

# **NEW INSTITUTIONAL ECONOMICS AND THE ANALYSIS OF THE PUBLIC SECTOR**

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## ABSTRACT

*The development of New Institutional Economics (NIE), and especially its core components agency theory, property rights economics and transaction costs economics, appears to have provided policy analysts with powerful tools for the analysis of public sector organisational behaviour and design. In particular, the adoption by NIE of the concept of "bounded rationality" and its employment of a "comparative institutions" approach to the question of economic efficiency seems especially applicable to public bureaucracies. However, NIE is difficult to define with any degree of precision and may well possess an inherent bias towards normative policy prescription favouring market solutions to public sector problems.*

## INTRODUCTION

186 With relatively few exceptions, like the economic theory of bureaucracy (Downs, 1957; Niskanen, 1972) and its derivative notion of bureaucratic failure, economists have ignored public sector organisations. If the core assumptions of economic analysis consist of rational maximising behaviour, stable preferences and comparable equilibria, and if neoclassical economics adds peripheral concepts like perfect information and costless market exchange (Eggertsson, 1990), then this reticence about examining hierarchical relationships characteristic of public bureaucracy would appear warranted. However, with the development of new institutional economics (NIE) and its emphasis on introducing institutional realism into economic analysis, especially agency theory, property rights economics and transaction costs economics, economists now possess powerful tools for the analysis of organisational behaviour and design. In common with several other contemporary commentators, including Bailey (1995), Frant (1991) and Hood (1998), we take up the question of NIE and its explanatory abilities in a public sector context.

## NEW INSTITUTIONAL ECONOMICS

In common with the major earlier institutionalist tradition associated with Thorstein Veblen, Wesley Mitchell, John R.

Commons and Clarence Ayres, NIE represents a loose collection of ideas aimed at bringing institutional characteristics back to the core of economic analysis (Rutherford, 1996). However, unlike the older tradition, NIE scholars have few problems with a priori deductive theorising. For example, Furubotn and Richter observe that:

The change in analytic approach adopted by the new institutionalists has not resulted from any deliberate attempt to set up a new and distinct type of doctrine in conflict with conventional theory. Rather, the tendency to introduce greater institutional detail into economic models has come about gradually over time because of the recognition that standard neoclassical analysis is overly abstract and incapable of dealing effectively with many current problems of interest to theorists and policymakers (Furubotn and Richter, 1992:1).

Given its somewhat disparate nature, NIE is difficult to define with any degree of precision. Frant (1991:112/113) has identified three “precursors” of NIE. First is Coase’s (1937) focus on the importance of transactions and the related problems of whether to employ markets or hierarchies to handle transactions, which emphasised the costs attached to using the price mechanism. Second is the literature on the economics of property rights deriving from Coase’s (1960) famous paper on how the assignation of property rights influences outcomes in the presence of externalities, which led to the so-called “Coase theorem”. And third is Alchian and Demsetz’ (1972) seminal attempt to apply the property rights paradigm to organisations engaged in productive activity, with the problems inherent in “team production”, like “shirking” and “monitoring”.

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Disagreement exists on the major dimensions of NIE. For instance, Rutherford (1996:2/3) adopts a fairly broad view of the main elements of NIE by including the economics of property rights (Alchian and Demsetz, 1973), law and economics (Posner, 1977), rentseeking and distributional coalitions (Olson, 1982), agency theory (Jensen and Meckling, 1976), transaction costs economics (Williamson, 1979), game theory in institutional

situations (Shubik, 1975), and the new economic history of Douglas North (1981). Matthews (1986) has developed a fourfold taxonomy of NIE in which institutions are viewed as property rights, as kinds of contracts, as conventions, and as governance structures. By contrast, Boston et al (1996) constrain their policy-orientated view of NIE to only two strands, namely agency theory and transaction cost economics. We follow a somewhat broader taxonomy of ingredients which includes agency theory, property rights economics and transaction cost economics.

