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TESIS DOCTORAL

***GOBIERNO CORPORATIVO Y
PLANTEAMIENTO MEDIOAMBIENTAL
DE LA EMPRESA***

MENCIÓN DE DOCTORADO EUROPEO

Tesis doctoral presentada por

Natalia Ortiz Martínez de Mandojana

Director:

Profesor Dr. Juan Alberto Aragón Correa

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Autor: Natalia Ortiz Martínez de Mandojana
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“Dejamos de temer aquello que se ha aprendido a entender”

-Marie Curie

*“No podemos resolver problemas pensando de la misma manera
que cuando los creamos”*

-Albert Einstein

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CAPÍTULO 1

INTRODUCCIÓN

1.1 Introducción al Tema Objeto de Estudio

1.1.1 Introducción

En 1987 la Comisión Mundial para el Medioambiente y el Desarrollo, WCED (creada tres años antes por la Asamblea General de Naciones Unidas) popularizó el término “desarrollo sostenible” como una forma de desarrollo o progreso que satisface las necesidades del presente sin comprometer la capacidad de las futuras generaciones para sostener las suyas propias. La necesidad de un cambio de actitud de las empresas en relación con el medio ambiente se empezaba a perfilar como una de las cuestiones clave de la gestión empresarial. Desde entonces, las llamadas de atención sobre problemas como el agujero en la capa de ozono, el cambio climático, o los efectos perjudiciales de la contaminación en la salud humana han sido incesantes. El protagonismo de las empresas en estos problemas es indiscutible, baste recordar las recientes imágenes del derrame causado por *British Petroleum* en el Golfo de México y las importantes consecuencias derivadas del accidente.

Hoy, la capacidad de integrar en la gestión empresarial la sostenibilidad, en general, y los temas medioambientales, en particular, parece cada vez más relevante para las empresas. En los últimos años se ha avanzado mucho en la consecución de este objetivo, sin embargo, aún queda mucho por hacer. De hecho, las empresas han adoptado planteamientos medioambientales que abarcan una gama muy heterogénea de prácticas y también existen importantes diferencias entre unas y otras en cuanto al desempeño logrado en el campo medioambiental (Delmas, Russo y Montes-Sancho, 2007). Por ello, se hace necesario seguir analizando las relaciones y condicionantes que llevan a estos distintos planteamientos y resultados.

La actualidad de los temas sobre gobierno corporativo también es patente. Tanto los escándalos corporativos de principios de siglo (ej. *Enron*) como los casos más actuales puestos de manifiesto con la crisis financiera (ej. *Lehman Brothers*), han dejado al descubierto grandes dudas sobre la manera en la que las empresas están siendo gobernadas. Por ello, pese a que la disciplina de gobierno corporativo goza ya de una consolidada trayectoria, todavía quedan importantes incógnitas sobre los incentivos, mecanismos de poder e incluso sobre los valores y motivaciones en el gobierno corporativo de las empresas y sus implicaciones en las decisiones empresariales.

En este trabajo relacionamos el gobierno corporativo con los planteamientos medioambientales de la empresa. El estudio conjunto de ambas temáticas ha sido limitado hasta la fecha. En concreto, nos centramos en aspectos de gobierno corporativo que todavía plantean interrogantes sobre sus implicaciones generales en la empresa y que, simultáneamente, son de indiscutible relevancia para la comprensión de las decisiones medioambientales de la misma. A grandes rasgos, las principales preguntas que nos proponemos resolver son las siguientes:

- ¿Ejerce influencia la propiedad de los directivos y la propiedad de los inversores institucionales en el desempeño medioambiental?
- ¿Actúa un buen desempeño medioambiental como reclamo para los inversores institucionales?
- ¿Se puede reducir la incertidumbre sobre recursos necesarios para el desarrollo de estrategias medioambientales proactivas a través de lazos creados con miembros del consejo de administración (consejeros compartidos)?

- ¿Pueden los consejeros compartidos con los proveedores de recursos relacionados con los sistemas de producción actuales de la empresa ser una barrera para su conversión hacia procesos de generación menos contaminantes?
- ¿Afecta la perspectiva temporal de los directivos y consejeros en el desempeño medioambiental?
- ¿Cómo influyen respectivamente la permanencia de los directivos y consejeros en el puesto y la separación entre las funciones de presidente del consejo y de primer ejecutivo sobre la relación existente entre la perspectiva temporal de los directivos y consejeros y el desempeño medioambiental?

1.1.2 Delimitación del Tema Objeto de Estudio

Siendo el objetivo principal de este trabajo analizar aspectos de gobierno corporativo y de planteamiento medioambiental de la empresa, se hace necesario, en primer lugar, delimitar los conceptos básicos sobre los que se articula esta tesis.

Al hablar de planteamiento medioambiental se está partiendo de un concepto amplio, dentro del cual englobamos tanto la estrategia medioambiental que las empresas adoptan como el desempeño logrado por las mismas en este campo.

La estrategia medioambiental es el conjunto de prácticas medioambientales y el grado en el que las mismas se desarrollan y son coherentes entre sí (Aragón-Correa, 1998; Hart, 1995; Sharma y Vredenburg, 1998). La literatura ha definido diferentes tipos de estrategias medioambientales en función de las distintas prácticas que las empresas adoptan para la protección del medio ambiente. Estas suelen representarse a lo largo de un continuo que, con alguna matización, representa una progresión según el

nivel de proactividad. Así, a un lado del continuo, han sido definidas las estrategias medioambientales proactivas como aquellas que implican la anticipación a futuras regulaciones y tendencias sociales y el diseño de operaciones, procesos y productos alternativos para prevenir voluntariamente el impacto medioambiental negativo (Aragón-Correa y Sharma, 2003). Este tipo de estrategia contrasta con la definición de estrategia medioambiental reactiva que se basa en la reparación (habitualmente forzada por la ley) de daños e impactos ya causados (Aragón-Correa, 1998; Russo y Fouts, 1997; Sharma y Vredenburg 1998).

Centrándonos en las estrategias proactivas, Hart (1995) también distingue tres posibles niveles de proactividad: prevención de la contaminación, garantía de producto y desarrollo sostenible. El autor señala, además, que estas estrategias están interconectadas en el sentido de que hay un camino lógico (dependencia del camino) que pasa por las distintas estrategias hasta llegar a la más proactiva, y destaca la importancia de ir acumulando recursos asociados con estas tres estrategias en paralelo, para poder llegar al mayor nivel de proactividad.

El concepto desempeño medioambiental incluye los efectos que los productos y los procesos productivos de las empresas causan en el ecosistema. Estos efectos se expresan midiendo un conjunto bastante amplio de variables que se fijan dependiendo del específico sector de actividad de la empresa o el área de interés que se está considerando (Azzone y Noci, 1996). Ejemplos de estas medidas son las emisiones contaminantes, los desechos sólidos, el consumo de agua y de energía o los vertidos y las aguas residuales.

En el capítulo uno y en el capítulo tres de este trabajo relacionamos características de gobierno corporativo con el desempeño medioambiental de la

empresa, mientras que en el capítulo dos, las relaciones se plantean con respecto a la adopción de una estrategia proactiva por la empresa.

El segundo bloque de conceptos sobre los que se sustenta esta tesis procede de la disciplina del gobierno corporativo. Definir qué se entiende por gobierno corporativo es complejo debido a la gran variabilidad de descripciones que pueden encontrarse en la literatura, cada una de las cuales suele, además, englobar una opción ideológica.

La Organización para la Cooperación y Desarrollo Económico (OCDE) definió de forma amplia en 1999 gobierno corporativo como el proceso a través del cual las empresas son dirigidas y controladas. Para Monks y Minow (2001), gobierno corporativo es la relación entre los distintos participantes en la determinación de la dirección y los resultados de las corporaciones. Asimismo, destacan que los principales participantes son los accionistas, los directivos y el consejo de administración.

Actualmente, muchos autores apuestan por ampliar este concepto englobando en él, además de las relaciones entre los accionistas, los directivos y el consejo de administración, el contexto donde el gobierno corporativo es aplicado. Esto es, proponen incorporar la influencia de los mercados de capitales, las instituciones, los mecanismos regulatorios e incluso la relación con los “stakeholders” o partes interesadas contractuales -ej. consumidores, proveedores, empleados- y no contractuales -ej. organizaciones no gubernamentales y la sociedad en general (Tricker, 2009). La revista Internacional: *Corporate Governance: An International Review*, fundada en 1972 y referente actual de esta materia, apoya también un concepto amplio definiendo el gobierno corporativo como “*el ejercicio de poder en las entidades corporativas con fin de aumentar el valor proporcionado a los diversos stakeholders de la organización*”.

Aun siendo creciente el apoyo de los autores hacia un enfoque amplio, la problemática respecto a las relaciones entre propietarios, los consejos de administración y los directivos, siguen protagonizando de forma mayoritaria la literatura sobre gobierno corporativo (Tricker, 2009). En esta investigación prestamos atención a la influencia de los propietarios, de los consejeros compartidos y de la perspectiva temporal de consejeros y directivos en el desarrollo medioambiental de la empresa. A continuación describiremos una serie de conceptos útiles para el seguimiento de los capítulos que recogen estos análisis.

En el capítulo dos de este trabajo relacionamos los propietarios de la empresa con el desempeño medioambiental. Desde un punto de vista formal, los propietarios tienen la potestad de gobierno de la empresa y son los que en última instancia deciden sobre el futuro de su organización. Es verdad que en las grandes sociedades cotizadas el accionista común tiene poco peso real y es el consejo de administración quien fiduciariamente ejerce esta función. Es más, en la práctica en ocasiones este poder ha recaído en manos de los propios directivos debido a la constitución de consejos pasivos y poco profesionales (Bainbridge, 2008). Sin embargo, determinados tipos de propietarios pueden tener un mayor peso y una mayor capacidad para influir en la estrategia de la organización. Este es el caso de los propietarios directivos y de los inversores institucionales.

La propiedad en manos de los directivos se ha estudiado extensamente como un mecanismo de alineación de intereses entre propietarios y directivos. El debate acerca del papel de los inversores institucionales, entendidos como entidades que captan recursos financieros del público y los dedican a actividades de inversión (Garrido, 2002), en cambio, es mucho más reciente. El ascenso de los inversores institucionales es

especialmente manifiesto en el mercado estadounidense donde, a comienzos del siglo veintiuno, sumaban ya más de la mitad de las participaciones accionariales (Goldman y Filliben, 2000) y en el británico, donde la importancia de estos inversores alcanza niveles similares. En los demás países de Europa, el crecimiento de este tipo de inversores también ha sido acelerado aunque no alcanza los niveles presentes en el contexto anglosajón (Garrido, 2002).

En el tercer capítulo analizamos la probabilidad de la adopción de una estrategia medioambiental proactiva en relación con una característica del consejo de administración: la presencia de consejeros compartidos. Un consejero compartido es aquél que simultáneamente pertenece al consejo de administración de dos o más empresas distintas (Haunschild y Beckman, 1998).

Cuando la literatura ha abordado el estudio de las funciones del consejo de administración ha destacado tres posibles papeles interrelacionados: vigilancia, estratégico y servicios (Zahra y Pearce, 1989). Los primeros trabajos explicaban desde el prisma de la teoría de la agencia que el acento debía ponerse en el primero de ellos (Fama y Jensen, 1983). Sin embargo, cada vez abundan más los trabajos en los que, sin dejar de aceptar este rol como importante, enfatizan la capacidad del consejo como proveedor de recursos y capacidades para la empresa. Así, de acuerdo con la teoría de la dependencia de recursos, los consejos de administración son mecanismos a través de los cuales las empresas pueden reducir la incertidumbre y la dependencia con el exterior (Hillman, Cannella y Paetzold, 2000; Pfeffer y Salancik, 1978). En concreto, una situación que puede aumentar la capacidad de los consejeros, facilitando esta dotación y soporte de la empresa, es su participación en varios consejos (Hillman et al., 2000).

La presencia de consejeros compartidos en los consejos de administración de las empresas está muy extendida a nivel mundial. Para el caso concreto de Estados Unidos, que es el contexto donde analizamos esta relación, el periódico *Financial Times* publicó en 2009 que el 55% de los consejeros de las empresas estadounidenses incluidas en el índice S&P 500, actuaban como consejeros en más de un consejo de administración (Masters, 2009). En España, el periódico *El País* publicó, también en 2009, un reportaje en el que se llamaba la atención sobre el gran número de consejeros que ocupaban sus cargos en más de una compañía (ej. Demetrio Carceller lo era de Gas Natural, Ebro Puleva, Sacyr, CLH y Unión Fenosa; Santiago Bergareche, de Ferrovial, Gamesa, Dinamia, Cepsa y Vocento).

