THE IMPACT OF GOVERNANCE, ON ENVIRONMENTAL PERFORMANCE, THE MEDIATING ROLE OF DIVERSITY ON THE BOARD

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Summary - In this paper, we analyse how social, gouvernemental and environnemental performance cannot exist without Financial performance with the role of board diversity. Our study mobilizes data collected between 2002 and 2020 from a sample of 29 international power generation companies and uses panel data fixed-effects regression with three control variables (percentage of women in the board, age of the company, net risk - ROE -) for the estimations. The results reveal the risk of competition between CSR priorities and action areas (environment, social, governance) as well as the moderating effect of diversity on the board of directors in terms of conciliation and strategic articulation of sustainable development approaches and environmental and social actions of energy companies.

Keywords - Environmental Performance, Board Diversity, Social Performance, Financial Performance.

I. INTRODUCTION

In recent years, with the obligation for all listed companies to publish an annual extra-financial report (CSR report), we have moved schematically from a financial representation of the company's performance to more global notions including environmental, governmental and social dimensions (Gomes et al. 2004; Yang and Baasandorj (2017), In the sense also of a certain complementarity between financial and non-financial performance indicators, the sustainability of the company's performance implies consideration of the interests of all stakeholders (internal, external and now future generations (Jahmane 2012 p.118). Performance cannot, therefore, be measured solely by the financial result.

According to Brédart, Bughin and Comblé (2019), on the socio-economic level, this inspiration is materialising in the form of new social auditing, reporting and communication tools, while on the research and academic level, interest is focused on the development of concepts such as social performance or stakeholder (Acquier and Aggeri, 2007).

Environmental performance, like any notion of performance, is a notion that is still largely vague and indeterminate, contingent, complex and a source of subjective interpretations (Janicot, 2007). According to ISO 14031 (1999), it can be defined as "the measurable results of the environmental management system (EMS), in relation to the organisation's control of its environmental aspects based on its environmental policy, objectives and targets". According to Henri and Giasson (2006), environmental performance can be analysed along four dimensions: product and process improvement; stakeholder relations; regulatory compliance and financial impacts; and environmental impacts and corporate image. Therefore, CSR activities not only create reputational capital, but also increase public trust, leading to a positive market reaction towards improved financial performance (Robert and Dowling 2002). Companies that engage in environmental and social activities generate a significant positive increase in performance and higher stock returns (von Arx and Ziegler 2014).

In this article, we focus on the following issue: The impact of governance on environmental performance, the mediating role of board diversity. Our study uses data collected between 2002 and 2020 from a sample of 29 international power generation companies and uses a panel data fixed effects regression method for the estimations, with three control variables used (percentage of women in the board, age of the company, net risk - ROE).

Conceptual and theoretical framework

While following Greenwood et al (2008), neo-institutional theory can be considered the dominant approach to understanding organisations. It is true that economic theory recognises that environmental protection is beneficial to society as a whole, which justifies the imposition of environmental regulations to force or incentivise firms to reduce their harmful impacts on the environment (Ambec & Lanoie 2009). However, this environmental protection objective is orthogonal to the profit maximisation objective of the company. Consequently, environmental regulations are perceived as detrimental to the companies that are subject to them. (Ambec & Lanoie 2009).

In an institutionalised environment, the theory of agency, conceptualised by Jensen and Meckling (1976), offers a stimulating conceptual framework for understanding the economic interest that a company may have in communicating its environmental commitment to shareholders. Indeed, since the pioneering work of DiMaggio and Powell (1983), neo-institutional theory has been widely used in organisational theory. This theory proposes to analyse the institutional and symbolic reasons that explain the adoption of identical practices in organisations.

Stakeholder theory proposes to broaden the contractual vision of the firm which can be presented as a node of contracts between the manager and the stakeholders (Hill and Jones 1992). According to Albouy 2006 (p.148) 'the main merit of the stakeholder value approach is that it forces the management of the firm to consider the main decisions of the firm in a much broader framework by taking into account not only the interests of shareholders, but also those of customers, creditors, suppliers, employees and public authorities'.

