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Veröffentlichungsversion / Published Version

Zeitschriftenartikel / journal article

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#### Empfohlene Zitierung / Suggested Citation:

Richter, R. (2011). Institutional economics of the "Market Itself": an attempted answer to a complaint by Ronald Coase. *Historical Social Research*, 36(3), 34-54. <https://doi.org/10.12759/hsr.36.2011.3.34-54>

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# Institutional Economics of the “Market Itself”.

## An Attempted Answer to a Complaint

by Ronald Coase

*Rudolf Richter*\*

**Abstract:** »Eine Institutionenökonomie des “Marktes selbst”: Der Versuch einer Antwort auf eine Kritik Ronald Coases«. This paper is motivated by the remark of Coase that “although economists claim to study the working of the market, in modern economic theory the market itself has an even more shadowy role than the firm.” It is argued that under conditions of positive transaction costs, incomplete foresight and bounded rationality – the conditions of the New Institutional Economics (NIE) – the institutional framework not only of firms but also of markets matters. Actors who plan to buy or sell a good under conditions of NIE are facing two *institutional choice* problems: First, to choose or establish a specific *market system* within which to trade the good and, second, to choose a specific exchange *contract*. Both are *nonmarket coordination problems* – the first is a *problem of collective action* between a multiplicity of suppliers and demanders; the second is a problem of bilateral action: the coordination of individual plans between two parties. Only the first problem is object of this paper. Our hypothesis is that the organization of markets is a collective good, which may be a product of *laissez faire* or of planned collective action. So far there exists no systematic theory of the NIE of markets, only a number of considerations on specific issues concerning the basic functions of trade, viz., the activities of search, inspection, bargaining, contract execution, control, and enforcement. We content ourselves to describe and comment on some prominent examples from the NIE literature and related approaches to illustrate the kind of considerations that are part of an evolving new institutional economic theory of “the market itself” and argue that, for reasons of the general interest of traders themselves, some forms of planned collective actions are unavoidable.

**Keywords:** transaction costs, new institutional economics, theory of markets, organization of markets.

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Revised and extended version of a paper held at the Faculty of Sociology, Bielefeld University, Bielefeld, Germany, 12 November 2008.

## 1. Introductory Remarks

This paper is motivated by the remark of Coase (1988, 7) that “although economists claim to study the working of the market, in modern economic theory the market itself has an even more shadowy role than the firm.” It seems natural to reflect on Coase’s complaint by extending Coase’s (1937) argument for the nature of the firm by postulating positive transaction costs also for the nature of the market (as an institution or organization). Let us use the concept of transaction costs in the wider sense of “the costs of running the economic system” (Arrow 1969, 48) that include besides the costs of using the market the costs of using, maintaining, changing etc. of institutions or organizations in general. In addition let us assume they include also the costs of the consequences of imperfect foresight (like the costs of planning mistakes, backup arrangements, reorganization etc.) and boundedly rational decision-making (like the costs of gathering and processing information).

Now, in the neoclassical world of costless transactions, perfect foresight and perfect rationality there is no need for a specific market system. It does not matter whether an individual trades only occasionally or professionally, whether he goes to the next street corner or sets up a whole network of trade relationships. This is the world of general equilibrium theory<sup>2</sup> in which everybody is trading with everybody else on whatever goods (he wishes) for all times to come. However, the model is institutionally neutral, i.e., the institutional framework is irrelevant if only the optimality conditions of general equilibrium theory are satisfied. Thus, it would apply equally to a socialist as to a capitalist economy<sup>3</sup> or to “hierarchies and markets”. In other words, we cannot differentiate between various institutional arrangements. Institutions don’t matter; their productive results are the same as long as the optimality conditions of general equilibrium theory are satisfied.

By contrast, Coase (1937) argued that the assumption of positive transaction costs is critical for discriminating between different institutions, in his case, between the firm and the market. Under certain circumstances the institution “firm” is preferred to that of the “market” because “certain marketing costs are saved” (Coase 1937, 392).<sup>4</sup> However, the same argument can be used to ex-

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<sup>2</sup> Partial equilibrium theory is an artifact of it.

<sup>3</sup> “The optimality conditions [of general equilibrium theory], being simply technical requirements, contain no ideological implications. They apply equally to capitalism, socialism, or any other “ism.” Whatever the political ideology of a country, it could make all of its citizens better off by ensuring that production and allocation satisfied the optimality conditions. (Lancaster 1969, 276) See also Furubotn and Richter (2005, Section 1.2).

