

Todorova, Tamara

**Article — Accepted Manuscript (Postprint)**

## The Transaction-Cost Roots of Market Failure

Journal of Advanced Research in Management

*Suggested Citation:* Todorova, Tamara (2015) : The Transaction-Cost Roots of Market Failure, Journal of Advanced Research in Management, ISSN 2068-7532, ASERS Publishing, Craiova, Vol. V, Iss. 1(11), pp. 30-44

This Version is available at:

<https://hdl.handle.net/10419/222989>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*

# THE TRANSACTION-COST ROOTS OF MARKET FAILURE

Tamara TODOROVA

Department of Economics

American University in Bulgaria, Bulgaria

[ttodorova@aubg.bg](mailto:ttodorova@aubg.bg)

1 blank line Arial Narrow 11 pt

## Suggested Citation:

Todorova, T. (2015). The transaction-cost roots of market failure, *Journal of Advanced Research in Management*, (Volume V, Summer), 1(11):65-73. doi:10.14505/jarm.v6.1(11).01. Available from: <http://www.asers.eu/journals/jarm/jarm-issues>.

## Article's History:

Received August, 2015; Revised October, 2015; Accepted December, 2015.

2015. ASERS Publishing. All rights reserved.

## Abstract:

*Our purpose is to reveal the transaction cost character of the different forms of market failure where transaction costs are defined as the costs of using the market mechanism, what it costs to organize market exchange or overcome the obstacles to an efficient market process. The paper thus inevitably attempts at defining market failure in this new context. It also studies market power, externalities, opportunism and informational asymmetries as the different forms of market failure from the perspective of transaction cost theory. We discuss public goods and the role of the state in overcoming the marketing costs of private transacting. This role would be stronger in economic systems faced with sizable transaction costs and thus more prone to market failure where market failure becomes a true obstacle for economic development.*

**Keywords:** transaction costs, market failure, economic development

**JEL Classification:** I31, O11, P0

## 1. Introduction

Market failure was not on the research agenda of old classical economists since they considered markets perfect instruments of resource allocation which work themselves out. Eventually it became apparent that certain markets do not and cannot always clear, that other markets adjust but do it slowly, while still other markets have the tendency to grow firms with excessive market power.<sup>1</sup> Neo-classicals have thus had to admit this inefficiency of market operation and generally market failure is viewed in the standard literature as some form of inability of the market to properly allocate resources.

It is believed that markets which provide for a competitive environment and consequently free exchange, where no externalities in production or consumption exist but which clear in a high-end equilibrium, are efficient markets. Such markets allocate resources promptly and efficiently with the help of prices which coordinate the activities of market participants and assign resources to their best use. Some scholars (Bator 1958) have studied the notion of market failure strictly from the viewpoint of Pareto efficiency, i.e., that at the high-end equilibrium and under ideal conditions the market operates in a way such that no person can be made better off without making some other person worse off.<sup>2</sup> The existence of market failure is thus seen as grounds for improvement in the market game where at least one person can be made better off without hurting another or where resources can find some better,

---

<sup>1</sup> Recognizing the deficiencies of the market, Stiglitz notes that “the invisible hand” is invisible because it is not there (Stiglitz 2002).

<sup>2</sup> Bator defines market failure broadly as “the failure of a more or less idealized system of price-market institutions to sustain “desirable” activities or to stop “undesirable activities” where by activities he means consumption and production (Bator 1958, p. 351).

more highly valued use. Other definitions describe market failure purely in terms of market equilibrium where the quantity of a good or service consumers demand diverges from the quantity suppliers want to supply. Still other definitions circulate around the inability of prices to capture certain positive or negative effects in the process of exchange. They encompass the weaknesses of the price mechanism and its eventual breakdown in reflecting all aspects of the exchange and in achieving optimal allocation. Note that all these are partial definitions of market failure since each one of them describes a particular form of it. Whereas the Pareto efficiency definition emphasizes the divergence from the competitive outcome and thus hints at monopoly power, the second definition of disequilibrium implies low-end or no equilibrium as in the case of asymmetric information, opportunism and complete market failure. The third definition exposing the deficiencies of the price mechanism involves externalities where social and private benefits diverge as do social and private costs. It is better to define market failure broadly as the failure of a market to allocate resources optimally, that is, to their best use and being appropriated by economic agents who value them the most or can use them best, due to the presence of some inherent obstacles to or defects of market exchange. The different forms of market failure then should be given a more specific, precise definition and studied individually, each with respect to these intrinsic hindrances of the market process. Since the latter is a costly mechanism where all transactions face some costs to organize, all types of market failure where the costs of market exchange are exhibited may be traced to transaction costs and all types of market defects may reflect transaction costs or have transaction cost roots of a specific kind.

Transaction costs challenge the presumption of neoclassical theory that Pareto efficiency occurs at the point of equilibrium. Given zero transaction costs, social benefits will equal private benefits exactly at the point of equilibrium. Likewise, with zero transaction costs all firms would be competitive and no monopoly of any form would exist. Transaction costs, in a way, question the very concept of standard equilibrium as the Pareto optimum and move it to a new, somewhat invisible equilibrium. The purpose of this paper is to reveal the transaction cost character of the different forms of market failure where transaction costs are the costs of using the market mechanism as defined by Coase (1937), what it costs to organize market exchange or overcome the obstacles to an efficient market process. Since markets are not costless and transaction costs are always positive in the real world, most market exchanges are faced with different levels of costs, where different types of market failure manifest different forms of transaction costs or link with different magnitude of those costs. That transaction costs could be the reason for some types of market failure was observed by other economists who hinted at the transaction-cost nature of market failure. The first part of the paper contains the views of those scholars. The second part discusses the major forms of market failure in relation to transaction costs. The paper ends with conclusions.

## **2. Literature review**

By defining transaction costs Coase (1937) deduced that the market is not a costless mechanism and transactions require resources to organize safely. Since the market is not a perfect instrument of running the economic system in that it cannot be omnipresent and do all resource allocation by itself, some of its functions are taken over by firms as administrative structures when transactions are too costly to organize by market means. The very presence of transaction costs, intentionally ignored or involuntarily omitted, speaks of the imperfections and frictions of the market as a resource allocation system. Furthermore, lower transaction costs relate with smaller firms, while higher transaction costs are associated with larger firms which supersede the market mechanism when the costs of transacting are sizable. In the extreme case of insurmountable transaction costs and in view of the small size of the market, Coase hypothesizes, there will be only one firm engulfing all functions of the market and substituting it completely. This firm Coase refers to could either be 1) the monopoly firm, based on private property rights and managed administratively by the manager, or 2) the state firm, as a superstructure of unique character, organized along public ownership and run by the government or a manager appointed by the government, where both administrative structures serve to economize on transaction costs and both represent types of monopoly power.