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Although NIE does not contest the methodology of contemporary neoclassical economics, it does make several crucial changes to it. Following Simon (1975) NIE recognises that in the real world, individuals possess an inherently limited capacity to process information and accordingly are “boundedly rational” in the sense that their calculations include only immediate and readily assimilated information i.e. whereas neoclassical economics assumes perfect knowledge, this assumption is dropped in NIE. Bounded rationality necessarily implies that the complexities of actual economic exchange cannot be fully captured by hierarchical contracts or market mechanisms. This leads to a second difference between NIE and conventional economic analysis. Since bounded rationality prevents the construction of complete contracts between agents and principals, scope exists for opportunistic behaviour by economic agents, who can conceal their preferences and actions from contractual partners (Williamson, 1975). Indeed, it is precisely because of real-world phenomena, like bounded rationality and incomplete contracts, that economic activities have to be conducted in an environment characterised by asymmetric information and costly transactions, and it is these features which lend crucial importance to institutions.

Perhaps even more significant than these methodological issues are the differences between NIE and orthodox neoclassical analysis on the question of what should constitute the appropriate measure(s) to gauge economic efficiency. Standard neoclassical

economics defines economic efficiency in three ways: allocative efficiency or Pareto efficiency, productive or technical efficiency and dynamic or intertemporal efficiency. In common with the conventional approach, normative problems are usually framed in individualistic terms and focus on the efficiency of alternative conceivable institutional arrangements. But many theorists working in the NIE tradition have expressed strong reservations about using the Pareto efficiency criterion to justify government intervention. For instance, Demsetz' (1969) "nirvana fallacy" argument holds that by comparing real-world arrangements against the ideal of allocative efficiency rather than feasible institutional alternatives, policymakers have become far too inclined to prescribe government intervention. Similarly, De Alessi (1983) has argued that many of the supposed inefficiencies identified in practical institutional situations by neoclassical economics are actually due to the existence of transaction costs.

Arguments along these lines have led many in the NIE tradition to favour a comparative institutions approach to the question of economic efficiency. The essence of this approach has been summarised by Furubotn and Richter as follows:

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Granting that the conventional efficiency standard is unsatisfactory, there is reason to seek a different criterion and move toward a concept of economic efficiency that takes fuller account of those real-life constraints that actually limit individual choices. This approach is precisely the one that many new institutionalist writers have adopted. These theorists point out that, in the real world, alternative systems of property rights exist and transaction costs are inevitably greater than zero. Hence, the 'generalisation' of neoclassical doctrine is advocated. The objective is, of course, to include in any general equilibrium model all of the constraints that decision makers must face in seeking to maximise utility (Furubotn and Richter, 1992:12).

The efficiency criterion required by this approach has been specified by De Alessi in the following terms:

Efficiency is being defined as constrained maximisation. Efficiency conditions are seen as the properties of a determinate (equilibrium)

solution implied by a given theoretical construct. On this view, a system's solutions are always efficient if they meet the constraints that characterise it (De Alessi, 1983:69).

Often notions of efficiency employed in the comparative institutions approach focus on either productive or dynamic efficiency rather than on allocative efficiency. For example, North (1984) emphasises the relative efficiency of institutions with reference to their impact on "social output" or "economic growth" and the ways in which they minimise transaction costs through time. This kind of argument does not indicate how "economic efficiency" defined in this way enhances individual utility or social welfare and accordingly is not completely satisfactory.

190 In general, theorists in the NIE tradition advocate a concept of efficiency that embodies organisational costs, like transactions costs, which can be used to evaluate various feasible reorganisations of economic activity that could yield social gains net of the costs of reorganisation. [See, for example, Coase (1960), Demsetz' (1969), Dahlman (1979), and Bromley (1989)]. This intellectual project is not without its critics (Schmid (1987)), and may be simply tautological. This argument has been summarised by Papandreou as follows:

The traditional notion of optimality in welfare economics has been criticised for comparing real-world outcomes with unattainable outcomes of a transaction-costless world. The alternative notion of 'attainable' optimality implicit in models with endogenous transaction costs, suffers in that by offering a causal explanation of economic interaction it precludes other feasible alternatives with which to compare the outcome of the model. By disallowing comparisons of the 'real-world' microeconomic model with microeconomic models that have different organisational costs, the set of feasible outcomes collapses to the outcome of the 'real-world' model. Accordingly, the outcome that exists is the only possible one (Papandreou, 1994:273/274).

### *Transaction costs*

Despite the fact that Coase (1937:390) originally specified

transaction costs as the "... cost of using the price mechanism" more than sixty years ago, a satisfactory definition of this concept remains problematic. As Allen (1991:2) has observed "the literature on transactions costs is replete with papers which use the term and provide examples, but which never pause to define the phrase."