<sup>4</sup> Coase continues: “The entrepreneur has to carry out his function at less cost, taking into account the fact that he may get factors of production at a lower price than the market transactions which he supersedes, because it is always possible to revert to the open market if he fails to do this.” (ibid.)

plain the existence of the enormously large number of different specific markets such as the London Stock Exchange, eBay, weekly town markets, annual fairs, real estate markets, producers' markets like the US automobile market, etc.. Their organization (market order or system) can be conceived as a collective good whose aim is to economize on the costs of transactions, incomplete foresight and bounded rationality. Their specific norms may be understood as being built on the elementary constitutional rules of the liberal state regarding private property, contractual obligations and obligations from tortuous acts that are guaranteed by a supreme authority: the state.<sup>5</sup> Some specific market systems evolve spontaneously such as those of the black market for US cigarettes in Frankfurt (Main), Germany, after World War II, the "Polish Market" in Berlin after the collapse of the Berlin Wall in 1989, etc.<sup>6</sup> Yet most specific markets are generated by identifiable people – such as the members of a city council or the producers of new products – even though they contain (or may contain) spontaneous elements.<sup>7</sup>

In every case, in the world of positive transaction costs, actors who plan to buy or sell a specific (type of) good face two (interrelated) problems of *institutional choice*: First, to choose or establish a specific *market organization*<sup>8</sup> [market system] within which to trade the good – such as a stock exchange, a weekly market, a producers' market, an online market, etc. and, second, to choose within that market organization [system] a specific exchange *contract* (a contractual governance structure<sup>9</sup>) with their trading partner. Both are *non-market coordination problems* – the first is a *problem of collective action* between a multiplicity of suppliers and demanders; the second is a *problem of bilateral action* between two parties: a supplier and a demander. Both aim at an institution or organization that economizes on the costs of transactions, incomplete foresight and bounded rationality. The Coasian question, which we set out to deal with, relates to the first problem: the establishment or choice of a specific market [system] on which traders wish to do business.<sup>10</sup> The second prob-

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<sup>5</sup> A simplification, cf. North (1990, 58).

<sup>6</sup> On the rise of open-air markets all over Eastern Europe in the 1990s see Sik and Wallace (1999); Karazman-Morawetz and Pilgram (1993) (quoted from Egbert 2007).

<sup>7</sup> "Spontaneous" and "made" order in the sense of Hayek (1973) *Law, Legislation and Liberty*, Vol. I, Rules and Order, Ch. 2). "Spontaneous" or "made" – they "[...] share the common characteristics of the need for collective action and the allocation of resources through nonmarket methods." (Arrow 1974, 26)

<sup>8</sup> Or market "order" (Hayek 1973, 40ff.).

<sup>9</sup> Williamson (1985, 32): "Organize transactions so as to economize on bounded rationality while simultaneously safeguarding the against the hazards of opportunism." – Since large numbers of contracts are incomplete, the parties to a contract must agree, either explicitly or tacitly, "about the procedure [the 'constitution'] that will be employed to deal with problems that may arise in the future" (Macneil 1974, 753).

<sup>10</sup> A private collective good would be a club good in the case of a closed market, or a private public good in case of an open market – similar to Coase's (1974) lighthouse example.

lem, the choice of the transaction cost economizing governance structure of exchange contracts, is the problem of Williamson's transaction cost economics. We argue that the organization of a specific market system is a collective good. It is either the result of spontaneous action (controlled by an "invisible hand" mechanism) or its order is "made" by human design<sup>11</sup> (by a "visible hand" mechanism). For both views exist institutional economic approaches: The spontaneously evolved order [system] is object of the "*institutions-as-an-equilibrium-of-a-game*" approach;<sup>12</sup> the "made" order is object of Olson's (1965) "*logic collective action*".<sup>13</sup> We'll keep these two approaches in mind and resort to them as needed.

Though, Coase compares only two general types of institutional arrangements, markets and firms, he could have gone on to compare with each other various specific types (organizational templates) of firms or markets or hybrid forms between markets and firms. In the NIE world, Coase's reasons for the nature of the firm could be extended to the nature of the different specific organizational templates of an economy, markets and firms (or mixtures thereof), that can be seen as different ways of economizing on transaction costs - inclusive the costs of incomplete foresight and bounded rationality.<sup>14</sup>

## 2. On Elements of Market Systems

The organization of "perfect markets" is fully described by the *abstract* elementary constitutional norms of private property, contractual obligations and liabilities from tort – given zero transaction costs, perfect foresight and perfect individual rationality.<sup>15</sup> In the more realistic world of the NIE, however, market systems (or organizations) need to include also more *concrete* elements, among

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<sup>11</sup> Hayek (1973).

<sup>12</sup> According to which an institution is defined as a salient Nash equilibrium of a recurrent "supergame" about the way a given "underlying game" (e.g., a prisoner's dilemma game) is repeatedly played (see Furubotn and Richter 2005, 8).

<sup>13</sup> That answers the free rider problem, the problem who pays for the set up and administration of a "made" organization (Olson 1965, 9f.).

<sup>14</sup> To understand correctly: Different from neoclassical microeconomics, we think in a non-optimizing sense. Reason is that it makes not much sense to add up transaction costs proper, costs of adaptation and costs of bounded rationality like production costs. Instead we are following Demsetz's (1969) comparative institution approach, i.e., we stop thinking in constraint optimization processes and assume that actors compare with each other concrete patterns of market organizations by taking into account economizing aspects, if only in some rough comparative manner. (See, e.g., Furubotn and Richter 2005, 108-110).

