

Changes in the Pattern of Negotiations for Housing Production - Explanations
Based on the Theory of Transaction Costs

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ABSTRACT

In order to improve competition between builders a Competition Stipulation was introduced as part of the Swedish Housing Finance Ordinance, in 1974/75. Competitive tendering was necessary to obtain government loans for building multi-family houses and multi-housing projects of one- and two-family houses. A study designed to investigate the effects of the competition stipulation showed that the expected results were only partially realized and that other unexpected effects became apparent.

By applying more recently published theories about the buyer-seller relations in industrial marketing, the unexpected results can be explained and the evaluation of the regulation can be more informative. For transaction theorists (Williamson, 1979, 1985) there are three critical dimensions to be considered when describing contractual relations, namely uncertainty, the frequency with which transactions occur, and the degree to which investments are idiosyncratic.

In Swedish Housing Production the buyer was found to initiate these investments in his relations to sellers. Previously it had been assumed that the seller took the initiative. The Competition Stipulation had effects on projects where the investments were of a non-specific character or mixed. For projects where the investments are idiosyncratic the procedure with no tender was still chosen after the regulation was introduced.

PRODUCTION DE MAISONS D'HABITATION - Modèles de relation acheteur/
vendeur modifiés. Contribution des théories économiques
modernes à l'explication de ces changements

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MOTS-CLES

Stratégie industrielle, production d'habitations, relations acheteur/vendeur, compétition dans le secteur de la Construction

SOMMAIRE

Les prescriptions relatives à la compétition en matière de construction - partie intégrante de l'Ordonnance relative au financement de la construction de maisons d'habitation en Suède - furent introduites en 1974/75 en vue de la stimulation de la compétition entre les constructeurs. L'appel à la concurrence devint indispensable pour l'obtention de crédits gouvernementaux pour la construction de maisons d'habitation multi-familles et pour les projets d'urbanisation avec maisons de une à deux familles.

Une enquête destinée à étudier les effets des prescriptions relatives à la compétition, a fait apparaître que les résultats escomptés n'ont été que partiellement atteints et que d'autres effets, inattendus eux, se sont manifestés.

Ces résultats inattendus peuvent s'expliquer et l'analyse des effets de la réglementation peut devenir plus informative, si l'on applique les nouvelles théories sur les relations acheteur/vendeur en stratégie industrielle, récemment publiées. Pour les théoriciens des transactions (Williamson 1979, 1985) il y a lieu de prendre en considération pour la description de relations contractuelles, trois facteurs critiques à savoir, l'incertitude, la fréquence des transactions et le degré d'idiosyncrasie des investissements.

Dans le domaine de la construction d'habitation, l'acheteur se trouve en Suède dans la position de pouvoir effectuer ses investissements en liaison avec des vendeurs. Il était sous-entendu auparavant que le vendeur prenait l'initiative. Les prescriptions relatives à la compétition eurent de l'effet sur des projets où les investissements avaient un caractère non spécifique ou mixte. Pour des projets où les investissements sont idiosyncratiques, la procédure sans offre, continue à être appliquée même après l'introduction de la réglementation.

Williamson's theory of transaction costs

Williamson's approach implies that there are forces that make a company change its relations with its environment both towards a more integrated activity and towards a more disintegrated activity. To Williamson the dependent variable is the governance structure, which is influenced by a range of independent variables via a form of interfering variables as the transactions. The independent variables are on one side the human factors, opportunism and bounded by rationality and, on the other hand, the environmental factors small numbers and uncertainty/complexity (Williamson, 1975, p. 40). While comparing Williamson's theory with reality it is essential to remember the central theme in Williamson's analysis, namely "the organizational failures framework" - based on the post-war market failure literature. The human factors, bounded rationality on the one hand and opportunism on the other that give rise to exchange difficulties and market failure (Williamson, 1985, p. 7). Fig. 1.

Williamson's matching of transactions with governance structures

The basic assumption among the spokesmen for the theory of transaction costs, especially Williamson, is that the main aim when organizing the commercial transaction is to reach best long term economy. This can be gained through limiting production costs and economizing on transaction costs. Consequently the aim is to minimize the sum of production and transaction costs and this dictates the type of organization the company chooses (Williamson, 1979, p. 245). Williamson claims that the choice of organization follows from the company's efforts to minimize costs. A change from one type of organization to another can cause a reduction in the costs for contract writing and the executing of it. When the transaction costs for a contract are negligible so in general the market is to be preferred instead of own manufacture because of cost efficiency (Williamson, 1979, 245-246).