In general terms, a transaction can be defined as an agreed exchange or transfer of goods and services across technologically separable boundaries. The costs involved in such an agreement and which facilitate such a transfer are collectively known as transaction costs (Williamson, 1985). In other words, transaction costs are the costs of facilitating economic exchange or, in the language of Kenneth Arrow (1969:48), the costs incurred in "running the economic system". Transaction costs are contrasted with transformation costs (sometimes also called production costs) which are the costs involved in transforming inputs into outputs.

Theorists have adopted two generic ways of specifying transaction costs: (1) to adopt somewhat narrow definitions of transaction costs closely bound up with the notion of property rights. For example, Eggertsson (1991:14) delineated transaction costs as "the costs that arise when individuals exchange property rights to economic assets and enforce their exclusive rights". Similarly, Barzel (1982) and McManus (1972) emphasise the costs of enforcement and negotiation of property rights. (2) focus on the costs of creating and maintaining the institutions characteristic of modern market economics. Furubotn and Richter (1992:8) have described this approach as "...most easily understood as embracing all those costs that are connected with (i) the creation or change of an institution or organisation, and (ii) the use of the institution or organisation". We follow this latter approach.

The theory of transaction costs arose from Coase's (1937) question of why it is that two institutions, the market and the firm, perform the same basic functions and yet continue to coexist. He argued that these two alternative methods of coordinating

economic activities exist because there are transaction costs associated with using the price mechanism. Accordingly, rational economic agents will seek to minimise transaction costs and will use either markets or hierarchies, whichever is cheapest. Thus, for example, whether a firm decides to own or lease a particular machine will depend on the transaction costs involved.

192 The modern theory of transaction costs has developed this line of thought and emphasises the importance of the institutions underpinning exchange relationships, namely markets, contracts and firms in private sector settings. Transaction costs theory thus seeks to characterise the properties of transactions in order to determine which institution is optimal in any specific case. Williamson (1979) has argued that the critical features of transactions are their uncertainty, the frequency with which they recur, and the extent to which parties to these transactions are obliged to make investments in transaction-specific assets. For example, once parties in an initial competitive market commit themselves to a specialised transactions (involving, say, substantial investments in specific assets, or high “asset specificity”), then this leads an ongoing “small number” bargaining situation between the two parties, often termed bilateral bargaining. Williamson (1985:47) has hypothesised that these kinds of arrangements encourage opportunistic behaviour or “self-interest seeking with guile”, and he has called them “idiosyncratic” transactions, since the benefits of the transaction are dependent on the absence of opportunistic behaviour in its execution. Obviously specialised institutional arrangements will be required to govern idiosyncratic transactions.

Similarly, pervasive uncertainty, or the absence of perfect information, will also have a decisive effect on whether markets, contracts or firms will be chosen to govern transactions. In general, Williamson (1979) has argued that high levels of uncertainty will inhibit the use of long-term contracts in these cases. Analogous arguments also exist with respect to transactional frequency. For instance, in the absence of asset



specificity, infrequent transactions will not usually require contracts and will simply be undertaken through the market mechanism. Figure 1 developed by Williamson (1979) provides a useful scheme for linking transactional characteristics and governance structures. For example, whereas for moderate to high levels of asset specificity, infrequent transactions will lead to “trilateral governance” (or third-party binding arbitration agreements), frequent transactions will either result in bilateral contracting between the buyer and seller, or in buyers purchasing the relevant productive capacity and integrating it into their firms.

**FIGURE 1: GOVERNANCE STRUCTURE AND THE CHARACTERISTICS OF TRANSACTIONS.**

		Asset Specificity		
		NON SPECIALISED	MIXED	IDIOSYNCRATIC
Frequency	OCCASIONAL	Market Governance	Trilateral governance	
	RECURRENT		Bilateral governance	Ownership integration

Source: Williamson (1979:253)

In common with other areas of NIE, transaction costs economics has been subjected to severe criticism. The first and most damaging line of attack is based on the proposition that it is not obvious that economic agents should wish to minimise total transaction costs rather than simply the transaction costs borne directly by themselves. Put differently, transaction costs minimisation may take the form of a contest over “cost shifting” rather than a search for the optimal institutional arrangements. Secondly, although an attractive idea in principle, the disaggregation of total costs into transformation costs and transaction costs may not always be feasible in practice (Dollery and Leong, 1998). As Lane (1995:229) has inquired: “could one measure the reduction in transaction costs by moving from a system of individual contracts to a hierarchy like a firm or

bureau?" The transaction costs theory has also been criticised for the narrowness of its homo economicus behavioural assumption, which is asserted to disregard cultural, social and other dimensions of human conduct.