<sup>15</sup> The proper design of "market order," i.e., the order of perfect markets, is the central issue of German *Ordnungspolitik* as advocated by Walter Eucken, Franz Böhm, Wilhelm Röpke, Alexander Rüstow and the "Austrian" economist Friedrich August von Hayek; see Schmidtchen (1984) or Richter (2011).

them, *aids of trade* such as common timing,<sup>16</sup> common units of measurement,<sup>17</sup> common locations of trade (local markets,<sup>18</sup> an internet platform), common usage of money, the legal construct of “liquidity,”<sup>19</sup> the organization of price formation (auctioning, rigid prices cum advertising, wage bargaining between unions and employers associations) – and all this interlinked by a network of social ties between traders and the rest of the economy. The reason is that markets do not function in a social vacuum.<sup>20</sup>

However, the centuries old debate on the nature and *evolution of money* illustrates the scientific and political difficulties that such aids of trade (and trust into them) can raise.<sup>21</sup>

Interestingly, the assumed use of money in markets (which presupposes frictions = transaction costs) did not induce economists to call such markets “imperfect markets”. For the same reason, financial markets are seen as a natural part of perfect markets (= efficient markets) though they make only sense if – due to imperfect foresight – pure futures markets “fail” (Hicks 1946). To adapt freely Goethe: Two souls alas! are dwelling in the neoclassical economist’s breast.

As for *location issues* only transportation costs, not the more general concept of transaction costs, have been considered and gave rise to a special branch of neoclassical economics: location theory.<sup>22</sup>

Location theory is neglected by new institutional economists in spite of the fact that, up to date, transportation costs make up a non-negligible part of the costs of using the market (“transaction costs”). The problem is that the transportation problem lends itself to standard “quantitative” analysis (optimization under constraints), while institutional economics requires very different, “qualitative” methods of optimization. Still, location problems are a central issue of market organization and should not be disregarded completely by institutional economists.

Regarding the role of *social relationships*, one sociological textbook example comes from Abolafia (1984) who showed that even in security exchanges – the classic example of perfect markets – social structure (informal organization) matters; it helps improving the market mechanism. “Fiercely independent eco-

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<sup>16</sup> The calendar introduced by Pope Gregor XIII in 1582 that was only slowly accepted by all trading nation states; the introduction of international time zones based on Greenwich Time was suggested by an international congress 1889. It took a couple of decennia until it was accepted globally.

<sup>17</sup> The extension of local markets required an extension of the range of validity of units of measurement and weight. The metric system has been introduced in the 19th century and is by now almost globally applied. The only exceptions among large states are England and USA. Germany introduced the metric system in 1868.

<sup>18</sup> Local markets are extended to large area markets (“nationwide” or “global” markets).

<sup>19</sup> The ability to fulfill one’s payment obligations. (Stützel 1959, 625).

<sup>20</sup> Hamilton and Feenstra (1995, 61).

<sup>21</sup> On the history of monetary economics see Dimand (2008).

<sup>22</sup> More or less started by Thünen (1826).

conomic actors are, at the same time, reliant on one another.” (Abolafia 1984, 132)

Anyway, there exists no systematic theory of the NIE of markets, only a number of considerations on specific issues concerning the institutional economics of the basic functions of trade, i.e., the activities of search, inspection, bargaining, contract execution, control, and enforcement. We content ourselves to describe and comment on some prominent examples from the NIE literature and related approaches to illustrate the kind of considerations that are at least part of an evolving new institutional economic theory of markets. (The examples from the NIE literature and more are reprinted in Furubotn and Richter 2010).

For clarity we are reducing above six elementary transaction activities into three categories:

- 1) *Precontractual activities* (search and inspection)
- 2) *Contracting* (contract formation)
- 3) *Postcontractual activities* (execution, control and enforcement).

After a compressed report and comments on some of the institutional economic answers on above issues and their assessment we shall indicate some possible steps towards a more systematic presentation of the characteristics of the NIE of markets.<sup>23</sup>

### 3. Precontractual Activities: Search and Inspection

A typical “classical” answer to the problem of search and inspection would be to do what textbooks do,<sup>24</sup> namely, to allow only for spot trade and let buyers and sellers meet at the same time and same place, such as on weekly markets. But even then information about product prices and product quality<sup>25</sup> will be a problem under NIE conditions. As for product quality, Nelson (1970) points out that information about it can be achieved either by way of search or through experience. “Experience will be used when search becomes too expensive” (318). Nelson correspondingly distinguishes between “search goods” and “experience goods”. Typical *search goods* are, according to his classification, cameras, furniture, china, glassware. Typical *experience goods* are soft drinks, television sets, automobiles, and bicycles. Advertising as a vehicle for informa-

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<sup>23</sup> The referred to literature and more is reprinted in a collective volume compiled and edited by Furubotn and Richter (2010).

<sup>24</sup> Cf. Stackelberg (1948, 219ff.).

<sup>25</sup> Nelson assumes that consumers already know where they can obtain each of the options open to them. Their information problem is to evaluate the utility of each option. He defines search to include any way of evaluating these options subject to two restrictions: (1) the consumer must inspect the option, and (2) the inspection must occur prior to purchasing the brand (1970, 312).

tion plays a role in the case of search goods, but personal inspection is also important. Misleading advertising results in costs to the advertiser, for “he suffers a decline in his credibility for future advertisements and pays the costs of processing non-buying customers” (Nelson 1974, 730). Therefore, “consumers can have some confidence that the advertising of search qualities bears a close relation to the truth” (730). This is much less so in case of experience goods: “The major control that consumers have over the market for experience qualities is whether they repeat the purchase of a brand or not” (730). Therefore, consumers cannot expect much direct information from advertising concerning experience qualities. What they get is *important indirect information*: “*The consumer can learn that the brand advertises.*” Nelson contends that this is the useful information. Advertisements for experience goods need not have informational content. Their total informational role [...] is simply contained in their existence” (732). It is *advertisement for experience goods that is of particular interest to neoinstitutionalists* as a means to save on transaction costs.

