GOVERNANCE AND ORGANISATION DESIGN:
A NEGOTIATION AND NETWORK ANALYTIC APPROACH

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Abstract

This paper proposes a negotiation analytic approach to the design of corporate governance mechanisms. The main research questions addressed in the paper are: Which packages of governance mechanisms maximize the utility of firm representatives – CEO – and human resource providers? On which matters do interests converge and on which do they diverge? Which packages are Pareto-rankable and which are not? Where are there areas of preferences balancing and effective negotiation? The answers to those questions structure the "governance game", indicating what are the interesting and sensible values for each mechanism, and what are the most interesting (value adding) combinations among policies on each mechanism. The approach is applied to a database of preferences over a wide array of governance and organisational mechanisms, expressed by two samples of relevant actors (CEOs and high potential managers working in 315 firms – domestic or subsidiaries – located in Italy) and contributes both in method and in the substantive identification of solutions. Results indicate, that the governance game is less adversarial than suggested by 'shareholder views', but also less generically cooperative than suggested by 'stakeholder views'; and develops policy implications by identifying on which matters preferences converge or diverge, among themselves and with respect to the solutions applied in practice. The framework and the findings offer new propositions about the design of CG structures, different from those based on the extant conventional approaches to CG.

Keywords: Governance and Organizational Mechanisms, Design of Governance Mechanisms, Negotiation of Governance Mechanisms, Network approach to Governance Design, Firm representatives and Human Resource Providers, Governance Structures

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Introduction

The debate on corporate governance (CG), in spite of its many insights, has suffered from a lack of realistic and pluralistic, yet precise and design-oriented models. In fact, on one hand, while economic models are design oriented, they have been criticised for being too narrowly focused on financial capital providers' incentives (Blair 1995, 1996; Osterloh and Frey, 2006). On the other hand, treatments of governance in administrative science, have largely endorsed a 'stakeholder' approach, envisaging 'participation' in governance of any actor holding significant stakes in corporate activities (Donaldson and Preston, 1995; Cuervo, 2002). Nevertheless, the stakeholder perspective has enlarged enormously the set of actors and preferences that could or should be taken into account, gaining in pluralism but losing in precision and prescriptive capacity (Aoki, 2004). This paper aims to propose an analytic approach to the design of corporate governance mechanisms based on the balance between two main spheres of interests: firm representatives and human resource providers. More precisely, the main research questions addressed in the paper are: Which packages of governance

mechanisms maximize the utility of firm representatives – CEO – and human resource providers? On which matters do interests converge and on which do they diverge? Which packages are Pareto-rankable and which are not? Where are there areas of preferences balancing and effective negotiation?

From a conceptual standpoint, the framework and study presented in this paper covers an intermediate terrain, addressing internal governance as a negotiated multi-actor problem, for which superior solutions in terms of efficiency and fairness can be specified. More specifically, our approach features a series of characteristics that are missing in previous research on governance and organisation design.

First, the approach is both pluralistic and prescriptive. Internal governance design is modelled as a multiple-actor and multiple-preference problem, to which fair and efficient solutions are to be found. Broadly, approaches to the design of governance and organisation mechanisms, assume that one or more packages of mechanisms exist and they can be evaluated as optimal solutions or at least considered as best practices. This judgement implies that these practices themselves, whatever they are – organisation

structures, compensation structures, contractual structures, ownership structures – should be rankable as superior for all the parties whose preferences should be taken into account (Fama and Jensen, 1983). An almost universally neglected aspect of this approach is that relevant actors may rank governance structures themselves in different ways according to their preferences (Grandori, 1991). In other terms, actors' preferences may conflict not only on substantive and distributive matters (what actions should be taken, what each party should contribute, in what parts should any surplus resulting from action be divided), but also on which are the best arrangements that can regulate those matters.

Second, this research adopts an empirical approach to actors' preferences (Arrow, 1951). Most commonly, in governance research, actors' preferences are 'assumed'. This holds true for economic analyses, but all too often organisational and management research has contrasted opposite or different assumptions to those of economics that, however, have equally gone untested. The approach to preferences developed here rests on the different (and neglected) methodological option that whenever possible preferences should be gathered, elicited, surveyed rather than 'assumed' – as once upon a time it was good practice in organisation design (Trist, 1981), and as has been called for as a good methodological rule for an empirically based economics (Simon, 1997). Hence, in this paper we formulate testable hypotheses, rather than assumptions, on preferences. In this way, beyond being methodologically correct, we can and do discover some interesting deviations between key actors' utility functions as usually assumed and their actual preference orderings.

Third, the approach is a joint analysis of governance and organisation. Prevailing approaches to CG have been charged with an 'organizational neglect' (Grandori, 2004), consisting of having considered too narrow a set of economic and structural variables – focused on incentives and controls – thereby underexploiting the regulation capacity of other mechanisms, as well as the potential complementarity effects among mechanisms. While complementarity analysis is an emerging trend in organisation design (Milgrom and Roberts, 1995; Whittington et al., 1999), there has been little analysis of corporate governance structures considered as a set of complementary mechanisms, and there have been no studies on finding packages of complementary mechanisms with respect to more than one preference function. In this paper, we focus on a wide range of human resource governance mechanisms, and on the preferences of two relevant actors over them – firm shareholder representatives and the providers of the human resources.

Fourth, the approach is 'generative' of new governance solutions, rather than limited to the comparative assessment of more or less frequently observed arrangements – a desirable property of any true design method (Boland and Collopy, 2004). The negotiated multi-actor perspective proposed in this paper and the empirical observation of preferences allows the design of governance solutions beyond common practices, even the 'best' practices among them (Grandori and Soda, 2004).

The paper is organised as follows.

The first section sets out the conceptual model, defining an enlarged set of governance and organisational mechanisms. The second section illustrates the empirical application of the approach and the data analysis on the preferences for governance and organisational mechanisms expressed by two samples of individuals drawn, respectively, from a population of Italian CEOs of large firms and from a population of managers. The third section reports the discussion and the design implications for governance and organizational mechanisms.

The Model: Governance and Organizational Mechanisms as a Negotiated Combinative Design

This section discusses how different policies on a set of internal governance and organisational mechanisms may rank in the utility of the firm representatives and of human resource providers (O'Sullivan and Diacon, 1999). We take on the challenge of addressing the preferences of these two groups of actors because they provide two of the main types of capitals – financial resources and human resources - which make strong influences on firm's strategies and governance. Moreover, the notion of human capital as a portfolio of valuable knowledge, competences and relationships, which can be combined with other assets for value generation, have become of common use both in the sociology and economics of organization (Becker 1986; Williamson 1979; Burt 1997).