For these and other reasons, transaction cost theory can at best offer only a partial explanation for real-world differences in economic organisation. While it does advance our understanding of the benefits and costs of alternative governance structures, it should nevertheless be applied with care and in tandem with other NIE models, like the economics of property rights and agency theory.

### *Economics of property rights*

194 A second dimension of new institutional economics may be found in the emerging literature on the economics of property rights. This literature holds that the allocation of property rights is a key factor in determining individual incentives. Coase (1960) provided a starting point. The so-called Coase Theorem, stating that the allocation of property rights does not affect efficiency in the absence of transaction costs and is widely misunderstood to this day. It is often taken to mean that property rights do not matter, while Coase's point was just the opposite. Coase (1992 : 716) observed that "the world of zero transaction costs has often been described as a Coasian world. Nothing could be further from the truth. It is the world of modern economic theory, one which I was hoping to persuade economists to leave." Because transaction costs do exist, the allocation of property rights does have efficiency consequences.

Economics is concerned with the consequences of alternative mechanisms for resource allocation. But in developing price theory, economists gradually eliminated institutional constraints on behaviour, and this has imposed severe restrictions on the applicability of price theory to real-world problems. By examining how differences in the structure of property rights can affect individual behaviour, the economics of property rights seeks

to re-introduce institutional considerations. Property rights refers to the rights of individuals to use resources. A system of property rights assigns to particular individuals the “authority” to select, for specific resources, any use from an unprohibited class of uses.

Alchian and Demsetz (1972) made the seminal attempt to apply property rights theory to organisations. They focus on what they call “team production”. Team production is group production that has inherent nonseparabilities, so that individual productivities are hard to estimate. (Their example is two men jointly lifting heavy loads onto a truck.) Because monitoring true productivities is costly, it will not be efficient to monitor perfectly, and therefore each member of the team will have an incentive to “shirk” to some degree. This is a simple Prisoner’s Dilemma problem - all members of the team would prefer to minimise shirking, but shirking still takes place. One method of resolving this problem was to select an efficient level of monitoring. Another was to view the firm not so much as a hierarchical organisation but rather as a set of contractual relations. Alchian and Demsetz (1972 : 777) put this argument as follows:

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“It is common to see the firm characterized by the power to settle issues by fiat, by authority, or by disciplinary action superior to that available in the conventional market. This is delusion... To speak of managing, directing, or assigning workers to various tasks is a deceptive way of noting that the employer continually is involved in renegotiation of contracts on terms that must be acceptable to both parties. Telling an employee to type this letter rather than file that document is like my telling a grocer to sell me this brand of tuna rather than that brand of tuna.”

### *Agency theory*

An important precursor to contemporary agency theory was the pioneering work of Berle and Means (1932) in their *The Modern Corporation and Private Property*. They were the first to draw attention to the divergence of interests between the owners and managers of large corporate firms. Numerous empirical and theoretical studies followed. The literature on agency theory is

centrally concerned with the relationship between one economic agent (the principal) and another economic agent (the agent). Accordingly, agency theory is chiefly focussed on the problem of economic incentives. By contrast, conventional neoclassical economics, with its reductionist construct of the organisation as simply a production function converting inputs into outputs in the most productively efficient manner, assumed away principal-agent problems and the associated question of incentives. In the orthodox tradition, principals were perfectly informed on the nature of the tasks agents were hired to perform and their subsequent actions could be costlessly monitored. Agency theory can thus be viewed as the extension of the neoclassical theory of the firm to embrace "the problems posed by limited information and goal conflict within organisations" (Levinthal, 1988:154). In other words, just as transaction costs theory adds realism to the theory of markets by including the costs attached to exchange relationships, so too agency theory adds realism to the conventional "black box" conception of organisations.

