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« Dealing with Risks and Governance »

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Dealing with Risks and Governance

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Abstract

The scope of this note is to delimitate what we are talking about when we refer to governance, a word that relates to different concepts in political sciences, social sciences and other human sciences. Within such a large meaning, governance encompasses many situations where there are risks to be managed, or risks to be taken, which leads us to question its economic foundations. However, the foundations need not be the same if we consider “corporate governance”, “national governance”, “territorial governance” and many compound ways of management through Public Private Partnerships (PPP).

Field of research: Governance, Economy of risks.

1. Introduction

“Governance” comes from the Greek *kubernan* (to pilot, to manage) and the word extended to managing firms (governance), states (governments), and more generally projects, or social events. For social organizations without a well defined political or juridical status it may be said that there’s a “lack of governance”. Distinct from “government” or from “management” the concept was first developed for firms: “corporate governance” to be later extended to other fields that we may call “public governance”.

The notions of risk and uncertainty arose in Europe in parallel with the notion of governance although their origins and their meanings varied a lot through ages. Risk was the first notion to arise, mainly in finance as a way to recognize that some investments were “risky” whatever the laws, omen, and oaths that guaranteed their returns. This notion made it possible to lend at a rate of return that exceeded the “price of time” (non-usurious rate of return): the difference being the “price of risk”.

In order to distinguish scientific certainty from lack of knowledge Knight, Ramsey and Keynes in the 1920’s, proposed to label situations where probabilities were known or could be figured out as “situations of risk”, in opposition to situations where there is no scientific certainty in the above sense that they dubbed: “uncertainty”.

This explains many of the confusion in the use of the word risk. Indeed, a “security”, i.e. a share in a firm, doesn’t guarantee returns with a given probability, and that’s what a typical financial risk is! Climate change induces risks for agriculture, e.g., without enough scientific certainty to measure possible outcomes with reliable probabilities. Hence this is typically an uncertain situation although we refer to it as “climate change risk”.

An explanation for this confusion may come from two different definitions of probabilities. The first one, discovered by Pascal and Huygens in the 17th century, is obtained whether by calculus or by statistics. The second one, introduced by De Finetti (1931) and Savage (1952) are based on decision theory in situations of uncertainty where it is the decision maker that reveals through its preferences on uncertain outcomes a subjective measure of their occurrence. Such a subjective measure is mathematically a probability in terms of properties, but is an individual one. For instance, an expert advice, even if well informed on a phenomenon, is often based on a subjective

probability, not an objective one. In such a case we find ourselves in a situation of uncertainty, not a situation of risk, even though the word risk is generally used in practice.

To conclude this presentation of risks, let us differentiate:

- Risks that one faces: such as climate risk, floods, epidemics, social revolutions and the like.
- Risk that one takes: any decision we make is risky, sometimes with such a little variance that we can consider the expected result as certain, most of the time with a known probability of loss that we consider as acceptable, and many a time without any idea about the probabilities of occurrence, unless a subjective one.
- Individual risks: borne or taken by an individual with consequences that are only of concern for this individual.
- Collective risks: borne by a collectivity of individuals, whether the risk is taken or managed by the collectivity or by some individuals. Collective risks concern: human environments (“nature” as some will say), social, economical, industrial and political risks, notably.

Countries around the world are confronted with common environmental challenges caused by natural hazards (e.g. earthquakes, floods, tsunamis, forest fires, desertification, drought, and landslides), technological risks (e.g. fire, air accidents, and industrial explosions), common risks (e.g. pollution, waste management), socio-economic risks (e.g. unemployment, poverty) and financial risks (e.g. credit risk, investments, hedging instruments). And, alongside, new risks have emerged such as: terrorism risk, nuclear risk, etc.

Contracts are the natural way to deal with risks: Lottery tickets, financial contracts, insurance contracts etc. Nowadays, contracts are often used as a way to complete the delegation of authority provided by law or as a means of managing political cooperation.

2. Theoretical foundations of governance

We are concentrating here on an economics and management science point of view and more particularly on risks management methods in different fields. These have been developed in the

context of corporate governance; however they are also called for its extension to public governance at the price of some adjustments.

In general, governance refers to how an organization makes its decisions and implements them. The contract concept has become essential in the economic analysis of organizations.