En el cuarto capítulo relacionamos la perspectiva temporal de los directivos y consejeros con el desempeño medioambiental de la empresa. Planteamos que, en el corazón de toda decisión medioambiental hay un dilema de asignación temporal. Por ello, es importante el análisis de las características de gobierno corporativo que se relacionan con la perspectiva temporal de los individuos que toman las decisiones y con la capacidad para que la misma se traslade a la perspectiva temporal de la empresa.

La perspectiva temporal de los individuos se define en función de las distancias hacia el pasado y el futuro que los mismos consideran como referencia a la hora de analizar los eventos *-temporal depth-* y en función de la importancia que se le asigna al presente, al pasado y al futuro *-temporal focus-* (Bluedorn, 2002). En el análisis propuesto, nos centramos en las características que llevan a una perspectiva hacia el futuro- *future time perspective-* que es aquella visión de los individuos en la que las distancias de tiempo que se analizan como referente son amplias y se concede una mayor importancia al futuro (Bluedorn, 2002). Sobre la base de la teoría del estamento

superior o “upper echelon theory”, según la cual los resultados organizacionales son reflejo de los valores y conocimientos de los directivos (Hambrick y Marson, 1984), puede desprenderse que la perspectiva temporal de los decisores en la empresa determinará la perspectiva temporal de la organización.

Los estudios recogidos en el capítulo 3 y en el capítulo 4 usan como contexto de análisis la industria eléctrica en Estados Unidos. Esta industria ha vivido recientemente una profunda remodelación hacia la desregularización y liberalización lo que ha supuesto la creación de un entorno nuevo para las empresas que operan en él. La adaptación a los cambios derivados de los procesos de desregularización y liberalización es para cualquier sector extremadamente compleja y puede llegar, incluso, a suponer una pérdida de productividad para las empresas implicadas (Grifell-Tatjé y Lovell, 1996).

En un contexto desregulado, las empresas eléctricas tienen mayores incentivos para reducir sus costes a través de la mejora de su eficiencia y productividad (Grifell-Tatjé y Kerstens, 2008). Ahora bien, la liberalización y, especialmente, la posibilidad de elección de compañía eléctrica por los consumidores, también crea incentivos a las empresas para buscar otras formas de competir. Esto es, además de la opción de buscar una ventaja en costes, las empresas pueden tratar de ofrecer un producto diferenciado por el que el cliente esté dispuesto a pagar un sobreprecio. En el mercado eléctrico, esta diferenciación puede ser la de ofrecer energía generada a través de procesos menos contaminantes (Brennan, Palmer y Martínez, 2002; Delmas et al., 2007).

1.1.3 Evolución de los Estudios sobre Medioambiente y Empresa

Hasta no hace mucho, la protección del medioambiente era considerada sólo de forma periférica por las empresas, como un tema relacionado con la responsabilidad social corporativa y que se afrontaba desde la óptica de ideales éticos y sociales que debían estar presentes en las empresas como miembros de la sociedad (Johnson y Greening, 1999). El planteamiento, además, pasaba por considerar la creciente preocupación medioambiental como una amenaza para la empresa, que debía acatar las cada vez más prolíficas legislaciones medioambientales, añadiendo costes e incertidumbre en su actividad. Así, muchas de las primeras aproximaciones a los temas de medioambiente y empresa fueron en esta línea (ej. Walley y Whitehead, 1994).

Porter y Van Der Linde (1995) fueron de los primeros investigadores en llamar la atención sobre la necesidad de un cambio de orientación a la hora de abordar la preocupación por el cuidado del medio ambiente. Estos autores introdujeron el concepto de “compensación de la innovación”, defendiendo que, bien diseñados, los estándares medioambientales podían mejorar la innovación y ésta no sólo podía bajar los costes netos de cumplir con la regulación medioambiental, sino que, además, podía llevar a ventajas absolutas sobre las empresas de países extranjeros no sujetas a similar regulación. Por tanto, las empresas debían comenzar a reconocer el medioambiente como una oportunidad competitiva y no como un coste molesto o amenaza que se podía posponer (Porter y Van Der Linde, 1995). A partir de aquí, son muchos los trabajos que han encontrado que los recursos y capacidades desarrollados para la consecución de objetivos medioambientales pueden suponer una ventaja competitiva para la empresa, por ejemplo mejorando su productividad (Garcés-Ayerbe y Galve-Gorriz, 2001), o generando un impacto positivo en su rentabilidad financiera (ej. Álvarez-Gil, de Burgo

y Céspedes, 2001; Aragón-Correa, García-Morales y Hurtado-Torres, 2005; Bansal y Huntler, 2003).

Junto a ello y de forma creciente, los estudios han comenzado a integrar las consideraciones medioambientales como variables que afectan ampliamente a muchas funciones de la empresa, dejando a un lado la visión periférica que la entendía sólo como cuestión de responsabilidad social corporativa. De este modo, se ha avanzado en la consideración de la gestión medioambiental como una cuestión clave a la hora de la toma de decisiones estratégicas de las empresas tanto a nivel corporativo, de negocio, funcional y operativo (Aragón-Correa, 1998; Buysse y Verbeke, 2003; Henriques y Sardorsky, 1999; Sharma y Henriques, 2005; Sharma y Vredenburg, 1998).

Con el objetivo de alcanzar una mayor comprensión sobre las posibles decisiones medioambientales que pueden adoptar las empresas se ha acudido habitualmente a dos lógicas distintas: recursos y capacidades e institucional. La primera, mira hacia el interior de la organización, la segunda, enfatiza el contexto social en el cual la empresa opera (Bansal, 2005). Otros trabajos aúnan rasgos, en cierta medida, de una y otra, combinando por ejemplo recursos y capacidades con un enfoque contingente (Aragón-Correa y Sharma, 2003). La teoría de los “stakeholders” también se ha ido configurando como uno de los enfoques principales que ha utilizado la literatura sobre medioambiente. Aunque con mucha menor intensidad, también se encuentran trabajos que utilizan el marco de la teoría de la agencia (Berrone y Gómez-Mejía, 2009), dependencia de recursos (Kassinis y Vafeas, 2006) o enfoques más basados en teorías psicológicas y del comportamiento (Cordano y Frieze, 2000; Flannery y May, 2000).

La teoría institucional mantiene la primacía de las fuerzas exógenas en la configuración de las estrategias medioambientales de las empresas (Hoffman, 1999;

Jennings y Zandbergen, 1995). Así, entre los temas que se han estudiado, encontramos la posible influencia de las regulaciones medioambientales (Rugman y Verbeke; 1998; Majumdar y Marcus; 2001; Bansal, 2005), la atención de los medios de comunicación (Bansal, 2005), la existencia y pertenencia a asociaciones (King y Lenox, 2000), el nivel de competitividad en la industria (Bansal y Roth, 2000) o la cohesión en el sector (Bansal y Roth, 2000).

La teoría de recursos y capacidades, en cambio, analiza cómo bajo un entorno idéntico, las empresas difieren tanto en sus planteamientos estratégicos como en sus resultados. Busca explicar las fuentes de una ventaja competitiva sostenible teniendo en cuenta que los recursos estratégicos están distribuidos heterogéneamente entre las empresas y que las diferencias entre las empresas pueden permanecer en el tiempo. Para que los recursos y capacidades puedan proporcionar una ventaja competitiva sostenible deben presentar, además, una serie de atributos: ser valioso, raro, imperfectamente imitable y no tener sustituto (Barney, 1991). Otros trabajos proponen modelos similares señalando como atributos necesarios para la sostenibilidad de la ventaja competitiva: la durabilidad, transparencia, transferibilidad y replicabilidad (Grant, 1991).

Desde que Hart (1995) abordó las estrategias medioambientales basándose en la perspectiva de recursos y capacidades, son muchos los autores que han abordado esta temática sostenidos por ese enfoque (Aragón-Correa y Sharma, 2003; Christmann, 2000; Marcus y Geffen, 1998; Sharma y Vredenburg, 1998; Sharma, 2000; Russo y Fouts, 1997) dando luz sobre las posibles implicaciones que los distintos recursos y capacidades que poseen las empresas pueden tener en el desarrollo medioambiental de las mismas. Así, por ejemplo, Marcus y Geffen (1998) examinan cómo se adquieren las competencias medioambientales; Sharma y Vredenburg (1998); plantean que la

proactividad medioambiental puede llevar a las empresas a desarrollar únicas y valiosas capacidades, como la capacidad de integración de los “stakeholders”, alto aprendizaje y de mejora continua, dando lugar a que la empresa pueda disfrutar de una ventaja competitiva frente a las demás empresas; o Aragón-Correa y Sharma (2003) quienes proponen que la gestión medioambiental proactiva puede actuar como una valiosa capacidad dinámica para la organización que la pone en marcha.

La teoría del “stakeholder” también ha sido una de las líneas de investigación con mayor relevancia en el análisis de la relación entre empresa y medio ambiente. Freeman (1984: 46) define “stakeholder” como “cualquier persona o grupo de personas que pueda afectar al desempeño de la empresa o que sea afectado por el logro de los objetivos de la organización”. Clarkson (1995) los clasificó como primarios, cuando mantienen una relación directa con la empresa y por tanto tienen capacidad para influir en ella (ej. accionistas, trabajadores, proveedores, reguladores y clientes) y secundarios, aquellos que no tienen una relación directa con la empresa y, por tanto, no son actores principales para la supervivencia de la misma (ej. organizaciones no gubernamentales y medios de comunicación). Sobre la base de estos planteamientos se han analizado varias relaciones.

Por ejemplo, se ha estudiado los efectos que tiene el desarrollo de la capacidad de integración de los “stakeholders” en el comportamiento medioambiental de las empresas (Hart, 1995; Sharma y Vredenburg, 1998). La literatura también ha mostrado que distintos “stakeholders” incentivan prácticas distintas en medioambiente (Buyse y Verbeke, 2003; Sharma y Henriques, 2005) y que la presión percibida de cada “stakeholder” no es igual para todas las empresas. En este sentido, Frooman (1999) planteaba cuatro escenarios de interdependencias de recursos entre los distintos

“stakeholder” y la empresa en función de los cuales determinaba el tipo de influencia que estos podrían ejercer de uso o restricción, directa o indirecta. Sharma y Henriques, (2005) trajeron al campo medioambiental estos planteamientos identificando distintas prácticas medioambientales, más o menos proactivas, en función del tipo de influencia ejercida por los “stakeholders”.

Además de la teoría de los “stakeholders”, que puede considerarse como un enfoque con entidad propia, la teoría de la dependencia de recursos también se ha usado para analizar la influencia de los “stakeholders” en la empresa. En este sentido, Kassinis y Vafeas (2006) plantearon que la respuesta a la mayor o menor habilidad de los “stakeholders” para influir en las decisiones de las empresas se encuentra en la teoría de la dependencia de recursos. La teoría de la dependencia de recursos sugiere que las organizaciones que dependen de entidades externas para la obtención de recursos críticos son más susceptibles que otras al control y la influencia de dichas entidades externas (Pfeffer y Salancik, 1978). Por tanto, la mayor dependencia de una organización respecto a un “stakeholders” implica mayor poder y aumenta su habilidad para influir en las actividades medioambientales de la organización (Kassinis y Vafeas, 2006).

Debido a que las decisiones son adoptadas por individuos, también se ha señalado que, para comprender la relación entre la empresa y el medio ambiente, es necesario estudiar el proceso de toma de decisiones de los participantes en la empresa (Cordano y Frieze, 2000). Resulta conveniente matizar que cuando los trabajos han prestado atención a los decisores de la empresa han dado un peso casi exclusivo a la alta dirección. Un buen ejemplo de esta tendencia quedó de manifiesto en el monográfico que, en verano de 2000, publicó *Academy of Management Journal* titulado

“*Management of Organizations in the Natural Environment*”, punto de referencia clave en el campo medioambiental, en el cual, buena parte de los trabajos recogidos enfocaban su investigación hacia el estudio del equipo directivo (Cordano y Frieze, 2000; Flannery y May, 2000; Ramus y Steger, 2000). Las variables que se han analizado respecto a los directivos se relacionan tanto con incentivos de tipo económico (Berrone y Gómez-Mejía, 2009; Russo y Harrison, 2005), como otras derivadas de interpretaciones de las teorías del comportamiento y consideraciones éticas (Cordano y Frieze 2000; Flannery y May, 2000).

