INSTITUTIONS AND INSTITUTIONAL DESIGN

Erling Berge

Part VI: Transactions, measurements and information

NTNU, Trondheim

Fall 2003

Literature

- North, Douglass C. 1990 "**Institutions, Institutional Change and Economic Performance**", Cambridge, Cambridge University Press,
- Williamson, Oliver E. 1996 "The Mechanisms of Governance", New York, Oxford University Press, Ch 3 **Transaction Costs Economics**, pp54-87

More literature

Coase, Ronald 1937 "The Nature of the Firm", Economica 4:386-405

March, James 1992 "The War is Over, The Victors Have Lost", Journal of Public Administration Research and Theory 3:225-231

The neo-classical assumptions

NIE preserves the “core” of the economics research paradigm by insisting on

- Stable preferences
- Rational choice, and
- Equilibriums

NIE preserves the “core” of the economics research paradigm by insisting on

•Stable preferences

•Rational choice, and

•Equilibriums.

North (1990:19) “The behavioral assumptions that economists use do not imply that everybody’s behavior is consistent with rational choice. But they do rest fundamentally on the assumption that competitive forces will see that those who behave in a rational manner, as described above, will survive, and those who do not will fail; and therefore in an evolutionary, competitive situation (one that employs the basic assumption of all neoclassical economics of scarcity and competition), the behavior that will be continuously observed will be that of people who have acted according to such standards.”

NIE change the elements of the protective belt of the economics research paradigm:

•The specification of the situational constraints the agents face

•The specification of the type of information the agents have about their situation

•The specification of the type of interaction that is studied

In practice this basically means introduction of transaction and information costs

Core question: why are there so many forms of organisation?

- The core problem of economic organisations is economizing.
- Behavioural assumptions
  - Contracting man (limited to the set of feasible contracts)
  - Bounded rationality (intendedly rational, but only limitedly so)
  - Cognitive competence is limited
  - Self-interest seeking with guile (i.e. in disclosure of information); opportunism, moral hazard, agency problems

How are Williamson's behavioural assumptions different from North's?

1. North emphasise the core of the neoclassical assumptions, but adds that transacting is costly.
2. North emphasis that we need to understand motivation and perception
    1. How motivation is shaped by institutions (self-imposed standards of conduct), altruism, wealth maximising behaviour
    2. How perception and reality may differ, and the degree of uncertainty this may introduce

Implications

- Incomplete contracting (feasible contract) is the consequence of bounded rationality and opportunism*
- Contract as promise implies risk of breaking it
- Central (state) governance versus private ordering (legal rules for everything versus contract as framework for resolving disputes)

*Selection through competition can affect only real behaviour, hence ”feasible contracts” become important.

It would seem that the environment of Williamson is what Eggertsson calls the laissez-faire economy of Demsetz: that is the neo-classical model with transaction costs added.

He is focused on contracts and how systems of contracts gives a diversity of organisational forms.

He does not discuss the interrelations of organisational development and institutional change.

Operationalization of transaction costs

- Technology of transacting
  - Comparing costs of planning, adapting, and monitoring task completion under alternative governance structures
- Main dimensions of transactions
  - Frequency of occurrence
  - Degree and type of uncertainty
  - Asset specificity/ sunk costs (can asset be used in alternative schemes?)

Asset specificity

- Asset specificity takes many forms:
  - one is personal knowledge (the problem of unique or imperfectly standardized goods)
- Implies complex ex ante incentive responses as well as ex post governance structure responses
- Six types:
    - Site specificity
    - Physical asset specificity (e.g. sunk cost in equipment)
    - Human asset specificity
    - Dedicated assets (customer specific investment)
    - Brand name capital

Site specificity: e.g. chains of production, logistics: economising on transportation and materials

Physical asset specificity e.g. sunk cost in equipment: dies to produce specific components