The contractual approach can analyze the functioning of micro-economic and macro-economic interactions and those of the institutional framework of applied economics. These institutions, which define the rules of the game, form what the New Institutional Economics (NIE) calls “institutional environment”. They may contribute to the implementation “enforcement” of contracts, whether formal (administration, judiciary and professional associations) or informal (culture, habits and customs) (Brousseau and Glachant, 2002).

We argue that the theory of property rights and agency theory provide satisfactory explanations for the emergence of the concept of corporate governance that will be extended to public governance. Contracts in economics are characterized by three theories: the theory of incentives (IT), the theory of incomplete contracts (TIC) and the theory of transaction costs (TCT), each of these resting on different hypothesis.

2.1. Corporate governance

Tirole (2001) pointed out that the standard definition of corporate governance among economists and legal scholars refers to the defense of shareholder’s interests. From Adam Smith (1776) to Berle and Means (1932), the concern is the separation of ownership and control, i.e. with the agency relationship between a “principal” (investors, outsiders) and an “agent” (manager, entrepreneur, insiders).

The problems that corporate governance faces arise from the separation of ownership and control of the capital, the disproportional power of certain shareholders, the control over minority shareholders, the employees holding significant rights regardless of those who they are entitled as capital owners. Corporate governance, framed by laws and accounting rules (e.g. International Financial Reporting Standards), maintains, in theory, the interests of the main stakeholders which are the majority of shareholders and managers, as well as the lenders (banks), minority shareholders,

employees, suppliers, customers and other partners such as contractors boards, NGOs, etc. In other words, the firm's social responsibility is sometimes viewed even more broadly to include the protection of stakeholders who do not have a contractual relationship with the firm (Tirole, 2001).

2.2. Corporate governance in an agency perspective

In their seminal article of the positive theory of agency applied to problems of corporate governance, Jensen and Meckling (1976) considered that the agency relationship arises from the asymmetry of information that gives the manager opportunities to undertake actions unfavorable to shareholders without them noticing it. For instance, this basic agency problem suggests a possible definition of corporate governance as addressing both an adverse selection and a moral hazard problem (Tirole, 2001).

Originally, corporate governance can be seen in an agency perspective, that is to say, a contract by which one or more persons (the principal) engages another person (the agent) to accomplish some services on their behalf implying the delegation of a part of the decision-making authority to the agent.

Governance is reflected in the first place by the governing bodies of each organization. They are general assemblies which represent the categories of stakeholders and the administrative bodies which usually take the form of a Board of Directors. The problem amounts to control the activity of a delegation part of the responsibility, that's why it is necessary to control those who have received that delegation.

Given the diversity of mandates and competencies, which sometimes overlap, there is no single model of governance. However, some principles are valid for all corporate governance models as we shall see below (§3).

2.3. Positive agency theory (PAT)

Inspired from the approach of the theory of property rights, agency theory is now the dominant conception in corporate governance (Jensen and Meckling, 1976; Fama, 1980; Fama and Jensen, 1983). In agency theory, the company is designed as an implicit and explicit “nexus of contracts” governing relationships between the firm and its principal partners (i.e. creditors, managers).

We highlight problems of asymmetric information and incomplete contracts, and thus the moral hazard and adverse selection that result. These situations give rise to “agency costs” due to the fact that each party seeks to maximize its own utility, even if it is to the detriment of the other. These agency costs can be classified into three categories (Jensen and Meckling, 1976):

1. “cost of control” or “monitoring costs and incentives”;
2. “cost of obligation” or “costs of court”;
3. “residual costs” or “opportunity costs”.

2.4. Theory of incentives (IT)

IT reasons from a situation in which the under-informed party “the Principal” develops an incentive scheme to conduct the informed party “the Agent” to reveal his information (adverse selection model) or to behave in the interest of the Principal (moral hazard model). The incentive scheme is based on a conditional remuneration to “signals” resulting from the behavior of the Agent (as the choice of an option on a list of proposals called the “menu” of contracts, or as the result of his apparent effort when that effort itself is not observable). The existence of such an incentive scheme has been proved with two important assumptions (Brousseau and Glachant, 2002):

1. Although the principal is “under-informed”, since he does not know the real value of the hidden variable, he knows both the probability law that affects this variable and the preference function of the agent. The Principal can get “in place” of the agent to anticipate his reactions to different remuneration schemes, and to select a scheme among the acceptable schemes to the Agent.
2. There is a concealed institutional framework, but competent and benevolent, ensuring respect for commitments made by the Principal. So any proposal made by the Principal is credible for the

agent. On the other hand, the proposed remuneration scheme is based on information known as “verifiable”, in other words, observable by a third party.