By legitimising the interests of various stakeholders, this theory has contributed to companies' awareness of the need to go beyond simply responding to the demands of shareholders to include those of other actors such as employees, public authorities, NGOs, customers or suppliers.... (Naszályi & Slama-Royer, 2016). Human Capital Theory, the foundation of Agency Theory, introduced by Bearle and Means (1932), is based on the separation of ownership and control in the modern firm. This theory adopts a contractual view of the corporation: shareholders and managers sign a contract specifying how the managers are to use the shareholders' funds and the distribution of income between them. In the case of the board of directors, the board plays a key role in overseeing how the managers will manage the shareholders' funds in order to ensure a good return.

The positive impact of effective board monitoring has been proven (Bearle and Means, 1932). Indeed, while the presence of women improves board oversight (Hillman and Dalziel, 2003), the agency framework offers the opportunity to link female board representation to firm value. Effective board monitoring requires a variety of skills, experience and information, as Hillman and Dalziel (2003) argue.

Many authors agree that gender diversity has benefits for the company (Roberson and Park, 2007; Adams and Ferreira, 2009), especially on boards. Despite this awareness, one fact remains: the under-representation of women in the professional world (Devillard, 2012). In order to remedy this, the majority of states in developed countries apply quota policies, i.e. they oblige companies to have a predefined percentage of women in their teams (Bruna, 2014; Adams and Ferreira, 2009).

Although they are still predominantly composed of men, even if France is tending towards balance with, on average, 43.6% of women on boards of directors in the Société des Bourses Française (SBF),120 efforts are still needed, and some authors do not hesitate to emphasise the positive contribution of women on these boards (Isidro and Sobral, 2015), more particularly their impact on the behaviour of men with a renewed rigour and seriousness. For this reason, St-Onge and Magnan (2013) consider that it is better to adopt a social perspective on the place of women in work teams. They stress the importance of basing ourselves on principles of equity that are fundamental to our society. As Bruna (2011) points out, the pro-diversity, pro-mixity discourse has evolved over time from a corporate imperative, in the form of a moral imperative, to a factor for better economic and social performance. The pressure of the policies implemented by the States is therefore making it possible to bring about real change (St-Onge and Magnan, 2013). Gender diversity has become a social and societal obligation (Bruna, 2011) because women have a role that is just as important as that of men.

II. RESEARCH DESIGN

In this study, we selected scores for various explanatory and explanatory variables to identify links between environmental and social performance. The Thomson Reuters Datastream database provides scores from zero to 100, with 100 being very good and zero being very poor.

Thomson Reuters ASSET4 ESG assesses a universe of companies for which ESG data is maintained and ESG scores are calculated, consisting of over 6,000 companies worldwide. These indicators are used by Kim & al (2014), Seo & al (2015), Yang & Baasandorj (2017) and Jahmane & Gaies (2020). Power generation companies around the world are representative of CSR activities that have a role to play in the company under different types of management (strategic management, risk management and change management). (Arjaliès and Mundy 2013; Jahmane & Gaiis 2020) For our study, only the data of 29 companies are exploitable, when looking for common evaluation dates.

Despite this, our sample remains representative (Arjaliès and Mundy (2013). To estimate our dynamic models, we used data analysis using the panel data fixed effects regression method (Jahmane and Gaies 2020).A panel data sample, a panel survey is defined here as a survey where similar indicators are measured on the same sample at different dates.

III. THE EMPIRICAL RESULTS

Descriptive statistics: The table highlights the descriptive statistics of the variables used in our models, the standard deviations (Std. Dev.) of the dependent variables do not exceed twice their mean, which indicates a relative homogeneity of the variables used between the companies in our sample, in particular for the ROE, Age, Social Pillar scores, Governance Pillar scores.... Shapiro-Wilk test for normal data:

The Shapiro-Wilk test is a test of whether a data series follows a normal distribution. Therefore, if the p-value of the test is significant, the sample does not follow a normal distribution. Following this test only two variables that do not follow a normal distribution, Employees Health & Safety Team and Women manager Work force, there is no normality, so we can see the presence of some phenomena that can influence all the variables studied.

