providing incentives for adjusting to scarcity, prices also have an informational role.

When responding to prices, economic agents are responding to events of which they need not be completely—or at all—aware (Hayek 1945). Prices help coordinate the actions of different individuals, the same way subjective values help an individual coordinate their own actions. The marvel of markets is how little an individual needs to know in order to act. The price system operates within an economy of knowledge, and prices reduce the amount of detail an individual needs to know in order to adjust their behavior. What Hayek described is the surrogate role of prices. In this role, prices inform the actions of an economizing agent without informing them of all the details. An increase or decrease in price is enough to tell the economic agent to adjust their plans.

In their signaling role, market prices are signals that convey all information needed for individuals to act efficiently (Koopmans 1957). Prices are direct sources of knowledge, and this knowledge is sufficient for individuals to act in a manner that leads to an efficient allocation of resources. Appreciation for the signaling role of prices is popular in the economics of information. To that field, gathering information is costly and individuals search prices. This literature was developed primarily by Stigler (1961), Machlup (1962), Alchian (1970), and Grossman (1981). Prices are thought to be spread over

some random distribution, and economic agents continue to search prices until their marginal benefit from searching equals their marginal cost of searching. In other words, they search to the point at which they have gathered the optimal amount of information. They read prices to infer information until they have collected all the information they need (Stiglitz 1987).

In the surrogate role, prices perform an informational function but are not information in and of themselves. When confronting prices, individuals act as if they learned all the relevant information from the prices. They do not necessarily directly obtain information from these prices. In the signaling role, prices explicitly communicate information about some quality of the good, or goods, in question. Individuals know the details necessary to economize efficiently. Understanding the surrogate and signaling roles of prices is certainly useful for economists. Regardless, it is not sufficient to understand the role of disequilibrium prices.

III. Austrian Price Theory and the Discovery Role of Prices

Austrian price theory is a large field that has been developed into numerous subfields and applied to various topics.² A survey of the entire literature is beyond the scope of this paper. What is most relevant here is that—in the Austrian approach—prices adjust within an institutional framework and market process (Kirzner [1973] 2013). This view posits a dynamic framework in which individuals face risk (Knight [1921] 1971) and an uncertain and unknowable future (Shackle 1958) but markets and institutions still work to disseminate information (Hayek 1945; Lachmann 1986; Strydom 1990). Additionally, the Austrian approach views prices in disequilibrium terms.

In the economics profession, much of the discussion surrounding prices is set against the backdrop of equilibrium analysis. Price adjustment is seen as a question whether prices converge to their predetermined equilibrium end states (Arrow and Hahn 1971). In reality, prices are complex and continually moving. Prices are formed in markets which are not states of perfect knowledge or optimal ignorance as understood by information economists. Markets are full of both known and unknown information, reflected in disequilibrium price discrepancies. Indeed, in the signaling view that Grossman and Stiglitz adhere to, prices cannot be perfect aggregators of information, and thus

² See Evans and Tarko (2014) for a brief survey of contemporary work in Austrian economics.

they are insufficient statistics (Grossman 1989).³ In their view, the presence of disequilibrium means that the ability of prices to serve their informational role is flawed. In contrast, Austrian economists contend that disequilibrium prices perform an essential informational role.

In the signaling view of prices, as found in the economics of information, knowledge is reduced to data (Klein 1997). Information is a commodity, no different from groceries on the shelf. Certainly, it is essential to the functioning of markets for economic agents to consistently assess the stock of knowledge. However, this is done to add to and revise the stock of knowledge (Lachmann 1986). Furthermore, this implies an element of uncertainty (Shackle 1958) and sheer ignorance (Kirzner [1973] 2013). That is, some information is completely unknown and not even previously thought of. The price discrepancies in disequilibrium reflect these areas of ignorance, and the profits that follow spark the continual discovery of new, and unthought-of, knowledge.

In the discovery view of prices, price disparities are the main emphasis. These disparities reveal profit opportunities that spark the entrepreneurial discovery of new knowledge—not just facilitating communication (Kirzner 1984). In this view, price discrepancies translate into potential profit opportunities. That said, it is really profits—from successful discovery—that perform the informational role (Thomsen 1992). Prices, serving as translators, perform this role indirectly. The entrepreneur is the economic agent who is alert to these previously unknown pieces of information (Mises [1949] 2010; Kirzner [1973] 2013). Profits from a successful discovery serve as both an incentive and reward to the entrepreneur. The reward encourages the discovery of new, previously unknown opportunities (Kirzner 1985). In the standard view, incentives are rewards that encourage economic agents to adopt a certain course of action and adjust their plans accordingly. However, these courses of action were already known to the agents beforehand but were not worth their cost. Without the incentive provided by the discovery role, individuals would (1) “be insufficiently motivated to do the right things” and (2) “not even know what the right things to do are” (Lavoie 1985, p. 21).

³ Grossman (1989) is a collection of several papers by S. J. Grossman and J. E. Stiglitz on the informational role of prices. They critique Hayek’s view of prices and argue that his theory does not hold in markets in which information is costly.