In "The Problem of Social Cost" Coase (1960) discusses the case of a crop owner and a cattle breeder, whose interfering activities reduce the maximum amount of their joint production and where the activity of one causes an externality to the other. Depending on the existing property right system and in the absence of transaction costs, Coase concludes, liability would fall on either party and they would negotiate and renegotiate to the point where the joint output of the two businesses would be maximized. Hence, there will be no externality with zero transaction costs. Since in the real world transaction costs are always positive, the problem of externality is pending and there is

a role for the state and judges to play in such cases of nuisance where economic resources must be allocated optimally so that to maximize the joint output of the interfering activities. With significant transaction costs only those transactions that cost little to organize and carry out will occur on the market and by deciding in favor of one party or the other judges in effect allocate economic resources influencing the economic system in one way or another.

Although “The Nature of the Firm” does not directly relate market operation to inefficiency, and transaction costs to market failures, it implies market failure since allocation does not occur at zero transaction costs but provides for monopoly with sizable transaction costs. “The Problem of Social Cost” describes market failure more overtly in that it elaborates on the concept of externality. While Coase’s first seminal article hints at market power, the second on the problem of social cost directs to the externality problem. Neither article takes the stand of welfare economics by providing normative analysis or policy recommendations. Both articles reveal the discrepancies of the market in a positive, neutral way.

Arrow (1969) was the first to overtly relate market failure to transaction costs. He postulated that transaction costs can be regarded as the general reason for the nonexistence or failure of markets.<sup>3</sup> Arrow makes a clear distinction between increasing returns to scale and market failure as they relate to Pareto inefficiency, on the one hand, and to the existence and optimality of competitive equilibrium, on the other. Arrow sees market failure as a more general category than externality where the problem of externality is “a special case of a more general phenomenon, the failure of markets to exist” (Arrow 1969, p. 513). Both market failures in general and externalities in particular relate to the mode of economic organization, while increasing returns are essentially a technological phenomenon. Exploring this comparison further, he maintains that transaction costs are a more general formulation, as they can be attached to any market and, hence, to any mode of resource allocation:

“Market failure is the particular case where transaction costs are so high that the existence of the market is no longer worthwhile. The distinction between transaction costs and production costs is that the former can be varied by a change in the mode of resource allocation, while the latter depend only on the technology and tastes, and would be the same in all economic systems.”<sup>4</sup>

Thus transaction costs vary from system to system where Arrow sees the advantages of the price system over some form of authoritative allocation (the state) in economizing on costs of information and communication. The welfare losses of transaction costs resulting from the divergence of buyer’s and seller’s prices must be weighed against any possible increase in transaction costs when changing to another system (the state machine). Arrow does not seem to favor governmental regulation even in the mildest form of taxes, subsidies or regulatory legislation.

Arrow identifies three sources of transaction costs: 1) exclusion costs, 2) costs of communication and information, including those of learning about the terms on which the transaction could be carried out, and 3) the costs of disequilibrium as the absence of equilibrium where it takes time to compute optimal allocation be it under the market or authoritative allocation. As formulated, the three types of costs resemble some of the most popular forms of market failure. Whereas exclusion costs hint at the problem of externality, the costs of communication and information remind of opportunism in bargaining and informational asymmetries, while those of disequilibrium near the concept of complete market failure where supply and demand cannot meet at all since “the highest price at which anyone would buy is below the lowest price at which anyone would sell” (Arrow 1969, p. 513). Arrow points at several areas where the market fails, more specifically, externalities and pollution, adverse selection, moral hazard, the principal-agent problem, information costs, risk and uncertainty, as well as market power. He also hints at opportunism in that “mutually advantageous agreements are not arrived at because each party is seeking to engross as much as possible of the common gain for itself” (Arrow 1969, p. 506). Discussing market versus non-market

---

<sup>3</sup> More specifically, Arrow (1969, p. 501) writes: “...market failure is not absolute; it is better to consider a broader category, that of transaction costs, which in general impede and in particular cases completely block the formation of markets. It is usually, though not always emphasized that transaction costs are costs of running the economic system.”

<sup>4</sup> Arrow (1969, p. 513).

allocation, Arrow describes the role of collective action as a means to overcome market failure. This collective action could either be 1) firm structures<sup>5</sup> or 2) social norms and rules of market exchange.<sup>6</sup>

In his study of market failure Toumanoff (1984) finds that if transaction costs are incorporated in theoretical economic models, much could be explained about the behavior of individuals under alternative institutional forms (market or administrative) as well as the evolution of those institutions. He criticizes welfare models of exchange which ignore transaction costs since these are the costs of the exchange process and “provide an explanation for market failure.” He relates two types of market failure to transaction costs, more specifically, market power and externalities where “monopoly power and externalities are symptomatic of the existence of transaction costs” (Toumanoff 1984, p. 534).

Yet, from the perspective of welfare economics, Toumanoff’s attempt at a positive analysis of the theory of market failure does not seem successful since he does not see market failure as an inefficiency of the market but rather as the relocation of economic resources due to the presence of transaction costs.<sup>7</sup> Toumanoff’s positive treatment of the theory of market failure and transaction costs violates his own definition of market failure as “the failure of market institutions to promote or to inhibit trade to some specified optimum” (Toumanoff 1984, p. 529). Substituting any form of market allocation by any form of non-market allocation (be it firm, state, communal ownership, state regulation or other form of collective action) due to the presence of transaction costs merely illustrates the deficiency of the market to perform its role. While the analysis seems to be correct in relating market failure to transaction costs, it seems wrong in its general treatment and understanding of market failure.

Williamson, too, sees the origins of market failure in transaction costs which require the substitution of market allocation with firm structures (Williamson 1985, p. 8). Continuing Coase’s basic line of thinking, Williamson (1971, p. 112) discusses the special case of market substitution by vertically integrated firms. This substitution is less attractive on account of technological economies associated with production but results rather from the “transactional failures” in the operation of the markets for intermediate goods:

“That product markets have remarkable coordinating properties is, among economists at least, a secure proposition. That product markets are subject to failure in various respects and that internal organization may be substituted against the market in these circumstances is, if somewhat less familiar, scarcely novel. A systematic treatment of market failure as it bears on vertical integration, however, has not emerged. ...the remarkable properties of firms that distinguish internal from market coordination have been neglected.”<sup>8</sup>

Williamson (1971, p. 113) considers efficient those intermediate markets where prices are non-monopolistic, market exchange experiences low transaction costs and there is potential for essential economies. He studies market failures in the limited sense “in that they involve transaction costs that can be attenuated by substituting internal

---

<sup>5</sup> Arrow does not see collective action necessarily in the coercive power of the state apparatus, neither in government intervention (in the form of taxes, expenditures, regulatory legislation and eminent domain proceedings), but, rather, as firm structures which can overcome excessive transaction costs and market failure as in the case of vertical integration where the costs of buying and selling on the market can be superseded by the costs of intrafirm transfers (Arrow 1969, p. 501).

<sup>6</sup> Societies facing insurmountable market failures resort to social norms and ethics of market exchange since “...norms of social behavior, including ethical and moral codes... are reactions of society to compensate for market failures.” Trust is seen as a means to maintain market exchange since “in the absence of trust it would become very costly to arrange for alternative sanctions and guarantees, and many opportunities for mutually beneficial cooperation would have to be forgone.” He interprets customs and norms as agreements to improve the efficiency of the economic system by providing commodities to which the price system is inapplicable.” Banfield (1958) also studies lack of trust as the reason for market failure.