A general answer to Nelson’s problem is to view advertising expenditures (sunk cost) as hostages in the hands of ones customers. The analytical background for that view is provided by the theory of self-enforcing contracts, which we’ll return to further below.

A different way to cut search cost is to use *personal ties* as done by Granovetter (1974/1995) for cases of job search. According to his sample, personal contact is the predominant method of finding out about jobs. Thus, the relevant factors of finding a job turn out to be social. Job finding behavior is “[...] heavily embedded in other social processes that closely constrain and determine its course and results” (1995, 39). Of those people finding a job through contacts, the majority saw their contact only occasionally or rarely, i.e., was only weakly tied with their contacts. Granovetter is certainly no new institutional economist (in fact he is opposing it – or at least Williamson’s TCA). But his study fits well into the style of neoinstitutional research. Granovetter himself concedes that many of his findings are easily explained in terms of rational behavior (1974/1995, 96). The reason would be that information is costly (loc. cit. 99). But also the quality of information would explain why employers and employees prefer to or make use of personal contacts in securing labor market information.

The point underlined by Granovetter’s study is that markets do not function in a social vacuum (Hamilton and Feenstra 1995, 61). Personal contacts, cooperation, social ties between potential buyers and sellers (including hierarchical relationships and relationships arising from organized groups) all play roles. Analytically this aspect is based on network analysis. Actors are, as Granovetter puts it, “embedded” in a network of social relations. They “[...] are so constrained by ongoing social relations that to construe them as independent is a grievous misunderstanding.” (Granovetter 1985/1995, 212).

These arguments were put forward not only by Granovetter but also by other sociologists among them Coleman (1984), Burt (1983), Abolafia (1984).

Barzel (1982) concentrates much of his work on the problems and costs of *inspection* (he calls it “measurement”). To eliminate errors in measurement completely would be too costly. The value of equally priced items on weekly markets, e.g., will differ, and people will spend resources to acquire the difference. Such resource expenditure would be wasteful, and Barzel hypothesizes that traders therefore implicitly agree on methods that help to reduce this kind of resource use. The customer’s random selection from an already optimally sorted commodity will avoid the excessive expense. A mutual agreement among traders is to be expected that some readily obtainable information will be suppressed to preempt opportunities for excessive measurement (Barzel 1982, 48).

Analytically, Barzel’s measurement problem results from the existence of *asymmetric information* between buyer and seller – with the seller being in general the better-informed party (Spence 1974). While sellers of low quality products (“lemons”) might be tempted to mislead their customers, sellers of high quality products will undertake efforts to “signal” their quality. For a signal to be effective (credible), it must be unprofitable for sellers of low quality products to imitate it (Spence 1976, 592). Thus, e.g., “To offer a *warranty* is a costly activity for the seller of lemons, but not very costly for the seller of good cars. Hence, this signal allows the buyers to discriminate between the two types of cars” (Varian 1992, 469). Provided it is sufficiently costly, the seller of the high quality product can afford to apply the signal “warranty,” while the seller of low quality products cannot. Similarly, investment in *brand-name capital* through, for example, high advertising expenditures can be seen as credible signals.

Kenney and Klein (1983) describe the somewhat peculiar selling policy of the Central Selling Organization (CSO) of the De Beers Group<sup>26</sup> as a practical device to avoid oversearching. They suggest that its selling practice contributes to a reduction of search cost by minimizing buyers’ oversearching for information. Stones are sorted according to shape, quality, colour, and weight in more than two thousand categories. Still, the variants in the value of stones within each category are substantial. To avoid oversearching, stones of each category are sorted by De Beers into imperfectly homogeneous categories and sold in preselected blocks to preselected buyers at non-negotiable prices. In this case the agreement among marketers is somewhat forced by the (once) monopolistic seller: If buyers’ rejected the sales offer they were no more invited by De Beers to purchase stones. However, this policy has (or had) also its advantages to buyers, who, since they have a long-term business relationship with De Beers,

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<sup>26</sup> That markets most of the world’s gem-quality uncut diamonds.

are earning rents the present value of which is greater than they would earn if they rejected sights of lower than average quality. “Since these rents are lost if the buyer decides to reject a sight and is terminated from the list of invited buyers, a wealth-maximizing buyer will not generally reject sights [...]” (Kenney and Klein 1983, 506).

Important is to remember that above described practical solutions of the problems of search and inspection are a matter of an implicitly agreed upon *market order* (market organization, market system), i.e., they are a problem of *collective action*. In most of above examples it may be seen as result of an invisible hand process. The usual argument is that market system tends towards a transaction cost economizing state. The special problems (and costs) of incomplete foresight and bounded rationality are rarely mentioned (for an exception see Williamson<sup>27</sup>). They play a vital role on asset markets where the expected resale value of the traded products is essential – as illustrated by the financial crisis of 2008. In this case, Akerlof’s (1970) lemons principle is strikingly important – much more so than on his used car market example. The buyer of a financial asset (such as a subprime mortgage security) must worry about the quality of what he buys.