Berrone y Gómez-Mejía (2009) se basaron en la teoría de la agencia para explicar, mediante el análisis de los incentivos económicos, la posición de los directivos ante el medio ambiente. Los autores plantean que los directivos pueden verse tentados a evitar estrategias medioambientales y asignar recursos a inversiones más conservadoras. Esta actitud se deriva de la aversión al esfuerzo y al riesgo del agente. Esto es, aún cuando los directivos puedan reconocer la importancia que tiene el buen funcionamiento medioambiental para las instituciones y los grupos de interés, éstos pueden ser renuentes a poner en ejecución las estrategias medioambientales, ya que pueden suponer una mayor complejidad de su función directiva a la vez que se relacionan de manera ambigua con el rendimiento financiero de la empresa. Por ello, si no se compensan el riesgo y el esfuerzo crecientes asociados a las inversiones medioambientales, los ejecutivos probablemente asignarán el capital a alternativas menos inciertas, manteniendo (o empeorando) el nivel actual de contaminación de la empresa y deteriorando consecuentemente su legitimidad.

Finalmente, también se ha prestado atención a las preferencias y valores de directivos sobre la base de teorías del comportamiento. En este sentido, Flannery y May

(2000), utilizando planteamientos de la teoría del comportamiento planificado de Ajzen (1985), analizan la influencia de las actitudes hacia el comportamiento medioambiental, el sentimiento de responsabilidad moral, la percepción de control del comportamiento y la influencia de normas subjetivas sobre el comportamiento medioambiental. También Cordano y Frieze (2000), en el mismo número monográfico de *Academy of Management Journal*, propusieron una aplicación en la teoría del comportamiento planificado de Ajzen para analizar las preferencias de comportamiento de los directivos medioambientales.

La existencia de estudios sobre de las motivaciones económicas (ej. Berrone y Gómez-Mejía, 2009) y de preferencias y valores de los directivos (ej. Cordano y Frieze, 2000; Flannery y May, 2000) en materia medioambiental no es contradictoria. De hecho, la combinación de las reflexiones de ambos tipos de análisis ofrece un enfoque más fiel de la realidad. Como señalaron Tetlock, Peterson y Berr (1993: 500) *“las intenciones que subyacen a la conducta a menudo se componen de complejas mezclas de motivos (algunos buenos y otros malos), lo que hace que en las decisiones a menudo se requiera equilibrar objetivos en conflicto, y la vida misma es un proceso de cambio continuo que requiere una actualización frecuente de los supuestos básicos y creencias”*.

1.1.4 Interés de la Investigación

Este trabajo presenta una compilación de tres artículos que relacionan el gobierno corporativo con el planteamiento medioambiental de la empresa. El interés de esta investigación se basa en una serie de características que la hacen valiosa desde un punto de vista científico.

Relevancia y actualidad del tema de estudio. Como señalaba en las primeras líneas de esta introducción, las dos temáticas analizadas gozan de una gran actualidad. Nuestro trabajo pretende dar respuestas a una serie de interrogantes cuya fuerza ha crecido en los últimos años a medida que la práctica empresarial ha dejado al descubierto importantes deficiencias de los sistemas de gobernanza y medioambientales de la empresa (ej. *Lehman Brothers* y *British Petroleum*, respectivamente).

Carácter novedoso. El estudio conjunto de gobierno corporativo y medio ambiente no está muy extendido. Las relaciones que se plantean analizar constituyen campos en los que los trabajos previos arrojan importantes contradicciones (ej. la influencia de la propiedad en manos de los directivos en el desempeño medioambiental) o no han sido nunca previamente analizados como tal (ej. la influencia de la perspectiva temporal de los individuos en el desempeño medioambiental). En todos los casos, los enfoques últimos difieren de lo planteado por la literatura anterior.

Desarrollo teórico. Para cada una de las relaciones específicas a analizar, nos apoyamos en el enfoque teórico que, bajo nuestro punto de vista, posee un mayor poder predictivo. El resultado es el desarrollo de tres teorías que, lejos de contradecirse, se complementan para darnos una idea de los incentivos, mecanismos de poder e incluso valores y motivaciones que llevan a las decisiones empresariales.

Por otro lado, debido a que el desarrollo medioambiental es un planteamiento ligado estrechamente a la supervivencia a largo plazo de la empresa, los argumentos teóricos que articulamos para comprender la relación con el medioambiente pueden, en la mayoría de los supuestos, extrapolarse al objetivo general de que las empresas deben gobernarse de manera que aseguren su supervivencia en el tiempo. De esta manera, pretendemos que nuestro estudio no sólo contribuya al proceso de desarrollo, mejora y

consolidación de la investigación sobre gestión medioambiental, sino que también pretende ser de utilidad para la mejor comprensión de las relaciones de gobierno corporativo analizadas.

En el primer artículo de los que componen la tesis (capítulo dos) planteamos, manteniendo el enfoque de la teoría de la agencia, un debate más allá de la tradicional preocupación entre propietarios, directivos y rentabilidad financiera. En este trabajo analizamos los incentivos que determinados tipos de propietarios pueden tener para apoyar un mejor desempeño medioambiental. Para entender con profundidad la relación de agencia que surge entre propietarios y directivos es necesario conocer cuáles son los intereses del principal. La literatura previa asume que el interés del propietario es una mayor rentabilidad financiera. Sin embargo, en la actualidad no puede obviarse que la sensibilidad social hacia el medioambiente es creciente y puede ejercer un claro impacto en las preferencias de los accionistas.

Un ejemplo evidente de la creciente inclusión en las preferencias de los inversores de utilidades más allá de las meramente económicas es la proliferación a nivel global de los fondos de inversión socialmente responsables (fondos ISR) (Balaguer-Franch, 2007). Estos fondos tienen en cuenta la dimensión social, ética o medioambiental de los valores en los cuales invierten. Estados Unidos es el país donde el mercado de la ISR está más desarrollado. En Europa este mercado también está cada vez más maduro, siendo Reino Unido el que mantiene el liderazgo (Balaguer-Franch, 2007). En concreto, de acuerdo con el Estudio Europeo de Inversión Socialmente Responsable de 2008, el mercado europeo de ISR experimentó un crecimiento del 102% entre los años 2005 a 2007 (Eurosif, 2008).

En el segundo artículo (capítulo tres), extraemos interesantes conclusiones para completar la teoría de la dependencia de recursos (Pfeffer y Salancik, 1978) en el marco de estudios sobre los consejos de administración y, en especial, en las situaciones de consejeros compartidos. Nuestro trabajo completa esta teoría analizando cómo los consejeros compartidos pueden ayudar o impedir el desarrollo de una estrategia medioambiental proactiva. Frente a la mayoría de los estudios sobre consejeros compartidos desde la teoría de la dependencia de recursos que se centran en los aspectos positivos (ej. Hillman et al., 2000), nosotros llamamos la atención sobre las consecuencias de recurrir a los consejeros compartidos como mecanismo de reducción de incertidumbre de recursos externos, a saber, la posible falta de autonomía y resistencia a los cambios que puedan suponer una alteración en las necesidades de recursos.

Finalmente, en el tercer artículo (capítulo cuatro de la tesis), desarrollamos una teoría naciente, la de la perspectiva temporal de las organizaciones. Pese al potencial de este enfoque para explicar las decisiones de las empresas, hay relativamente pocos estudios que han explorado la orientación temporal de las organizaciones (ej. Das, 2006; Slawinski, 2010; Slawinski y Bansal, 2009). En este artículo, planteamos que en el corazón de toda decisión medioambiental hay una elección intertemporal (se debe pagar hoy para obtener la recompensa en el futuro). Por ello, aquellas empresas gobernadas por individuos con una perspectiva de futuro asignarán más valor a las inversiones que generan valor a largo plazo, como las inversiones para la obtención de un mejor desempeño medioambiental.

Las conclusiones de este trabajo también tienen implicaciones para entender la relación de los directivos y consejeros con el futuro a largo plazo de las organizaciones

que dirigen. Por ejemplo, detrás de los problemas de Enron existía una decisión temporal. Los directivos primaron los resultados a corto plazo frente a la creación de valor a largo plazo.

Variedad de bases de datos. Para la realización de este trabajo, hemos realizado un gran esfuerzo para la compilación de datos procedentes de fuentes diversas. Concretamente, para el estudio recogido en el capítulo dos hemos utilizado datos que proceden de los cuestionarios realizados por *Carbon Disclosure Project (CDP)* en el año 2008 y de la base de datos *Bloomberg*. En ese año, CDP envió más de 3000 cuestionarios a las mayores corporaciones de todo el mundo solicitando información sobre emisiones de gases de efecto invernadero, los potenciales riesgos y oportunidades que ofrece el cambio climático y las estrategias desarrolladas para gestionar estos riesgos y oportunidades. Por otro lado, *Bloomberg* contiene datos a nivel global sobre precios en tiempo real de más de cinco millones de valores, así como noticias económicas, archivos gráficos y una gran variedad de datos históricos con información financiera y corporativa de empresas. Finalmente, de la base de datos *Compustat Global* hemos obtenido información financiera para otras de las variables definidas en este trabajo.

Para la realización del segundo y tercer artículo elaboramos una base de datos con información financiera, corporativa y medioambiental de empresas eléctricas norteamericanas utilizando un compendio de varias bases de datos. La información para controlar el efecto del proceso de desregulación en la industria eléctrica y los incentivos a las energías renovables para cada estado procede de la información pública suministrada por la *Energy Information Administration (EIA)*. Del registro público de emisiones *Toxic Release Inventory (TRI)* se ha obtenido información para controlar las

emisiones de cada estado. La información sobre desempeño medioambiental, inversión en renovables, generación eléctrica y capacidad para cada empresa se ha obtenido de la base de datos eGRID (U.S. *Environmental Protection Agency*). La información financiera procede de la base de datos *Capital IQ* (ligada a Standard & Poor's). Los datos de gobierno corporativo se han obtenido de la base de datos *EDGAR* que contiene acceso público a documentos de las compañías obligadas a suministrar información financiera a la *Securities and Exchange Commission* (SEC). Subsidiariamente, para los casos en los que no ha sido posible localizar los informes Form 10K y DEF14A en *EDGAR*, los datos de gobierno corporativo proceden de los informes anuales de las empresas.

Formalidad en el análisis empírico. En todas las etapas de este trabajo se ha intentado utilizar los métodos estadísticos más rigurosos para asegurar la fiabilidad de los resultados. La siguiente tabla recoge las diferentes metodologías utilizadas y una breve referencia a los motivos que nos han llevado a su selección. Para la presentación de las tablas de resultados y figuras hemos seguido las líneas de estilo marcadas por la revista *Academy of Management Journal*. Se han utilizado dos paquetes estadísticos para el desarrollo de todos los análisis efectuados en esta tesis: SPSS y LISREL.

Tabla 1.1 Metodologías Empleadas a lo Largo del Trabajo

Título del artículo de investigación	Metodología seguida
<p>The relationship between managerial and institutional ownership and corporate environmental performance</p>	<p><i>Con el fin de recoger los posibles efectos tanto de la propiedad institucional en la mejora del desempeño medioambiental, como de esta mejora en el incremento de fondos de inversores institucionales, hemos utilizado un “path” análisis usando el método de estimación de mínimos cuadrados no ponderados (ULS) con LISREL.</i></p> <p><i>Esta técnica nos permite integrar simultáneamente una serie de ecuaciones de regresión múltiple diferentes pero a la vez interdependientes, ya que las variables que son dependientes en una relación pueden ser independientes en otra relación dentro del mismo modelo.</i></p>
<p>A resource dependence perspective on the effects of director interlocks on proactive environmental strategies</p>	<p><i>La variable dependiente en este análisis se define como la decisión de invertir en renovables. Es, por tanto, una variable dicotómica que toma el valor 1 si la empresa invierte en renovables y 0 si no lo hace.</i></p> <p><i>La técnica estadística utilizada es una regresión logística binaria.</i></p>
<p>Seeing the future: the importance of upper echelons’ time perspective in shaping corporate environmental performance</p>	<p><i>Para este análisis se ha construido un panel con datos de 126 empresas para tres años distintos. Debido al amplio grado de cambio en la industria eléctrica sólo el 25.4% de las empresas analizadas se mantienen en los tres años de observación resultando un panel con 165 observaciones.</i></p> <p><i>Realizamos regresiones lineales ordinarias agrupadas -pooled OLS estimation regressions- y regresiones moderadoras.</i></p>

1.2 Objetivos de la Investigación

Esta tesis se estructura en tres artículos, cada uno de los cuales presenta objetivos de investigación específicos. Sin embargo, a la vez, los tres artículos se

integran en una temática común que sirve de hilo conductor de todo el trabajo. Esta estructura nos permite deslindar entre el objetivo general y una serie sub-objetivos específicos de cada capítulo.