<sup>7</sup> He writes: “When the costs of the exchange process are incorporated in the analysis, the model is consistent with observed behavior, but the implication of inefficiency or market failure is no longer valid. The methodological inconsistency of the theory of market failure is the uncritical acceptance of an incomplete model” (Toumanoff 1984, p. 533). Furthermore, in explaining market power Toumanoff borrows on the example of trademarks provided by Demsetz (1982) which is rather limited and not comprehensive of the diverse forms of market power, on the one hand, and taking on the perspective of property rights instead of the more relevant transaction cost theory, on the other.

<sup>8</sup> Williamson (1971, p. 122) underlines the fragmented nature of the market failure literature in its treatment of vertical integration which he aims to systematize.

organization for market exchange” (1971, p. 114). The single dominant firm is seen as the direct result of the failure of markets to function in the manner normally assumed by economists and antitrust experts. Williamson (1968, 1972) recognizes that market power can, indeed, result from transaction costs causing market inefficiency and the attempts of firms to achieve cost economies by mergers. Two anticompetitive effects of vertical integration as the result of transactional failure are: 1) price discrimination and 2) entry barriers. Furthermore, market power is studied jointly with efficiency and transaction cost economies resulting from optimal firm size and vertical mergers. Williamson (1968, p. 33) writes:

“That vertical integration can produce real economies is a result of the fact that the market does not perform its exchanges costlessly. Going to the market involves search costs, contracting costs, misinformation costs, delay costs, transfer costs, interface costs, etc., and these must be balanced against the costs of organizing a transaction internally. Where the former exceed the latter, “vertical integration” is indicated. ...in fact it represents a rationalization of the firm into an optimum economic unit. ...an efficiency defense is not automatic. Furthermore, if an efficiency defense can be supplied, any market power consequences that a vertical merger produces need also to be considered.”

In what is known as the Williamson tradeoff efficiency and market power go together. Market power could be the result of transaction costs in search of efficiency, though power may not be intentionally sought.<sup>9</sup> A major drive of vertical integration is asset specificity paired with opportunism and uncertainty. The incentives for vertical integration, and, thereof, market power, strengthen, as assets become more specific to a single use and, therefore, less transferable to other uses; parties become more open to opportunism and require the special protection that integration can supply.<sup>10</sup> Opportunism is defined as a strong form of self-interest seeking and differs from simple self-interest seeking as a semistrong form and from obedience, which is equivalent to non-self-interest seeking. When paired with asset specificity, bounded rationality and uncertainty in contractual relations consistent opportunism forces firms to resort to vertical integration.<sup>11</sup> With contractual incompleteness the costs of litigation and dispute resolution between separate entities exceed those of resolution by fiat within the firm. Williamson (1971) thus raises the issue that with incomplete contracts, imperfect information, opportunism and uncertainty contract enforcement is difficult, thereby, necessitating intrafirm arbitration.

While Williamson reveals the transaction cost nature of vertically integrated firms, this is only a limited study of market failure, as it represents the special case of vertical integration. Market power should be studied more broadly in its transaction cost context and not just with respect to vertical integration since market power has deeper and more diverse roots in transaction costs than vertical integration can reveal. The market failure aspects of organically grown, natural, or state-owned monopolies remain unexplored and unclear. Other types of market failure remain unexplained by transaction cost economics, too. Williamson’s theory has true contribution to the study of the firm, its operation, size and growth. But to the economics of market failure, welfare and development it is more important to study markets in relation to human behavior in the form of opportunism and market failure as the consequence of

---

<sup>9</sup> Williamson investigates the special case where price increases postmerger, but the cost savings to the enlarged firm exceed the loss of consumer surplus, i.e., there is a positive net effect on total social surplus. Williamson, thus, concludes that transaction cost savings which offset a given price increase, make a merger justifiable. He asks: “But in the occasional case where efficiency and market power consequences exist, can economies be dismissed on the grounds that market power effects invariably dominate?” While he does not welcome antitrust measures, he seems somewhat neutral by concluding: “This does not of course mean that the mere existence of economies is sufficient to justify a merger.” (Williamson 1968, p. 34).

<sup>10</sup> Asset specificity arises in relation to special purpose investments that are more risky than general purpose investments because specialized assets cannot find alternative uses without some sacrifice of productive value if contracts are terminated earlier. Specificity takes several forms: site specificity, physical asset specificity, human asset specificity, dedicated assets and brand name capital. Bounded rationality is the rationality of individuals who are “intendedly rational but only limitedly so” (Simon 1961, p. xxiv) and differs from maximizing and organic rationality, the former showing a maximizing orientation in the presence of full information, the latter being one of complete ignorance.

<sup>11</sup> Williamson (1985, p. 47) defines opportunism as “self-interest seeking with guile. This includes but is scarcely limited to more blatant forms, such as lying, stealing, and cheating. Opportunism more often involves subtle forms of deceit. Both active and passive forms and both *ex ante* and *ex post* types are included.”

human deeds and misconduct which lead the market into an abyss. Thus the concept of opportunism as human selfishness in market dealings is more important in the general context than just in its relevance to vertically integrated firms and firm substitution of market exchange. Transactional opportunism is more important as the general reason for the inability of markets to clear at the Pareto optimum. While opportunism can be the reason for 1) market power in the form of vertical integration, as seen by Williamson, it is as well and, perhaps, more importantly the reason for 2) complete market failure in a low-end equilibrium where supply and demand cannot meet at all. It is this second aspect of opportunism that we emphasize here.

### **3. Transaction costs at the root of market failure**

It becomes apparent that contemporary economics is lacking a general explanation of the reasons for market failure. Since all forms of market failure could be explained by transaction cost means, it is logical to build up the theory along the concept of transaction costs. However, an essential and comprehensive transaction cost theory of market failure is missing. Although the different forms are studied elaborately, few theoreticians try to analyze the general roots and foundation of market failure. Various symptoms of the market illness are being identified or diagnosed but ultimately the problem lies with or can be traced to transaction costs as the true disease. Like doctors confuse disease with symptoms, economists seem to be confusing the cause with the effect considering the effect to be the cause. In particular, the various presentations of market failure which result from transaction costs are seen as the reasons for market failure whereas they appear to be merely the effect of those costs.

The transaction cost character of market failure has thus been studied poorly. The neoclassical tradition studies market failure in terms of symptoms and manifestations and separately from its transaction cost roots. The new institutional economics school studies market failure one-sidedly and in a fragmented way, emphasizing just few of its forms and lacking a general transaction cost theory of market failure. If all types of market failure can be attributed to market transaction costs, then systems with prohibitively high transaction costs are more prone to market failure. This will profoundly affect resource allocation and policy tools in societies and spheres experiencing strong market friction in their attempt to build efficient markets.

