The Pigovian Theory of Market Failure

Introduction

The purpose of this essay is twofold. First, it is to thoroughly analyze the concept of market failure and the factors that cause it, and second, it is to challenge on theoretical grounds the Pigovian[1] argument regarding market failures and externalities, which I believe to be flawed. I am aware that Ronald Coase has already done pioneering work to counter the Pigovian doctrine of externality, which was the dominant thought in mainstream economics in the 1940s and 50s.

In challenging the Pigovian argument of market failures, I argue in this essay that market failures do indeed exist, but they are a natural element of the market process, and since they are a natural element of the market process, they then do not need any external force of command to control the mechanisms of the market since the market is inherently a decentralized system of organization.

I – Market failure and the Pigovian Theory of Externality

The concept of market failure exists since the late eighteenth century when Adam Smith wrote the *Wealth of Nations*, precisely in 1776. In his magnum opus, the Scottish economist argued from a philosophical and ethical standpoint that when markets do end up failing, no external force outside the market should intervene within the market process to rectify the situation because the market ends up regulating itself since people naturally adjust their economic behavior according to the situation presented to them, which leads to a restoration of market activities.

This approach to market failure has been dominant throughout the nineteenth century with classical economics as the dominant economic thought until Cecil Arthur Pigou, a neoclassical British economist from the University of Cambridge and disciple of Alfred Marshall, reevaluated the matter but from a very technical and mathematical approach rather than from an ethical standpoint in the first half of the twentieth century. Before developing the Pigovian theory of external cost, let me first define what the term "market failure" means and what it entails.

a) Definition and concept of market failure

The term "market failure" could be defined as the economic situation where the distribution of goods and services is done in an inefficient fashion.[2] Hence, in economic terms, when the distribution of goods and services is not Pareto optimal[3], we then claim that the market has failed. There are generally four reasons why the market fails: (1) information asymmetries, (2) monopoly market, (3) externalities, and (4) public goods.[4]

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[1] The word "pigovian" is the adjective derived from the name of Arthur Cecil Pigou, who was a British economist from Cambridge University. He is considered to be the father of welfare economics and developed theory of market failure.

[2] Boyle, Michael. "Market Failure" *Investopedia.* (2020).

[3] The term "Pareto Optimal,"also known as Pareto Efficent" is a situation where no individual or preference criterion can be better off without making at least one individual or preference criterion worse off or without any loss thereof.

[4] Boyle, (2020).

a.1 Market failure by information asymmetries

Information asymmetries occur when sellers know more about what they are selling than consumers do.[5] The consequence is that buyers may unknowingly purchase commodities with defects at a higher price than they would have been willing to pay if they had information about the defects.[6]

a.2 Market failure by monopoly

In a monopolistic system, there is only one producer of a good or service, and market power is concentrated in the hand of a single producer.[7] There are no other producers, no other appealing substitutes and the single organization has excessive power that no other competitor can gain footing in the market. As a result, consumers are in a weak position to influence the monopolist's behavior because they have nowhere else to get that good or service.[8] Since the monopolist producer has no competitor in a monopolistic market, he, therefore, has weak incentives to cater to consumers' demands.[9] Hence, the producer will produce too little or poor-quality goods or services while pricing them above marginal cost.[10]

a.3 Market failure by externalities

Externalities, which are sometimes called "spillovers" occur when a transaction generates a benefit (positive externality) or a cost (negative externality) on a party not directly involved in the transaction.[11] Externalities pose problems for markets because the price of a good or service associated with an externality does not reflect the total societal benefits or costs from these goods or services.[12] As a result, companies or organizations will produce either too much or too few goods or services, depending on the externality.[13]

a.4 Market failure by public goods

The delivery of public goods by private or public companies can create the problem of "free-rider," which can happen when enough people can enjoy a good or service without paying for the cost to supply it. As a result, the company will underprovide or not provide at all.[14]

The Pigovian theory of market failure essentially focuses on how externalities affect the market.

b) The Pigovian Theory of Externality

Arthur Cecil Pigou (1877-1959) was a disciple of Alfred Marshall. Alfred Marshall, one of the founding fathers of neoclassical economics, saw economics as the science or the study

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[5] Lueken, Martin. "Defining Market Failure" *EdChoice.* (2018).
[6] Lueken, (2018)
[7] Lueken, (2018)
[8] Lueken, (2018)
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[10] Lueken, (2018)
[11] Lueken, (2018)
[12] Lueken, (2018)
[13] Lueken, (2018)
[14] Lueken, (2018)

of the material improvement of human welfare. It is from this definition that A.C. Pigou developed the branch of welfare economics as a unique field of economics, which uses methods of microeconomics to evaluate human welfare at the aggregate level.