El objetivo general es el análisis de vínculos existentes entre el gobierno corporativo y el desarrollo medioambiental de las empresas mediante la utilización de diferentes enfoques teóricos y el empleo de una metodología rigurosa y diversa para la verificación de las hipótesis de investigación.

Los objetivos específicos son los siguientes:

1. En el segundo capítulo, el objetivo es conocer si la diferente presencia en la estructura de propiedad de las empresas de los propietarios con mayor capacidad de impacto en las decisiones medioambientales, propietarios directivos e inversores institucionales, lleva a un desempeño diferencial entre empresas. Al mismo tiempo, nos planteamos como objetivo conocer si un buen desempeño medioambiental puede actuar como reclamo de los inversores institucionales.
2. En el capítulo tercero, el objetivo es investigar si la presencia de consejeros compartidos con proveedores de recursos importantes para la adopción de una estrategia medioambiental proactiva, se relaciona positivamente con la probabilidad de que la empresa adopte este tipo de estrategia. Simultáneamente, nos planteamos si consejeros compartidos con los proveedores de recursos necesarios para los actuales procesos productivos se relaciona con una menor probabilidad de desarrollar esta estrategia.
3. En el cuarto capítulo, el objetivo es analizar si las empresas con directivos y consejeros con características que determinan una perspectiva temporal hacia el

futuro tienen más probabilidad de tener un mejor desempeño medioambiental. Al mismo tiempo, analizamos el efecto de una serie de características que pueden moderar la capacidad de estos individuos para trasladar su preferencia temporal a la de la organización, en concreto, el tiempo de permanencia en la empresa y la existencia de figuras separadas de primer ejecutivo y presidente del consejo de administración.

1.3 Estructura del Trabajo de Investigación

El trabajo de investigación presentado contiene, además de este capítulo introductorio, tres artículos de investigación y un último capítulo de conclusiones y recapitulación. A continuación, se describen brevemente los contenidos de cada uno de los capítulos mencionados.

El capítulo 2 de este trabajo recoge el artículo de investigación titulado “*The relationship between managerial and institutional ownership and corporate environmental performance*”. Debido a que los resultados de las inversiones destinadas a obtener mejoras en el desempeño medioambiental, a menudo, se presentan a largo plazo, los directivos pueden disfrutar de mayores beneficios personales realizando otras inversiones de las que se extraigan rápidos resultados y, por tanto, les ayuden a aumentar su reputación y faciliten el avance de su carrera profesional (David, Hitt y Insead, 2001). De acuerdo con la teoría de la agencia, los directivos tratarán de maximizar su propia utilidad por encima de los intereses de los propietarios (Fama y Jensen, 1983). Como consecuencia, los directivos pueden preferir no acometer este tipo de decisiones.

La teoría de la agencia propone que, una manera de conseguir la alineación de intereses entre ambas partes ocurre cuando los directivos tienen acciones que les dan incentivos financieros para perseguir la creación de valor a largo plazo (Wright, Ferris, Sarin, y Awasthi, 1996; Zahra, Neubaum y Huse, 2000). Por ello, un incremento de la propiedad en manos de los directivos puede hacer que éstos presten una mayor atención a los resultados a largo plazo de las compañías en las que trabajan. Por otro lado, a medida que se incrementa la propiedad en manos de los directivos, éstos pueden verse afectados por utilidades de tipo no económico. Por ejemplo, los directivos pueden sentir una mayor identificación con la empresa que dirigen e interiorizar la imagen de la misma ante la sociedad como la propia, lo que podría justificar una mayor preocupación por el desempeño medioambiental (Berrone, Cruz, Gómez-Mejía, Larraza-Kintana, 2010). Por el contrario, los resultados de Kassinis y Vafeas (2002) mostraban que la proporción de acciones en manos de directivos se relacionaba positivamente con la probabilidad de afrontar litigios medioambientales.

Por otro lado, planteamos que los inversores institucionales son inversores profesionales que cuentan con una mayor capacidad e información (Kochhar y David, 1996) y esto les puede permitir analizar y valorar mejor las oportunidades que un buen desempeño medioambiental ofrece. Además, tienen los incentivos necesarios para influir en la estrategia de la empresa debido a las economías de escala derivadas del mayor tamaño de su inversión (Kochhar y David, 1996). También, el miedo de que un mal desempeño medioambiental de las empresas en las que invierten afecte negativamente a su propia imagen, podría llevar a muchas de estas instituciones a que se preocupen por asegurar un buen desempeño medioambiental. De forma paralela, estudiamos si un buen desempeño medioambiental está actuando como reclamo para los

inversores institucionales. Este tipo de inversores tienen un mejor alcance a la información de los resultados medioambientales de las empresas y tienen mayor capacidad para valorar las actuaciones medioambientales de las empresas como una oportunidad.

En el tercer capítulo recogemos el artículo titulado “*A resource dependence perspective on the effects of director interlocks on proactive environmental strategies*”.

El planteamiento de partida es el siguiente. Existen una serie de recursos que son necesarios para la inversión en una estrategia proactiva como los recursos financieros, el equipamiento tecnológico y el conocimiento (Hart, 1995; Henriques y Sadorsky, 1996; Klassen y Whybark, 1999; Lenox y King, 2004; Lewis y Harvey, 2001; Russo y Fouts, 1997; Sharma and Vredenburg, 1998; Sharma, 2000; Shrivastava, 1995). Junto con la posibilidad del desarrollo interno de recursos, las empresas pueden conseguir los recursos que necesitan del exterior (Pfeffer y Salancik, 1978). Planteamos que la existencia de consejeros compartidos con los proveedores de estos recursos puede aumentar la probabilidad de desarrollar este tipo de estrategias.

En esta línea, Pfeffer y Salancik (1978) describen a los consejeros compartidos como un mecanismo que facilita el acceso a recursos externos a través de la cooptación. Cooptación describe la situación en la que una persona o una serie de personas son invitadas a pertenecer al consejo de administración, a un comité consultivo o a algún otro órgano de la empresa que tenga, al menos, la apariencia de adoptar o influenciar las decisiones. Con este nombramiento, la organización tiene la expectativa de que esta persona o personas invitadas a pertenecer al consejo ayudarán a soportar la organización, se preocuparán por sus problemas, la presentarán favorablemente a los demás y tratarán de ayudarla (Pfeffer y Salancik, 1978:163). Sin embargo, el

nombramiento de consejeros compartidos también abre la puerta a la influencia externa en la organización (Pfeffer y Salancik, 1978). Sobre la base de este argumento planteamos que los consejeros compartidos con los proveedores de recursos relacionados con los sistemas de producción actuales de la empresa dificultan su conversión hacia procesos de generación menos contaminantes, ya que estos consejeros pueden suponer compromisos difíciles de romper y falta de búsqueda de nuevos recursos.

En el capítulo 4 se presenta el artículo titulado “*Seeing the future: the importance of upper echelons’ time perspective in shaping corporate environmental performance*”. En este capítulo el planteamiento de arranque es que, las decisiones medioambientales son, en esencia, decisiones intertemporales, pagar hoy para obtener la recompensa en el futuro. En las decisiones intertemporales los valores, preferencias, interpretaciones y actitudes de los decisores tienen un importante efecto. La literatura documenta un gran número de sesgos psicológicos y dilemas éticos que llevan a que los individuos se alejen en la toma de decisiones de lo que sería una predecible solución desde el punto de vista racional (Laverty, 1994; Shu y Bazerman, 2010; Wade-Benzoni, Sondak y Galinsky, 2010).

Así, los individuos con una perspectiva temporal hacia el futuro asignarán más valor a las inversiones que generan valor a largo plazo, como las inversiones para la obtención de un mejor desempeño medioambiental. En concreto, sobre la base de la teoría del estamento superior o “upper echelon theory” (Hambrick y Marson, 1984), planteamos que las empresas con directivos y consejeros con características que determinan una perspectiva temporal hacia el futuro, tienen más probabilidad de tener un mejor desempeño medioambiental. Al mismo tiempo, planteamos que una serie de

características moderan la capacidad de estos individuos para trasladar su preferencia temporal a la organización: el tiempo de permanencia en la empresa y la existencia de figuras separadas de presidente del consejo y de primer ejecutivo.

Finalmente, en el último capítulo del presente trabajo, se exponen las principales conclusiones obtenidas, las implicaciones que dichas conclusiones conllevan tanto para el ámbito académico como para la gestión y los reguladores públicos, las limitaciones encontradas a la hora de realizar el trabajo y las futuras líneas de investigación.

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CAPÍTULO 2

THE RELATIONSHIP BETWEEN MANAGERIAL AND INSTITUTIONAL OWNERSHIP AND CORPORATE ENVIRONMENTAL PERFORMANCE

THE RELATIONSHIP BETWEEN MANAGERIAL AND INSTITUTIONAL OWNERSHIP AND CORPORATE ENVIRONMENTAL PERFORMANCE

ABSTRACT

Prior research has recognized that a better environmental performance may benefit a firm in several ways. However, these positive outcomes only difficultly become apparent in a firm's short-term financial profitability. This paper aims to shed light on some of the implications of influential firm owners in a company's environmental performance, as different ownership structures may lead to different firm objectives and this may affect the environmental performance. In addition, we analyze whether a good environmental performance attracts certain types of investors. We test these relationships using a sample of 82 United States and British firms. Finally, we discuss the results and offer the conclusions of our study.

Key words: Corporate environmental performance, managerial ownership, institutional ownership.

2.1 Introduction

Over the several last years, studies have shown how a better environmental performance may benefit a firm in a variety of ways. For example, a firm may gain a competitive advantage either by producing the same products with fewer resources or developing innovative products for which the market is willing to overpay (Marcus & Fremeth, 2009; Shrivastava, 1995b), thereby improving its international competitiveness (Porter & Van Der Linde, 1995). Commitment also has the potential to reduce the risk of non-compliance and to build a positive reputation that places the firm in a better position in the market (Rugman & Verbeke, 1998). In addition, a firm has the opportunity to develop a commitment to its stakeholders that may result in intangible benefits through interactions with employees, providers or society in general (Buysse & Verbeke, 2003; Sharma & Vredenburg, 1998). However, since the benefits that result from a good environmental performance are usually seen in the long term (Shrivastava, 1995a), there is often a certain discouragement regarding the decision to invest to achieve a better environmental performance.

Despite the fact that some firms operate in the same context and potentially reap all of these benefits, there are important differences in environmental approaches between firms. As a result, not only clearly influential external aspects, such as the environmental regulation (González, Junquera & Fernández, 2006; Rugman & Verbeke, 1998), the attention of media (Bansal & Clelland, 2004; Majumdar & Marcus, 2001), the membership in associations (King & Lenox, 2000) or the degree of competitiveness within the industry (Bansal & Roth, 2000) matter, but also internal firms issues may influence these decisions.

The ownership structure of a firm may be decisive in this sense. Formally, owners are at the helm of firms and ultimately make decisions about the future of their organization. Generally, in large listed companies, common shareholders certainly carry little real weight, and conversely, the board of directors performs the decision-making functions in a fiduciary manner. In practice, sometimes the authority of corporate governance falls in the hands of the managers themselves because of the constitution of unprofessional, passive boards (Bainbridge, 2008). However, certain types of owners, including executive owners and institutional investors, may carry heavier weight and have a greater capability to influence a firm's strategy.

Nevertheless, studies that have focused on corporate owners are difficult to find in the environmental literature. An important exception to this is the work of Darnall & Edwards (2006) who studied how certain aspects relating to ownership influenced the costs involved in the adoption of an environmental management system. Specifically, they compared private-ownership enterprises with publicly-traded organizations and government enterprises and showed that the ownership structure may affect a firm's strategy because it determines a different provision of complementary capacities. The recent study by Berrone, Cruz, Gómez-Mejía and Larraza-Kintana (2010) is among the few that has tackled the relationship between the ownership of firms and environmental performance. This study found that family-controlled firms have a better environmental performance. In family-controlled firms, the preservation of socio-emotional wealth is often more valued than financial gains. This feeling partly derives from the family manager's special identification with the firm and the desire to project and perpetuate a positive image. Therefore, the negative image of the firm due to poor environmental performance is personalized in the family owners themselves, which inflicts "socio-

emotional" losses to the family. Simultaneously, the desire to bequeath the business to future family generations favors the long-term view, and therefore, attention is paid to the environmental demands of the society in which the firm is settled.