2.5. Theory of transaction costs (TCT)

Transaction costs analysis is typically a problem of governance, i.e. of contractual relationships. This approach combines the contributions of legal research, and economic organization, in order to identify alternative methods of governance, to define relevant attributes, and to explain their relative performances (Williamson, 2000).

New Institutional Economics works predominantly at two levels: the institutional environment, which includes both the formal (laws, polity, and judiciary) and informal (customs, mores, norms) rules of the game, and the institutions of governance (markets, firms, bureaus) or play of the game (Williamson, 2000).

Williamson has studied the factors that explain how individuals, that have a bounded rationality and that are immersed in an uncertain environment, organize their contractual relationships or more generally organize their transactions (make or buy). In doing so, Williamson builds a pragmatic analysis of transactions and transactional choices which lead him to set the choice of organizational structures (which he calls governance structure) that govern transactions (Chabaud, Glachant, Parthenay and Perez, 2008).

According to Williamson, the three attributes of the transaction are: frequency, uncertainty and asset specificity (e.g. site, physical assets, human assets, lack of assets, active time).

2.6. Theory of incomplete contracts (TIC)

The theory of incomplete contracts has become a theory of the influence of institutions on the design of contracts while it was initially concerned with the impact that the allocation of property

rights may have on the distribution of the residual surplus between agents, and on their incentives to invest.

The theory of incomplete contracts, of which Hart (1986) is a prominent founder, is a new paradigm in economics. This new paradigm considers that the complete contingent contracts, the contracts which imply that all future events that may affect the contractual relationship are considered in the original contract, are not the only types of contracts faced by agents. In reality, agents cannot always anticipate all obligations related to possible states of nature. Therefore, contracts between agents will be incomplete (Chabaud, Glachant, Parthenay and Perez, 2008).

The contract incompleteness is the result of two hypotheses that characterize agents and the environment in which they evolve. On the one hand, agents are supposed to have bounded rationality. On the other hand, uncertainty (as defined by Knight, 1921) and complexity that characterize the environment they face mean that agents cannot anticipate all future contingencies.

3. Governance modes

We shall focus on the basic modes of governance, i.e. corporate governance and public governance. In addition, this quest for governance modes may be best expressed in territorial governance with the development of methods for Public Private Partnerships (PPP) in support of projects of public interest.

3.1. Corporate governance principles

The principles of corporate governance of the OECD have been approved in 1999 by the ministers of OECD countries and have since then emerged as a reference at the international level (OECD, 2004).

These principles of corporate governance include basics which underlie the “good” corporate governance: establishment of the foundations for an effective corporate governance regime,

shareholder rights and main functions of shareholders, equitable treatment of shareholders, role of stakeholders in corporate governance, transparency and dissemination of information and responsibilities of the Board of Directors (OECD, 2004).

In that perspective, a “good” governance structure is then one that selects the most able managers and makes them accountable to investors. Many authors have therefore advocated moving from traditional shareholder value to the broader concept of the “stakeholder society” in which the interests of non-investing parties would be better represented (Tirole, 2001).

3.2. Corporate governance and risk management

Corporate governance concerns the management of firms. As such, it is concerned by the management of investments, their returns, the ways those are shared and future developments, i.e. financial risks. However, in any industries, there are other risks that have to be managed in parallel: technical risks and hazards. Hazards can be prevented to some extent and most of them may be insured (whether auto-insured, or through contracts with insurance companies). These are manageable at the level of a firm.

In the context of corporate governance, we identify three groups of hazard causes that may affect a company: technical risks (inoperative machine, fire, etc.), deviant behavior (theft, attacks, etc.) and natural phenomena (volcanoes, floods, etc.) (Ledoux, 1995).