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A principal-agent relationship comes into being whenever a principal delegates authority to an agent whose behaviour has an impact on the principal's welfare. Numerous principal-agent relationships exist across virtually the entire spectrum of human endeavour. For example, principal-agent relationships include voters and their elected representatives, employers and employees, shareholders and corporate managers, and so forth. The essence of all these principal-agent relationships involves a trade-off for the principal. By delegating authority to an agent, the principal economises on scarce resources by adopting an informed and able agent, but simultaneously takes on the risk that since the interests of the principal and agent will never be identical, the agent may fail to maximise the wealth of the principal. For instance, despite being paid a proportionate commission, real estate agents may wish to sell a property quickly at a lower price than could otherwise be obtained for the owner of the property. Since the interests of principals and agents are likely to diverge in most real-world relationships, agency theory focuses on the costs

attached to such relationships and the efforts that both principals and agents will take to economise on these costs.

In their seminal contribution, Jensen and Meckling (1976) identified three categories of agency costs. First, monitoring costs arise from the resources principals invest in monitoring the behaviour of agents and creating incentives for desirable behaviour. Second, bonding costs will derive from resources invested by agents to guarantee successful outcomes to their principals. And third, residual loss costs consist in the losses to their wellbeing suffered by principals due to a divergence between their interests and those of their agents. According to Jensen and Meckling (1976), total agency costs are thus comprised of the aggregate of monitoring costs, bonding costs and residual loss costs.

The extent of total agency costs is postulated as dependent on the characteristics of particular principal-agent relationships. For example, in a typical agency relationship agents almost always possess more information about both the task assigned and the relative efficacy of their own performance. Agents often take advantage of this asymmetry of information by engaging in shirking or opportunistic behaviour inimical to the interests of principals, and clearly the greater the extent of this behaviour the higher will be the level of total agency costs.

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Although in its initial stages agency theory was applied exclusively to the firm, and especially the modern corporation with its characteristic separation of ownership from control quintessentially representative of a principal-agent relationship, it was soon used more widely once its explanatory powers were recognised. Jensen and Meckling themselves recognised the generality of agency theory:

The problem of inducing an 'agent' to behave as if he [or she] were maximizing the 'principal's' welfare is quite general. It exists in all organizations and in all co-operative efforts - at every level of management in firms, in universities, in mutual companies, in co-

operatives, in governmental authorities and bureaus, in unions, and in relationships normally classified as agency relationships such as are common in the performing arts and the market for real estate (Jensen and Meckling, 1976:309).

198 Two specific aspects of the agency problem have received widespread attention in the literature. First, the phenomenon of adverse selection occurs due to informational asymmetries in principal-agent relationships. For example, because unhealthy people are more inclined to purchase health insurance they will be over-represented in the pool of insured people. In turn, this will force the price of insurance to rise inducing many low-risk healthy individuals to forego health insurance. Second, the problem of moral hazard arises when a party to a contractual relationship can affect the outcome of this arrangement to their own advantage. For instance, if a person is fully insured and cannot be accurately monitored by an insurance company, then their behaviour may change after the insurance has been purchased to induce larger payments. Adverse selection occurs due to information asymmetries in principal-agent relationships. For example, older people typically experience more difficulties in obtaining health insurance.

Given the problems inherent in principal-agent relationships, like adverse selection and moral hazard, a good deal of agency theory has tried to resolve these problems by specifying the optimal form of contracting (Rees, 1985a; 1985b). Substantial progress has been made in a variety of economic relationships, including labour, land, credit, and product markets, and more recently in the public sector.

Agency theory is not without its critics (see, for instance, Davis and Gardner (1995)). In common with other areas of NIE, including transaction costs economics, agency theory has been criticised for the restrictive and descriptively unrealistic nature of its homo economicus behavioural postulate, which is postulated as neglecting the complexities of human relationships. More specifically, agency theory has been attacked for overlooking

issues of authority and power in principal-agent relationships, and in particular for emphasising the role of opportunistic behaviour by agents while ignoring opportunism by principals. It has also been argued that agency theory places a heavy reliance on single principal-agent models which ignore questions of competing principals or of uncertainty surrounding the identity of principals. Moreover, it has been observed that the policy implications which flow from agency theory are unclear, especially in public sector contexts.