Human asset specificity e.g. on the job training, learning by doing

Dedicated assets e.g. customer specific investments

Brand name capital

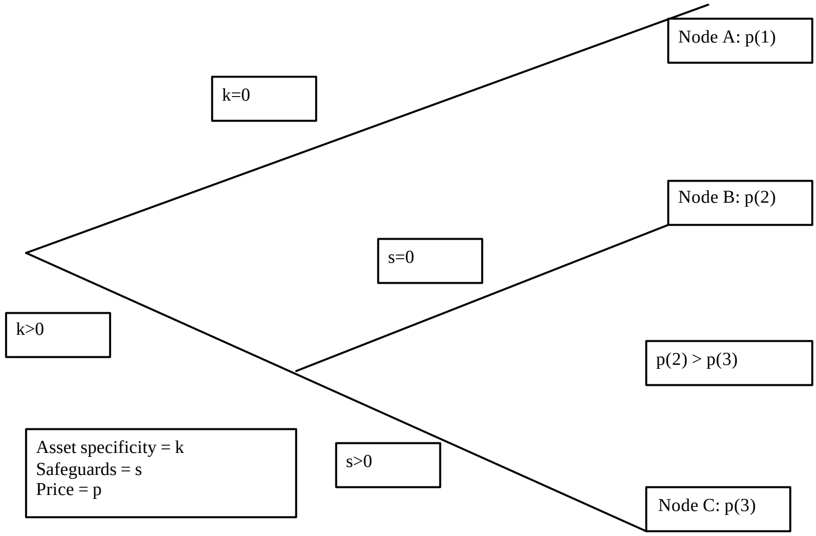
Temporal specificity

Uncertainty

- Statistical risks (random acts of nature, unpredictable shifts in consumer's preferences)
- Idiosyncratic trading hazards (lack of communication, strategic non-disclosure, distortions)
- The fundamental transformation
  - Asset specific products implies that market competition becomes distorted. After a first round of large number bidding, the identity of contractors will matter. Specialised investments by the supplier cannot be redeployed to alternative uses, and a buyer will have to induce alternative suppliers to invest in specialised equipment.

Asset specificity is a fundamental problem in governments contracting out some kinds of services like medical and old age care.

A simple contracting scheme



Amount of transaction specific technology = k, Contractual governances/ safeguards = s

K= 0 needs no safeguards. The world of competition obtains.

K>0 involves significant investments specific to the transaction

k>0 and s=0 unstable,

may go to A: k>0 technology replaced by k=0 technology, or

to C by introducing safeguards

K>0 and s>0 implies safeguards against investment in technology (k>0) being expropriated

Williamson (1996:63) "More generally, it is important to study contracting in its entirety. Both the ex ante terms and the manner in which contracts are thereafter executed vary with the investment characteristics and the associated governance structures within which transactions are embedded."

Illustration: the use of franchises for brand names, problem "quality shading". The system benefits from policing of quality. The solution is some kind of hostage: investment in brand specific assets which will be lost upon "cheating"

A simple typology of contracts

- Competitive markets
  - (1) Suppliers with general purpose technology, no protective governance, price P1
- Bilateral trade
  - (2) Suppliers with specialised technology, no protective governance, price P2
  - (3) Suppliers with special purpose technology, protective governance, price P3 (p3 < P2)

The situation (2) will be unstable: either technology will change or safeguards will be developed.

The problem of measurement

- All measurement problems are rooted in either

  1) information asymmetries, or

  2) costliness of providing an arbiter with the true information condition in case of disputes between opportunistic parties with equal information

- Information problems with different origin give different organisational responses.

Asset specificity is one branch

Measurement problems another branch of transaction cost economics

According to this it is not the cost of measurement per se,

but the differential access to information or the opportunism of the parties.

Vertical Integration

Market:

1. Promote high powered incentives and restrain bureaucratic distortions
2. Aggregate demand to take advantage of economies of scale and scope

Internal organisation

1. Access to distinctive governance instruments

The Paradigm Problem: **Vertical Integration** (starts with Coase 1937: The Nature of the Firm)

Comparative transaction costs explains the firm.