The implications that ownership structure has on firm management have been widely covered in research throughout the 20th century. These studies have primarily had the approach of using paradigms from Agency Theory. One of the issues of special concern is how the separation between ownership and control over the listed companies has resulted in potential conflicts between the stakes of managers and shareholders (Fama & Jensen, 1983). In this regard, Hoskisson, Hitt, Johnson, and Grossman (2002) stated that managerial ownership aligns the interests with the owners, which creates a positive effect on the adoption of strategies for internal innovation. Furthermore, Zahra, Neubaum and Huse (2000) have shown that managers have a stronger motivation to increase long-term value when they hold shares in the firms. However, other studies hold the opposite point of view that managerial ownership results in conservative decisions because of the desire to evade the financial risk of their own shares in the firm (Sanders, 2001; Wright, Ferris, Sarin & Awasthi, 1996).

More recently, the growth of the so-called institutional investors has provided new questions for debate in the field. For example, several studies have described how these large shareholders may influence the remuneration to the CEO (David, Kochhar & Levitas, 1998) and on corporate social responsibility (Johnson & Greening, 1999). These large shareholders have even been described as mechanisms for the solving of the traditional problems of agency (Garrido, 2002), but also as creators of other types of problems, particularly problems that arise between majority and minority shareholders (Bainbridge, 2008). The rise of institutional investors is especially evident in the United

States market where, in the early 21st century, they accounted for 65% of the shares of the domestic stock held by institutions (Goldman & Filliben, 2000) and in the British market where the importance of these investors remains at similar levels. In the other European countries, the growth of this type of investor has also been accelerated, although it has not reached the current levels of growth in the British context (Garrido, 2002).

The aim of our study is to analyze the influence of these two types of owners, i.e., executive and institutional investors, in environmental performance. Potentially, both types of owners may have a stronger impact in a firm's strategy. Moreover, we analyzed whether the more sustainable firms attracted more institutional investors.

The contribution of this study is based on three aspects. First, starting from an Agency Theory approach, we go beyond traditional concerns about owners, managers, and financial profitability. We analyze the incentives that certain types of owners may have to support an environmentally sustainable strategy. To gain a deeper insight into the relationship that occurs between owners and managers, it is necessary to know the interests of the principal. Previous studies in the literature have assumed that the owner's interest lies in an ever-increasing profitability. However, the fact that social awareness towards the environment is growing and may exert a clear impact on the preferences of shareholders cannot be a misunderstanding.

Second, this study complements previous studies on the effect of managerial ownership links to environmental performance. The results obtained by previous studies have been contradictory to some degree. In particular, whereas Berrone and Gómez-Mejía (2009) found that managerial long-term remuneration with stock options had a positive effect on environmental performance, Kassinis and Vafeas (2002) showed that

the ratio of stocks in the hands of managers had a positive relationship with the probability of environmental litigation. Although stock option rights do not fully replicate the incentives related to the ownership of stock (Sanders, 2001), the results yielded a different bias, which encouraged us to complete an analysis of the existing relationship between managerial ownership links and environmental performance.

The relationship between good environmental performance and institutional ownership has not been analyzed previously. The growing presence of institutional investors in the capital market, in the sense of organizations that capture financial resources from the general public to engage in investment businesses (Garrido, 2002), and the many calls in the literature for an analysis of the potential influence on the decisions of the firms they invest in (Kochhar & David, 1996) justified our study to conduct studies in this line of research.

Finally, this work complements studies on enterprise and environment by analyzing how institutional owners affect environmental performance and how good performance attracts some types of investors.

Below, we analyze the previous literature to outline a series of hypotheses. We tested the proposed relationships using empirical data. Finally, we discuss the results and offer the conclusions of our study.

2.2 Theoretical Background and Hypotheses

2.2.1 The Search for Good Environmental Performance as a Long-Term Strategy

Although the literature contains a substantial number of studies that support the idea that the development of strategies for sustainability may generate profits (Aragón-

Correa, García-Morales & Hurtado-Torres, 2005; Klassen & Whybark, 1999; Russo & Fouts, 1997), it has been traditionally assumed that these environmentally sustainable developments impose costs and only slowly improve the productivity.

The achievement of good environmental performance requires a considerable initial investment, such as in the purchase and installation of new technologies (Russo & Fouts, 1997) and capabilities (Darnall & Edwards, 2006). In this line of reasoning, Hart (1995) distinguished several levels of pro-activity in environmental strategies, including pollution prevention, product stewardship and sustainable development, and noted that there was a logical pathway that passed through these different strategies to the most proactive strategy, which emphasizes the importance of the gradual accumulation of resources to reach the greatest degree of development. Hart proposed the path dependence and interconnectedness of these strategies.

The sacrifice of a part of the short-term profits of the firm is usually required to significantly improve environmental performance. This is because firms must make significant financial investments in new technologies and processes (Shrivastava, 1995). The firm often has to impose controls, such as through environmental audits (Bansal, 2005), and seek behavioral changes, such as training for employees (Darnall & Edwards, 2006). Nevertheless, after a certain period of adaptation, the capacities and resources that have been developed to achieve the environmental goals may provide a competitive advantage for the firm, such as through an improvement in productivity (Garcés-Ayerbe & Galve-Górriz, 2001) or a positive impact on financial profitability (e.g., Álvarez-Gil, de Burgo, & Céspedes, 2001; Aragón-Correa et al, 2005; Bansal & Huntler, 2003; López, Molina, & Claver, 2008; Russo & Fouts, 1997).

2.2.2 Managerial Ownership and Corporate Environmental Performance

Although the long-term investments of firms are needed to ensure survival and are in accordance with the owners' interests, these investments may be suboptimal from a managerial point of view. Managers enjoy greater personal benefits by making investments that yield rapid results, which consequently helps them gain a good reputation and paves the way for a successful professional career (David, Hitt & Insead, 2001). Because the results of investments that are destined to improve environmental performance often occur in the long term, managers may prefer to postpone these kinds of decisions.

Studies in the literature have analyzed the key role of managers in the choice of the firm's environmental positioning. A manager's interpretation of the environment is influenced by their own personal characteristics (Cordano & Frieze, 2000; Flannery & May, 2000; Ramus & Steger, 2000), their view of environmental issues as either opportunities or threats (Sharma, 2000) and their views of the importance of the pressures from stakeholders on environmental issues (Buysse & Verbeke, 2003; Henriques & Sadorsky, 1999; Kassinis & Vafeas, 2006; López et al., 2008; Sharma & Henriques, 2005). Other studies (Berrone & Gómez-Mejía, 2009; Russo & Harrison, 2005) have focused on analyzing the diverse economic incentives that drive managers to socially more responsible developments. In this regard, how the association of part of the managerial salary with the environmental performance of the firm affects the reduction of polluting emissions (Russo & Harrison, 2005) and the positive effect on environmental performance that derives from the utilization of long-term remuneration systems on managers, such as stock options and restricted stock plans (Berrone & Gómez-Mejía, 2009) have been analyzed.

In accordance with Agency Theory, managers attempt to maximize their own utility over the owners' interests (Fama & Jensen, 1983). One way to achieve an alignment of interests between both parties occurs when managers hold shares that give them financial incentives to pursue the creation of long-term value (Zahra et al., 2000). Similarly, it has been stated that the lack of new investments may be due to a lack of ownership interests by the people who make the decisions. New investments impose a personal cost (e.g., more skills, more uncertainty and more risk) that only with difficulty can be compensated for by the benefits of these investments. This would justify the fact that managers prefer an acceptable level of short-term results before embarking on new investments (Wright et al., 1996). In this regard, an increase in managerial ownership can make managers pay more attention to the long-term results of the firms in which they work.

Moreover, as managerial ownership increases, managers may be affected by non-economic utilities. In cases of high concentrations of managerial ownership, there may occur a greater identification with the firm that they manage and an internalization of the image of the firm as their own before society, which might justify a greater concern for environmental performance. In fact, the dual role of owners and managers is often associated with family ownership (Thomsen & Pedersen, 2000). In this regard, the study of Berrone et al. (2010) suggested an idea similar to the idea just mentioned. In particular, Berrone et al. (2010) state that the negative image of a firm due to poor environmental performance becomes personalized in the family owners themselves, which inflicts "socio-emotional" losses to the family. Moreover, Chua, Chrisman, and Sharma, (1999) state that, in family firms, there is more personal identification with the

firm and a greater concern about the family's reputation, which can foster a more respectful attitude towards the societies in which they settle.

In accordance with previous literature, it can be expected that when managers have ownership interests, they also have more incentive to assess the long-term future of the organizations they manage, and as a consequence, they will make more investments to improve the environmental performance of the firm. Therefore, we propose the following hypothesis:

Hypothesis 1: There is a positive relationship between the percentage of shares held by managers and environmental performance.

2.2.3 Institutional Investors Ownership

Despite the growing presence of institutional investors in capital markets, there is much controversy about the effects of these investors on business strategies (Kochhar & David, 1996). It has been stated that these types of investors seek short-term profits for their own investments in shares (Graves, 1988). However, other studies have shown the existence of a positive relationship between the percentage of ownership by institutional investors and the implementation of actions that increase the value of firms (Hansen & Hill, 1991). For example, Wright et al. (1996) supported the idea that the presence of institutional investors increases the value of firms through its positive influence on the adoption of risk that enables the firms to take advantage of growth opportunities.

Kochhar and David (1996) state that this disparity in results can be explained by the existence of a variety of institutional investors with different preferences and

attitudes. In this regard, the authors distinguish between pressure-sensitive institutions and pressure-resistant institutions. The former are characterized by other relationships with the firm (e.g., banks), but the latter only maintain an investment relationship with the firm (e.g., mutual funds and pension funds) and can exert a more active role and have a greater influence on the innovation of the firm. Hoskisson et al. (2002) proposed an alternative classification. According to these authors, the relationship between institutional ownership and a commitment to internal innovation strategies depends on the temporal point of reference of the institutional investor. These authors distinguished between the institutional investor that is geared towards the long term (e.g., pension funds) and the institutional investor that bears the pressure of short-term profitability (e.g., mutual funds, banks, or investment banks). Although the former choose internal innovation strategies regarding products, the latter prefer external innovation through the purchase of existing products on the market because it can generate profits in a shorter time. Lastly, Johnson and Greening (1999) studied the effects of these two types of institutional investors (i.e., long- versus short-term oriented) in two dimensions of corporate social responsibility, one related to people (e.g., community, employee relations, and social minorities) and the other related to products (e.g., quality and environmental protection). Their results do not provide significant support for the hypothesis that the ownership of investment banks and mutual funds has a negative effect on either of the two dimensions of corporate social responsibility. The hypothesis that pension funds have a positive effect on the human dimension of corporate social responsibility was not confirmed either, albeit the hypothesis regarding the dimension of products was confirmed.

Good environmental performance relates to the firm's medium- and long-term views and represents a commitment to new market opportunities. These strategies are increasingly necessary to ensure the survival of a firm. However, the integration of environmental concerns into the firm's strategy is a complex question that is surrounded by great uncertainty, including the uncertainty that derives from potential new environmental regulations (Lewis & Harvey, 2001).

Institutional investors are professional investors who have greater capabilities and information (Kochhar & David, 1996), and these qualities enable them to better analyze and assess the new market opportunities. Furthermore, institutional investors have the incentives that are needed to influence the strategy of the firm because of the economies of scale that result from the larger size of their investments (Kochhar & David, 1996). Although the literature has suggested that this type of investor may sometimes choose to withdraw their funds instead of influencing the firm's strategy in which they have invested, the potential loss that is derived from the exit of a significant shareholder may encourage these groups to use their voting rights to deliberately influence the firm's strategy (Hansen & Hill, 1991).

Moreover, institutional investors may assess the risk that poor environmental performance may have on the value of their shareholdings if there are sanctions for breaches of environmental regulations or environmental disasters. Finally, the fear that the poor environmental performance of the firms in which they invest may adversely affect their own image could lead many of these institutions to ensure good environmental performance.

Therefore, institutional investors have more knowledge and information about environmental initiatives and more training to understand their implications.

Furthermore, they also gain economic incentives for the promotion of these initiatives in the firms in which they invest because the economies of scale allow a profit to be made through these efforts to influence the management of the firm. For these reasons, we propose that:

Hypothesis 2: Firms with a higher percentage of ownership by institutional investors have a better environmental performance.