## **NEW INSTITUTIONAL ECONOMICS AND THE PUBLIC SECTOR**

As we have seen, the development of the major strands of NIE took place in an attempt to add greater institutional realism to abstract neoclassical economics in its efforts aimed at explaining and predicting the behaviour of utility maximising individuals and profit maximising firms in market relationships. The question thus arises as to whether the major elements of NIE can shed any light on behaviour in non-market or public sector contexts. Looked at from a different angle, this question reduces to the degree of similarity between the private and public sectors. Can NIE have the same descriptive and predictive powers in a non-market setting that it enjoys in a market milieu?

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The distinction between the public and private sectors in the mixed economies of advanced representative democracies is extremely difficult to pinpoint with any degree of precision and appears ultimately to depend on value judgements about the characteristics of the “good society”. [See, for example Perry and Rainey, 1988; Bozeman, 1987; Sinclair, 1989]. Boston has summarised some of the complexities involved as follows:

The issue as to what are the proper or legitimate functions of the state raises important philosophical questions over which there is never likely to be complete agreement. On the one hand, libertarians maintain that the functions of the state should be limited to the protection of life and property. This includes the provision of defence

forces and a police force, together with the collection of taxes necessary to fund such services, but little else. On the other hand, those who reject libertarianism - including conservatives, liberals, social democrats and socialists - maintain that the state has responsibilities which extend well beyond matters of external and internal security and the protection of property rights. Equally vital are the administration of justice, environmental protection, the regulation of commerce, and the provision of income support and various social services (Boston, 1995:84).

Quite apart from disputes over the appropriate functional roles of government, it is virtually impossible to define the meaning of term "public sector" in any coherent manner. Jan - Erik Lane has conceptualised these definitional difficulties as follows:

The basic problem here is what could be called the 'demarcation problem'; it involves deliberations about what the concepts 'public' and 'private' refer to as well as about the criteria that may guide the choice of what is to be public, private or some public-private mixture, and how such decisions may be implemented. The demarcation between the public and the private involves semantic questions, issues involved in derivation of an optimum or feasible solution to the problem of what is to be private or public and matters concerning the practicality of implementing any such solution (Lane, 1995:15).

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It is sometimes argued that this "demarcation problem" between the public and private is misplaced and what really matters is the mode of social organisation. For example, von Mises (1962:31) has argued that "there are two methods for the conduct of affairs within the frame of human society ... one is bureaucratic management, the other is profit management". This classification largely coincides with Boulding's (1978) distinction between the "threat system" and the "exchange system" and perhaps even roughly overlaps Wolf's (1989) dichotomy between "markets" and "governments". Similarly, it can be argued that public/private is essentially a legal distinction. By contrast, economists focus on functional dimensions of this distinction by juxtaposing the market sector with the collective sector, where the latter sector is characterised by the fact that its revenue derives



from taxes rather than prices. But a demarcation drawn along the lines of markets versus hierarchies by no means captures the full complexities of the public sector. Several other polar dimensions of public sector and private sector activity need to be considered, not least “.. exchange and authority, competition and hierarchy, laissez-faire and planning, market economy and command economy, capitalism and socialism, and freedom versus authority” (Lane, 1995:19). In other words, there is no single method of making a satisfactory private-public distinction since issues like authority, bureaucracy, competition, ownership, regulation, public allocation, etc, are all relevant.

However, Wolf (1989:127) has argued that “one general and neglected” dimension of the distinction between public and private sector activity resides in “... the differing processes by which performance is monitored in the market and nonmarket domains”. In the public sector “responsibility for monitoring nonmarket output usually is lodged in another public body: a cognizant legislative committee in the federal, state, or municipal legislature ... [and] the principal monitors are not consumers of output” (Wolf, 1989:127/128). The inevitable result is that “... control over the costs and quality of nonmarket output is thus oblique and indirect, several steps removed from the production process, and therefore attenuated” (Wolf, 1989:128). This contrasts sharply with “typical” private sector activity where “... control over performance is ultimately exercised by consumer behaviour and by competing producers whose competition often occurs across product lines as well as within them” (Wolf, 1989:129). Accordingly, although both public and private sector organisations generate output using a combination of markets and hierarchies, fundamental differences in the management of production exist. Notwithstanding our earlier qualifications surrounding the “demarcation problem”, if we accept the generality of this argument across the multitude of public and private organisations, then this may well circumscribe and qualify the applicability of NIE to the public sector.