#### **The problem of externality exhibited**

The problem of externality is perhaps most illustrative of how transaction costs cause market failure. In his example of the interfering businesses of the cattle breeder and the crop owner, Coase demonstrated that negotiations through the market process and market dealings between private agents may be hampered by costly and strenuous bargaining and high transaction costs. When property rights are clearly defined and transaction costs are close to zero, the two parties negotiate and renegotiate to the point of joint output maximization which represents the classical Pareto optimum. Irrespective of who has the liability, resource allocation would be driven by efficiency. An efficient business involved in an externality would pay the other and resources would be allocated optimally. If the cattle breeder causes an externality to the crop owner by damaging his crops and has liability for it, there may be two possible outcomes. If the damaging business of the cattle breeder is relatively efficient, it will pay compensations to the damaged business of the crop owner for causing externality to it. If the damaging business is inefficient, it would then be worthwhile closing it.

In the opposite case when liability falls on the damaged business of the crop owner, efficiency considerations reign again. If the harmful business has the right to cause the externality, then the harmed business of the crop owner may pay him sufficiently well to stop receiving the externality. Depending on his relative efficiency the crop owner might decide to either pay the cattle breeder to stop damaging his crops or go out of business himself. Thus parties would negotiate and renegotiate in the direction of liability and efficiency to the point of Pareto optimality. Since it may be difficult or impossible to define property rights clearly and the very process of negotiations may be significantly hindered by transaction costs, the Pareto optimum cannot be achieved in cases of nuisance. Transaction costs may originate from three essential types of problems: 1) impossibility to define property rights, 2) technical constraints in the process of negotiations; 3) immeasurability of externality. In some cases it may be impossible to define property rights and the liability of the parties. In the example of the cattle breeder and the crop owner fencing would be a solution to the problem of nuisance and either party may be liable or required by law to build up the fence. However in some situations such a solution may be unavailable. Consider the right to clean air with the similar example of the smoker-nonsmoker problem where the fumes of air may enter the nonsmoker's area without the

possibility of building a barrier. Similar examples of nuisance problems are the right to clean water, the right to quiet and noise, congestion externalities, etc. where each party could claim right of ownership or right of usage. Crampton (2007) stresses that due to positive transaction costs some rights to resources cannot be assigned fully, enforced fully or priced properly reducing thus the individual's incentive of taking fully into account the harms and benefits of his actions. Undefinable property rights may be an essential source of transaction costs where it may take time, efforts and other resources to establish rights as well as liabilities.

Transaction costs may also originate from the technical constraints arising in the process of negotiations. It may be difficult or technically impossible to identify all stakeholders and parties engaged in or affected by the externality, to coordinate successfully among them, to compensate them and to lead strenuous negotiations involving such multiple parties whose interests and demands have to be reconciled. Thus, private bargaining can be so costly and burdensome that it prevents Pareto optimum as in the case when a large number of participants or property owners are involved. It may be particularly lengthy and effort-taking to redistribute property rights among multiple claimants. Some scholars (Gillman 1999) emphasize the costs of obtaining information in private dealings where it may be too costly for one private coalition to bargain and negotiate with another private coalition. Hence, some types of transaction costs in resolving externality problems stem merely from coordination problems, technical constraints, and the hard process of multilateral negotiations.

A third cause of transaction costs may be the impossibility to measure externality. Sometimes the very type, magnitude and effect of the externality may be hard to detect by market means. In the case of pollution as a form of negative externality it may generally be difficult to measure the extent of pollution and the exact effect it has on the environment and third parties. Consider the case of a nuclear accident where the long terms effects of radiation may be unknown and, therefore, hard to incorporate into negotiations or compensations. Likewise, a person driving a polluting car may find it difficult to identify all the people affected by the exhaust and fumes of his car. In the case of positive externality exclusion costs may represent significant transaction costs prohibiting the exclusion of third parties benefiting from a positive externality. Transaction costs present, it may be impossible to allocate private resources optimally opposite to the classical claim that private economic resources are used best and have highest value, as they can freely be traded on the market and appropriated by those economic agents who can use them best or value them the most. Sizable transaction costs partially hamper or completely block market exchanges prohibiting thus resources to be freely traded and preventing a Pareto optimal allocation of resources where a maximum output in the economy cannot be achieved.

Generally, externalities allow markets to clear but not at the Pareto optimum. In the case of positive externality markets clear on the left of the Pareto optimum, causing thus a deadweight social loss and providing less of the good than is socially desirable or optimal. Since social benefits exceed private benefits, there are few incentives for the private agent or individual to continue supplying the socially desired good. The deviation between what is supplied and what should be supplied, i.e., between the actual equilibrium and the Pareto optimum, is exactly the size of the transaction costs borne by the individual who incurs them and is not fully compensated or awarded by society. With a positive externality where a hotel maintains a rose garden enjoyed by the entire community exclusion costs demotivate the hotel management to provide more of the garden and plant more roses. The hotel owners may not feel sufficiently encouraged to plant more roses. With a positive externality such as education which has true value for society youth is discouraged from studying since to the individual student funding education may be difficult whereas the benefits which accrue to society are numerous. Since the individual is not sufficiently remunerated for his efforts and other members of society do not pay him and the problem of exclusion reappears, he finds it unattractive to invest in such a difficult undertaking. Transaction costs present, it is difficult to identify free riders and charge them the true economic price of what they consume. Again the divergence between social and private benefits or rather social benefits and private costs is merely the amount of transaction costs. Prices do not reflect the true economic and social cost of an externality. This failure of prices to work as signals of resource allocation is, in effect, a failure of the market.

Negative externalities present similar examples except equilibrium now occurs right of the Pareto optimum causing again a deadweight social loss due to oversupply. Too much of the good or service is provided. To the individual supplier or economic agent the benefits justify the activity but the costs are borne by society. These excessive costs not accounted for by prices are either borne by the whole society or by individual members as bystanders. The excess of social costs over private in the case of negative externality represents transaction costs

uncompensated or unaccounted for by the price mechanism. Overconstruction, congestion and environmental harm are forms of market failure where the government can do little to curb private interests in the conditions of considerable transaction costs. Transitional economies are a vivid illustration of market failure in the case of privatization where common, municipally owned land is being privatized. Land restitution and privatization of common pool resources in former communist countries have resulted in overconstruction, destruction of nature, and congestion externalities beyond the point of social optimum thus reducing the maximum total product of the economy. Pristine areas are being excessively constructed with resorts; town parks and pedestrian areas in cities are brutally overconstructed with private blocks of flats, office buildings and hotels. To a hotel owner benefits exceed costs. Transaction costs absent, society would easily trade and redistribute property rights with the hotel owner so that to keep the area untouched. Whereas with positive externalities the transaction costs are borne by the individual economic agent to the benefit of society and free riders, with negative externalities society takes on transaction costs to the benefit of the individual economic agent causing the externality. It seems that with positive externality society is free riding on the activity and efforts of the individual while with negative externality the individual economic agent is free riding on society. The example of negative externality resembles a covert subsidy society provides to the individual or firm causing harm. The firm enjoys all benefits of the subsidy providing the good in excess while society carries the deadweight social loss of the subsidy in the form of significant transaction costs.