Design organizational and internal governance mechanisms implies to find configurations ranking high in relevant actors' utilities. The most common approach to this problem in organisation theory and organisational economics alike is to investigate the effects that different combinations of practices have on a single utility function, represented by some overall performance indicators, usually at firm level (Meyer et al., 1993; Whittington et al., 1999; Roberts, 2004). The approach outlined in this paper refines that analysis by addressing a joint optimisation problem with respect to multiple utility functions. Using a negotiation perspective on organisation and governance (Grandori, 1991), the following interesting questions can be posed and answered: Which packages of governance mechanisms maximise the utility of each actor - firm representatives and human resource providers -? How would the other group rank those packages? On which matters do interests converge and on which do they diverge? Which packages are Pareto-rankable

and which are not? Where are there areas of compromise and negotiation?

The answers to those questions structure the governance game, indicating what are the interesting and sensible values for each mechanism, and what are the most interesting (value adding) combinations among policies on each mechanism.

We address the issue about the potential combination among key actors' preferences across a set of organizational and governance mechanisms. In particular we theorize and empirically investigate over a set of governance and organizational mechanisms, specifically: the distribution of overall managerial compensation among based fixed compensation, contingent compensation to performance, and stock options portfolios; the degrees work autonomy and the levels of delegation; the incidence of team work; the representation of managers in the boards or other strategic and governance committees; the levels of employee shareholding; the incidence of individual and firm investments in the development of individual competencies and abilities.

In the first place, the intensity of '*pay for performance*', i.e. the allocation to human resource providers of some residual rewards rights, is almost universally supposed to be a mechanism of crucial importance for 'good governance' (e.g. Useem, 1996; Bebchuk and Fried, 2006; Conyon, 2006). A well known and largely diffused argument, both in practices than in theory, is that the more monetary rewards are linked to performance, the better. Under the lights of an orthodox economic solution of the optimal incentive problem and in a principal-agent game, where managers are considered as agents of financial capital investors, incentives should increase with managerial discretion ('profit from effort') and with the 'cost of effort' for the agents (Jensen and Meckling, 1976). Similarly, contingent incentives should decrease when task uncertainty and risk aversion increase (Milgrom and Roberts, 1992). Since agents' activities are characterised by both high discretion and high uncertainty (Bloom and Milkovich, 1998), the optimal level of contingent pay should be expected to assume intermediate values. More precisely, even using standard available economic theory, the generic plea for more pay for performance as an optimal solution or best practice is not warranted. In addition, still using standard agency theory, a lower incidence of contingent pay is supposed to be optimal if ownership is concentrated and monitoring more effective (Schleifer and Vishny, 1997).

We propose a different perspective introducing the preferences of the parties over incentive policies. A common assumption is that the best interest of the firm is to introduce incentive pay for aligning objectives of managers to those of shareholders. Managers are usually hypothesised to be risk averse, making preference for lower levels of risk transfers, and to be effort averse. Hence, the standard expectation is that, if the preferences of managers are

taken into account, the system will become more indulgent and less performance oriented. This standard prediction is questionable and has been disputed for various reasons (i.e. Osterloh and Frey, 2004; Windolf, 2004), including the unintended adverse effect of contingent pay, the neglected benefits of task and professional identification, and the neglect of incentives to provide human capital and to put it at risk (Becker, 1964).

Moreover, there are other additional reasons of particular importance for our argument. First, human resource providers may accept more risk transfers if they are given more decision rights, both operational (*autonomy* in effort allocation *and discretion* on tasks) and strategic (*representation* in boards and strategic committees). In addition, in organisational research, high discretion has ever since typically been found a) to be an important intrinsic benefit for agents and b) to be a necessary ingredient for high quality decision-making in distributed knowledge conditions. Therefore, high levels of discretion in managers should most often be in the best interests of the firm and of its shareholders as well. Second, contingent pay does not only transfer risk but also transfers surplus: under pay for performance schemes, part of the gain generated from action goes directly to the providers of human resources rather than to the providers of financial resources. This suggests that the latter actors, may eventually be unsympathetic towards the variabilisation of pay than is usually assumed, as it implies transferring wealth.

Other aspects of the allocation of decision rights may be complementary with high levels of contingent pay, in particular mechanisms that allow managers to share risks of decision making. Thus, teamwork is an increasingly diffused and recommended mechanism with both these properties. More precisely, it has been repeatedly found that the application of individual highly powered incentives in association with risk-sharing and competence enhancing organisational mechanisms, such as teamwork and joint decision-making (Laursen and Manke, 2001; Galia, 2006) increases performance. Therefore, the intensity of teamwork will also be considered an important governance mechanism in our analysis. The two groups of reward and decision mechanisms mentioned above are considered to be the two core classes of property rights (Hart and Moore, 1990; Hansman, 1996), hence, it is hardly surprising to include them among important governance mechanisms.

A third class of mechanisms is less commonly considered in the CG literature, but has been shown to be of core importance in human resource literature. The degree of *mobility of human resources*, or conversely of stability and permanence, is a hot issue. Theoretically, varying the period of stay of a person in a firm (*firm tenure*) and the conditions of exit should have various important properties. Decreasing firm tenure is a way of reducing the risk of firm-specific human capital investments for agents; actually a way of diversifying, at least over time, those investments.

Hence, the providers of critical human resources are likely to be interested in shortening the investment time horizon and in maximising the re-salability of work experiences into new ventures and new positions. This hypothesis is consistent with the often-described trend towards an increased interfirm mobility of managers (Arthur and Rousseau, 1996). From the firm viewpoint, in spite of the popular policies inspired by the desire of retaining talents, organisation theory would rather suggest that high human resource mobility is also to a good extent in the interest of the firm and other resource providers as a source of innovation (Meyer et al., 1993; Grabher, 2002).

On the other hand, there are reasons for all parties to prefer a reasonably delayed exit. Human resources need to be committed in association with other resources for some time when the deployment of activities occurs over time, and when firm-specific investments in human assets are necessary (Williamson, 1981; Doeringer and Piore, 1971; Penrose, 1959). Continued activity and human asset specificity are likely to characterise the activity of most managers, namely direction. Therefore to lock-in those human resources for some time in some way is in the best interests of the firm (Blair, 2004). In summary, theoretically, we expect an intermediate value of firm tenure to maximise joint pay-offs, as a result of the illustrated trade-offs between innovation and asset specificity; knowledge generation and exploitation; the making of investments in human capital by staying and the realisation of them by moving (Hart and Moore, 1994).

The Empirical Study
Samples

The empirical investigation presented here is based on the responses obtained from two populations – represented by one sample of managers and one sample of CEOs – to a questionnaire asking them to 'vote' for the preferred policy over a set of governance mechanisms.