3.3. Public governance

There is no consensus on a definition of public governance, yet there are many international organizations (such as World Bank, Governance Institute in Canada, the United Nations Development Program, the International Monetary Fund, the Organization for Economic Cooperation and Development and the European Commission) that have worked to make the concept more precise. Consequently, governance is understood in different ways reflecting the interests and objectives of the issuer organizations (Fabre, Meisel and Ould, 2007).

In short, we admit that public governance refers to the participatory interaction between government, private firms, organizations of civil society and citizens in order to ensure an optimal use of resources and an increase in the quality of services provided by the State which implies the improvement of the quality of life for citizens and their shares of goods. This remark particularly concerns public goods, i.e. goods and services which everyone benefits from and characterized by non-rivalry in terms of consumption (Harribey, 2011).

3.4. Management in public organizations and New Public Management

The notion of governance requires a global approach of objectives and methods, one of its most important objectives is the modernization of public administration and the verification of the existence of quality of life indicators for citizens such as education and health which are costs for the state but considered as long term investments for a sustainable development.

A public policy does not respond to the same needs than the private sector and we may well reject the idea of comparing the government methods to methods of corporate governance. Although, supposed to meet the current needs of the reform of public organizations, management methods traditionally used in the private sector have been gradually widespread in the public sector of many countries, forming the current New Public Management (NPM).

The NPM relies on taking into account the market in public policy and relies often on approaches of privatization, or outsourcing of a part of the public sector activities through the creation of agencies or autonomous public institutions (Bartoli, 2005). Thus, the NPM introduces an approach of performance in the State services in passing from the logic of means to the logic of results. However, the results of NPM should be observed with certain decline. This relative success of NPM may originate from dysfunctions related to its application.

3.5. Evaluation of governance by international organizations

There is obviously no consensus on the definition of “good governance” than on the definition of governance itself. However, an effective public service, a reliable legal system and an accountable administration to its users are the central elements of good governance into which all definitions converge (Fabre, Meisel and Ould, 2007).

It is important to note that the evaluation of the governance for countries around the world by international organizations has become of major importance over the years. Here are some of them:

- Indicators of the OECD: rule of law, public sector management, control of corruption and reducing military spending.
- Indicators of the United Nations: citizen participation, rule of law, transparency, citizen satisfaction, alignment of interest, equality especially for opportunities, effectiveness, existence of a system of punishment and accountability and the strategic vision to promote the growth of the society.
- Indicators of the World Bank: the World Bank plays a leading role in this field; both economists Kaufmann and Kraay (Kaufmann, Kraay and Mastruzzi, 2010) are updating the version of the World Governance Indicators (WGI). According to these two economists, it is possible to divide the governance into six principal components by taking as a starting point the late 90 in order to apply them on developed and developing countries as follows: voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, control of corruption.

3.6. Public Private Partnership (PPP)

The PPP aims to define a legal framework for relationships that bind the public sector to the private sector, and to organize cooperation between the two sectors. It refers, however, to all infrastructure projects that benefit the economy and which the private sector can contribute through financing, installation, maintenance, modernization or management.

3.7. Political regimes referring to the precautionary principle

The communication of the European Commission (2000) indicates that the precautionary principle should be considered in the context of a structured approach in risk analysis (evaluation, management and communication). The reference to the precautionary principle assumes that potentially dangerous effects have been identified, but the evaluation does not allow determining the risk with sufficient scientific certainty.

4. Public governance and risk management

To exceptional situations, exceptional remedy! The State, upon the occurrence of a catastrophic risk, becomes the pivot of the rescue operation in order to counteract the crises considered sometimes as being uninsurable.

Collective risk management has become one of the major themes of public debate particularly in terms of the effective implementation of the precautionary principle. Hence numerous tools have been developed for this purpose. However, for less exceptional situations of risk, a number of instruments and methods have been developed.

4.1. Insurance, reinsurance and financial markets

The principal tools to managing and sharing risks vary on a large scale between insurance, reinsurance and the financial market (Godard, Henry, Lagadec and Michel-Kerjan, 2002):

- **Insurance:** An insured pays a certain price (the premium) to receive a certain amount of money (compensation) if the hazard (for which he is insured) happens. Notice that the principle of insurance relies on a great number of independent risks insured by the same company.
- **Reinsurance:** According to the French Federation of Insurance Companies (FFSA), reinsurance is a service provided by reinsurers by which all or part of the risk subscribed by another insurer is assumed by them in return for remuneration. Due to the reinsurance transaction, the insurer may invest premiums he perceives into two parts: a riskless one over a long term and short term

contracts with the reinsurer in order to hedge the “risky” part of his insurance portfolio. Reinsurance makes the link between insurance (and thus individually insured people) and financial markets.