If we adopt a few plausible assumptions regarding the nature of public and private organisations deriving from Wolf's (1989) observations as "stylised facts", then this may shed some light on the potential applicability of NIE for policy formulation and implementation in the public sector. First, it seems reasonable to postulate that public agencies are more reliant on hierarchical organisational structures with multiple levels of principal-agent relationships than their private sector counterparts, given the typical "conditions of nonmarket supply" specified by Wolf (1989) (especially the purported "difficulty in defining and measuring output" and "single-source production as well as the fact that often their output is not traded"). Accordingly, the insights provided by agency theory are likely to be particularly useful in the analysis of public agencies. However, because the monitoring process is usually "indirect" and not motivated by considerations of profit maximisation due to Wolf's (1989:54) "absence of bottomline and termination mechanism[s]", principals have fewer incentives to closely monitor the behaviour of agents, with the result that shirking and opportunistic behaviour are likely to be relatively high, boosting total transaction costs.

Second, and by way of contrast, private firms are comparatively more dependent on market relationships than hierarchical structures in their productive activities with fewer principal-agent relationships than equivalently sized public agencies. But because of stronger pecuniary incentives for principals to monitor the performance of agents, deriving from their profit maximisation maximand, per capita total agency costs are likely to be lower *ceteris paribus*.

Finally, if we conceive of the production and interchange of intermediate outputs within different parts of some organisation as a kind of intraorganisational market, then hierarchical organisational structures can be viewed as a substitute for market relationships, along the lines of Coase (1937). Weimer and Vining have put this argument as follows:

This perspective makes the distinction between markets and hierarchies less significant. Markets embody some hierarchy, typically a centrally enforced system of property rights but also perhaps various regulations by government agencies. Within hierarchical organizations, considerable discretion is often delegated to people whose behavior can be understood as the pursuit of self-interest subject to various administrative constraints. Indeed, the boundaries of hierarchical organizations become blurred when the organizations contract with nonmembers for the provision of services (Vining and Weimer, 1996:96)

Once it is realised that these stylised facts can be placed in somewhat more complex private-public interactions, then the importance of NIE becomes even more apparent. Figure 2 provides an illustration of these complexities:

Figure 2 also highlights the various public and private production and provision options. We have discussed the generic public provision and production and private provision and production models in relation to the potential explanatory power of NIE. Once public funding and private production (lower left quadrant) and private funding and public production (upper right quadrant) are considered, then principal-agent relationships and attendant transaction costs can be expected to change. For example, activities taking place in the upper right hand quadrant will presumably more closely approximate private production and provision rather than public production and provision. Similarly, activity occurring in the lower left-hand quadrant would probably

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**FIGURE 2: PUBLIC AND PRIVATE PRODUCTION AND PROVISION OPTIONS.**

	Public provision	Private provision
Public production	Non-commercial and non-contracted, 'core' public functions	Commercial functions undertaken by public organizations
Private production	State-funded goodsand services provided by private organizations	Commercial functions undertaken by private organizations

Source: Adapted from Boston (1995:82, Figure 4.1)

be characterised by relatively indirect monitoring by public principals and a comparatively high degree of reliance on market relationships rather than hierarchies by private agents. Although the analytical framework contained in Figure 2 is useful for illustrative purposes it should not be pushed too far. For instance, it cannot readily accommodate public provision and private production involving publicly funded private non-profit organisations delivering free services.

204 Despite the reservations expressed by Moe (1984) and others about the careless application of NIE to the public sector, and notwithstanding the complex nature of the public sector, it would thus appear that NIE has much to offer. Indeed, the deployment of rational choice models using the homo economicus assumption to questions in public economics has a long tradition, and includes game theory, social choice theory, and public choice theory, as Ordeshook (1986) has demonstrated. NIE appears to be especially helpful in the analysis of public-private interactions, like privatisation and competitive tendering, since agency theory and transaction costs economics go to the core of these interactions. Frant has argued that the application of NIE is essential and its neglect in the past has led to misdirected empirical research:

Many public utilities are not government bureaus but independent public corporations or authorities. Such organizations have governance structures - and, in a certain sense, property-rights structures - quite different from those of bureaus. One might suspect, then, that their efficiency properties would be quite different. Yet researchers studying public utilities have not distinguished between these two types of organizations. (Admittedly, the task would be time-consuming because most data sources do not make the distinction). Would the generally negative findings of researchers looking for superior efficiency from private sector utilities be different if the comparison group were bureaus rather than all public agencies? We do not know (Frant, 1991:121).

ining and Weimer (1996) have sought to answer the somewhat broader question of what neoclassical economics augmented by

NIE have to offer in the analysis of the public sector. They conclude that the market failure paradigm assists in the diagnosis of organisational problems, whereas the agency theory and transaction costs strands of NIE can assist in the practical design of appropriate organisational structures. Their arguments are summarised in Figure 3.

**FIGURE 3: ECONOMICS AND PUBLIC SECTOR ANALYSIS**

Economic Approach	Central Notion	Area of Application
Neoclassical Welfare Economics	Market failures occur when violations of the assumptions of the competitive framework lead to equilibria that are not Pareto efficient.	Administrative rules and incentives to increase efficiency of intra-organizational markets: solving organizational public good, pricing rules, common property resource, and natural monopoly problems.
NIE: Agency Theory	Contracts structure the relationship between principals and agents to minimize agency cost, which is the sum of the costs of structuring, monitoring, and bonding contracts and the loss from residual discretion.	Organizational design: creating incentives for the production and revelation of information and improve the efficiency of intra- and inter-organizational transactions.
NIE: Transaction Cost Theory	Institutional arrangements economize on transaction cost: the sum of precontract bargaining and postcontract compliance (opportunism) costs.	Organizational design: creating hostages, bonds, and other mechanisms for generating credible commitment and discouraging opportunism.

Source: Adapted from Vining and Weimer (1996:112, Talbe 1)

A further way of looking at the applicability of NIE to resolving problems in the public sector is to conceive of NIE as an analytical means of evaluating tradeoffs between government failure and market failure, before deciding on appropriate modes of provision and production. Weimer and Vining (1998: 236) have posed the problem as follows:

Indeed, the choice between government provision and other generic policies is one of the least well-understood policy issues. Perhaps

the reason is that, while we have a convincing theory of market failure and an increasingly convincing theory of government failure, we have no overreaching theory that delineates the efficiency tradeoffs between market failure and government failure.

NIE can thus assist in deciding the form of government intervention. For example, should governments intervene through direct supply by government bureaus (like the U.S. Army Corps of Engineers; see, for instance, Leman, 1972), through independent agencies or “quangos” (like the Australian Federal Airports Commission; see, for instance, Walsh, 1978), or through contracting out via profit-making firms (like building maintenance for public buildings; see, for instance, Pool and Fixler, 1987) or through contracting out via nonprofit organisations (like alcoholism social services and the Salvation Army in New South Wales; see, for instance, Hansmann, 1986)?

## CONCLUSION

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An evaluation of the views of leading NIE protagonists seems to indicate a distinct bias towards market solutions to social problems and a pervasive belief in the inherent superiority of markets over governments. Rutherford (1995:162) has observed that a striking feature of NIE is its “... more positive view of markets, and of non-governmental processes more generally, and its more negative view of government. Not only are economic markets usually seen as giving rise to efficient outcomes, but this idea of competition leading to efficient results is also frequently extended to social institutions, conventions, and norms”. Accordingly, care should be taken in the adoption of NIE policy prescriptions. For example, NIE typically favours market competition over regulation of firms to avoid “regulatory capture” and to harness the efficiency-inducing market incentives. Similarly, NIE is usually much more forgiving of horizontal and vertical integration than anti-monopoly laws, presumably because transaction cost analysis provides efficiency, rather than monopolistic, arguments for integration. This dogmatic perception of the superiority of markets appears unfortunate, and should be eschewed in favour

of a case-by-case pragmatism. In conclusion, Rutherford has summed up this argument as follows:

... [M]any writers within the NIE have argued for the efficiency of market and spontaneous processes very broadly, utilizing only weak arguments by analogy. A closer analysis of invisible-hand, common law, and even competitive market processes reveals that there are no guarantees that the inefficient will be eliminated in favour of the efficient or socially beneficial. This may occur, but whether or not it does will depend on the specifics of the case (Rutherford, 1996:172).

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