The sample of managers (MGR), who are considered as human resources providers, has been drawn from the population of people who have completed one of the main Italian Master Programs in the previous 10 years from the data collection (2003). The incidence of post-graduate titles in the Italian management population is still quite limited – specifically, the percentage of the population between 25 and 44 years old with a master degree is 3% (ISTAT, 2006). Hence, a master degree from the best schools can be considered an indicator of holding human capital that firms have an interest in attracting[16]. Five Master programmes participated in the data collection and through the Business Schools and the Alumni Associations we have contacted 380 people currently working in 315 different companies or independent

branches of large groups or multinationals. From this sample we collected 230 questionnaires, and the final sample of valid questionnaires of these human resources providers constitutes 201 managers (52% response rate) working in 190 different organisations, which are typically of large size and distributed in a wide variety of industries.

A second sample of firm representatives, composed of CEOs or presidents has been constructed by contacting the first 200 Italian firms and gathering one questionnaire per firm. The final sample for firm representatives consists of 63 valid questionnaires, with a response rate of 34.5%. As for human resources providers, firms represented in the sample of CEOs are also dispersed in various industries and are not concentrated in any particular setting.

Variables: operationalisation of preferences over governance mechanisms

The data are collected by a questionnaire assessing actors' preferences over 11 governance mechanisms. For each, a scale was presented to the subjects, proposing different possible states or policies, defined by different intensities of application of the mechanism. On each scale, respondents had to choose their preferred policy over five possible values capturing different policies of a given governance mechanisms. We asked respondents of both samples to indicate which policy would be best for them on each mechanism, irrespective of what policies were actually applied in their firms. The questionnaire also asked MGRs to describe mechanisms as used in the firms where they worked. These data will be used for drawing design implications in the discussion section. The governance mechanisms and their different policies, over which preferences were expressed, are synthesised in Table 1, along with the frequencies obtained by each of the two samples.

Table 1 about here

As long as scales are designed to measure the relative incidence of each mechanism and in order not to limit the distribution of possible preferences, all scales are expressed as ranges of percentage values covering the entire expanse from 0 to 100 (with the exception of firm tenure, expressed in years). The partitions of percentages are, however different, in order to capture variance. The face validity of the scales has been initially tested trough deep qualitative interviews with a sample of 15 managers and 10 firm representatives.

Methodology: network analysis of mechanisms' policies

Broadly, the preferences obtained by each state of each mechanism synthesize the collective utility of the group of respondents for that single policy. For detecting complementarity effects among policies,

and to discover interesting combinations of them, the frequency of preferences for each mechanism policy has been analysed with connectionist methods belonging to the repertory of network analysis procedures. Network analysis is used widely in the social and behavioural sciences, as well as in economics, marketing and industrial engineering. The network perspective focuses on relationships among entities and is an important addition to standard organisational and behavioural research, which is primarily concerned with attributes of the actors or nodes.

In order to reduce the dispersion of votes and to perform the network analysis with left and right policies on our scales sufficiently represented with respect to the centre policies, the possible policies have been reduced from five to three – low, medium, high – aggregating the extreme, lower frequency classes of policies to their neighbour class (namely, value 1 with value 2; and value 5 with value 4). Hence, we reduced the number of possible policies for all studied mechanisms from 55 (11 mechanisms for 5 policies each) to 33 (11 mechanisms for 3 policies each).

Then a 201 × 33 actors/policies matrix was constructed for the sample of managers (MGR), and a 63 × 33 matrix for the CEO sample. In these matrices cells take value 1 if a specific policy is preferred and 0 if not. The two MGR and CEO matrixes were transformed in two policy-by-policy co-occurrence matrixes, representing the frequencies at which each policy has been chosen simultaneously with each other policy in the two samples. The new matrixes for both samples of managers and CEOs are one mode, policies by policies, thus with a size of 33 × 33 each. At this point the data set is organised in a relational way: a network of policies in which policies of mechanisms are nodes and joint choices are ties or links among them, as represented in Figure 1 as an example.

Figure 1 about here

Therefore, the network of joint preferences or co-preferred policies of governance mechanisms can be analysed in search of components which are the most frequently linked policies. To that purpose we employed the Nested Weak Component analysis of Ucinet IV. That procedure allows combinations of an increasing number of nodes to be identified, ranked according to the frequency of ties connecting them[17]. Figures 2 and 3 report the results of the most preferred combinations of policies for both samples. The frequency reported at the left-hand side is: for dyads of two policies their frequency of co-selection was preferred; for combinations of more than two policies, the highest frequency at which another policy has

been co-selected with one of the elements in the former string.

Figure 2 and 3 about here

In synthesis, the network methodology allows us to identify combinations of policies with the highest frequency of co-preference.

Measuring the utility of superior combinations

According to our theoretical purposes, we were interested in understanding and measuring the overall utility in the population of those co-preferred combinations. One possibility was to use the frequency of co-selection as a utility index, but that would have excluded the capacity of a combination of policies to satisfy other actors in a less than full but still significant way. This is the case of respondents who had chosen some but not all the policies in a given combination. Hence, for each of the combinations with the highest frequency of co-selection in the network nested components analysis, we constructed a wider index of utility including the respondents who selected at least $k < n$ policies in the combination.

Specifically, the utility of a specific combination of policies in a sample is given by: the number of people who simultaneously chose all the n policies included in the combination with weight 1, plus the number of votes obtained by any combination $n-1$ weighted by the $n-1/n$, plus the number of votes obtained by any combination $n-2$ weighted by $n-2/n$, and so on. For example, in the case of a combination among two policies, the utility index is computes as the frequency preferences - number of people – for both policies (with weight 1) plus the frequency preference of one of the two policies × 0.5. In the case of a combination between three policies, the possible weights are: 1 (3/3), 0.75 (2/3), 0.3 (1/3), 0 (0/3), and so on[18].

The utility index of the two samples has been constructed for combinations including 11 policies at most. In fact, beyond 11 elements strings, mechanisms start to appear in more than one state (e.g. firm tenure either medium or high, individual investments in human capital either low or medium), as the second best policies on each of the 11 mechanisms start to be picked up by the procedure. With that cut-off level, we selected eight most relevant combinations for human resource providers – MGR - and eight for firms representatives – CEO -, ranked according to the weighted utility index. Table 2 reports the policies included in the 16 packages extracted from the two samples.

Table 2 about here

Once a combination of preferred policies is extracted from one sample, this procedure allows computing its utility index in the other sample, thereby permitting ranking any combination in both utility functions.

Results and Discussion: Ranking Governance Mechanisms Combinations

Figure 4 visualises high utility combinations of policies in a two-dimensional space, where axes represent the utility of each of the two actors. The values reported in the figure counts the number of mechanisms over which the preferences are ranked. The packages of governance policies that would be chosen by each population alone lie closer to the axis representing the utility for that population, but there are points that are superior for both (Raiffa, 1982). This means that there is some conflict as to the best configuration of mechanisms, but there is integration potential as well. The possible content of these packages is discussed later in this section, after discussing some general structural patterns of the starting packages of Figure 4.