A. C. Pigou built his entire theory of market failure on cost-benefit analysis, which is represented by externalities. He argued that the mere existence of externalities is sufficient for government intervention. If someone is creating a positive externality—say, by educating himself and making himself more interesting or useful to other people—Pigou advocated subsidies for activities that create positive externalities. They are called Pigovian subsidies.[15] If someone, on the other hand, is creating a negative externality, such as pollution, for instance, that person is engaging in too much of the activity that generated the externality.[16] To remedy this negative externality, Pigou proposed a tax against private individuals or businesses for engaging in activities that create adverse side effects for society.[17] This tax is called the "Pigovian tax." The Pigovian tax is meant to discourage activities that impose a cost of production onto third parties and society as a whole.[18]

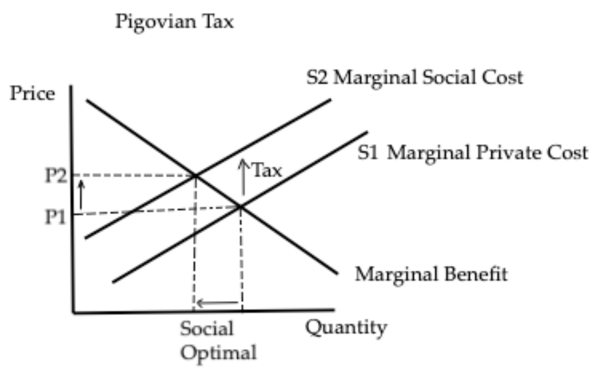
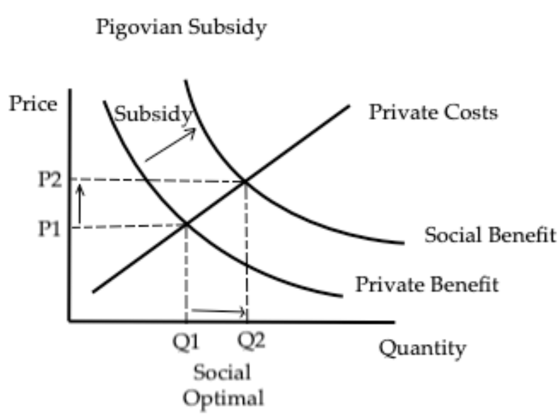


Figure 1



[15] Arthur Cecil Pigou, *The Library of Economics and Liberty*
[16] Arthur Cecil Pigou, *The Library of Economics and Liberty*
[17] Kagan, Julia. "Pigovian Tax" *Investopedia.* (2020).
[18] Kagan, (2020)

Figure 2

According to Pigou, negative externalities prevent a market economy from reaching equilibrium when producers do not take on all costs of production, and this adverse effect might be corrected, he suggested, by levying taxes equal to the externalized costs.[19] Ideally, the tax would be equivalent to the external damage caused by the producer and thereby reduce the external cost going forward.[20] The problem with Pigou's argument on market failure is that government intervention does not always minimize externalities. On the contrary, it expands them, as Milton Friedman called "unintended consequences." It is the expansion of these externalities that we are now going to discuss in the second part of this analysis.

II – Market Failure as Part of the Market Process

The problem with the Pigovian approach to market failure is that it treats market failures as an event that is external to the market process whereas market failures are not external to the market process. They are part of the market process.

As Hayek argued in his paper *The Use of Knowledge in Society* (1945), the market is a social organization based on a spontaneous order. The concept of the spontaneous order suggests that there is no central authority to neither determine nor coordinate the mechanisms of the market process since the market is a decentralized system dictated by the laws of supply and demand. Hayek further argued that the reason why a central authority cannot control the market process is that there are a billion pieces of information that are being shared among people, and it is remotely impossible for a central planner to collect all these pieces of information because the information being transmitted can always be modified and its modification will ultimately change the nature of the decision being made.[21] Yet, the Pigovian theory seeks to do the very opposite. It seeks to transform an inherently decentralized system into a centralized one where the government would control the mechanisms of the market process.