2.2.4 Good Environmental Performance as an Enticement for Institutional Investors

Baysinger, Kosnik, and Turk (1991) suggested that institutional investors do not only promote long-term investments in the firms they invest in, but that these investors, who seek long-term profits, invest in firms that adopt strategies intended to achieve this goal. The process of the selection and assessment of these firms is complex because of the difficulty in obtaining reliable information about the actions that firms are performing in this field. Regarding the actions related to the improvement of environmental performance, there is still a significant deficiency of information (Delgado-Ceballos & Rueda-Manzanares, 2010) despite increasing efforts to make the environmental performance of firms more open both publicly (e.g., Toxics Release Inventory or European Pollutant Releases and Transfer Registers) and privately (e.g., Carbon Disclosure Project or Dow Jones Sustainability Indexes) and the greater concern of firms themselves for the preparation and publication of reports on their environmental practices (Kolk, 2008; 2003).

Institutional investors have a better understanding of the market and have more capabilities to assess investment opportunities than individual investors (Hansen & Hill, 1991). These investors are better informed of the environmental performance of firms and are better able to see the environmental actions that are performed by firms as an opportunity. Furthermore, these large shareholders have the incentive to devote more time to the assessment of this type of behavior because they obtain economies of scale in the assessment of investments. For example, Hansen and Hill (1991) found a positive relationship between the intensity of investment in research and development and institutional ownership. The authors stated that institutional investors act as professionals who have greater capabilities than individual investors and can obtain economies of scale from information and analysis. Conversely, individual investors may be more likely to buy and sell because they are driven by the short-term movements in markets (Hansen & Hill, 1991).

In addition, Graves and Waddock (1994) stated that corporate social responsibility is a measure of risk reduction and that institutional investors adopt a rational stance towards investment in the alternative with the possibility of higher profits with less risk. According to the authors, corporate social responsibility reduces the risk of potential, costly sanctions that result from adverse legislation, judicial action, and a lack of consumer confidence.

Large investors have increased their attention to more sustainable firms, which is reflected in the increased effort of some private initiatives to publicize these situations. This is the case with the Carbon Disclosure Project (CDP) whose mission is to facilitate a dialogue between investors and firms on climate change. In 2009, the CDP had more than 475 signatory investors. This initiative has an increasingly important influence. In

Spain, the number of questionnaires sent has changed from 35 administered in 2008 to 85 in 2009 (Carbon Disclosure Project, 2009).

Similarly, the global proliferation of socially responsible investment funds (SRI funds) (Balaguer-Franch, 2007) shows that investors increasingly value goals that transcend the purely economic. These funds take into account the social, environmental, or ethical dimensions of the firm in which they invest. The United States is the country in which the SRI market is most developed. In Europe, this market is also increasingly mature, and the United Kingdom is ahead of the other countries (Balaguer-Franch, 2007). In particular, according to the European SRI Study in 2008, the European SRI market rose by 102% between 2005 to 2007 (Eurosif, 2008).

On the basis of these ideas, we suggest that firms with better environmental performance are more attractive to institutional investors than polluting firms.

Hypothesis 3: Firms with a better environmental performance attract more institutional investors.

2.3 Methodology

2.3.1. Sample

The sample consisted of 82 firms from the United States (36 cases) and the United Kingdom (46 cases). The data were collected from questionnaires prepared by the CDP in 2008 and the Bloomberg database. In 2008, the CDP sent questionnaires to more than 3,000 major corporations around the world that requested information on the emission of greenhouse gases, the potential risks of and opportunities for climate change, and the strategies that they have developed to manage these risks and

opportunities. The CDP received over 1,550 responses. Firms in Europe and North America had a response rate of 83% and 82%, respectively. However, only 50% of the total Global 500 firms in Asia responded (Disclosure Carbon Project, 2008). The Bloomberg database is a financial services system that provides current and accurate financial, economic, and government information that covers all market sectors worldwide. It also features analytics, company financials, historical market data, statistics, and current news reports. Bloomberg database includes CDP questionnaires responses as part of its “*Environmental, Social and Corporate Governance data*” Lastly, we obtained financial information for other variables from the Global Compustat database.

2.3.2 Measurement of Variables

Improvement of environmental performance. Our dependent variable was measured by the firm’s total emissions of greenhouse gases emitted by each firm in 2007 and 2008. The total firm’s emissions have been weighted taking into account the sales in 2007 and 2008, respectively. On the basis of the difference between the years 2007 and 2008, we assessed the improvement made in each firm's environmental performance using the relative reduction of emissions. Greenhouse gases are emissions of carbon dioxide, methane, and nitrous oxide that directly contribute to the warming of the atmosphere.

Managerial ownership. This variable accounted for the percentage of shares that was, on average, held by insiders in 2007.

Institutional ownership. We defined this variable as the percentage of shares held by institutional investors in 2007, which included 13F portfolios, national and International Funds, and insurance companies that appeared on the aggregate level.

Change in institutional ownership. This was the change in the percentage of institutional investors that was derived from data on the corporate reports of two consecutive years (2007-2008).

In addition, we followed the methods used in previous studies by including the following control variables in the model.

Capital intensity t-1. Firms that operate in sectors with capital-intensive production processes generate a greater amount of pollution (Bansal, 2005). To control for the effect of capital intensity on the improvement in each firm's environmental performance, we divided the net value of property, plant, and equipment by the total sales (Bansal, 2005, Sharma & Kesner, 1996). Finally, the variable was normalized by logarithmic transformation.

Profitability t-1. Profitability relates to the focus on environmental issues, i.e., whether these issues are regarded as a threat (Sharma, 2000). Moreover, profitability is an important indicator for institutional investors who analyze it when choosing between investment alternatives (Al-Najjar, 2010). We have taken into account the prior-year return on assets, which is usually found in the literature as an indicator of the financial performance of the organization.

Country. The sample was comprised of firms from two different countries. To control for the possible effects of a national context, we created a dichotomous variable that took a value of 0 for firms from the United Kingdom and a value of 1 for firms

from the United States (i.e., the two countries that were included in our reference sample).

Size t-1. Economies of scale are an important determinant of environmental behavior (Christmann, 2004). Furthermore, firms of larger sizes may be more attractive to institutional investors because they are less exposed to financial risks and bankruptcy (Al-Najjar, 2010). To control the size of the firm, we took the logarithmic transformation of the total assets reflected in the balance of 2007 as an indicator.

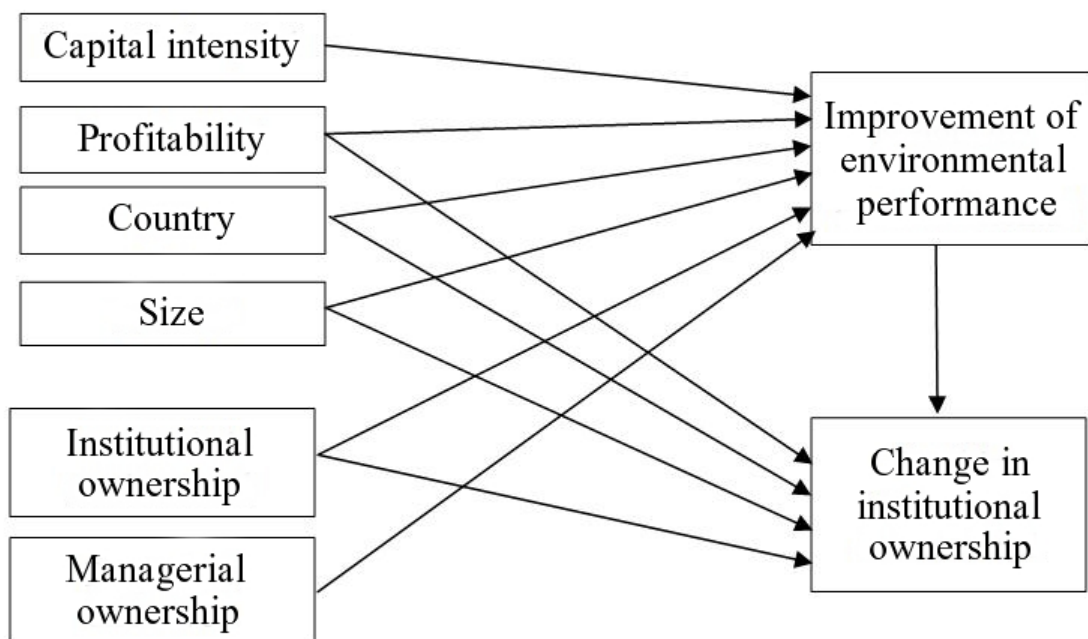
Institutional ownership t-1. The change in the percentage of institutional ownership may be affected by the initial percentage of institutional ownership. Institutional investors play an important role by informing other investors of the best investment opportunities (Al-Najjar, 2010). For this reason, we included the effect of institutional ownership percentage on the change of institutional ownership for each firm in 2007.

2.3.3 Data Analysis

To determine the potential effects of institutional ownership on the improvement of environmental performance and the effects of this improvement on the increase in funds from institutional investors, we performed a path analysis using an unweighted least-squares approximation (ULS) with LISREL 8.8. This technique allowed us to simultaneously integrate several multiple regression equations, which were different but also interdependent because the variables that were dependent on a given relationship could be independent in another relationship within the same model. Therefore, the path analysis allowed us to analyze the causal relationships in a model with more than one dependent variable. Other models that include multiple dependent variables, such as the

multivariate analysis of variance and the canonical correlation analysis, are not appropriate for the model we have outlined because they are only suitable for a single relationship between dependent and independent variables (Hair et al., 2008). Figure 2.1 shows the graphical representation of the model.

Figure 2.1 Path Analysis



2.4 Results

Table 2.1 shows the descriptive statistics and correlations for the variables of the study.

Table 2.1 Mean, Standard Deviations and Correlations

Variable	Mean	S.D	1	2	3	4	5	6	7
1. Improvement of environmental performance	0.11	0.74							
2. Change in institutional ownership	7.86	25.35	.65***						
3. Capital intensity (Ln)	-1.37	1.19	.01	.04					
4. Profitability	9.04	6.65	.00	-.06	.04				
5. Country	0.44	.50	-.06	.07	-.04	.00			
6. Size (Ln)	23.87	1.39	-.10	-.02	-.03	-.33**	-.06		
7. Managerial ownership	1.66	6.13	-.02	-.03	-.09	.27*	.05	-.22*	
8. Institutional ownership	81.36	19.09	-.31**	-.45***	-.14	.12	.34**	-.45***	.12

^a The correlations involving the variable *Country* are polyserial correlations. The rest are Pearson correlations. Significant at †.10; * .05; ** .01; *** .001 level.

Table 2.2 shows the path analysis results, which allowed us to determine the causal relationships between the variables under study. This path analysis was appropriate because the probability of the chi-square statistic was above 0.05, the GFI and AGFI statistics roughly equaled one, and the RMSEA approached zero. The mean values of goodness-of-fit and the results of the analysis are listed in Table 2.2.

The statistics did not show significant relationships regarding the control variables. The effect of managerial ownership on environmental performance was not significant. Therefore, Hypothesis 1, which held that there was a positive relationship between the percentage of shares held by managers and the environmental performance, cannot be accepted.

Moreover, the statistic t showed that there was a significant negative relationship between institutional ownership and the improvement of environmental performance. However, the proposed hypothesis held that firms with a higher percentage of ownership by institutional investors would have a better environmental performance.

Therefore, Hypothesis 2 must be rejected. The next section discusses the possible reasons for this result.

Table 2.2 Influence of Ownership on Environmental Performance

Effect of	to	Effect	t
Capital intensity (Ln)	→ Improvement of environmental performance	-0.07	-0.47
Profitability	→ Improvement of environmental performance	-0.04	-0.21
Country	→ Improvement of environmental performance	0.08	0.48
Size (Ln)	→ Improvement of environmental performance	-0.34	-1.40
Managerial ownership	→ Improvement of environmental performance	-0.04	-0.25
Institutional ownership	→ Improvement of environmental performance	-0.49*	-1.97
Institutional ownership	→ Change in institutional ownership	-0.44	-1.50
Profitability	→ Change in institutional ownership	-0.07	-0.35
Country	→ Change in institutional ownership	0.24	1.21
Size	→ Change in institutional ownership	-0.17	-0.65
Improvement of environmental performance	→ Change in institutional ownership	0.51*	2.47
Goodness-of-fit statistics	$\chi^2_{82}=0.15$ ($P>0.05$) GFI=1.00 AGFI=1.00 ECVI=0.93 AIC=125.66 CAIC=152.91 NFI=1.00 NNFI=1.34 IFI=1.02 PGFI=0.06 PNFI=0.07 NCP=0.00 RFI=1.00 CFI=1.00 RMSEA=0.00		

^a Standardized coefficients. Significant at * .05; ** .01; *** .001 level.

Finally, the statistics showed a significant and positive relationship between change in ownership by institutional investors and an improvement of environmental performance, as posed in Hypothesis 3. Therefore, Hypothesis 3 was accepted.