If he suspects that the security is being offered because the seller knows that the security has a problem, he will not be willing to buy it unless he is given a large discount. Because the potential sellers’ reactions to the discounts depress quality even more, trading volume can be reduced to a bare minimum; as in the used-car market, there may even be a complete market breakdown. (Hellwig 2008, 9)

Avoidance of a breakdown of financial markets demands the supply of a collective good, viz., a market system that includes some type of quality control or regulation. Opportunistic misrepresentations or supposedly cost saving suppression of information on the quality of the traded product becomes a problem. There are reasons to doubt the regulative ability of an invisible hand mechanism and demand a ‘made’ market system (or market organization) in which case Olson’s (1965) *logic of collective actions* applies. The organizational answers include anything between establishing of a private organization (like a security exchange) and passing of special laws by the state.

Different from – say – diamonds, money claims require continuous monitoring. In case of bank loans, the financial intermediary combines origination, underwriting, funding, and servicing of the loan – and it is liable towards investors. As a consequence, the bank has an incentive to monitor the loan – a costly activity. With securitization, however, origination and funding are separated, which weakens the originator’s incentive to monitor the securitized portfolio. Moral hazard becomes a problem, and is enhanced by the formation

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<sup>27</sup> He mentions “[...] the ex post costs of maladaptation and adjustment that arise when contract execution is misaligned as a result of gaps, errors, omissions, and unanticipated disturbances” (Williamson 1996, 379).

of CDOs. Different from, the diamond market, suppression of information on financial markets entails the incentive to originate and sell low quality claims that may (and in fact did) end up as lemons or “toxic assets”.

#### 4. Contracting: Agreeing on Prices and Further Stipulations

We shall discuss two NIE problems in this section: the problems of the formation of prices (a central issue of price theory) and of contractual stipulations (an issue of contract theory).

The mantra of *neoclassical price theory* is that demand and supply determine the price as graphically described by the Marshallian Cross.<sup>28</sup> Vernon Smith (1962) corroborated it with his experimental study of competitive market behavior. His experiment and the praxis of auctions show that neoclassical style price formation demands the strict observation of a clearly defined set of market rules. To organize a complete market economy in this style would not only be a very costly affair, it would also demand a bureaucracy that hampered the economy’s adaptability to unforeseen events<sup>29</sup> (inclusive unforeseen ideas and technical developments). De facto, most prices are announced by one side (usually the producers or sellers) and then kept constant for a while. As a consequence, *prices are comparatively rigid*, a phenomenon that characterizes all advanced economies.<sup>30</sup> One transaction cost reason is the “menu costs” (the costs of changing price labels). Their size is not negligible as shown, i.a., by Levy, Bergen, Dutta, Venable (1997). Other reasons are based on the worry of price wars and irritations of customers (Blinder et al. 1998, 85), or, differently expressed, on the common desire to cultivate the price setters’ business relationships with their competitors and customers.

Empirical work on rigid prices exploded during the last decade (see Campbell and Eden 2007), though not with the purpose to support the NIE but to proof the non-neutrality of money and, as a consequence, the effectiveness of an active monetary policy. Rigid prices are of course changed once in a while. Traders don’t change prices all the time but may try to approach equilibrium prices by a weekly or monthly trial and error process. Thus, e.g., Campbell and

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<sup>28</sup> The illustration of the equilibrium price of a commodity by the intersection of an upwards sloping supply curve (“law of supply”) and a downward sloping demand curve (“law of demand”) in a system of coordinates whose vertical axis denotes the price and horizontal axis the quantity of the commodity. We are concerned here only with issues of the institutional framework of markets. For that purpose suffice, for the time being at least, the classical plausibility considerations regarding the price dependence of the quantities of demand and supply. The microeconomic foundation of these relationships and of the existence of market equilibrium is object of neoclassical microeconomics.

<sup>29</sup> Not unlike to the Lange-Lerner model of market socialism (Hayek 1945).

<sup>30</sup> However, as Carlton (1986) has shown, the degree of price rigidity differs greatly across industries. In some industries the average price does not change for periods well over one year while in other industries the price changes quite frequently.

Eden (2007, 1) report, there is evidence that grocery stores “extensively experiment” with their prices.<sup>31</sup> However, there may exist also tacit price agreements among competitors as explained by oligopoly theory, and suppliers may change their prices only according to the announcements of a one firm – the price leader (Stigler, 1952, 234).

Representatives of the New Institutional Economics such as Armen A. Alchian (1987) argue that rigid prices are part of an – between sellers and buyers – implicitly agreed upon market order (market system). He describes the practice of *posted prices* as follows:

Posted prices, announced publicly and maintained until publicly revised, are prices at which the posting party will transact any amount. All parties obtain the same price; the price to a particular party could not be changed while all others were getting better prices (127).