<p align="center">**Figure 4 about here**</p>

First, the overall utility of combinations decreases with the number of policies comprising them. This pattern reflects a general law of consensus: if multiple preferences are taken into account, the higher the number of matters is, the less likely that everybody gets their preferred value on them. This effect is stronger the more dispersed the preferences are. In our case, preferences were not homogeneous; hence, the maximum index of utility that the collective actors, each considered as a whole, can reach is about 70 points (over a theoretical maximum of 100 points – 100% of first preferences satisfied). As hypothesised, this is an interesting, usually neglected aspect of organisational complementarity. In fact, these losses of utility due to disagreement over best policies go unnoticed if the actually implemented compromise policy is the only thing that is analysed.

Second, both the complementarity among policies (present wherever two or more practices get more votes jointly rather than separately) and the addiction of single highly praised policies contribute to the formation of high preferred combinations. The two effects can be inferred from the shape of the distribution of preferences among 'full matches' (value 1), 'partial matches' (value between 0 and 1) and no match (value 0) in Table 2. Consider for simplicity the case of two mechanisms. For each, three states can be selected, then the base-rate probability that any two policies are co-selected is 1/9, the probability of any partial match is 4/9 and the probability of no match is also 4/9. Deviations from that base-rate can be due to the concentration of preferences on one of the three policies on one mechanism but not on the other. Thus, popular

policies on one or the other mechanism might emerge, but they are not chosen together at any systematic rate. We can interpret this finding as additivity effect and should raise the frequency of partial matches over its base-rate. Alternatively, if the frequency of co-selection is higher than its base-rate then it is not the mere popularity of the two policies that contributes to raise the overall utility of the package, but also complementarity. For example, in Table 2 the utility of combination 2 is made up of 51% of the population voting simultaneously for both, and 19% voting for either one or the other policy. This means that the two policies are not just popular; they are jointly popular, co-preferred, complementary in preference (actually this is what we searched for, devising a procedure that builds combinations around patterns of co-selection)[19].

Third, although MGR and CEO preferences do differ, the structure of the game looks neither fully distributive (as mostly assumed in shareholder value maximisation models with managers as agents) nor fully cooperative (as implicitly or explicitly assumed in some stakeholder and in stewardship views of managers) (Davis, Schoorman and Donaldson, 1997; Clarke, 2004). Our study suggests that a more reasonable and empirically based alternative assumption to be made about actors' utilities is that the governance game is mixed motive, with some more competitive and some more cooperative issues. The next paragraphs indicate and discuss what they are.

Pareto- superior combinations: where preferences converge

Our general connectionist and multi-actor procedure allows detection of which the distributive and integrative issues are, in any specific situation, and what the superior clusters of policies are. In the Italian case, the findings are as follows.
- *Diffused decision rights.* MGRs consistently vote for high confrontation and decision right sharing with peers (Teamwork HIGH); and CEOs go along on that policy (it enters the string of co-preferred mechanisms in fifth position). This supports the thesis that the diffusion of decision rights in the form of group decision-making is effective in all respects and for all actors whenever decisions are difficult and risky. The width of discretion considered to be optimal is further sustained by levels of autonomy preferred to be high in both populations (Autonomy HIGH).
- *Moderate risk transfers.* Both MGR and CEO co-select with some systematicity a reward policy, in association with their option for high discretion. MGR and CEO preferences converge on having a sufficiently high part of income guaranteed as fixed pay (Fixed pay >60%), and on having pay contingent

upon firm performance and individual/group performance, each <25%. Stock options are preferred to contribute to increase total incomes at a maximum rate of 25% (Stock option LOW is the most voted stock option policy in both samples, although a consistent minority of managers would prefer it to go up to 40%; and the policy is co-selected with the other mostly co-selected policies if the combination is sufficiently large (fifth item for MGR, ninth item for CEO). The finding is consistent with our hypotheses of moderate, rather than extreme, optimal values of incentive pay.

Non-rankable components: where negotiation is in order

Some mechanisms enter into the preferred combinations by MGRs and CEOs in different states, i.e. different policies are preferred by them. These matters are not related to the much discussed issue of compensation, but regard the less addressed issue of investments in and of human capital; and they do not regard the traditional organisational problem of decentralisation and participation but the more substantial one of economic democracy and ultimate residual control rights.

- *Human capital mobility and investments.* As to investments of human capital, we hypothesised a trade-off between asset specificity and knowledge exploitation, favouring longer stays in the same firm, and innovation and realisation of the value of accrued human capital, favouring shorter stays. The trade-off, however, is not performed by each actor coming to a similar intermediate optimal value. Rather, CEOs weigh more the delivery of services generated by human capital in the firm, thereby preferring longer stays; while MGRs weigh more re-salability of their services, through new investments, resulting in shorter stays. Therefore, the two solutions are not Pareto-rankable. Rather, with that mechanism, a bargaining solution is in order. An intermediate value of firm tenure would be a fair solution of such a distributive game (Raiffa, 1982).

Parties also disagree about who should sustain the costs of investments *in* human capital. Both MGRs and CEOs see as reasonable that individuals invest up to 10% of their income in human capital maintenance and development. But MGRs demand co-investments by firms over and beyond 20%, while CEOs would co-invest only at the same rate as MGRs (up to 10%). Thus, again, a splitting the difference would be a fair solution of this distributive game. All these mechanisms related to human capital investments enter into a preferred combination not in core positions, though, but as eight or ninth marginal mechanisms (i.e. specific policies on them do not have very high indexes of popularity and of complementarity with other policies). Hence, negotiating a compromise seems feasible.

- *Fully residual reward and decision rights.* An analogous pattern is found for the truly and fully residual categories of reward and decision rights, namely ownership of shares and positions on boards. On those grounds the two actors compete, as usually hypothesised (Hansman, 1996). MGR preferences converge on high values – strongly for board representation (as a first mechanism attached to the winning combination), weakly for shareholding (attached as a 10th mechanism); while CEO preferences converge on low values – strongly as to shareholding (belonging to the winning couple of two policies), more weakly for board representation (entering in 6th position). Hence, in spite of the opposite preferences as to values, the extent to which preferences converge on those values are complementary: the joint optimisation, negotiation solution would involve an exchange among those items (Pruitt, 1983), namely a representation policy closer to MGR preferences, and an employee shareholding policy closer to CEO preferences.

If those additional policies, constructed as fair negotiation solutions on competitive matters, were associated with the jointly preferred policies on cooperative matters, a new point could be added to the graph in Figure 4, situated in the area between the two clouds of points representing utility maximising packages for each population.