2.5 Discussion, Limitations and Future Research

Environmental performance is a key question for every firm because as an extensive literature shows, good environmental management can be associated with positive financial results or a sustainable competitive advantage (Álvarez-Gil, et al., 2001; Aragón-Correa et al., 2005; Aragón-Correa & Sharma, 2003; Hart, 1995; Russo & Fouts, 1997; Sharma & Vredenburg, 1998).

This study analyzed the effect that influential owners have on the firm's environmental performance, and whether a better environmental performance helped attract new institutional investors. With regard to the effect of ownership in the hands of managers, our analysis yielded non-significant results. The lack of significance regarding the relationship between managerial ownership and the improvement of environmental performance may be explained by the existence of the contradictory effects that were derived from an increase in managerial ownership. Together with the many reasons proposed to justify the situation in which managers obtain financial incentives to pursue the creation of long-term value in the firms they manage (Zahra et al., 2000; Wright et al., 1996), other studies have supported the idea that managerial ownership results in conservative decisions (Sanders, 2001). It may be that when reaching a high level of ownership, the relationship between the shares in the hands of managers and the investments in environmental developments turns negative because of the uncertainty associated with this type of investment. This might be the reason why the suggested linear relationship lacked meaning.

The results obtained showed that the percentage of institutional investment had a significant influence on environmental performance but in the opposite direction that we had proposed. That is, the presence of institutional investors in the firm's

shareholdings showed a negative relationship with the improvement of environmental performance. However, at the same time, the firms that improved their environmental performance the most were the firms that attracted the most institutional investors.

When analyzed jointly, these results helped us draw interesting conclusions. First, the firms with lower percentages of institutional investment were also the firms that improved their environmental performance the most over the period observed. The reason for this may be that, in accordance with other authors (e.g., Graves, 1988), institutional investors seek short-term profits, which hinders firms from making large investments in improvements of environmental performance because of the fear of a lower short-term profitability that may lead these institutional investors to sell their shares in the firm. However, another possible reason, which is backed by the results of the third hypothesis, is that firms with less institutional investors may attempt to attract capital through the improvement of their own environmental performance. In fact, the weight carried by institutional investors who take into account the social, ethical or environmental dimensions of the stocks they invest in (SRI funds) has witnessed significant growth in the last few years, especially in the United States and United Kingdom (Balaguer-Franch, 2007), countries from which our sample was derived.

The results we obtained have significant, practical implications. Good environmental performance is appealing to certain types of investors. Therefore, managers must pay attention to environmental issues and weigh the opportunities that might arise from the pioneering development of these kinds of strategies. Moreover, our results show the importance of improving and supporting mechanisms through which companies can communicate their environmental practices to investors. Companies would have greatest interest to improve their environmental performance if they realize

that the market values this performance and if they have the instruments to translate their environmental practices to the market to be evaluated. Despite the increasing effort to make the environmental performance of companies more open (e.g. European Toxics Release Inventory and Pollutant Releases and Transfer Registers), there is still a significant deficiency of information (Delgado-Ceballos & Rueda-Manzanares, 2010). Thus, greater government efforts in this direction would increase incentives for firms to improve their environmental performance.

This study presents some limitations. First, we analyzed the effect of the owners in a narrow, national context by collecting data only from the United States and the United Kingdom. This approach helped gather homogeneous data but may have entailed some difficulty in the extension of our conclusions. Furthermore, we analyzed the effect of the institutional investors as a joint category. It would be interesting to gain a deeper insight into the different types of institutional investors and their diverse approach to environmental sustainability. It would be especially interesting to analyze the function that SRI funds are serving in the firms in which they invest.

The study of these questions remains incomplete. A deeper study would be required to gain a full understanding of the many aspects. This study opens the door for future efforts in this line of research. It is necessary to have a deeper knowledge of the conditions that benefit better environmental performance. Moreover, whether the effects of ownership are conditioned by the characteristics of certain sectors or countries should be analyzed because both the success of the environmental strategy (Aragon-Correa & Sharma, 2003) and the effectiveness of corporate governance (Aguilera, Filatotchev, Gospel & Jackson, 2008) can be affected by contingent variables.

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CAPÍTULO 3

A RESOURCE DEPENDENCE PERSPECTIVE ON THE EFFECTS OF DIRECTOR INTERLOCKS ON PROACTIVE ENVIRONMENTAL STRATEGIES

A RESOURCE DEPENDENCE PERSPECTIVE ON THE EFFECTS OF DIRECTOR INTERLOCKS ON PROACTIVE ENVIRONMENTAL STRATEGIES

ABSTRACT

Based on the resource dependence theory, we focus on whether director interlocks with a firm's suppliers of resources important for the adoption of a proactive environmental strategy, such as financial resources, technological equipment and knowledge, are linked to a higher likelihood that a firm adopts this strategy. Because uncertainty reduction is also tied to loss of a firm's autonomy, we simultaneously analyze whether director interlocks with fossil fuel firms are linked to a lesser likelihood that a firm adopts a proactive environmental strategy. We focus on 93 U.S. electric utilities and present associated data regarding their corporate governance, environmental variables and profitability. The results of this paper may impact debates on the strategic implications of director interlocks and approaches regarding the requirements of proactive environmental strategies.

Keywords: Corporate governance, board of directors, director interlocks, proactive environmental strategy, resource dependence view

3.1 Introduction

The financial scandals at the beginning of the 21st century revealed that corporate boards need to participate more actively and influence more directly an organization's strategic decisions. Efforts in this direction have been evident as shown by the increasing proliferation in most countries of codes of good governance (Aguilera & Cuervo-Cazurra, 2009). Many of these codes have called for director appraisal, training and development and for board level performance reviews (Tricker, 2009). Among scholars, increased numbers of studies also support the idea that directors should contribute not only by monitoring the executive team's actions, but also by using information, experience and other cognitive resources to help improve corporate decision making (Chen, Dyball & Wright, 2009; Kroll, Walters & Wright, 2008) and to foster a competitive advantage (Zahra & Filatotchev, 2004; Zahra, Filatotchev & Wright, 2009). Thus, greater attention must be paid to the role of boards and directors in processes of strategic leadership and change (McNulty & Pettigrew, 1999).

The connection between business activity and environmental issues has often been considered a matter of relevance only to a company's social responsibility and to its ethical ideals (Johnson & Greening, 1999). However, some authors are increasingly suggesting that environmental considerations should be explored as variables that widely impact many strategic functions of a company (Aragon-Correa, 1998; Buysse & Verbeke, 2003; Henriques & Sadosky, 1999; Sharma & Vredenburg, 1998; Sharma & Henriques, 2005). Authors have focused on proving that a proactive environmental strategy can generate competitive capabilities leading to improved financial results (Judge & Douglas, 1998; Klassen & McLaughlin, 1996; Klassen & Whybark, 1999; Marcus, 2005; Marcus & Fremeth, 2009, Russo & Fouts, 1997; Sharma & Vredenburg,

1998). A proactive environmental strategy implies anticipating future regulations and social trends as well as designing alternative operations, processes, and products to prevent (rather than simply reduce) negative environmental impacts (Aragon-Correa & Sharma, 2003).

Boards of directors should guide and supervise key decisions within a company, including the environmental strategy (Kassinis & Vafeas, 2002; Ricart, Rodriguez & Sanchez, 2005). However, the literature to date has paid little attention to the connection between environmental strategy and boards. In fact, when environmental researchers have analyzed corporate governance issues, they have focused on managers. Analyzed variables include the following: the personal characteristics of managers (e.g., Cordano & Frieze, 2000; Flannery & May 2000; Ramus & Steger, 2000); whether managers perceive environmental issues as opportunities or threats (e.g., Sharma, 2000); the connection between the managers' pay and their environmental decisions (e.g., Berrone & Gomez-Mejia, 2009; Russo & Harrison, 2005); the way managers exercise their leadership regarding the environment (e.g., Andersson & Bateman, 2000; Egri & Herman, 2000); and how managers perceive stakeholder pressure in respect to environmental decisions (e.g., Buysse & Verbeke, 2003; Henriques & Sadosky, 1999; Kassinis & Vafeas, 2006; Sharma & Henriques, 2005).

Although the literature has paid little attention to the connection between boards of directors and environmental strategy, we have found a few exceptions to this general pattern. Kassinis and Vafeas (2002) have shown how board size, the presence of board members with executive duties and the inside ownership faction are positively connected with the number of environmental litigations. Berrone and Gomez-Mejia (2009) have analyzed whether the existence of environmental board committees ties

executive pay more strongly to environmental performance. They did not find empirical evidence for this hypothesis and concluded that environmental committees in the board may result from an attempt to appear environmentally concerned rather than from a true effort to reduce pollution. Finally, Ricart and others (2005) have examined how corporate governance systems should evolve to integrate sustainable development thinking into their organization. According to the authors, to obtain a sustainable corporate governance model, it is important take into account four key issues. First, board members should be individuals with a strong background and training in sustainability practices. Second, boards should pay attention to their structure (e.g., the convenience of committees) and process (e.g., including sustainability issues into the agenda). Third, boards must decide what part of their roles (e.g., resource attainment, control, and/or strategy) is the most important. Finally, sustainability must be part of the nitty-gritty of corporate governance and infuse the corporate system.

Despite these previous efforts, it is necessary to further study the connection between boards of directors and their environmental strategies. In this paper, we state that the effects of boards on corporate environmental decision-making are especially intriguing when a director simultaneously belongs to the boards of several firms (director interlock). Director interlocks have an important presence in the U.S. firms. In fact, *Financial Times* recently published that 55 per cent of directors of the U.S. firms listed in the S&P 500 index serve on more than one board (Masters, 2009). This situation has even led to regulation. For example, in the electric industry, the U.S. Federal Energy Regulatory Commission (FERC) has established new rules regarding director interlocks (section 305 of the FPA), with violations incurring both civil and criminal penalties. Indeed, prior authorisation from the FERC is now required for a

person to be a director or officer of more than one electric utility simultaneously or to hold a position in other types of companies. In addition, these individuals must file an annual report with the FERC that lists a series of relevant interlocks including equipment suppliers, fuel suppliers or financial institutions (i.e., FERC Form No. 561, Annual Report of Interlocking Positions, 18 CFR 131.31¹).

Our aim was to study whether director interlock can help a company adopt a proactive environmental strategy, or whether it contributes to lack of flexibility and thus constrains this goal. Based on the resource dependence theory, we stated that director interlocks with a firm's suppliers of resources important for the adoption of a proactive environmental strategy, such as financial resources, technological equipment and knowledge, are linked to a higher likelihood that a firm adopts this strategy. We also state that facilitation of resource acquisition by the board does not always result in adoption of an environmentally proactive strategy. Because uncertainty reduction is also tied to loss of a firm's autonomy, we maintain that director interlocks with fossil fuel companies are linked to a lesser likelihood that a firm adopts a proactive environmental strategy. We focus on 93 U.S. electric utilities and present associated data regarding their corporate governance, environmental variables and profitability.

The industry analyzed herein, the electric utilities, is one of the last U.S. industries in which competition is replacing regulation. Although the term "restructuring" may be unique to electric utilities, the sometimes painful process of undergoing a transformation from regulation to competition is not. Deregulation and

¹ The Code of Federal Regulations (CFR) is the codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the U.S. Federal Government.

liberalization bring a new environment and the firms' adaptation to change may be very difficult (Griffell-Tatje & Lovell, 1996). In any case, opening markets to competition generally gives firms better incentives to control costs, introduce innovations, and seek new ways to serve consumers (Brennan, Palmer & Martinez, 2002).

One of the advantages to opening retail markets is that it allows innovative options in the purchase and delivery of electricity. One notable example is the marketing of "green power"—electricity generated in an environmentally friendly way—to consumers willing to pay a premium (Brennan et al., 2002). Therefore, competition could result in more research and development into process innovations and new products that promise higher returns to competitive firms. However, in the newly competitive environment, utilities also face greater pressures to reduce costs and are therefore reducing discretionary spending on activities that don't contribute directly to profits. That means that competition also creates pressure to reduce costs and transfer the savings to consumers.

In conclusion, as deregulation has unfolded in the electric generation industry, a range of strategic responses have been opened to electric companies. Some firms stress low cost power and focus on minimising generation costs and prices to consumers. Differentiation is also possible, although it is difficult in this industry because there are few products as quintessentially commoditised as a kilowatt-hour. For this reason, differentiation must take place in other ways; for example, by offering power produced using less environmentally harmful methods (Delmas, Russo & Montes-Sancho, 2007). Therefore, the process of deregulation may in fact generate opportunities for directors to implement new strategies in their firms.