The author gives as examples tuna and salmon fishing, “where the fishing boats are reliant on a unique buyer-processor. Similarly, a fixed price guarantee occurs in many agricultural product markets where farmers plant crops relying on a unique buyer-processor” (127). The reason is to create planning security.

Another reason for price rigidity is that, in long-term business relationships that require relationship-specific investments, “opportunistic price changes (intended to effect a hold-up) are not clearly or cheaply distinguishable from price changes to which the parties would have agreed had the demand and supply environment been mutual foreseen” (Alchian and Woodward 1987, 128).

Whether prices change by split seconds or once a year – what matters is that the price mechanism steers demand and supply towards equilibrium – not non-price controls such as queues or rationing cards and not take-it-or-leave-it offers of monopolists. It is here where the *collective actions of anti-trust measures and their enforcement* by the state enter the picture.<sup>32</sup>

We now come to the problem of *contractual stipulations*, a central issue of principal agent or adverse selection theory. Both approaches deal with problems of asymmetric information but continue to use the neoclassical assump-

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<sup>31</sup> Campbell and Eden (2007, 2) report that according to their study “Increasing the difference between an item’s price and the average price for the same item at other stores substantially raises the probability of a price change. However, the probability of changing a price close to average far exceeds zero, and most price changes occur with the original price close to average. In simple menu-cost models, extreme prices arise from the erosion of a fixed nominal price by other sellers’ adjustments. Therefore, they are older than average. We find that most extreme prices are relatively young (less than a month old). That is, grocers deliberately select extreme prices, which they then quickly abandon. *Taken together these results suggest to us that sellers extensively experiment with their prices.*” (Emphasis added).

<sup>32</sup> To work properly, price competition requires an economic constitution (“order”) whose formation cannot be left to *laissez-faire*. Rather, design and administration of the economic constitution is the task of economic policy or “*Ordnungspolitik*” by the state (Eucken (1950, 314).

tions of perfect rationality, perfect foresight (apart from some “asymmetric” blind spot) and zero transaction costs. Mathematically their approach is based on an ingenious form of constrained optimization with pretty far-reaching assumptions on the constraints. Thus, in case of the principal-agent approach, the principal is admittedly unable to observe what effort level his agent is supplying. But he knows perfectly well his agent’s preferences and his reservation utility or the properties of the stochastic influences of nature on the result. Contracts are complete in the sense that, once concluded, they are (and can be) executed as agreed upon. It is here where Williamson’s critique enters by emphasizing the problems that may arise after contract conclusion. They can be particularly bothersome if transaction specific investments play a role, which would require very detailed agreements before contract conclusion. However, under (Knightian) uncertainty it is impossible to write a complete contract that details all possible future contingencies,<sup>33</sup> wherefore contracts are unavoidably incomplete. They contain loopholes and the lock-in of the parties (resulting from their transaction specific investments) may invite opportunistic behavior of the other side. Due to information costs (a special kind of transaction costs), the parties may be unable to verify their case to a court. Thus, governance by court ordering may have to be supplemented or even substituted by that of private ordering to effectively protect the parties against opportunism of their trade partners.<sup>34</sup> As one can realize, Williamson’s theory of contractual stipulations (his “transaction cost theory”) stretches to the Postcontractual activities we reserved for the next section.

Williamson (1985), for one, drew economists’ attention to the American legal literature, in particular Macneil’s concept of *relational contract*. It is based on long term arrangements in which past, present, and expected future personal relations among the contractual parties matter (Macneil 1974, 753). Therefore, such contracts are, to a degree, *implicit, informal, and nonbinding*. Self-enforcement (private ordering) becomes an important supplement of court ordering. Transactions are normally part of ongoing and long-term business associations. As such, they play an important role in modern economic life.

Often contracts are necessarily and intentionally incomplete because of mutual desires for flexible but bounded responses to uncertain future conditions that limit the scope and precision of verifiable terms. Moreover, incomplete contracts often exist deeply embedded in an ongoing relationship. The parties

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<sup>33</sup> For lack of knowledge of what the future will bring, i.e., of all the stochastic variables.

<sup>34</sup> Mathematical economists such as Grossman and Hart (1986) have criticised the imprecision of TCE. They tried to develop, instead, a formal version of transaction cost economics. But their theory of incomplete contracts, as it became known, does not really deal with the central problem of TCE: ex post opportunism. Grossman and Hart explain rationally only *who* should acquire a (private) property right, in their case who should become the owner of the residual decision right of a contractual relation between a supplying and a buying firm (Hart 1995, 5ff.).

are not strangers; much of their interaction takes place “off the contract,” mediated not by visible terms enforceable by a court, but by a particular balance of cooperation and coercion, communication and strategy. (Hadfield 1990, 927)

Sociology aside, social relations play an important role in both the legal and the economic side of the organization of markets. That is, contractual relations (Macneil 1978) develop between suppliers and their customers: Customer relationships matter. Given the specific investments on both sides, and the resulting lock-in effect, coordination by advertisements or research and development (qualitative competition) has much better properties than price adjustments. As Williamson (1985, 76) argues, “price adjustment proposals involve the risk that one’s opposite is contriving to alter the terms within the bilateral monopoly trading gap to his advantage.”