Implications and Limitations

In order to illustrate the general usefulness and possible implications of the approach, it would be interesting to apply a similar analysis to contexts that may be biased, as to applied practices, in other directions. For example, a comprehensive study on executive and non-executive compensation in the US from 1993 to 2003 (Conyon, 2006) reveals that the incidence of base salary in total compensation (including option grants) for non-CEOs, decreased from about 50 to 36%, and after the stock market bubble of 2000, gradually rose again to 38%. Are those percentages sensible? Are they closer to the preferences of shareholders, CEOs, non-CEO managers, market analysts, consultants? For the same period considered here (2001–02), it might well have resulted, if analysed along the substantive propositions and methodological options proposed here, that these actual practices were biased for excessive incidence of stock option components and excessively low incidence of base salary. This example further illustrates that the propositions that can be derived from this type of analysis are different from those derivable from analyses of whether governance systems converge or diverge, and both from the proposition that there are universalistic best ways of governing and from the proposition that there are as many good ways of governing as the variety of institutions that exist in practice.

Some limitations of the analysis conducted in this paper should also be highlighted, especially as far as the empirical study is concerned. The analysis states which mechanisms (and in what state) are core and

which are more peripheral in governance combinations, as far as preferences are concerned. However, this is not the entire story, as the optimal breadth of the combination also depends on the contribution of the mechanisms to the performance of the system to which parties belong. Hence, this type of analysis complements and needs to be complemented by the study of what combinations of governance and organisational mechanisms contribute more to system-wide performance (which is the type of analysis that has typically been conducted in governance studies to date).

It should also be acknowledged that there can be objections to the assessment of governance structures in terms of subjective utility of the parties, as parties may misjudge their own costs and benefits or may be influenced by fashions and social desirability in their judgements. Our approach and method, however, mitigates this bias in various ways. First, actors' utilities are constructed by aggregating judgements of individuals who are in the same structural position in the governance game. Hence, the majority of choices should appreciate the most relevant costs and benefits for the population, even if some individual choices fall randomly around. Second, the very diversity between the judgements of the two actors considered set limits to the wild variation of policies, indicating ranges of values that are reasonable for the very reason that they fall in between unilaterally preferred, more extreme policies.

This said, we however defend a subjective utility approach to these controversial governance matters, as, after all, when to govern is the issue, preferences are all that count.

Notes

2. A similar proxy for human capital intensity has also been employed in other studies (e.g. Uzzi and Lancaster 2002).

3. Components of a network are sub-networks or groups of nodes which are connected within, but disconnected between sub-networks.

4. Technically this computation has been done using the 'network similarity' procedure of Ucinet VI (Borgatti et al., 2002), confronting an ideal vector of n components (policies) in which all policies in the vector to be evaluated are chosen (an all-1 vector) with the number of 1 appearing in the observed vectors of respondents' preferences. More precisely, the network similarity procedure computes the proportion of exact matches between all respondents' vectors with the ideal vectors. By multiplying the frequency of proportion of matches for their weights, we obtained the utility index for each combination of policies.

5. As the number of mechanisms in the combination increases though, the probability of full matches (or zero matches) becomes very low; hence the presence of complementarity is signalled by the extent to which the frequency of 'fuller' matches is greater and that of 'more partial' matches is lower then their respective base-rate probabilities (the higher the number of mechanisms, the more the base-rate distribution becomes normal).

Admittedly, the type of complementarity we measure in this way is not a direct test of interaction, i.e. whether the value of having one policy increases the value of having another for every single individual, or they are co-preferred for other reasons. However, after all, co-preference is what matters most for design, whatever its reason.

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Table 1: Mechanisms, policies and preferences: scales and general distributions across samples of Human resource providers (MGR) and firm representatives (CEO)

Variables (Governance Mechanisms)	Policies (states) and distribution of preferences					Preferred incidence of Work Autonomy (% of tasks which not require supervision or approvals)	< 20%	20-40%	41-60%	61-80%	> 80%
	1	2	3	4	5	MGR	8 (4.3%)	27 (14.4%)	66 (35.3%)	53 (28.3%)	33 (17.6%)

	< 10%	10 to 25%	26 to 40%	41 to 60%	> 60%						
Preferred percentage of Base Fixed Pay (% of overall compensation)						CEO	4 (8.1%)	7 (11.3%)	23 (37.1%)	21 (33.9%)	6 (9.7%)
MGR	11 (5.5%)	44 (22%)	64 (32%)	55 (27.5%)	26 (13%)	Preferred Team work (% of work time in team on daily work time) < 20% / 20-40% / 41-60% / 61-80% / > 80%					
CEO	1 (1.6%)	6 (9.4%)	13 (20.3%)	37 (57.8%)	7 (10.9%)	MGR	2 (1.1%)	13 (7.2%)	32 (17.7%)	78 (43.1%)	56 (30.9%)
Preferred percentage of compensation contingent on individual and/or group/team performance (% of overall compensation) < 10% / 10 to 25% / 26 to 40% / 41 to 60% / > 60%						CEO	7 (10.9%)	7 (10.9%)	9 (14.1%)	20 (31.3%)	21 (32.8%)
MGR	26 (13.1%)	49 (24.6%)	58 (29.1%)	45 (22.6%)	21 (10.6%)	Preferred proportion (%) of managers in the board of directors < 10% / 10-25% / 26-39% / 40-50% / > 50%					
CEO	4 (6.7%)	29 (48.3%)	20 (33.3%)	4 (6.7%)	3 (5%)	MGR	10 (5.5%)	27 (14.8%)	50 (27.3%)	61 (33.3%)	35 (19.1%)
Preferred percentage of compensation contingent on corporate results(% of overall compensation) < 10% / 10 to 25% / 26 to 40% / 41 to 60% / > 60%						CEO	10 (16.7%)	29 (48.3%)	10 (16.7%)	7 (11.7%)	4 (6.7%)
MGR	66 (33%)	74 (37%)	36 (18%)	15 (7.5%)	9 (4.5%)	Preferred employee share holding (% of stakes held by employees) < 5% / 6-10% / 11-25% / 25-49% / ≥ 50%					
CEO	17 (25.8%)	36 (54.5%)	10 (15.2%)	0	3 (4.5%)	MGR	6 (4%)	18 (11.9%)	41 (27.2%)	57 (37.7%)	29 (19.2%)
Preferred percentage of incidence of Stock options (% on yearly overall compensation) < 10% / 10 to 25% / 26 to 40% / 41 to 60% / > 60%						CEO	24 (42.9%)	26 (46.4%)	6 (10.7%)	0	0
MGR	38 (24.4%)	53 (34%)	52 (33.3%)	12 (7.7%)	1 (0.6%)	Preferred individual investment in human capital (on % of yearly compensation dedicated to in training and individual knowledge growth) < 5% / 6-10% / 11-20% / 21-30% / > 30%					
CEO	18 (31.6%)	14 (24.6%)	22 (38.6%)	2 (3.5%)	1 (1.8%)	MGR	41 (20.5)	46 (23%)	54 (27%)	40 (20%)	19 (9.5%)
Preferred average of firm tenure (number of years) < 2 years / 2 - 3 years / 4 - 5 years / 6 - 7 years / > 7 years						CEO	25 (39.1%)	19 (29.7%)	12 (18.8.%)	8 (12.5%)	0
MGR	27 (13.6)	48 (24.1%)	53 (26.6%)	45 (22.6%)	26 (13.1%)	Preferred firm investment in human capital (on % of yearly compensation dedicated to in training and individual knowledge growth) < 5% / 6-10% / 11-20% / 21-30% / > 30%					
CEO	0	10 (17.5%)	17 (29.8%)	19 (33.3%)	11 (19.3%)	MGR	13 (7.1%)	33 (18.1%)	53 (29.1%)	58 (31.9%)	25 (13.7%)
						CEO	14 (26.4%)	23 (43.4%)	9 (17%)	6 (11.3)	1 (1.9%)