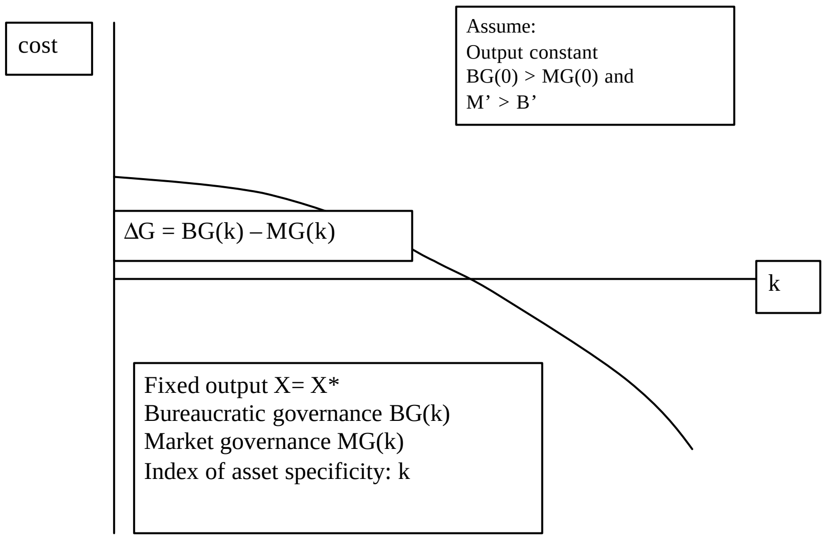
Main alternative to vertical integration:

Incomplete short-term contracts. These have problems if

1. Efficient supply requires special purpose equipment with long life
2. The winner of the original contract acquires a cost advantage (unique location or learning (such as task specific labour skills)

One important specification lies in **asset specificity**.

A heuristic model



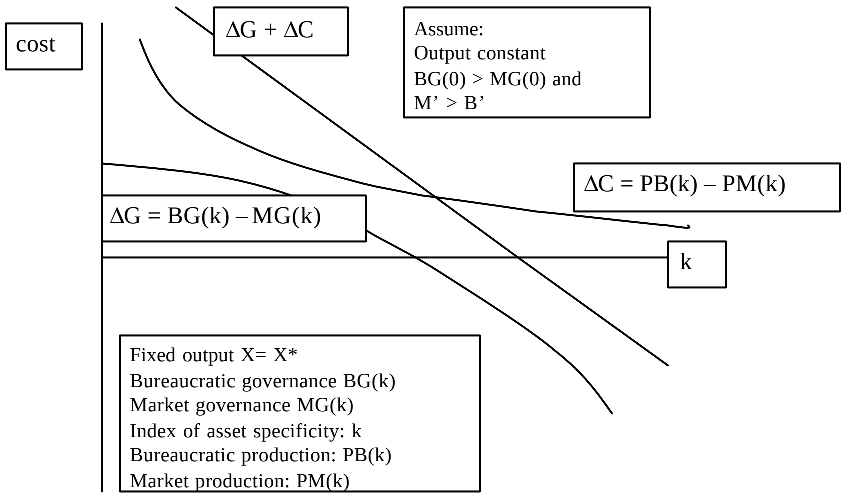
Fixed output X= X*
Bureaucratic governance BG(k)
Market governance MG(k)
Index of asset specificity: k

Assuming economies of scale and scope are negligible and

BG(0) > MG(0) - because of the incentive and bureaucratic effects

MG’ > BG’ - because of the comparative disability of markets in adaptability respects

Production cost differences



Fixed output X= X*
Bureaucratic governance BG(k)
Market governance MG(k)
Index of asset specificity: k
Bureaucratic production: PB(k)
Market production: PM(k)

1. Market procurement has advantages in both scale and economy and governance respects where asset specificity is slight.
2. Internal organisation enjoys th advantage where optimal asset specificity is substantial. Not only does the market realize little aggregation economy benefits, but market governance, because of maladaptation problems that arise when assets are highly specific, is hazardous.
3. Only small cost differences appear for intermediate degrees of optimal asset specificity. Historical accidents may determine the type of governance found.
4. Only when contracting difficulties arise will vertical integration be interesting (PB(k) > PM(k)).
5. Larger firms will be more integrated into components than smaller, ceteris paribus.M-forms more than U-forms.