As for financial markets, securitized money loan contracts are as classical as contracts can be – with market prices being proverbially flexible. However, it would be wrong to conclude from this that financial markets are perfect. In the contrary, they are incomplete markets – in the sense of *Arrow’s time-state preference markets* – due to transaction costs, imperfect foresight and bounded individual rationality. As a result, “[...] not all risks which it would be desirable to shift can be shifted through the market.”<sup>35</sup> The incompleteness of financial markets can be allowed for by suitable arrangements of debt contracts or by non-market constructs (collective actions) such as licensing, private or public regulation, limited liability, bankruptcy – or “large business organizations” (Arrow 1970, 141). The latter is in effect a repeat of Coase’s (1936) explanation of the nature of the (financial) firm “by other means,” viz., for reasons of incomplete foresight: Financial firms offer, i.e., an organizational answer (“hierarchy”) to the trials and tribulations caused by transaction costs, imperfect foresight and bounded rationality, a governance structure of a collectivity of actors that allows them to react to unforeseen events by non-market methods. They can be seen as of *privately controlled forms of collective actions*.

## 5. Postcontractual Activities: Execution, Control and Enforcement

Under conditions of the NIE, the activities “execution and control” of contractual obligations require a communication mechanism that provides the information necessary to know when “enforcement” is required (cf. North 1990, 57). “Enforcement” of contractual obligations may either be seen as an activity of a

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<sup>35</sup> Arrow (1970, 139); he puts the problem as follows: “What we observe is that the failure of the price system to handle risk-bearing adequately leads to a diminished use of prices even in contexts where they would be most useful in bringing about a careful and flexible confrontation of needs and resources” (1970, 141).

higher authority of an organization or state (an agreed upon mediator, a corporate board, a court) or as a form of self-enforcement in the sense of game theory. In the first case the activity enforcement is a *collective good* of whose provision the community benefits but whose costs are born only by a small set of individuals. Olson's free rider problem may arise. A '*visible hand mechanism*,' i.e., an organization is required to finance and carry out the activity "enforcement" when necessary. In the second case we are dealing with an 'invisible hand mechanism' as described by the "institutions-as-an-equilibrium-of-a-game" approach,<sup>36</sup> that leads on to a Nash equilibrium, i.e., a state in which no actor has an incentive to deviate from his present plan of action as long as other actors do not do so.

The institutions-as-an-equilibrium-of-a-game approach assumes that the misbehavior of players is public information. However, under conditions of the NIE, real world players are incompletely informed. Anyway, though transaction costs play no [essential] role in game theory, game theoretic explanations of self-enforcement mechanisms are applied to answer real world situations characterized by costly information. Such models are therefore assumed to contain special private or small-scale public institutions that provide low cost information about each player's behavioral history and coordinate community responses. The development of such institutions is the object of diverse historic studies by scholars such as Milgrom, North and Weingast (1989), Greif (1989, 1993, 2006) and Greif, Milgrom and Weingast (1994). However, from a certain point on transaction costs of such private (or small public) systems of third party enforcement would become prohibitive (North 1990, 58) and will result finally in the establishment of a territorial state – in spite of the problems of its control. We'll relate in this paper briefly only on three articles – two historic contributions by Greif (1993) and, Greif, Milgrom and Weingast (1994) plus one on modern times by Baron (2002).

The two historic papers describe an early and a more intermediate stage on the road from personal to impersonal exchange – both characterized by the *separation between the quid and the quo* over time and space. The third paper on modern times describes one of today's most successful dot-com ventures: the reputation mechanism of eBay's online market.

The paper by Greif (1993) deals with the problem of trust between a merchant and his travelling agent using the example of the organization of a coalition of Jewish traders, the *Maghribi*, who pursued complex, long-distance trade in the Mediterranean during the eleventh century. The Maghribi had organized an informal principal-agent relationship – with the traders being the principals and their employed "overseas agents" being the agents. The latter accompanied

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<sup>36</sup> According to which an institution is defined as a salient Nash equilibrium of a recurrent "supergame" about the way a given "underlying game" (e.g., a prisoner's dilemma game) is repeatedly played (see Furubotn and Richter 2005, 8).

the sea transport of the goods, searched for buyers, negotiated and concluded purchasing contracts, monitored the transfer of the goods, and secured payments. Complete contingent contracts between principals and agents were impossible because of lack of foresight. Also impossible was a direct monitoring of the agents by the principals. Similarly, court ordering against fraudulent agents was not feasible. Despite these difficult conditions, the Maghribi merchants were still able to help themselves by establishing the following agreement. The agents were, or became, members of an economic institution, the group of traders of the Maghribi. They earned premiums for good behavior. But, if any agent deceived his principal just once, he got no more assignments for the rest of his life from the merchants of the Maghribi group. If a fraudulent agent tried to become a principal (a merchant) himself, his Maghribi agent was free to deceive him. No Maghribi tradesmen or merchants would punish him in the usual manner. Thus, he would soon be driven out of business. Insofar, “[...] the Maghribi traders established a relationship between past conduct and future economic rewards. As a result, agents resisted the short-term gains attainable through deception [...]” (Greif 1989, 881).