Results of the regressions

Model 1: The link between governance, social performance (measured by all explanatory variables), three control variables, Net Firm Risk, age and ROE and environmental performance (table 1)

Modèles avec Robustesse:

```
Fixed-effects (within) regression               Number of obs      =        33
Group variable: CompanyID                       Number of groups   =         9

R-sq:                                           Obs per group:
     within  = 0.9480                                         min =         1
     between = 0.0086                                         avg =       3.7
     overall = 0.1434                                         max =         8

                                                F(7,8)             =         .
corr(u_i, Xb)  = -0.9799                        Prob > F           =         .

                                              (Std. Err. adjusted for 9 clusters in CompanyID)
------------------------------------------------------------------------------------------------
                           |               Robust
     EnvironmentPillarScore |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
---------------------------+--------------------------------------------------------------------
                       ROE |  -.2364437   .2153905    -1.10   0.000     -.733135    .2602477
              NetFirmRisk |   7.204606   3.944375     1.83   0.000    -1.891139    16.30035
                      AGE |   2.078471   .9213548     2.26   0.000    -.0461771    4.203119
      GovernancePillarScore |   -.289527   .1134855    -2.55   0.000     -.551225    -.027829
 EnvironmentInnovationScore |   .3166858   .0832612     3.80   0.005     .1246852    .5086865
             WorkforceScore |   -.146263   .1358893    -1.08   0.313    -.4596241    .1670982
             AccidentsTotal |   .0108222    .035967     0.30   0.771    -.0721178    .0937622
                  Boardsize |  -.4158535   .3201219    -1.30   0.230    -1.154056    .3223489
        CSRStrategieservice |   .3566359   .0733486     4.86   0.001     .1874936    .5257782
        EmplyeeSatisfaction |   .6066942   .4072948     1.49   0.005    -.3325293    1.545918
  EmployeesHealthSafetyTeam |  -7.590441   2.380644    -3.19   0.003    -13.08022   -2.100666
           HumainrigthScore |    .292941   .2047708     1.43   0.000    -.1792614    .7651434
NumberofEmployeesfromCSRrep |  -.0044874   .0026229    -1.71   0.125    -.0105358     .001561
              womenemployee |   .0172977   .5604991     0.03   0.000    -1.275216    1.309811
                      _cons |  -24.81217   77.57722    -0.32   0.000    -203.7055    154.0812
---------------------------+--------------------------------------------------------------------
                    sigma_u |  89.297683
                    sigma_e |  3.3916198
                        rho |  .99855952   (fraction of variance due to u_i)
------------------------------------------------------------------------------------------------
```

Table 1

To justify the choice of our fixed effects regression method in panel data (Jahmane and Gaies 2020), it is essential to perform the Hausman specification test to choose the model to be used (fixed effects or random effects).

Model 2: The relationship between governance, social performance (measured by all explanatory variables), three control variables, Net Firm Risk, Age, ROE and Broad gender diversity Percent and environmental performance (Table 2)