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Table2. Combinations of policies and utilities

Policies selected from MGR preferences

Number of Governance Mechanisms within the combination	MGR Utility	CEO Utility	Policies in the Combinations
1	68.50	70.15	Compensation contingent on corporate results LOW, Team Work HIGH
Figure 4: Utilities of combinations for MGR and CEO (in parentheses the number of policies for each combination). (CombMGR2)			
2 (CombMGR3)	61.70	52.24	Proportion of managers in the board HIGH, Compensation contingent on corporate results LOW, Team Work HIGH
3 (CombMGR5)	54.20	54.03	Incidence of Stock options LOW, Base Fixed Pay HIGH, Proportion of managers in the board HIGH, Compensation contingent on corporate results LOW, Team Work HIGH
4 (CombMGR6)	52.39	55.97	Individual Investment in Human Capital LOW, Incidence of Stock options LOW, Base Fixed Pay HIGH, Proportion of managers in the board HIGH, Compensation contingent on corporate results LOW, Team Work HIGH
5 (CombMGR8)	49.64	53.42	Compensation contingent on individual and/or group/team performance LOW, Work Autonomy HIGH, Individual Investment in Human Capital LOW, Incidence of Stock options LOW, Base Fixed Pay HIGH, Proportion of managers in the board HIGH, Compensation contingent on corporate results LOW, Team Work HIGH
6 (CombMGR9)	48.46	48.42	Firm Investment in Human Capital HIGH, Compensation contingent on individual and/or group/team performance LOW, Work Autonomy HIGH, Individual Investment in Human Capital LOW, Incidence of Stock options LOW, Base Fixed Pay HIGH, Proportion of managers in the board HIGH, Compensation contingent on corporate results LOW, Team Work HIGH
7 (CombMGR10)	47.95	43.58	Employee Shareholding HIGH, Firm Investment in Human Capital HIGH, Compensation contingent on individual and/or group/team performance LOW, Work Autonomy HIGH, Individual Investment in Human Capital LOW, Incidence of Stock options LOW, Base Fixed Pay HIGH, Proportion of managers in the board HIGH, Compensation contingent on corporate results LOW, Team Work HIGH
8 (CombMGR11)	46.96	40.93	Firm Tenure LOW, Employee Shareholding HIGH, Firm Investment in Human Capital HIGH, Compensation contingent on individual and/or group/team performance LOW, Work Autonomy HIGH, Individual Investment in Human Capital LOW, Incidence of Stock options LOW, Base Fixed Pay HIGH, Proportion of managers in the board HIGH, Compensation contingent on corporate results LOW, Team Work HIGH

Table2 : Combinations of policies and utilities

Policies selected from CEO preferences

Number of Governance Mechanisms	MGR Utility	CEO Utility	Governance Mechanisms
1 (CombCEO2)	41	76.87	Compensation contingent on corporate results LOW, Employee Shareholding LOW
2 (CombCEO4)	41.5	71.27	Individual Investment in Human Capital LOW, Base Fixed Pay HIGH, Compensation contingent on corporate results LOW, Employee Shareholding LOW
3 (CombCEO5)	46.6	69.25	Team Work HIGH, Individual Investment in Human Capital LOW, Base Fixed Pay HIGH, Compensation contingent on corporate results LOW, Employee Shareholding LOW
4 (CombCEO6)	41.945	67.39	Board Representatives LOW, Team Work HIGH, Individual Investment in Human Capital LOW, Base Fixed Pay HIGH, Compensation contingent on corporate results LOW, Employee Shareholding LOW
5 (CombCEO8)	39.24	63.82	Compensation contingent on individual and/or group/team performance LOW, Firm Investments in Human Capital LOW, Board Representatives LOW, Team Work HIGH, Individual Investment in Human Capital LOW, Base Fixed Pay HIGH, Compensation contingent on corporate results LOW, Employee Shareholding LOW
6 (CombCEO9)	39.64	61.99	Incidence of Stock options LOW, Compensation contingent on individual and/or group/team performance LOW, Firm Investments in Human Capital LOW, Board Representatives LOW, Team Work HIGH, Individual Investment in Human Capital LOW, Base Fixed Pay HIGH, Compensation contingent on corporate results LOW, Employee Shareholding LOW
7 (CombCEO10)	39.3	60.15	Firm Tenure HIGH, Incidence of Stock options LOW, Compensation contingent on individual and/or group/team performance LOW, Firm Investments in Human Capital LOW, Board Representatives LOW, Team Work HIGH, Individual Investment in Human Capital LOW, Base Fixed Pay HIGH, Compensation contingent on corporate results LOW, Employee Shareholding LOW
8 (CombCEO11)	39.495	58.48	Work Autonomy HIGH, Firm Tenure HIGH, Incidence of Stock options LOW, Compensation contingent on individual and/or group/team performance LOW, Firm Investments in Human Capital LOW, Board Representatives LOW, Team Work HIGH, Individual Investment in Human Capital LOW, Base Fixed Pay HIGH, Compensation contingent on corporate results LOW, Employee Shareholding LOW
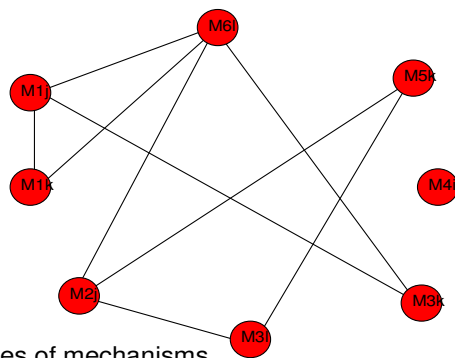
Nodes Mn_x = Policies of mechanisms
Links = Joint preferences of policies