For Williamson there are three critical dimensions to be used when describing contractual relations, namely uncertainty, the frequency with which transactions recur, and the degree to which investments are idiosyncratic. With the dimension of frequency (two categories) and the dimension of investment character (three categories) Williamson makes a two-by-three matrix which describes the six types of transactions to which governance structures then are matched. To the six types of transactions he matches four different governance structures; market governance, trilateral governance, bilateral governance and unified governance.

Williamson's matrix for analysing reality

In reality, transactions take the shape of contractual relations and assumptions for these. The dependent variable governance structure is realized in different types of contracts. Williamson's matrix is an attempt to explain how contractual relations are connected with the types of contracts. The matrix is divided in two; one for occasional frequency and one for recurrent contractual relations. The corresponding contracts are, according to Williamson, not the same for the two types of frequency (Williamson, 1979, p. 253).

Williamson's four assumptions in order to simplify the argument

In the real world the transactions are implemented in contracts and assumptions about contractual relations. Besides the assumptions he makes about uncertainty, frequency and transaction-specific investments, Williamson introduces four assumptions in order to simplify the conditions for his theory. Suppliers intend to stay in business on a permanent basis and so the fly-by-night-firms can be disregarded. There are always suppliers for any given requirement and so ownership of specialized resources is disregarded. The frequency dimension refers strictly to buyer activity in the market. Finally the investment dimension refers to the characteristics of investments made by suppliers (Williamson, 1979, p.246).

The first three assumptions are accurate with regard to the Swedish housing production. The fourth and last assumption is that the investment dimension refers only to the characteristics of the investments made by suppliers. Applying this assumption to housing production in Sweden is dubious. In the housing production sector, excluding the individually built one-family houses, there are very stable groups of buyers and suppliers. The initiative generally comes from the buyer. An experienced buyer can choose between the situation where he takes responsibility for construction and function or the situation where he buys this from the supplier. For an inexperienced buyer the choice situation is either to buy the service from a consultant or buy it from the supplier.

After having applied Williamson's matrix with the fourth assumption that the investments were made by suppliers, I found that it is wrong to use a basic assumption that differs so markedly from reality. In the following I have chosen to change Williamson's fourth assumption so that the investment dimension refers only to the characteristics of the investments made by buyers.

For recurrent transactions Williamson argues that the company can choose different governance structures and contract forms in order to find the most efficient form. "Classical market contracting will be efficient wherever assets are non-specific to the trading parties; bilateral or obligational market contracting will appear as assets become semi-specific; and internal organization will displace markets as assets take on a highly specific character" (Williamson, 1981, p. 1548).

Investments in buyer-seller relations - investments characteristics

Williamson assumes that uncertainty exists to some intermediate degree and focuses on frequency and the degree to which the expenses incurred are transaction-specific. For the recurrent frequency the investment characteristics are illustrated as follows. Purchasing standard material is characterized as a nonspecific investment. Purchasing customized material has a mixture of non-specific and idiosyncratic investments. And finally the site-specific transfer of an intermediate product across successive stages is illustrative of an idiosyncratic investment (Williamson, 1979, p. 247).

Analysing buyer-seller relations in housing production

When the buyer is purchasing a standard product the seller takes on the responsibility for construction and function. This standardization of the

product and the regulation of the buyer-seller-relationship is laid down in a contract form called total in Swedish housing production. Purchasing customized material has a mixture of non-specific and idiosyncratic investments. The customized material is a house where the buyer is responsible for function and construction and in Sweden there are two types of contracts available, namely general and split contracts. Illustrating the site specific transfer of intermediate product across successive stages, what Williamson calls an idiosyncratic investment, is in Swedish housing production "own development" by the buyer.

- a) total (all-in): the supplier takes full responsibility for construction and function and the buyer's investments in contractual relations are low, what Williamson call non-specific.
- b) general: the buyer has supplied the drawings for bidding and the supplier of the project only has limited responsibility for construction and function, i.e. the investments are mixed.
- c) split (divided): the buyer takes the responsibility for construction and function and also coordinates a number of suppliers, i.e. the investments are mixed.
- d) own development: the buyer internalizes the project and takes full responsibility for construction and function and the investments are idiosyncratic.

Governance structure - contracting forms

Williamson uses MacNeil's three-way classification of contracting-procedures; classical contracting, relational contracting and neoclassical contracting. Classical contracting applies to all standardized transactions and relational contracting develops for transactions of a recurring and non-standardized kind.

There are two types of transaction-specific governance structures for intermediate-production market transactions. One type is the bilateral structures where the autonomy of the parties is maintained. The other type is unified structures where the transaction is removed from the market and organized within the firm, subject to an authority relation (vertical integration). The corresponding contract-forms are obligational contracting and no contract at all, an internal organization (Williamson, 1979, p. 248-253).