### **Market power**

Standard economic literature equates market power with monopoly power, the power of monopoly or oligopoly to extract excessive economic profits from its position on the market. Market power should be discussed in the context of private monopoly associated with the market economy. Two types of private monopoly, which represent forms of market power in a private-property based, market economy, are

- 1) Organically grown monopolies
- 2) Vertical mergers

A special type of monopoly is the state-owned monopoly which is associated with a non-market economy and, hence, does not represent a form of market power but could be a form of coercive power in the conditions of a market economy. Hence, monopoly power and market power are not the same, as presumed by standard literature, although both arise of transaction costs. In the presence of high market transaction costs the monopoly of the state could serve to substitute the market or market monopoly and save on the transaction costs of private monopoly or the market.

- 3) State-owned monopolies

Coase, Arrow and Williamson reveal the transaction-cost character of monopoly associated with the functioning of the market. But while Arrow and Williamson discuss the substitution of the market mechanism by vertically integrated structures, Coase provides a more general framework for the study of the firm putting it in a broader context. While the first two emphasize vertical mergers as a type of private monopoly where two large oligopolistic firms join in to form a larger firm with the purpose of achieving transaction cost economies, Coase's theory explains both types of monopoly, vertically integrated as well as organically grown monopoly structures. In "The Nature of the Firm" Coase unveils the transaction-cost origins of both types of firms. The firm grows larger and the manager takes on more and more of the activities and tasks of the market as the costs of using the market increase and as it pays him to perform the duties of the market. At the same time, Coase not only defines 1) the monopoly firm based on private property rights and managed administratively by the manager, but also hints at 2) the state firm as a monopoly organized along public ownership and run by the government. Thus, while the writings of Arrow and Williamson have relevance to market power and private monopoly as the direct result of market failure, Coase extends the discussion to the concept of monopoly in general, seeking the roots of both private and public monopoly in transaction costs. Both administrative structures result from the transactional failures of the market and both come to economize on market transaction costs.

Monopoly, in general, seems to be the result of market failure. Market power should be viewed more broadly than vertical integration and monopoly power should be viewed more broadly than market power. Transaction costs lie at the heart of all forms of monopoly, not only vertically merged firms. Transaction costs explain large firms

altogether, how they have grown naturally out of small, competitive firms through the market process. But transaction costs as well explain state-owned monopolies, how and why the state undertakes to perform the activities of the market and provide goods and services that the market fails to provide properly. In the extreme case of complete market failure the state undertakes to provide socially important goods and services that no private agent wants to provide through the market because in the presence of significant transaction costs the market does not pay him to provide those. According to Williamson enlarged firms do not seek market power but aim at cost efficiencies. The ultimate effect though is market power. Whether two large firms merge or a small company grows naturally taking over the functions of the market to turn into a single, dominant firm in it, transaction costs appear to be the driving force behind market power. The presence of transaction costs leads to the substitution of the market with nonmarket allocation and collective action in the form of firms with huge market power. Although a form of non-market allocation, large, dominant firms exhibit market power and represent a direct result of market failure. Likewise, the state-owned monopoly comes in to play the same role whenever there is market failure present. Both types of monopoly, private and public, are forms of collective action. Both private and public monopoly share the task of replacing the market in overcoming sizable transaction costs but whereas private monopoly relies on private ownership, the state-owned monopoly indeed relies on the coercive power of the state in cases when private ownership is costly or inefficient and public ownership is a swifter, cheaper and more efficient mode of allocating resources within the economy. At the aggregate level, through the transaction-cost economizing role of public ownership such state-owned monopolies may, in effect, maximize the aggregate output of the economy beyond what private monopolies provide for.

Similar to externality as a form or the result of market failure, market power (not the same as monopoly power) moves the equilibrium away from the Pareto optimum. Whereas with zero transaction costs the market exchange would occur at the competitive point, with positive transaction costs leading to the monopoly power of private monopoly the outcome is the monopoly outcome and the equilibrium is left of Pareto causing, therefore, a deadweight social loss and excessive monopoly rents. The entire trade lost and the difference between demand and supply can be attributed to transaction costs which lead to monopoly power, too high a price and too limited output produced by the individual firm. Certain sectors of the economy can experience market failure more strongly due to the presence of significant industry transaction costs. With perfect competition where it is assumed that information is free and easy to obtain and where the potential for opportunism is negligible, the costs of using the market mechanism are infinitesimal. Markets gravitating towards perfect competition today are cheaper to use by thousands of small firms. The degree of competitiveness, the ease of entry and exit, the potential for opportunism, the access to information, and the degree of certainty thus are reflective of the level of transaction costs in the respective industry. Competitive markets which are characterized by strong competition, easy entry and exit, impossibility for opportunism, accessible and abundant information and complete or nearly complete certainty are examples of low-transaction cost sectors. In contrast, private monopoly is an extreme form of market structure where competition is absent, the potential for contractual opportunism on the part of the monopolist is infinite, information is costly to obtain, there are natural or artificial barriers to entry present and uncertainty is complete.

There seems to be some disregard in transaction cost theory for natural monopoly. When it comes to market failure natural monopoly takes a special place in the discussion. Transaction cost economics does not seem to be at ease with the concept of natural monopoly as a standard economic term which remains largely unexplored and unexplained by transaction cost theory. In classical economics natural monopoly is the special case when due to the unique character of its production technology or significant initial investment in the form of fixed costs, a firm is subject to increasing returns to scale solely. In the logic of classical economics monopoly is justifiable on the grounds of internal economies of scale where no market power is exhibited but the operation of a single firm on the market brings efficiency and cost economies. In effect, many public utilities which represent natural monopolies are organized as private monopolies in some countries, while in others they are publicly owned. As opposed to the other forms of monopoly, organically grown or vertically merged monopoly structures, natural monopoly is considered a "good" monopoly in that a single firm achieves cost economies whereas two and more firms on the same market do not. It should be noted that adding a cost component to firm structure always expands the minimum efficient scale of the firm. Thus, even for firms with a typical envelope average-cost curve adding more production or transaction costs would elevate the curve shifting the optimal scale of production to the right. Transaction costs added, economic theory justifies a bigger size and monopoly position for the firm. Such line of thinking confirms Coasean theory in general and more specifically the finding that firms at the optimum grow with market transaction costs.

As mentioned previously, Arrow (1969) takes issue with increasing returns and market failure in their relevance to Pareto inefficiency. Arrow relates market failure to the mode of economic organization, while at the same time he considers increasing returns a purely technological phenomenon. Whereas transaction costs determine the mode of resource allocation, production costs depend on technology and tastes and would be the same in all economic systems. Therefore, it seems that natural monopoly does not have transaction cost roots but is entirely based on and driven by production costs. Furthermore, in congruence with Arrow natural monopoly, despite being called monopoly, does not seem to be an example of market failure, in general, and market power, in particular. Although natural monopoly does not seem to have transaction cost origins, does not represent a case of market failure and does not line up with the other types of private monopoly, it does seem to have transaction cost aspects.