Figure 1: Network of joint preferences

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COMPONENTS OF VALUED GRAPHS

HIERARCHICAL COMPONENTS

                              B                                         B
             B                a                                         a
             a        P       s                               S         s                 P                       P
             s        r       e                               t         e        P        r                       r   S
             e   P    o       d                 S        P    a    F    d   B  B  o                 P             o   t
             d   a    f                 B       t   F    a    o    F    d   o  o  f                 a             f   o
             y    f   i       F         o   F   o   i    y    c    i        a  a  i        F    F   y    F   E    i   c   E
             F    y   t   E   I    i    T   a   i   k    m    A    A    F    m  n  r   I    i    r   n    r   i    i   l   m
        F    i    o   m   n   d    x    e   r   r        k    u    u    o    m  a  d   i    r    t   F    o   m    S   k   p
        i    x    s    h  d   e    a    d   m   o   T    t    t    t    r    e  t  t   T    e    t   r    r   l    o   m   l
        e    d    l         w   R  T   t    t   n    n   P    i    n    o    r  e  m   t    P    t  h           h    p   s
        r         P    r    r  P   o   e   r    i    o   o    o    e    u    n  a  n  W    P    r   P    i    r    a   t    s
        P    e    i    a    i  o   a   r   u    o    o   m    m    m    r    o  r  o  a    r    n   r    i    i    n   o    e
        a    i    n    r   y   k   r   i   n    o    m   m    y    y    f    n  r  r  i    r    i   r    i    r    n   o    s
        r    n    r    i  n   r   i    n   e    m   y    y    f    f    s    e  y  k  e    e    n   n    f    n    e   g    e
        y    f    g    e  3   3   e    n   s    3    3   3    2    2    2    k  e  2  2    3    2   2    3    2    g   s    3
                        1   2   2       1   2   2   1    1    1    1    2         1  3  1    1   1   2    3   2    3   2    2   2  3
  Value  1  2  3   9  1   3   9  8   0   4   7   8   7    3    5    6    6    2   5  7  2   0    9   4    8   1   3    4   2    0   5  6  1
  ------  -  -  -   -  -   -   -  -   -   -   -   -   -    -    -    -    -    -   -  -  -   -    -   -    -   -   -    -   -    -   -  -  -
  41.000  .  . XXX  . . . . . . . . . . . . . . . . . . . . . . . . . . . .
  36.000  .  . XXXXXXX . . . . . . . . . . . . . . . . . . . . . . . . .
  34.000  .  . XXXXXXXXX . . . . . . . . . . . . . . . . . . . . . . . .
  33.000  .  . XXXXXXXXX . . . . . . . . . . . . . . . . . . . . . . . .
  32.000  .  . XXXXXXXXXXX . . . . . . . . . . . . . . . . . . . . . .
  31.000  .  XXXXXXXXXXXXX . . . . . . . . . . . . . . . . . . . . . .
  30.000  .  XXXXXXXXXXXXXXX . . . . . . . . . . . . . . . . . . . . .
  29.000  .  XXXXXXXXXXXXXXX . . . . . . . . . . . . . . . . . . . . .
  28.000  .  XXXXXXXXXXXXXXX . . . . . . . . . . . . . . . . . . . . .
  27.000  .  XXXXXXXXXXXXXXX . . . . . . . . . . . . . . . . . . . . .
  26.000  .  XXXXXXXXXXXXXXX . . . . . . . . . . . . . . . . . . . . .
  25.000  .  XXXXXXXXXXXXXXXXX . . . . . . . . . . . . . . . . . . . .
  24.000  .  XXXXXXXXXXXXXXXXX . . . . . . . . . . . . . . . . . . . .
  22.000  .  XXXXXXXXXXXXXXXXX . . . . . . . . . . . . . . . . . . . .
  21.000  .  XXXXXXXXXXXXXXXXX . . . . . . . . . . . . . . . . . . . .
  20.000  .  XXXXXXXXXXXXXXXXXXX . . . . . . . . . . . . . . . . . . .
  19.000  .  XXXXXXXXXXXXXXXXXXXXX . . . . . . . . . . . . . . . . . .
  18.000  .  XXXXXXXXXXXXXXXXXXXXX . . . . . . . . . . . . . . . . . .
  17.000  .  XXXXXXXXXXXXXXXXXXXXX . . . . . . . . . . . . . . . . . .
  16.000  .  XXXXXXXXXXXXXXXXXXXXXXX . . . . . . . . . . . . . . . . .
  15.000  .  XXXXXXXXXXXXXXXXXXXXXXX . . . . . . . . . . . . . . . . .
  14.000  .  XXXXXXXXXXXXXXXXXXXXXXX . . . . . . . . . . . . . . . . .
  13.000  .  XXXXXXXXXXXXXXXXXXXXXXXXX . . . . . . . . . . . . . . . .
  12.000  .  XXXXXXXXXXXXXXXXXXXXXXXXX . . . . . . . . . . . . . . . .
  11.000  .  XXXXXXXXXXXXXXXXXXXXXXXXX . . . . . . . . . . . . . . . .
  10.000  .  XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX . . . . . . . . . . . .
   9.000  .  XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX . . . . . . . . . . .
   8.000  .  XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX . . . . . . . . . .
   7.000  .  XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX . . . . . . . . . .
   6.000  XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX . . . . . . . . .
   5.000  XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX . . . . . . . .
   4.000  XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX . . . . . . .
   3.000  XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX . . . . .
   2.000  XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX . . . .
   1.000  XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX . . .
   0.000  XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
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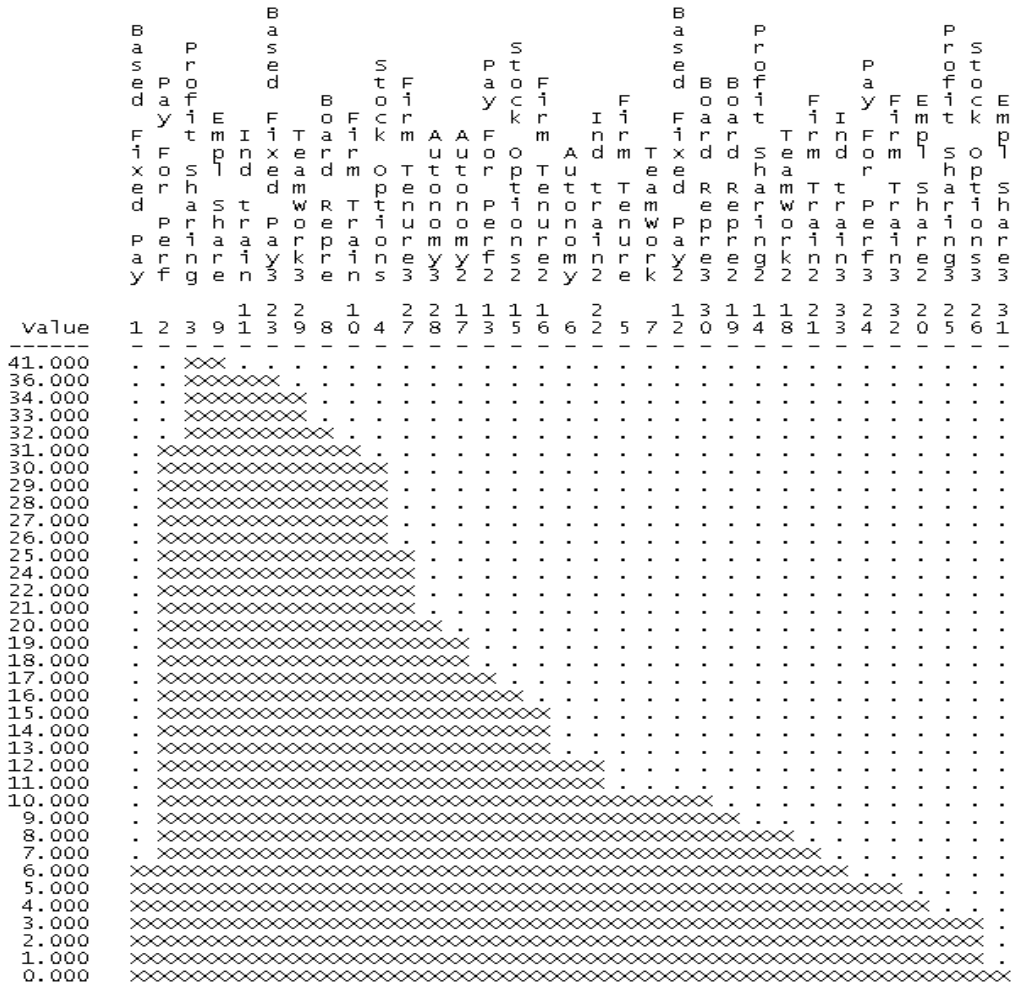
Figure 2: Hierarchical Components for CEO preferences