Other Applications (1)

- Non-standard Commercial Contracting
  - The hostage model for developing credible commitments. These deal with intertemporal contracting, uncertainty and investment in transaction specific assets.
- Over-searching (a measurement problem)
  - Applied to diamond trading:

The hostage model for developing credible commitments.

> These deal with intertemporal contracting, uncertainty and investment in transaction specific assets.
>
> Here reciprocal trading is discussed. (tie-break explanations, asset specificity).
>
> **The release of hostage**: licensing "monopoly" products to other suppliers.

Oversearching (a measurement problem) Applied to diamond trading:

> all-or-none of a group of stones plus in-or-out of the trading (refusing a group of stones implies leaving the trade altogether). This encourages the parties to consider the dealing as a long-term relationship.

Other Applications (2)

- Economics of the Family
  - Family firms (incentives, monitoring, altruism, and loyalty)
  - Career marriages (manager married to the firm, cohabitation of two people).
- Corporate Finance (debt or equity financing? Depends on asset specificity)
- The Modern Corporation (development of line/ staff structure, selective vertical integration, multi-divisional corporations)

Family firms.

The advantages are incentives, monitoring, altruism, loyalty. The disadvantages are conflict spill-over, propensity to forgive inefficient/ slack behaviour, restrictions on available talents, possible diseconomies of small scale.

Career marriages (manager married to the firm, cohabitation of two people).

Discussing cohabitation with career as the single focus by means of typology above: career requiring special adaptations of cohabitation or not, if asset specificity obtain, how do you mitigate insecurity, or induce credible commitment?

Public Policy Ramifications

- Regulation/ deregulation vs. monopoly supply (private unregulated, private regulated, government supply).
- Antitrust: the problem of vertical integration. Vertical integration is problematic only in highly concentrated industries where entry is impeded
- Stagflation: full flexibility of prices and wages will jeopardize contracts supported by durable investments in firm-specific assets.

The evidence?

Lack of data is a problem. But not as severe as some maintain.

Regulation/ deregulation vs monopoly supply

Both ex ante and ex post features of transactions need to be examined for impact on competitive practices. Attributes of the good of service becomes salient: asset specificity, uncertainty

Some conclusion from Williamson

- Future developments of "friction" studies:
  - 1) at least partly absorbed by "extended" neo-classical economics*
  - 2) process values such as fairness will more easily be incorporated,
  - 3) expansion to new phenomena,
  - 4) a better theory of bureaucracy is needed,
  - 5) more empirical studies are coming each year (original paper published in 1989)

*See for example: James March 1992 "The War is Over, The Victors Have Lost", Journal of Public Administration Research and Theory 3:225-231

2) Fairness and justice considerations converge when an extended view of contracting in its entirety is adopted

More about the Firm: What is it?

- A set of long term contracts between input owners
- The firm replaces the product market with a factor market where price signals plays a minor role

But not in the unitary firm (the one-person firm) who

  - Discover and produce commodities with valuable dimensions related to form, location, and time
  - Is rewarded by profits

Eggertsson wants to summarize the various contributions developing out of Coase’s 1937 article.

Resource owners: coalitions

Structure of contracts

- Merchant-coordinator (the putting-out system)
- Federated production mode (common locality)
- Inside contracting mode (capitalist manages external relations and common facility only)
- Hierarchical authority relations mode
- Various forms of common ownership

Market costs are replaced by agency costs

Entrepreneurs and measurements

- With full information entrepreneurs are not needed
- The person whose contribution is most difficult to measure will assume the role of entrepreneur
- Information about entrepreneurial activities are asymmetrically distributed, giving rise to moral hazard problems best solved by the self-monitoring of the entrepreneur as residual claimant
- Shirking in coalitions solved by entrepreneur

Specific investments

– Specialised investments cannot be transferred to other uses without loss
– Quasi-rents: difference between current earnings and best alternative use of factor
– Unique resources (finding substitutes is impossible or very costly) may make it possible to expropriate quasi-rents.
– Asymmetric information, measurement costs and opportunistic behaviour puts specialised investments at risk

Pure rent, or economic rent, derives form unique, rare and valuable, qualities of nature. If sum of market values of individual team members is less than joint value, the difference is a quasi-rent.