- Financial market: Tools have been developed to hedge many risks and even some catastrophic risks. Reinsurance hedges its position financial instruments exchanged on the stock market. Three main tools have been implemented: Index options from the Chicago Board of Trade (CBOT) on the occurrence of a disaster on the Chicago market, the swaps of Catastrophe Risk Exchange (CATEX) of New York and the Bermuda Commodities Exchange (BCE) established in spring 1997 as a disaster swap market for catastrophe risk based on Guy Carpenter’s catastrophe index (GCCl) (Bruggeman, 2007). We’ll see an example in section 5.2.

5. Territorial governance

The term “territory” may refer to the national territory of an administrative area in which the State (by its headquarters) shall exercise its sovereignty. The notion of territory contains three different but complementary dimensions. Firstly, an identity dimension that is characterized by its name, limitations, history, heritage and the way by which the inhabitants of the territory represent it. Secondly, a material dimension, which designs the territory as a space with natural and physical properties which are characterized by their structure and their dynamic in time and space. Last but not least, an organizational dimension in which the territory is an entity with an organization of social and institutional actors.

The concept of territorial governance consists of new modes of organization, coordination and management of a territory. It refers also to the governance of several countries or part of them, which share a common concern. In the Mediterranean territory case, some Mediterranean countries (e.g. Egypt, Israel, Lebanon, Syria, Turkey) are prone to seismic and tsunami risks. Others (e.g. Morocco, Algeria, Tunisia, Libya and Egypt) are concerned by their desert climates. Last but not least, a number of Mediterranean countries such as South of France, Italy, Spain, and Greece where urban areas are threatened by sea-flood risk. However, territorial governance corresponds to the increased involvement of public and private actors in the dynamic of development in a given territory.

The territory as a social construct, economic and spatial, calls for a particular organization depending on the type of actors that dominate it. In this sense, Leloup, Moyart and Pecqueur (2005) have identified three types of coordination: private coordination, where the dominant actor is a private organization, public or institutional coordination and a joint coordination which is a mix of the two precedents.

This coordination mobilizes the cooperation among different interest groups (business, civil society, professional associations, NGOs, etc.) whose objectives may be different, even contradictory, but which contribute to the production of development factors of this common territory. However, development is no longer a purely economic matter, it also relates to social equity and to the conservation of nature and resources. Thus, territorial governance requires, first, to overcome the administrative vision of the territory and to apprehend it as a pluri-dimensional social construct.

5.1. Features of a good territorial governance

Like other forms of governance (private, public, etc.). There is no consensus on the definition of good territorial governance in adequacy with the sustainable character of the territory. However, a set of features are valid for all models in order to ensure sound governance, known by the generic term of “good territorial governance”.

Territorial governance should enable technology transfer and the diffusion of the know-how in partner countries (use of waste management methods with low environmental impact, for example). It should also enable the proliferation of research centers that would facilitate the social innovation process in a perspective of integrated territorial development. All of the above explain the increasing interest in territorial governance that focus on longer terms than those of a country where interest is usually tied to election's terms.

5.2. Territorial governance and risk management

Let's take as an example of a large scale environmental hazard to which the Mediterranean territory is widely sensitive, i.e. seismic risk. In fact, among the largest earthquakes in the world, there is the Mediterranean territory ranging from Turkey to Lebanon passing by Italy and to the south of France. Indeed, an earthquake concerns people from medium term to long term. So, it is worthy to bring a sample of actors of these populations and their decision makers to establish plans to reduce the vulnerability of this region to this particular hazard.

The components to be determined are particularly: the frequency of earthquakes, the situation of the Mediterranean, the expected date for the occurrence of an earthquake, the good practices to be undertaken in urban development and architecture.