Legend: Policies labels are accompanied by 3 if High, 2 if Medium and nothing if Low
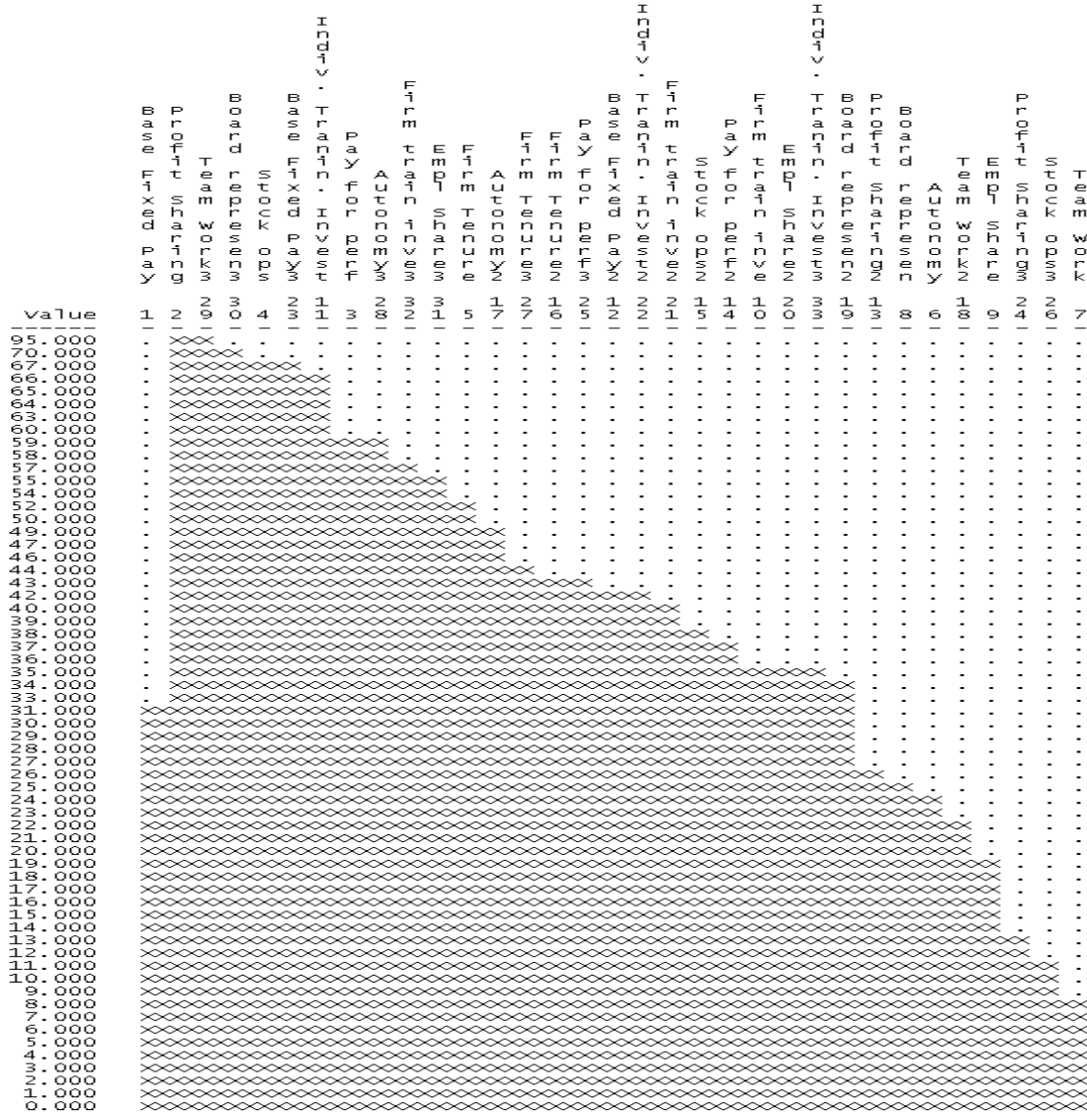
HIERARCHICAL COMPONENTS

Figure 3: Hierarchical Components for MGR preferences

Legend: Policies labels are accompanied by 3 if High, 2 if Medium and nothing if Low

Figure 4: Utilities of combinations for MGR and CEO (in parentheses the number of policies for each combination)