Thus quasi-rents can be expropriated without causing the withdrawal of the factor from production.

E.g. If specific investment depend on some other factor, this can make it possible to expropriate the quasi-rent

Eggertsson(1990:172) "When it is costly to measure performance and prevent shirking or sabotage by cooperating inputs, the value of a specialised asset is at risk – even when the cooperating input has close substitute."

Interdependence: resource A is unique to B and dependent on B, meaning B is unique to A.

Eggertsson(1990:173) "In general, a worker who invests in firm-specific human capital risks expropriation of the returns."

One solution is the sharing the cost of firm-specific skill development.

Eggertsson(1990:174) "Using the terminology of Oliver Williamson, we could say that the sharing agreement is equivalent to exchanging hostages."

Protective measures

- Ownership of key interdependent assets. Strongly interdependent assets of a firm (except human capital) tend to be owned in common
- Long-term contracts designed to constrain the set of future options of input owners (contractual guaranties that quasi-rents will not be expropriated)

Competing forms of organisation

Environment:cost minimization in a laissez-faire economy

- Economies of scale
- Asymmetrical information, measurement costs, agency costs depending on contracts
- Production dependent information distribution, monitoring and contract structure
- Size, information and coordination costs
- Assignment of risk bearing and residual claims
- Firm-specific human capital

Differential treatment by state regulations, taxes, subsidies one important explanation

Profitability may also come from ownership of unique resources, rather than proper organisation of technology and contractual structure

Types of organisations (1)

- Proprietorships: Owner-manager with horizon and diversification problems
- Partnerships: like proprietorships but less constrained by wealth, scale and risk, but with the problems of common ownership
- The closed corporation, non-manager-owners have close ties to manager-owners, limited liability lowers risk but it is still problematic, tendencies to under-investment

Proprietorships constrained by the owner's wealth because of high transaction costs on external finances, not suited for firms where economies of large scale operations are high.

Types of organisations (2)

- The open corporation with limited liability and separation of owners (risk taker specialists) and mangers (management specialists) can maximize utility of owners and market value of firm
  – Agency costs between owners and managers, decision management and decision control
  – Coordination costs increase with size, changing from U-form to M-form

Types of organisations (3)

- Financial mutual: customers are residual claimants, claims redeemable at a prespecified rule – a relatively efficient diffuse control mechanism provided assets are non-specific and can be liquidated at low cost
  - The interpretation of social clubs as a type of mutual sees their human capital as non-substitutable interdependent resources

Types of organisations (4)

- Non-profit private organisations producing merit goods donators want to see others consume more of. There are no residual claims. Agency problems between donors and mangers, alleviated by donor-presence on boards

The logic of economic organisation

- Assume laissez-faire economy
- The relative economic advantage of alternative contractual forms is rooted in transaction costs
- Problems
  - Measuring quality
  - Enforcing labour contracts
  - Contracts in agriculture
  - Money

Measurement of quality

- Search goods – quality by inspection
  - Variable qualities increase measurement costs
  - Relative cost distribution seller-buyer important
- Experience goods – quality by consumption
  - Sellers having little to gain by investing in reputation will not supply high quality exp.goods
  - Use of hostages (reputation, brand name, goodwill)
  - Investment in production specific human and physical capital
  - Use of warranties

Eggertsson (1990:201) "The survival hypothesis implies that measurement will be undertaken by the party to exchange who has easy access to information and lower costs of measurement, provided incentives to cheat are curbed and trust established. The survival hypothesis also suggests that, other things being equal, quality will be measured at points in the process of production, exchange, and consumption where it can be done with least expenditure of resources."