The paper by Greif, Milgrom and Weingast (1994) interprets *merchant guilds* in the light of a repeated-game model to conclude that guilds (a public organization) emerged to allow rulers of trading centers to credibly commit themselves to the security of the person and property of alien merchants. They centralized information about rulers’ behavior and disputes among merchants, and were able to apply sanctions against breach of promises by rulers (city governments) that required effective collective actions. In effect, guilds provided merchants with the leadership and the information transmission mechanism required for coordinated action. They decided when to impose a trade embargo and when to cancel it (p. 755). Members could also obtain information from guilds about disputes between their members or other traders. Modeling city – trader relationships as equilibria of repeated games is impossible because of the asymmetry of power (size) between city and foreign traders. Also the interposition of a merchant guild, which organizes communication and coordination between traders, does not necessarily lead to reputation equilibria because individual traders have no incentive to participate in the boycott of a city. To be effective, merchant guilds (like labor unions) have to be strong enough to force members to do so rather than to serve their individual interest (771). The authors do not deny that merchant guilds were cartels but maintain that they originally served as countervailing powers against rulers of trading centers (cities) and thus facilitated trade expansion. In the course of time, when larger political units emerged and took over the functions of merchant guilds, merchant guilds did not necessarily disappear but were transformed into monopolistic organizations that may have hindered the expansion of trade (773). The institution of the merchant guild was so to speak complemented by the institu-

tion of the “community responsibility system” as described by Greif (2006). It was a further step into the direction of modern impersonal exchange.

One of the most extreme cases of modern impersonal exchange represents the online auction market organized by eBay. Baron (2002) gives a detailed description of it. Traders are anonymous and remote; buyers cannot examine the items before bidding and have to pay in advance for items they had not inspected. Sellers have little recourse if a winning bidder refuses to pay (Baron 2002, 254). Still, trade flourishes and eBay became one of the true dot-com successes. Its achievement is based on trust among members of the “eBay community of traders,” which represents eBay’s principal asset; “eBay’s strategic focus is to support and expand this community.” For that purpose eBay established and attends to a multilateral online reputation mechanism based on [published] feedback provided by the transacting parties (246). This mechanism generated incentives similar to those in a long-term personal relationship between buyer and seller. Of course, a community based on trust was vulnerable to (outright) fraud. But fraud remained rare and can be covered by an insurance against fraud (272). Baron concludes:

The internet allowed an online reputation mechanism to support trust among anonymous traders, most of whom would not have repeated bilateral exchange. The reputation mechanism was multilateral and based on feedback provided by the parties to a transaction. This mechanism was the heart of eBay’s strategy of building a community and sharing in the value created for its members. (Baron 2002, 272)

So much on our three examples; for a systematic review of economic historic papers on private ordering that are largely based on the problem of prisoner-dilemma games see McMillan and Woodruff (2000). They emphasize two ways to counter the self-defeating incentives of PD-games: The law and repeated PD games with the possible threat of retaliation. “If the legal system functioned perfectly, contracts would never need to be self-enforcing. The advantage of private ordering is that the market participants are mostly better informed than judges.” Important as private ordering may be – in a modern society it could not replace public ordering.

## 6. Final Remarks

As we have seen, the market is not just “supply and demand determines the price”. To function properly, it demands a set of rules that regulate not only the price mechanism, but also the other basic functions of trade like search, inspection, contract execution, control, and enforcement. Independent of whether these rules evolved spontaneously or were made by identifiable people, they must be well designed and well implemented. As the sub prime mortgage crisis of 2008 illustrates: the quality and execution of these trading rules is vital for the functioning of the market itself, which is by no means a marginal problem.

To be sure, there exists no comprehensive NIE theory of “the market itself”. But there are a number of empirical studies on the basic functions of trade: search, inspection, bargaining, contract execution, control, and enforcement. Most of them read like illustrations of an invisible hand mechanism. But there are also a few reports on clear cases of visible hand interventions of which the following were briefly mentioned:

- Public or private quality control of financial assets to avoid the brake down of financial markets as a consequence of Akerlof’s lemons principle as illustrated by Hellwig (2008),
- Public anti-trust measures to secure the functioning of the price mechanism as emphasized by Eucken (1950),
- Public or private organization of execution, control and enforcement as described by North (1990).
- Bankruptcy as a means to secure an orderly liquidation of debtors in financial distress or to help the rehabilitation and continuation of their business – for reason of the “failure of the price system to handle risk-bearing adequately” (Arrow 1970, 141).

We wish to mention that the institutional details of the basic activities of trade are also subject matter of legal regulations such as of property right law and contract law.<sup>37</sup>

We conclude by repeating that the market is a privately or publicly supplied collective good and that the assumption, sophisticated market participants will seek to protect themselves by purely relying on invisible hand mechanisms is contra-factual.<sup>38</sup> For reasons of general public interest some visible hand mechanism – products of collective actions – seem unavoidable, such as anti-trust measures (Eucken 1950) and regulations of financial markets.<sup>39</sup>

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<sup>37</sup> Examples see e.g. Furubotn and Richter (2005, ch. 3 and 4).

<sup>38</sup> Quinn (2009, 6).

<sup>39</sup> For fear of systemic risks; see, e.g., Kroszner and Strahan (1999).

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