If the same technology and production costs lie behind a given natural monopoly and should be the same in all economic systems, why is that natural monopoly privately owned in some economic systems and state-owned in others? The apparent answer seems to be that something other than production costs and technology determines the ownership over natural monopoly. Public utilities operating under different resource allocation and property right systems seem to be associated with different levels of transaction costs. Public utilities and natural monopolies in economic systems faced with low transaction costs are typically privately owned and well regulated. They function smoothly, operate at low cost and are relatively easy to control in western-type economic systems. In high-transaction cost systems, where markets fail to operate and where there are numerous market failures present, natural monopolies tend to exert market power and rent-seeking efforts, be poorly regulated and could alternatively be run more productively by the state. Through the process of privatization public utilities in transitional countries are massively transferred from state hands into private. Formerly state-owned monopolies are transformed into private. A guaranteed private monopoly such as a large electrical supplier may be opportunistic to its millions of customers, households and firms. It is too costly for the customers to form a coalition so that to undertake collective action against the electrical company in cases of noncompliance, excessive monopoly rents or intensive rent seeking. The process of negotiations between a private monopoly and a coalition of customers is lengthy and strenuous. It is difficult for a private coalition to file law suits against the monopoly in the conditions of an inefficient court system, to lead negotiations and bargain with the firm on private terms. Control over private monopolies in non-market societies is more difficult than control over state-owned monopolies since state and social control mechanisms which normally exist in market economies are absent in non-market ones. Due to its transaction cost saving effects a state-owned monopoly may be socially and economically preferable to the market and private monopoly. Thus, natural monopolies such as those supplying electricity, water and telecommunications that standard economic literature approves of on the grounds of technology and minimum efficient scale and which would normally operate as private monopolies in low-transaction cost systems may be run better by the state in high-transaction cost systems.

### **The low-end equilibrium trap**

This type of market failure reflects the disappearance of markets in the upshot of low-end equilibrium. Such an outcome stems from behavioral problems associated with market participants and human misconduct in market dealings. Continuous opportunism in the market place can have two ultimate effects: 1) a vertically integrated firm when the non-opportunistic firm acquires its opportunistic commercial partner; or 2) a low-end equilibrium when the seller is so opportunistic the buyers lose all trust in him. Note that the first outcome occurs among firms one of which is continuously opportunistic thereby threatening the business of the other. This also is the more favorable outcome of transactional opportunism in that market transactions become intrafirm transactions and thus result in no welfare loss. The second situation describes the unfavorable outcome when market equilibrium is not reached and mutually advantageous and potentially gainful deals are lost. In this second case the presence of an opportunistic seller in the market detracts buyers who at some point refuse to buy at any given price and under any conditions. Demand thus is insufficient (or absent) to meet supply thereby preventing equilibrium. This could be opportunism at the firm level, but is more likely to be an exchange between a firm seller and individual customers or between individual sellers and individual customers.

Opportunism is a broad category describing the deviant behaviour individuals follow in market transactions. Opportunism refers to the efforts to hide or distort information, mislead, disguise, obfuscate or confuse the partner and could appear on both sides of the transaction, buying or selling. Informational asymmetries are best manifested

by adverse selection and misrepresented product quality but may as well be reflected by opportunistic behavior with delivery delays, payment delays, breaches of the general terms of the contracts, conditions of delivery, types of equipment agreed on and, in general, all possible forms of pre-contractual and post-contractual opportunism. The incentive for contractual opportunism is obtaining the quasi-rents of the commercial partner where once a deal is concluded and a contract is signed even general purpose assets turn into specific assets. The partner thus is locked into a trade relationship and becomes vulnerable to the opportunistic and hazardous behavior of the other party, that is, to the moral hazard and risks of the market. An opportunistic buyer may, for instance, refuse to pay to the seller. Both buyer and supplier opportunism may result in vertical integration, but both may as well lead to the less favorable outcome of complete market failure. Williamson includes even the most subtle forms of deceit such as lying, stealing or cheating. He defines three degrees of self-interest seeking, i.e. 1) obedience as a weak form, 2) simple self-interest seeking as a semi-strong form and 3) opportunism as a strong form of self-interest seeking. Classical economists emphasized that economic agents should not be overly opportunistic in the market game in order for Pareto optimality to occur.<sup>12</sup> Opportunism was presumed absent by classicists who only viewed simple self-interest seeking as the necessary and sufficient condition for an optimum. Later it became clear that "human nature as we know it"<sup>13</sup> is multifaceted and allows for more than just honesty and promptness in market transactions. In fact, Williamson defines opportunism as "self-interest seeking with guile," an extreme form of human selfishness. He demonstrates that paired with asset specificity, bounded rationality and uncertainty in contractual relations consistent opportunism forces firms to resort to vertical integration. This is the first and more favorable outcome of opportunism discussed. Williamson does not reveal the more general effect of opportunism in the market place, that of the low-end equilibrium. Consistent contractual opportunism seems to be more problematic in its second outcome, that of treachery, when customers lose their trust in sellers forever. While vertical integration clearly stems from opportunism, other types of market failure are the more serious consequences of opportunism as a form of deviant human behaviour. The most subtle and unfavourable forms of market failure result from human deeds and misconduct which are deleterious to the market. Thus opportunism as human selfishness in market dealings is more detrimental to the market in the general sense than only in the limited sense of vertical integration, and even less so in its relevance to asset specificity. Transactional opportunism is the reason for 1) market power in the form of vertical integration, and the general reason for 2) complete market failure where the market is nonexistent.

Since opportunism refers to lying, misleading, hiding or distorting information, it is inevitably related to asymmetric information, adverse selection and misrepresented quality, all three reflecting the informational aspects of the market. Of all informational forms opportunism takes misrepresented quality is perhaps the most blatant. Since in reality buyers cannot always be perfectly informed and a potential for asymmetric information exists, sellers may be tempted not to represent information accurately. A seller may want to convince the buyer that the product is of higher quality than it really is or may want to reduce the quality, given the buyer's expectations, in order to extract additional surplus from cutting costs or obtaining rents from the uninformed buyer. Opportunism absent, sellers would disclose the full information to buyers and both sides would be symmetrically informed. Asymmetric information therefore has clear behavioral dimensions as it is driven by human action. Uncertainty that comes with opportunism in business dealings is behavioral uncertainty. Akerlof (1970) reveals the quality aspects of informational asymmetries and presents asymmetric information and inferior quality as the reasons for the disappearance of certain markets. Inferior quality products invariably replace good products while sellers have more information about the quality of the products they are selling than the buyers.<sup>14</sup> Since only lemon goods would be sold at some point, demand may be insufficient to meet supply on the given market ultimately causing it to collapse. If market price is a signal of quality, the total effect of price on demand may be positive causing a positively sloped demand curve. Being

---

<sup>12</sup> Adam Smith stressed the importance of promptness in market dealings. Classical economists saw the absence of opportunism and honest behavior as traits of perfect competition and the ideal information it provides for.

<sup>13</sup> As defined by Knight (1965, p. 270) implying individuals' hazardous behavior and the effect moral hazard has on economic organization (Knight 1965, p. 260).