Types of tender - governance structure

Type of tender is an indicator as to how the contact buyer-seller is organized. Competition and open tender are what Williamson describes as classical quotation and classical contracting. Invited tender and negotiations are a form of "bilateral governance" and can result in "obligational contracting" (Williamson, 1979, p. 25). The invited tender, when the buyer invites a limited number of suppliers to give a tender, is an intermediate form. The buyer has chosen among the suppliers on the market a number of suppliers that in his opinion are acceptable. When the buyer chooses to approach only one supplier he has gone even further in his choice, so the "best" supplier is the one to negotiate with. When the buyer internalizes the project there is no bid, although comparisons with prices in the market can have been made.

Applying Williamson's matrix to Swedish housing production

Statistics are available covering the production of multi-family houses and multi-housing projects of one- and two-family houses receiving government loans 1970-79 in three larger municipalities in the southern part of Sweden. In total 78 per cent of all housing production in Malmö, Helsingborg and Lund during this period. A project is defined as the number of flats or one-family houses that the decision included when the government loans were granted.

Results of the survey

The information from the housing production statistics covering houses granted government loans during the 70's will be analysed. Williamson's hypothesis is that there is a connection between the investment characteristics and the governance structure (H_1).

$$H_0 \quad F = F_0 \quad \text{against} \quad H_1 \quad F \neq F_0 \quad (1)$$

An X^2 -test is applied to the housing production statistics testing H_0 against H_1 . F_0 is a function of type of tender and F is a function of type of responsibility.

Table I.

$$X^2_{0.05} (3-1) (3-) = X^2_{0.05} (4) = 9.49 \quad (2)$$

The hypothesis (H_0) that there is no connection between type of tender and type of responsibility can consequently be rejected.

The X^2 -tests applied show that the hypothesis that there is no connection between type of tender and type of responsibility can be rejected for the time periods 1970-74 (273 projects) and 1975-79 (261 projects) as well as the total time period of 1970-79. Williamson's matrix can be applied for the longer time period as well as the two shorter periods.

Discussion

The results showed strong support for Williamson's theory. The sample sizes are sufficient to support the theory that there is a connection between buyers investments in relationship to the supplier and the governance structure chosen.

In Sweden housing production, represented by three municipalities, uncertainty exists to some intermediate degree. The Competition Stipulation introduced 1974/75 improved competition between builders so that uncertainty continued to exist. The question here is how the governance of transaction was affected if the degree of uncertainty was decreasing during the first time period (Williamson, 1979, p. 254). Non-specific transactions are ones for which continuity has little value, since new relations are easily arranged. Decreasing the degree of uncertainty, does not alter this. It is different with transaction-specific investments; to the extent that uncertainty decreases the benefits that accrue through integration presumably decline. According to Williamson, greater reliance on obligational market contracting is often feasible. The general impression is that the figures from the study support this approach, 1970-74: 62 per cent and 1975-79: 42

per cent. The question is if a χ^2 -test is applicable to Williamson's matrix. The relative simplicity of the two components studied may contribute to the high value of the tests. The chosen operational variable to measure investments characteristics may be too simple. The contract form on the other hand gives information as to the investment characteristics in exactly the same way Williamson himself illustrated it. The governance structure is illustrated by the procedure the firm chooses to collect price information.

The result does not at first sight support the assumption that market competition effects "make" or "buy" decisions (Walker, G. & Weber, D., 1984). There are no own-development projects after a tendering procedure. Within the Swedish housing production the investigation by the grant-authorities can have taken over the procedure for collecting information from market competition. The decision to make (own-development) is made before the tendering-procedure and this procedure is replaced by the grant-authorities accepting or not accepting the price. The fact that there are a few projects (1970-74: 21 projects and 1975-79: 6 projects) where the chosen non-specific and mixed investments are combined with unified governance, suggests however that Williamson's causal relationship does exist in at least some of the projects.

A comparison between the period 1970-74 and the period 1975-79 may indicate the effects of the competition stipulation introduced in late 1974. The increase is in the combination with total responsibility (for the seller) - an increase of 35 projects, and with split responsibility - an increase of 42 projects. This increase was expected to be the result of a corresponding decrease in internalized own development. The results show a somewhat different picture. We find the main decrease in the combination of invited tender and negotiations combined with general and split responsibility. For at least every fourth project-buyer who has changed his tendering procedure to open tender there has been also a shift in responsibility, so the seller is taking full responsibility (+ 35 projects). Still every second buyer retains the responsibility or shares (splits) it while changing the tendering procedure (+ 42 projects). The small decrease in internalized own development, supports Williamson's thesis that the change follows a pattern whereby the commercial transactions are organized to reach the best long term cost economy.