Ex.:

sale of apples from producer in sealed containers avoids excessive measurement

Limiting the choice of buyers may increase the net output for society

Depends on buyer believing the seller has no incentive to cheat, or that fellow buyers have no opportunity to pick unpriced quality (by such practices as repeated dealings, production specific assets, third party regulations)

Enforcing labour contracts

- Employment package (wage ++) and supply of labour are multidimensional (hours ++)

Ex: slavery –nonviable because of agency costs?

- – The slave can buy his freedom by controlling his work effort
- – Pain incentives (or prohibition of manumission) may make slaves more productive than freemen

Transaction costs reduce the advantage of slavery due to severe agency problems

Wage + working condition, location of work,

Hours + intensity and quality of effort

Cost items:

Control of consumption for maximum productive efficiency

Control of feigned illness and self-inflicted damage

Sabotage of output

Preventing uprisings and flights

Fenoaltea:

Pain incentives work only in effort or land intensive productions using primitive technology

Contacts in agriculture (1)

The open field system (OFS)

- Costs of scattered strips and communal regulations? High TC of rearranging property rights do not explain
- McClosky: scattering as insurance
- Dahlman: missing market in grazing rights
- Fenoaltea: labour market too costly (OFS = family farming with scale economies)

NIE assumes

*low cost organisations tend to supersede high cost ones

*when high cost organisations appear to persist we search for hidden benefits at unexpected margins or specific contractual constraints

*if hidden benefits or contractual constrains do not explain, political constraints may do it

(footnote)

Eggertsson (1990:214) "Again, note that the concept of inefficiency becomes useless when the neoclassical model is taken to its logical conclusion and all costs and benefits are accounted for. The cost of collective action is a real, not imaginary, cost. If such costs block a structural change in property rights, it is not correct to talk about inefficient property rights. According to Pareto criteria, changes must be voluntary, and it follows logically from assumptions of the neoclassical model that all adjustments where benefits exceed costs will take place. Note that an involuntary change in property rights can lead to a very large increase in total net output for a community, but involuntary changes cannot be evaluated in terms of the neoclassical concept of efficiency and the Pareto criteria."

Contacts in agriculture (2)

Sharecropping

- Risk: born by landlord under fixed wage, by tenant under fixed rent, shared by sharecropping. This can also be achieved in a mixed contract of rent and wage
- Enforcement costs a key element in choice of contract form
- The cost of contracting determines the marginal changes in contract mix (various TC's)

NB also labour contracts entail TC's, such as enforcement costs

The market for money (1)

- Money useful to economise on information
- System of exchange: institutional arrangement
  - Both direct and indirect flows
  - Indirect links – media of exchange – if also used for final payment = money
- Services supplied by the stock of money
  - Specialisation and costly information ✹ need for M
  - Commodities with low marginal transaction costs, falling with use, structure of TC the same for all, buyers and sellers invest in uncertainty reduction and price reduction

Double co-incidence barter implies the coincidence of time and locality

Indivisible commodities may cause problems

Eggertsson (1990:237) “Finally, Niehans (1971) and Brunner-Meltzer (1971) make the interesting point that specialized traders and middlemen are substitutes for decentralized information, and suggest that their role is analytically comparable to that of media of exchange such as money.”

The market for money (2)

Trust and brand name of money

- TC low if quality is easily measured and resale markets are stable
- The particular choice of a commodity for money is a social choice
- A durable good with a flow of services depending on future supply (trust)
- Token money as experience goods, requiring investment in brand name
- Appearance of fiat money not yet explained

Fiat money linked to a lessening cost of creating consumer confidence?

The market for money (3)

Competition in supply

- Feasible if each brand is easily recognized, and suppliers and consumers agree on the potential gains from over-issuing

Choice of system of exchange

- Unstable regimes uses commodity money
- Stable regimes uses fiat money
- Information, Individuals and Networks important to exchanges
- Several exchange systems existing simultaneously

Costs for acquiring information about trading partners and cost of enforcing contracts affects the choice of exchange systems

Several exchange systems existing simultaneously because individuals and exchanges are heterogeneous with respect to transaction costs

Bank deposits as money