<sup>14</sup> Akerlof (1970, p. 495) writes: "The presence of people in the market who are willing to offer inferior goods tends to drive the market out of existence... It is this possibility that represents the major costs of dishonesty – for dishonest dealings tend to drive honest dealings out of the market... the presence of people who wish to pawn bad wares as good wares tends to drive out the legitimate business." And furthermore, "the cost of dishonesty, therefore, lies not only in the amount by which the purchaser is cheated; the cost also must include the loss incurred from driving legitimate business out of existence."

asymmetrically informed consumers expect sellers to reduce quality and cheat. The market is thus led into a low-end equilibrium where firms provide low quality and consumers expect it. A low-end equilibrium is no equilibrium, that is, Pareto optimum is non-existent or cannot be achieved due to seller opportunism. With misrepresented quality the market for a specific good fails to allocate it properly and realize the potential gains from the exchange where such potential exists, unilateral opportunism being a source of transaction costs in the process of market exchange. Akerlof does not relate complete market failure to transaction costs. While he discusses the cost of dishonesty (implying opportunism) he does not relate cheating on quality, asymmetric information and opportunism to transaction costs.<sup>15</sup> Akerlof does relate market failures and dishonest, opportunistic behavior to economic development and underdeveloped countries seeing thus market failures in those countries as the result of contractual opportunism.

The full economic cost of dishonesty and seller opportunism is the loss incurred by society from driving legitimate businesses out of existence. Opportunism on quality should be discussed in terms of social and private benefits and costs. Whereas it pays to the individual seller or supplier to cheat and provide lower than necessary quality, all costs accrue to the group of sellers or suppliers, industry, market or society in general. In "lemon" markets, like in other failing markets, social and private gains diverge as do social and private costs. While it pays an individual seller to misrepresent quality, society incurs costs from the loss of welfare, the overall reduction in the average quality, the loss of consumer trust and the collapse of the market. Prices not capturing quality effects (or rather defects), opportunism generating quality verification, compliance and assurance transaction costs presents an example of market imperfection.

Cheating and opportunism in market transactions take away resources. The costs of locating a partner, who can provide the needed quality are search costs of the *ex ante* type of transaction costs. The costs of inspection and verification of quality after the signing of the contract from what was agreed prior to the deal require *ex post* transaction costs. Taken together, search costs and enforcement costs form quality observance transaction costs, an essential group of transaction costs that aim to curb contractual opportunism. Quality observance transaction costs may be associated with the hardships of finding quality at the necessary level or prevention in case this desired or agreed quality is not provided after the deal. Generally, asymmetric information, adverse selection and behavioural uncertainty form the informational foundation of the market and require costs to overcome. Since transaction costs have relevance to all informational aspects of the market, they are the costs of the informational foundation of the market, namely, the costs of obtaining and buying information, the costs of checking the correctness of market information, etc. There are informational costs within hierarchies as well but these informational costs of internal organization are significantly saved in private or public entities organized along a centralized, administrative mode and run by an authority, be it a manager or a sovereign. Informational asymmetries, adverse selection, behavioral uncertainty stemming from contractual opportunism and moral hazard, costliness of information, monopoly over information, difficult access to information and difficult transmission (noise) of information are all informational failures of the market process.

Today it becomes clear that opportunism is inherent in human behavior and human character as revealed in market dealings. At the same time there should be some trust in market dealings and self-interest seeking should be moderate in order for the market to function smoothly. Given the opportunity, many individuals would refrain from being opportunistic and would stick to social rules of trust and honesty as the rules of the market game. Yet, given the opportunity, some few individuals would opt for opportunism of general character, not of a specific form. Since some individuals are more inclined to be opportunistic than others, societies where such individuals dominate are more prone to contractual opportunism. Opportunism could thus be seen as a regional, racial or national trait. Societies and cultures which are overly opportunistic and where self-interest seeking is excessive, are inherently prone to market failure and economic underdevelopment, much more than non-opportunistic, low-transaction cost

---

<sup>15</sup> Of the new institutional economics school Barzel (1985, p. 8) draws a direct relationship between cheating on quality and transaction costs: "...The seller can get away with some cheating, and given maximization, cheating will occur. Under competition, price will adjust to the cheating. What is costly, however, is not the cheating per se; rather resources are devoted to cheating and its prevention which sharply distinguishes the outcome from that obtained in the Walrasian world." Barzel thus implies the impossibility of the market to clear in a Pareto manner when market participants cheat on quality.

societies where opportunism as a national or market trait is absent or is less strongly exhibited. Non-opportunistic or low-opportunistic societies are those where individual members of society and economic agents have long ago realized the net gains to market exchange. Those members stick to the rules of the market which functions smoothly and naturally. In highly opportunistic societies where deviant commercial behavior brings sizable transaction costs, complete market failure would be the prevalent state of economic reality. Different resource allocation systems associated with different levels of aggregate transaction costs can well be explained by different patterns of economic behavior, with strongly opportunistic societies being more prone to market failures and requiring thus administrative structures or collective action as substitutes to the market. In the broad sense, economic systems prone to contractual opportunism, high market uncertainty and costly information face significant transaction costs of using the market and determine more centralized economies versus other, less centralized ones. In the narrow sense, certain industries and spheres of the economy can be subject to market failure more strongly than other sectors where different types of market structures can be associated with different levels of transaction costs, perfect competition reflecting low-transaction costs of market operation and monopoly reflecting high-transaction costs and an extreme form of market failure.

### **Public goods, public ownership and the role of the state**

Some economists view public goods as a form of market failure. Public goods, public ownership and state participation in the economy apparently result from market failure in its different forms. The state economizes transaction costs when it comes to the provision of public goods, the exploration of environmental resources, the operation of natural monopolies and even that of competitive industries facing sizable transaction costs. In effect, market failure is associated with private property and privately owned resources since those are the instruments by which free markets work. Public property and the state, therefore, could correct market failure as the failure of private agents to allocate economic resources optimally. Negative externalities such as pollution, environmental harm, overconstruction, congestion externalities and others that prices fail to capture and that occur in the marketplace under private ownership lead to economic inefficiencies that public ownership could correct for. The “tragedy of the commons” should be compared to “the tragedy of the private” and the cost-benefit analysis of private resources should be compared to that of public. In many cases the private exploration of environmental resources causes significant externalities which outweigh its benefits but which originate in transaction costs. Samuelson (1976) concludes that externalities related to the use of common-pool resources “make it nonoptimal to have decentralized rent-charging owners” and that government regulation and centralized decision making of the common pool is obviously preferable to free competition.

Market externalities, private monopoly and complete market failure due to opportunism and the informational failures of the market are serious defects of the market system originating from private property. In societies where the transaction costs of market operation are sizable strongly asymmetric information and excessive opportunism by economic agents render private dealing ineffective. Such market failures could be overcome by using the state apparatus in allocating economic resources. Even competitive industries, which would normally be organized along private ownership in low-transaction cost systems, may be state owned in high-transaction cost systems. The state is a preferable way to allocating resources in industries where markets do not function or cannot clear, information is strongly asymmetric, there are insurmountable market failures present, economic agents have no trust in each other or in markets altogether, markets do not seem to evolve with the passage of time and self-interest seeking in its strongest form is prevalent. With considerable market uncertainty, excessive opportunism as a cultural trait and significant transaction costs of private dealing, public ownership may be preferable to private. Transaction costs present, markets fail in allocating resources which cannot be traded freely so that to achieve their maximum value and be used most productively in a private-property based economy.