As for the involved actors, the working group will be formed by a committee of wise (of different formations) rather than a traditional steering committee (the formal elected of the countries) and that is to prevent the manifestation of the political cleavages which adversely affects the quality of substantive discussions. Given the type of the problem raised, we need, among others, the following skills: civil engineering, management, economics, geology, sociology, seismology, and econometrics.

The animation of working groups may use non-prospective methods (Metaplan, Design reviews, Brainstorming, etc.) and prospective methods (Actors, Matrix analysis, Morphological analysis, Forecasts, Projections, Scenario, Future diagram, Utopia, Dystopia, Eutopia, Vision of the future, etc.) in order to organize proactive policies.

Due to the extent of the work to be undertaken, prospective plans for the medium and the long term, including several scenarios identified as probable by the committee should be established. A difficult issue that arises is to accept the costs involved in the process, that is why, in addition to representatives of the local population and experts, the politicians of the concerned territories should take part in the procedure.

These costs include: research investment, earthquake-resistant buildings, the structuring of the regional and cities networks, the development of programs of cooperation and communication, the becoming of the rural areas, the evolution of the agricultural structures, etc. The implementation and functioning of such a heavy structure requires a real commitment to the future. If these requirements are obtained, then a private corporation may be interested in taking interest, this is what happened concerning the Mediterranean region: Swis-Re has been able to develop specific instruments to help

governments and local agencies to manage seismic risks. This is the result of a wide cooperation between the public and the private sector. On June 1st 2007, Swiss-Re obtained US\$ 100 Million protection against earthquake risk in Turkey, Greece, Israel, Portugal and Cyprus.

The problem has been solved even though it was complicated by the references to different countries, regulations and hazards. The special sponsor vehicle to issue the cat-bonds, is MedQuake ltd. The real issuer is Swiss-Re with a retrocession agreement between the two companies. MedQuake issued notes that cover severe earthquake risk (measured by a parametric trigger) in the countries at stake, from May 2007 to May 2010. There were two classes of issues, with different ratings (depending on two different risky parts in the portfolio of the issuer) for the same redemption date (June 2010).

Class	Rating	Size in M US\$	Coupon (spread in basis points to LIBOR 3month rate)
A	BB-	50	355
B	B	50	510

6. Conclusion

Our interest is focused on risk management in a multi-level governance in which the interaction between levels is provided by contracts. Thus, the contracting process may take place between: two independent companies, the company and the administration, different levels of government, the company and international agencies or the administration and an international body, etc.

Several characteristics are of a particular importance in the case of the contractual approach of risk management. The following includes a few of them: the vulnerability of the territory, the competence of the contracting party, the complexity of the field of action, the institutional environment in place, the degree of independence between the national and local policies in risk

management, the legal context in which the contracting parties operate, the severity and probability of occurrence of the encountered risks, etc.

In such a contract, we note that: the private sector seeks to reduce its vulnerability, the public sector expects to increase the insurability of citizens against those risks, and the territorial actors expect to provide a satisfactory assurance of good conduct of the territorial project, on common hazards. In all cases, contracts should be geared towards learning and improving efficiency. Thus, the audit should enable to study the origin of the effectiveness of governance practices and to define the potential utility of the lessons learned in a different context (OECD, 2007).

In this context, we highlight the fact that the formation of institutions may take a very long time. This process of institutionalization consists of three phases: the externalization, the objectivation and the internalization of routines, which become the “natural order” of things. Those Institutions are the conventions, norms and formally sanctioned rules of a society. They provide expectations, stability and meaning essential to human existence and coordination (Vatn, 2005).

It is clear that radical uncertainty, when it is not even possible to conceive a number of assumptions, the completeness of the contracts is impossible (Ghestin, 2000). In this case, as for example in the case of catastrophe risk, central government turns out to be the insurer of last resort. This former often lacks the “good” governance for an intended public welfare that exceeds short terms vision such as elections’ dates.

For instance, we can argue that if an improvement is to be made in favor of citizens, this improvement must rest on a conscious consideration of governance. Clearly, such elements lead observers to ponder various governance structures and to compare different risk management across countries. In that perspective, we assume that a better comprehension of our subject lays on a case by case study of different risks (e.g. waste management, earthquake and volcano) that a territory, a nation or an organization may face. To better understand issues related to governance dealing with risks, other applied researches, involving different institutional structures, have to be conducted.

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