Modèles avec Robustesse:

```
Fixed-effects (within) regression               Number of obs      =        33
Group variable: CompanyID                       Number of groups   =         9

R-sq:                                           Obs per group:
     within  = 0.9489                                         min =         1
     between = 0.0086                                         avg =       3.7
     overall = 0.1434                                         max =         8

                                                F(7,8)             =         .
corr(u_i, Xb)  = -0.9799                        Prob > F           =         .

                                              (Std. Err. adjusted for 9 clusters in CompanyID)
------------------------------------------------------------------------------
                             |               Robust
     EnvironmentPillarScore |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----------------------------+------------------------------------------------------------------
                        ROE |   -.1564776   .2173905    -1.10   0.000     -.793135    .2692477
                NetFirmRisk |    6.514606   3.944375     1.85   0.000    -1.831639    14.33435
                        AGE |    2.098671   .9013548     2.86   0.000    -.0861771    4.303119
      GovernancePillarScore |   -.179587    .1034864    -2.65   0.000     -.532225    -.026289
 EnvironmentInnovationScore |    .3176878   .0932614     3.88   0.000     .1326852    .5456865
             WorkforceScore |   -.136273    .1376793    -1.05   0.015     -.4591245   .1673487
             AccidentsTotal |    .0106112    .025787     0.31   0.201     -.0761178   .0908734
BroadgenderdiversityPercent |    .5749954   .6119582    -0.61   0.000     -1.785064   1.037293
                  Boardsize |   -.2158535   .3101219    -1.30   0.000     -1.174056   .4523489
        CSRStrategieservice |    .3666359   .0722486     4.45   0.001     .1874345    .5257234
        EmplyeeSatisfaction |    .6166978   .4172948     1.34   0.005     -.3324567   1.514679
  EmployeesHealthSafetyTeam |   -7.694545   2.397674    -3.18   0.003     -16.08022   -2.760666
           HumainrigthScore |    .397946    .2149878     1.34   0.000     -.1745734   .7652367
NumberofEmployeesfromCSRrep |   -.0057896   .0024356    -1.61   0.105     -.0106428    .001113
              womenemployee |    .2796645   .5602476     0.02   0.000     -1.234213   1.397897
                      _cons |   -22.89978   79.56633    -0.22   0.000     -205.7677   151.5678
-----------------------------+------------------------------------------------------------------
                    sigma_u |  89.897683
                    sigma_e |  3.9916198
                        rho |  .99955952   (fraction of variance due to u_i)
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Table 2

Following the Fisher test our model is well significant, which indicates that our chosen variables explain the environmental performance (EPS) well. According to the first model, we can see that there is a positive (significant) link between environmental performance (EPS), age, Environment Innovation Score, Work force Score, CSR Strategie Service, Emplyees Satisfaction, Net firm Risk (with the largest multiplication coefficient =7.80), but, this link is not significant in the case of the variable Work accident The financial performance measurement variable "ROE" has a significant negative impact on environmental performance, all the other explanatory variables have an equally significant negative link, with the exception of the Word force Score variable (non-significant positive link, idem as in the first model), governance has a significant negative link on environmental performance.

When reading this model, with the presence of the "Governance pillar Score" variables, the environmental performance (EPS) has a significant value of (-24.81) if all the explanatory variables are zero, in the other cases, as an example. An increase of 1% in governance implies a decrease of 0.2895% in the environmental performance indicator (EPS), an increase of 1% in Board size leads to a decrease in environmental performance (EPS) of 0.41% (0.29% in the first model). The results of the second model indicate improved impacts of the variables on environmental performance and this is due to the addition of the new control variable "the percentage of women on the board of directors. Thus, an increase of 1% in the Broad gender diversity Percent also implies an increase of 0.575% in the environmental performance indicator (EPS). Thus, we see that the impact of ROE increases from (-0.236) to (-0.156), governance increases from (-0.289) to (-0.179), and board size increases from (-0.415) to (-0.215).

It should be noted that the level of staff satisfaction also increased from 0.606 to 0.616. Following this model we also find that the constant increases from (-24.81) to (-22.899), which may indicate the importance of the variable "Broad gender diversity Percent" in our model, so with the presence of diversity in the board of directors, environmental performance improves, and even if all explanatory variables are zero.

Discussion and conclusion:

After testing our two models, testing the link between governance, social performance (measured by all explanatory variables), three control variables, Net

Firm Risk ,age and ROE and environmental performance, in the first place, then we played the percentage of women on boards, our results are well improved and we found the important role of women's presence on the board and thus in environmental decision making, Gender diversity is really seen as an advantage for boards and has multiple contributions: different points of view, behaviours, knowledge, experiences... It has a positive impact on the different working groups. The literature review underlines that gender diversity on boards of directors is of real interest to the company as it positively impacts its performance, both social, environmental and economic, where the work of employees is more effective if the team is mixed (Hillman and Dalziel, 2003). We therefore sought to find out the contribution of gender diversity, and in part, that of gender within the board of directors. This is confirmed by the results of Dang et al (2017) who found that gender mix has benefits for the company. These benefits are varied and apply to all levels of the company, up to the board of directors, where a positive contribution is found in relation to the presence of women, particularly as they bring about a change in men's behaviour (Isidro and Sobral, 2015).

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