The Swedish system of grants seems to play a dominant part in the environment of the building firm. One result of the study is the indication of the possibility that in certain projects the grant-authorities replace the market-competition in Williamson's theory. But that is another question, still waiting to be examined.

References

1. Byggnadskonkurrensutredningen (The Commission for the Investigation of Building Competition, Konkurrens i bostadsbyggandet (Competition in the Housing Production), SOU 1972:40, (Stockholm 1972).
2. O. E. Williamson, Chapter 1 and 2, Markets and Hierarchies: Analysis and Antitrust Implications, (New York, 1975).
3. O. E. Williamson, Transaction-Cost Economics: The Governance of Constructural Relations, Journal of Law and Economics, 22, pp. 223-262 (1979).
4. O. E. Williamson, The Modern Corporation, Origins, Evolutions, Attributes, Journal of Economic Literature, Vol. XIX, pp. 1537-1568 (December, 1981).
5. L. Werin, Chapter 10, Ekonomi och rättssystem (Economy and Legal Systems), (Stockholm, 1982).
6. G. Walker and D. Weber, A transaction Cost Approach to Make or Buy Decisions, Administrative Science Quarterly, 29, pp. 373-391 (1984).

Types of responsibility	Types of tender:			
	Open tender	Invited & tender	Negotiations	Internalized
Total	$0_{11} = 45$	$0_{12} = 99$		$0_{13} = 19$ 163
General & Split	$0_{21} = 60$	$0_{22} = 178$		$0_{23} = 5$ 243
Own development	$0_{31} = 0$	$0_{32} = 0$		$0_{33} = 128$ 128
	105	277		152 534

Table I. Housing production 1970-79. 534 projects

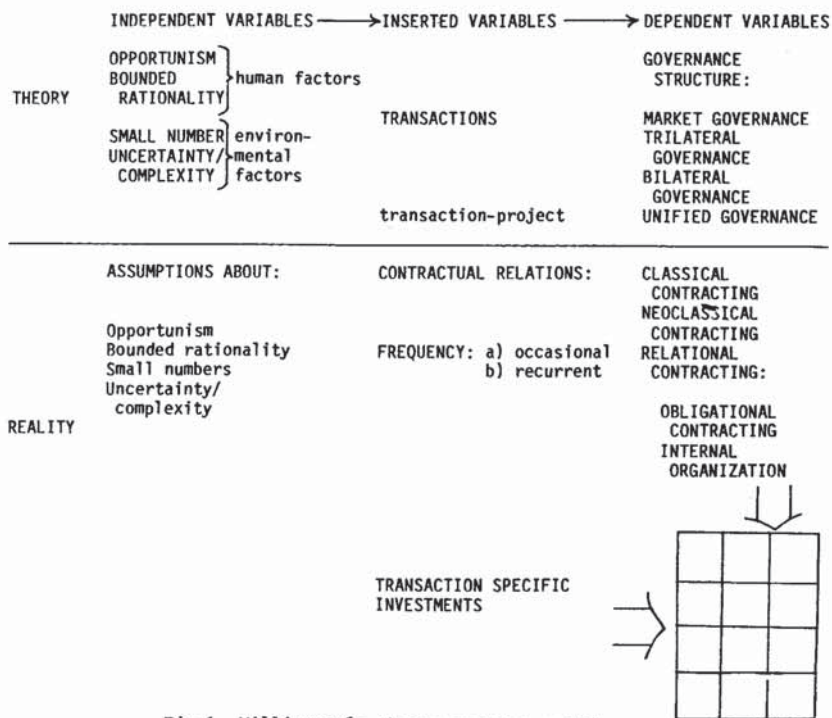


Fig 1. Williamson's theory and the reality

Information transfer in building design
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ABSTRACT

Transfer of information into practice from technical and scientific research is alleged to be a weak link in the chain from research to successful innovation in the built environment. Starting with design, studies at the UK Building Research Establishment aim to make recommendations for those who produce, disseminate and use such information. Completed studies include a review and analysis of sources of information, case studies of the use of information and experience in some 40 live design projects, and the development of methods for appraising and testing textual and other documentary information. These studies indicate that designers in practice prefer to rely on experience rather than published information, use publications most in detail design, prefer graphics to text and that there is scope to improve the structure, sequence, text and graphics of much published design information. Early reports have made recommendations for the UK's British Standard Institution's publications on building and civil engineering and BRE's own publications. A recent study has interviewed designers 'over the drawing board' on their use of technical publications. The findings are being used to develop and test prototype publications. Future research will take account of other areas of information transfer within the construction industry.