There are three possible venues by which the state can help resolve the problem of negative externality. Coase (1960) hints at the legislative role of government and the participation of judges in economic decision making. By resolving disputes over nuisance and deciding in favor of one interfering business against another, judges, in effect, allocate economic resources. This is an indirect role the state plays in the operation of the economic system. With positive transaction costs the state in the face of judges deals with the problem of externality where optimal allocation means maximizing the joint output of the interfering activities. The Pigouvian approach to externalities is government taxation of negative externalities, regulation and control of pollution, imposition of emission standards,

fees and penalties. A third possibility for dealing with private externalities is internalizing them within public ownership. By sustaining natural resources as common-pool or common-access resources the state in fact achieves transaction cost economies by being the sole owner of what could otherwise be privately owned environmental resources. Governmental regulation may be the efficient solution when the number of parties to the transaction is high or where property rights cannot be readily assigned. Since the existence of transaction costs does not allow property rights to be assigned fully, some natural and environmental resources will be owned in common. The very strenuous process of bargaining among numerous private agents makes it suboptimal to have all forests, parks, streets, etc. privately owned.

Public goods as well solve the problem of positive externality and exclusion costs as a type of transaction costs. Private agents have no incentives to supply private goods due to the impossibility to exclude other nonpaying users and would supply those goods only if their benefits from creating the good exceed the costs of producing it or if a technology is found that renders the good excludable. Such a technology would have the effect of eliminating the transaction costs of exclusion with private provision. But if the costs of providing the good exceed the benefits to the private agent and the alternative is that no one provides the good, then the state could be a reliable provider. When economically and socially essential goods are not created due to the adverse effects of transaction exclusion costs, the state can correct that by providing them on its own and in its administrative, authoritarian, yet, cost-minimizing way in cases where the market does not pay to create an otherwise essential good.

The monopoly of state ownership could serve to substitute market monopoly and save on the transaction costs of private monopoly and the market. Today the state clearly has a corrective role in market failure when it comes to private monopoly. This role is stronger where transaction costs are higher. State monopoly is a form of collective action which can be used to provide goods and services that no private agent wants to provide. But state monopoly also is a powerful way of dealing with the huge market power of private monopolies in cases when private monopoly is socially costly or unacceptable, where there is excessive deadweight social loss attached to the operation of the monopoly, when substantive economic resources are wasted in the form of rent seeking or when society finds it hard to bargain with the monopoly on private terms and as one private coalition negotiating with another. State monopoly is preferable to private monopoly when the monopolist is infinitely opportunistic, information is costly to obtain, there are numerous natural or artificial barriers to entry present and uncertainty is complete. In high-transaction cost systems private monopolies exert extreme market power and rent-seeking efforts, are poorly regulated and could be run better by the state. Transaction costs present, it is harder for the state to regulate private monopolies. When the cost of state regulation exceeds the cost of state monopoly, welfare considerations and wealth maximization necessitate the transaction-cost economizing role of state ownership. Likewise, when the costs of property right enforcement with private goods in a private-property based system exceed those of providing public goods, a state monopoly becomes justifiable.

Finally, in the extreme case of complete market failure where market participants totally mistrust each other due to excessive opportunism, asymmetric information or moral hazard, those agents may trust the state more than they trust an opportunistic partner. As a "trustee of last resort" and an ultimate authority the state can ensure certain quality levels (for instance, by certification), introduce and enforce standards, prevent opportunism and hazardous behavior, and resolve informational noise, failures and asymmetries which the market cannot do.

#### **4. Conclusions**

Markets operate smoothly and efficiently in some societies and market failure is less present there. With low transaction costs there are few market failures and inefficiencies which allow markets to allocate economic resources promptly and productively. Western economies are examples of societies where markets work smoothly and naturally and allocate resources efficiently. But in other, high-transaction cost systems where there are numerous market failures exhibited, markets are an inefficient instrument of resource allocation. The economic reality in such systems provides evidence that market failures have a transaction cost origin and that transaction costs are at the root of economic underdevelopment.

#### **References**

[1] Akerlof, G. A. 1970. The market for 'lemons': quality uncertainty and the market mechanism. *The Quarterly Journal of Economics*, 84(3): 488-500, DOI: 10.2307/1879431.

- [2] Arrow, K. J. 1969. The organization of economic activity: issues pertinent to the choice of market versus nonmarket allocation. In *The Analysis and Evaluation of Public Expenditures: The PBB System*, Joint Economic Committee, 91<sup>st</sup> Cong., 1<sup>st</sup> sess., vol.1. Washington, D.C.: Government Printing Office.
- [3] Banfield, E. C. 1958. *The Moral Basis of a Backward Society*. Glencoe, IL: The Free Press.
- [4] Barzel, Y. 1985. Transaction costs: are they just costs?" *Journal of Institutional and Theoretical Economics*, 141(1): 4-16.
- [5] Bator, F. M. 1958. The anatomy of market failure. *The Quarterly Journal of Economics*, 72(3): 351-379, DOI: 10.2307/1882231.
- [6] Demsetz, H. 1982. Barriers to entry. *American Economic Review*, 72(1): 47-57.
- [7] Coase, R. H. 1937. The nature of the firm. *Economica*, New Series, 4: 386-405, DOI: 10.1111/j.1468-0335.1937.tb00002.x.
- [8] Coase, R. H. 1960. The problem of social cost. *Journal of Law and Economics*, 3: 1-44, DOI: 10.1002/sres.3850090105.
- [9] Crampton, E. 2007. Market failure. in Clark, D. S. (Ed.), *Encyclopedia of Law & Society: American and Global Perspectives*, Thousand Oaks, CA: Sage Publications: 983-985, <http://dx.doi.org/10.4135/9781412952637>.
- [10] Gillman, M. 1999. The problem of social cost: the role of the state. *International Journal of Social Economics*, 26(5): 590-596, <http://dx.doi.org/10.1108/03068299910215898>.
- [11] Knight, F. H. 1965. *Risk, Uncertainty and Profit*. New York: Harper & Row.
- [12] Samuelson, P. A. 1976. Economics of forestry in an evolving society. *Economic Inquiry*, 14( 4): 466-492, DOI: 10.1111/j.1465-7295.1976.tb00437.x.
- [13] Simon, H. 1961. *Administrative Behavior*. 2<sup>nd</sup> ed. Macmillan: New York. Original publication: 1947.
- [14] Stiglitz, J. E. 2002. There is no invisible hand. *The Guardian*, December 20, 2002.
- [15] Toumanoff, P. G. 1984. A positive analysis of the theory of market failure. *Kyklos*, 37(4): 529-541, DOI: 10.1111/j.1467-6435.1984.tb00757.x.
- [16] Williamson, O. E. 1968. Economies as an antitrust defense: the welfare tradeoffs. *American Economic Review*, 58(1): 18-36.
- [17] Williamson, O. E. 1971. The vertical integration of production: market failure considerations. *American Economic Review*, 61(2): 112-123, DOI: 10.1179/102452907X166845.
- [18] Williamson, O. E. 1972. Dominant firms and the monopoly problem: market failure considerations. *Harvard Law Review*, 85: 1512-1531.
- [19] Williamson, O. E. 1985. *The Economic Institutions of Capitalism*. New York: The Free Press.