Now, there is certainly a discovery component in Hayek's description of prices above, especially when read in light of his 1937 paper "Economics and Knowledge." Hayek was not discussing competitive equilibrium prices. But he also was not describing the market process, which was later studied by himself and other Austrians. This is, arguably, what led to Grossman and Stiglitz's misinterpretation of Hayek's view of prices (Thomsen 1992).

Rather than focusing on static end states, the Austrian approach emphasizes the constant movement of markets. For instance, the sheer ignorance that is dissipated through entrepreneurial discovery is excluded from equilibrium models by definition, but it is essential to Austrian price theory. In fact, it is price discrepancies that highlight that ignorance (Kirzner 1984). Ignorance is a fundamental component of Austrian price theory. This is not to say static models cannot offer anything to price theory. Indeed, economists can say a lot about how individuals may respond to changes in prices. However, these models say very little about how those prices are formed in the first place. The discovery view, as found in Austrian price theory, helps understand the character of disequilibrium prices. The surrogate and signaling roles of prices have much to contribute to price theory. Thomsen (1992) argues that they can—and usually do—serve as components of the discovery role. However, understanding them is not sufficient to analyze disequilibrium prices.

IV. Economic Implications

The discovery view of prices, as found in Austrian price theory, has significant implications for economic analysis. What the above discussion suggests is that price formation is endogenous to the market process and the result of both appraisal and the subjective valuation of individual preferences. The determination of prices is traced back to the value judgments of individual consumers (Mises [1949] 2010). Individuals have ordinal preferences that interact with those of others and manifest in the form of market prices.

This has implications for the process of appraisal. Appraisal is the anticipation of future prices. It aims at establishing what prices will prevail on the market, which goods will sell at those prices, and how much money will be necessary to purchase those goods (Mises [1949] 2010, p. 329). In the market economy, individuals look at current (really, past) fluctuating prices and see these as reliable indicators for what future prices may be. Additionally, these prices also serve as useful indicators for

opportunity costs. Through this process, economic agents learn what prices may prevail in the future. Moreover, the alert entrepreneur may notice—or anticipate—price discrepancies and potential profit opportunities and drive this process further. Hence, the discovery role is prominent in this process. This process generates market prices and is undoubtedly driven with the assistance of information since price disparities reveal states of ignorance. However, since prices are determined by subjective valuation and appraisal, this implies that the information these prices reveal is subjective as well, with further implications.

The discovery view of prices can be applied to two different strands of market-process economics and to the analysis of interpreting information. Kirzner's (1997) disequilibrium view sees the market process as in continual motion and the exploitation of profit opportunities in disequilibrium as nudging the market in an "equilibrative direction" (p. 72). Contrarily, the nonequilibrium view of Lachmann rejects the tendency toward any equilibrium. Once the creative and dynamic nature of choice is recognized, any assumptions about the knowability of a predetermined future become unfounded; economic phenomena can be understood only as relating to subjective valuations manifested in choice or expectations about the market (Lachmann 1977). Still, both views of the market process emphasize the crucial element of information in the market process.

Lachmann (1986) argues that what is significant about information is that it involves an element of interpretation. This certainly carries implications for the pricing process. Individuals act to remove some "felt uneasiness" (Mises [1949] 2010, p. 14). They each have their own plan and perceived state of affairs (Kirzner [1960] 2009). Their actions depend on their own expectations and the expectations they impute to others in the market. That is, individuals interpret information privately based on their subjective valuations. Thus, information is crucial since plans are constantly revised as more is added to the stock of knowledge. Others will act upon this new information and adjust their plans accordingly.

The discovery view of prices has much to offer here. As stated above, profits perform an informational function by revealing successful entrepreneurial undertakings. The entrepreneur interpreted the information provided by prices in their discovery role (that is, the price discrepancies) as a potential profit opportunity. Conversely, loss reveals error, or rather an unsuccessful entrepreneurial action. The discovery role thus reveals information about the perceived preferred

states of affairs of economic agents, and entrepreneurs act to bring these states about (Horwitz 2010). All of this implies change, movement, and error. Austrian price theory acknowledges the imperfect nature of disequilibrium prices but sees that they still perform an important discovery role. It is because of their imperfect nature that they are able to perform the discovery role, and drive the market process, at all.

V. Conclusion

From the above discussion, it is clear that the discovery view of prices is needed to analyze the character of disequilibrium prices. However, the traditional framework—focusing on equilibrium states—is inadequate for understanding the discovery role. Austrian price theory provides the necessary backdrop to understand that role. It shows that disequilibrium prices reveal important information and incentives fundamental to functioning markets. The price discrepancies in disequilibrium reveal areas of ignorance, and the profits that follow incentivize the continuous discovery of new, and unthought-of, knowledge.

The discovery view has important implications for the process of appraisal and the interpretation of information. Prices, in addition to providing information about profit opportunities, provide information about perceived profit opportunities and states of affairs and provide the incentive to consistently be alert to them. Surely, the discovery view of prices has much to contribute to economic analysis.

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