How is market failure part of the market process? The market is evidently not perfect. Indeed, it does fail sometimes because the market process is not always subject to perfect competition. But its failure does not necessarily imply that government must intervene to correct the wrong. Market failure sometimes indicates that a market has reached its point where innovation is no longer possible. When production stagnates due to a lack of innovation, it means that consumers do no longer see any value in the good or service that is been supplied to them. Even if the market is subsidized by government to increase production, subsidization leads to a lack of innovation the government is preventing the producer from failing if consumers are dissatisfied with what is being produced. This is the case in the following model where the market fails due to a lack of innovation. Demand falls. As demand falls, the quantity produced is there reduced as well since no one is buying. Since no one is buying, the producer attempts to reduce prices to stimulate demand. But the behavior expressed by consumers is not affected by the price being reduced because the quality of the product or service being supplied has decreased in value. Therefore, consumers have no incentive to purchase a product or service that

[19] Kagan, (2020)

[20] Kagan, (2020)

[21] Hayek, Friedrich von. "The Use of Knowledge in Society" *The American Economic Review.* (1945). Volume 35, No. 4. Pp. 519-530

stagnates in terms of quality. We see that the Pigovian subsidy implemented by the government only expands the externality instead of reducing it.

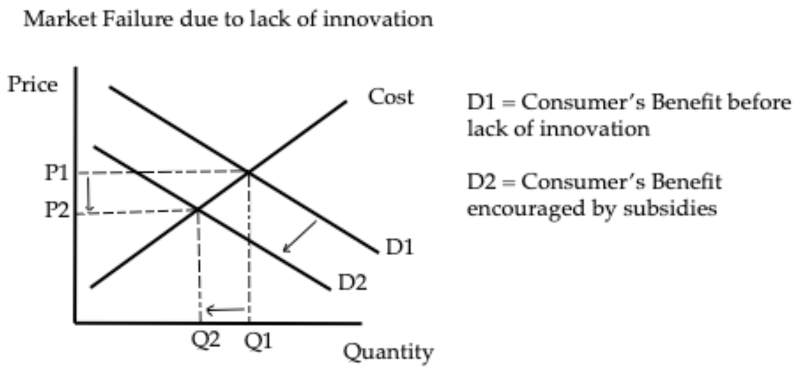


Figure 3

By implementing a subsidy within the market, government distorts its process. Markets fail in order to create new markets. As a matter of fact, the market process is a recycling process because its mechanism operates through unplanned coordination. This unplanned coordination has been developed by Ronald Coase, who, through the Coase Theorem, argued that in the face of market inefficiencies, citizens are able to negotiate a mutually beneficial solution as long as there are no costs associated with the negotiation. When government intervenes to rectify or correct a given inefficiency within the market, it imposes a cost. This cost may reduce the externality in the short-term, but it expands it in the long-term.

More importantly, the Pigovian theory of market failure ignores that government fails to. Pigou assumed, whether consciously or unconsciously, that government knows what is best for the market than the buyers and producers would. Pigou assumed that government agents are benevolent and selfless individuals. If we consider government actors as rational self-interest individuals like the entrepreneurs in the private sector, we can see their incentives are not so different since they both seek to maximize their utility. The difference between the entrepreneur and government actors is that government actors have a higher likelihood to misallocate the resources that government attempts to allocate efficiently because they do not bear the cost of the misallocation. If government misallocate resources, it will implement a new law in an attempt to rectify the damage caused by the previous law. But the government agents will not pay the cost of their failure. If the entrepreneur, on the other hand, misallocates resources; he will bear the cost of this misallocation. He could lose a substantial portion of his factors of production or even go out of business.

Taxes and regulations are used as tools of mechanism to attenuate spillovers. However, these two measures create an additional burden. If we take for example the case of a single-payer system, we can see that the cost of healthcare will significantly rise mainly on those in the middle-class because while the service provided will not be expanded to all kinds of medical treatment. Hence, the citizen would pay a higher cost for a lower value. In a market free from government intervention, citizens will find a way to arrive at a consensus where everyone will benefit because they would rely on property rights as a transaction cost to leverage their options. Something that cannot be done under a Pigovian framework.

Conclusion

Market failures are nothing parts of the market process. They are a natural element of how the market operates. The market is not always efficient at all times. Some of its inefficiencies though should be interpreted as signals of consumer's choice. When a market fails, another market arises to compensate the one that failed. It means that a product or service has either been created or innovated to improve its efficiency and serve consumers better. Market failure as a part of the market process means that incentives have changed, as incentives change demand changes accordingly. Producers then have to adjust to the new demand in place for the market to maintain its activity.

References

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15. Arthur Cecil Pigou, *The Library of Economics and Liberty*

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17. Kagan, Julia. “Pigovian Tax” *Investopedia.* (2020).

18. Kagan, (2020)

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