Our paper offers three key contributions. First, our analysis makes an important contribution to the literature in terms of a board's strategic role in a firm. This paper responds to calls in previous studies (e.g., Golden & Zajac, 2001; McNulty & Pettigrew, 1999; Ravasi & Zattoni, 2006) for a more thorough analysis of how directors influence the development of an organization's strategy. Indeed, this paper focuses on a specific feature, namely, director interlocks. We based our work on the well-established resource dependence theory; however, in contrast to prevalent previous approaches that mainly focused on positive effects of the resource provision role of directors on firm outcomes (e.g., Hillman, Cannella & Paetzold, 2000), we state that facilitation of resource acquisition by the board does not always have a positive result from a strategic point of view. As such, we contribute to resource dependence theory by offering empirical evidence that reduction of uncertainty about critical resources by director interlocks may also constrict a firm's autonomy, thus making change more difficult. We analyze this relationship on the specific context of environmental strategies. That is, director interlocks as a mechanism to reduce uncertainty may help the development of a proactive environmental strategy but may also lead to a firm's loss of autonomy and flexibility through an ossified relationship with traditional suppliers. Thus, analysis of specific interlocks and their connection with the strategies firms wish to develop becomes very important.

Second, our paper also offers an interesting conclusion regarding the debate on the influence of interlocking directors on the company and serves as a bridge between those who point to the negative implications of director interlocks and those who highlight the positive implications. Regarding resource dependence, our paper analyzes

the positive and negative implications of director interlocks from a strategic point of view.

Third, this paper extends approaches regarding the requirements of proactive environmental strategies. Firms do not entirely control all the resources necessary for the development of their strategies. Because firms are not self contained or self sufficient, they can look outside themselves to obtain support (Pfeffer & Salancik, 1978). Director interlocks may act as resource providers but also as constraints for the adoption of a proactive environmental strategy.

3.2 Theoretical Background

3.2.1 A Proactive Environmental Strategy in the Electric Industry

A proactive environmental strategy implies anticipating future regulations and social trends as well as designing alternative operations, processes, and products to prevent (rather than simply reduce) negative environmental impacts (Aragon-Correa & Sharma, 2003).

The negative environmental impact of firms operating in the electric industry is especially relevant. According to the U.S. Energy Information Administration (2009), energy-related carbon dioxide (CO₂) emissions represented 81.3 per cent of total U.S. greenhouse emissions in 2008, and generation of electricity emits more than twice as much CO₂ per unit of end use energy as do gasoline and other petroleum products and three times as much as the direct use of natural gas.

The electric power industry is characterised by a variety of generation technologies. Electricity is produced using steam generators fired by coal, natural gas, oil, and nuclear power. Other electricity turbines are powered by hot gasses produced from burning oil or natural gas. Additionally, gravitational power is harnessed through hydroelectric plants. Renewable fuels, such as wind, biomass, solar, and geothermal technologies, are a small but growing part of the electricity portfolio (Brennan et al., 2002).

One reason for the variety in production technologies is geography. Some generators are near coal mines, railroads and gas pipelines while wind power requires open spaces with the right climate. However, an increasingly important factor in the choice of technologies for generating electricity involves pollution regulation. Any plant that burns fossil fuels emits significant amounts of greenhouse gasses. Nuclear plants produce none of these emissions but raise concerns about the disposal of spent radioactive fuel and the fate of the plants themselves, which become radioactive with use (Brennan et al., 2002).

Therefore, the environmental impact from electricity generation can be reduced mainly by increasing the share of electricity generated from low fossil fuel or renewable sources (U.S. Environmental Protection Agency, 2009). Firms using a high proportion of renewable energy generation - i.e., energy from biomass, solar, wind, geothermal, and hydro resources - are preventing a negative environmental impact. Thus, these firms are developing a proactive environmental strategy in the electric sector.

In the U.S. electric industry, firms have made key advances in the pursuit of sustainability over the last few years; however, there has been substantial variability in the environmental performance of the firms (Delmas et al., 2007). An explanation of

these differences could be found in both the need to have stronger complementary capabilities and greater access to resources to adopt proactive environmental strategies (Darnall & Edwards, 2006) and the lack of flexibility and constraints to change existing policies within companies (Shrivastava 1995).

3.2.2 Resources for a Proactive Environmental Strategy

Firms with a high proportion of renewable energy generation are using alternative generation processes and are preventing a negative environmental impact. Thus, these firms are developing a proactive environmental strategy in the electric sector. Despite the increased pressure to switch to renewable energy sources, only approximately 10 per cent of U.S. electric generation is derived from renewables (e.g., 7 per cent from hydropower, 1 per cent from biomass, approximately 1 per cent from wind power, <1 per cent from geothermal power, and <1 per cent from solar power).

Investments in renewable energy technologies represent a significant shift from fuel-generating technologies such as coal (Delmas et al., 2007). Although environmental and performance conditions may motivate renewable investments, firms have to face an important challenge to go into the renewable sector. In fact, the general development of proactive environmental strategies has been linked to an important set of resources (Hart, 1995; Russo & Fout, 1997). We define three fundamental resources required for the development of a proactive environmental strategy in the electric sector: financial resources, technological equipment and knowledge.

First, financial resources are essential to make the investments needed to achieve a proactive environmental strategy. Previous literature has noted that when a company

lacks sufficient financial resources, other more pressing issues become prominent, and environmental concerns are relegated to a lower priority (Henriques & Sadorsky, 1996).

There are two sources of financial resources for firms: internal and external. Internal funding is very closely related to previous financial performance and especially to retained earnings. Sometimes retained earnings are seen as a more desirable form of financing than external funding because external financing reduces managerial autonomy (Mizruchi & Stearns, 1994). Financial institutions provide external funding to firms. These funds can improve bottom-line performance (Simerly & Li, 2000). In addition, because debt financing is tax-deductible, a portion of the cost of capital is passed from stockholders to the government. A firm may also have internal resources available; thus, if financial institutions offer additional resources, the firm's investment capability is improved.

The securing of financial resources for investment is critical to the development of proactive behaviours. Studies regarding resource availability have been developed extensively around the concept of slack. Slack is a measure of resources in excess to those required to produce output (Etzion, 2007). Previous studies have found a positive relationship between slack and a variety of exploratory activities, including innovation (Nohria & Gulati, 1996; Voss, Sirdeshmukh & Voss, 2008). Sharma (2000) applied this idea to the environmental field, suggesting that the greater the degree of discretionary slack provided to the manager in managing the business/environmental interface, the greater the likelihood of their interpreting environmental issues as opportunities rather than as threats. The reason for this trend is that high levels of slack - in the form of free resources that can be applied to a wide variety of situations and problems - facilitate certain types of strategic or creative behaviours.

Proactive environmental strategies are also associated with environmental technologies (Shrivastava, 1995). Klassen and Whybark (1999) classify environmental technologies as belonging to three general categories: pollution prevention, management systems and pollution control. Pollution prevention technologies are defined as structural investments in operations that involve fundamental changes to a basic product or primary process. These technologies reduce or eliminate pollutants by using cleaner alternatives than those currently in place. Management systems are infrastructural investments that affect the way manufacturing is managed; they include, for example, efforts to formalise procedures for evaluating environmental impacts or increasing employee training for spill prevention and waste reduction. Finally, pollution control technologies are structural investments that treat or dispose of pollutants or harmful by products at the end of a manufacturing process; thus, they can be characterised as either remediation or end-of-the-pipe controls.

In the electric industry, equipments for renewable electricity generation (e.g., photovoltaic panels) represent prevention technologies. The implementation of pollution prevention technologies depends on organizational and knowledge-based resources (Klassen & Whybark, 1999) and the capacity for continuous innovation (Hart, 1995; Russo & Fouts, 1997; Sharma & Vredenburg, 1998).

Finally, the complex and systematic nature of the environment may generate high levels of uncertainty, which makes it more difficult to integrate environmental management into a company's strategy (Lewis & Harvey, 2001). This complexity may in part be due to a lack of information regarding environmental issues, the rapid development of related issues (e.g., environmental regulation), or the existence of incomplete information regarding the preferences of the different agents as implied by

their strategic environmental decisions (Lenox, King & Ehrenfeld, 2000; Lenox & King, 2004). Therefore, whether or not the company has proper knowledge about such issues will determine whether and/or which environmental practices are adopted.

3.2.3 Resources for Continuing with High Pollutant Systems

Most of the actual capacity installed to generate electricity in the U.S. uses fossil fuels (e.g., 45 per cent coal; 23 per cent natural gas and 1 per cent petroleum), whereas nuclear power is used to generate approximately 20 per cent of all the country's electricity (U.S. Energy information administration, 2009). Thus, non-renewable energy sources represent approximately 90 per cent of all the actual generation portfolios.

For firms that continue generating electricity using traditional technologies, the fossil fuel provision is one of the most important elements of their business. Cost of fuels is a major determinant of utility firms' expenditures and greatly determines the price of electricity (U.S. Energy Information Administration, 2010), especially in terms of non-renewable generation (Russo, 2003). In comparing two power plants - one that would use exhaustible resources and another that would use renewable resources - the calculus of the cost would look relatively standard. Both projects would incur capital, operation and maintenance costs. However, for projects using an exhaustive resource (e.g., coal), fuel costs would be additional, but for projects using a renewable source (e.g., wind), fuel costs would be zero (Russo, 2003).

Therefore, the uncertainty in fuel costs has great importance for firms that continue generating electricity using traditional technologies because the operational costs of the power generators are directly affected by changes in fuel costs (Grifell-Tatje & Lovell, 2000; Kaymaz, 2007). In fact, in 2008, Michael Callahan, executive vice

president of the Electric Power Associations of Mississippi affirmed that *“fuel expenses are, by far, the largest driver of our costs to provide service to our members and those costs now account for about half of the member's bill”* (Gillette, 2008).

3.3 Hypotheses

From a resource dependence perspective, boards of directors are mainly a tool to manage external dependencies and reduce uncertainty (Hillman et al., 2000; Pfeffer & Salancik, 1978). Through boards, the company may have access to valuable resources (Hillman & Dalziel, 2003). These effects are particularly clear in situations of director interlocks. The relationship of members of the board with other boards of directors can facilitate coordination and reduce uncertainty about the availability of resources when these ties occur with suppliers (Bazerman & Schoorman, 1983).

Pfeffer & Salancik (1978) describe director interlocks as a form of interorganizational linkage that facilitates interaction between the organizations over time. This linkage provides the opportunity to obtain external group support through cooptation. Cooptation describes a situation in which a person, or set of people, is appointed to a board of directors, advisory committee, policy making or influencing groups, or some other organizational body that has at least the appearance of making or influencing decisions (Pfeffer & Salancik, 1978:162). Such appointments may occur either by means of an election or by direct invitation. Through providing at least the appearance of participating in organizational decisions, cooptation tends to increase support for the organization by those coopted. In fact, *“when an organization appoints an individual to a board, it expects the individual will come to support the organization,*

will concern himself with its problems, will favorably present it to others, and will try to aid it” (Pfeffer & Salancik, 1978:163).

Cooptation and influence occur simultaneously in any resource dependence-based interlocks (Mizruchi, 1996). That is, although director interlocks with critical suppliers may be a mechanism through which firms reduce uncertainty, they also make the organization susceptible to the influence of external forces and may lead to a loss of organizational autonomy and constrain the firms' actions (Pfeffer & Salancik, 1978).

Following the resource dependence theory, we argue that director interlocks with firms providing critical resources needed for a proactive environmental approach in the electric sector (i.e., financial institution, equipment and knowledge) are associated with the adoption of this strategy. Meanwhile, director interlocks with traditional suppliers constrain the organization's action, making less likely the adoption of a proactive environmental strategy.

3.3.1 Proactive Environmental Strategy and Director Interlocks with Financial Institutions

Firms that make investments in renewable energy generation use alternative generation processes and prevent a negative environmental impact. As a result, they can improve their competitive position, for example, through an improved reputation (Bansal, 2005) or a better relationship with stakeholders. The tangible aspect of the investment (the impact on the profitability of the company), however, may take more time to be realised. Therefore, the role of financial resources is essential in these cases (Henriques & Sadorsky, 1996; Sharma, 2000).

Director interlocks with financial institutions can facilitate access to such resources (Davis & Mizruchi, 1999; Mizruchi & Stearns, 1994; Stearns & Mizruchi, 1993). Several works analyze the relationship between the presence of directors of financial institutions and the tendency of companies to borrow more easily (Davis & Mizruchi, 1999; Mizruchi & Stearns, 1994; Stearns & Mizruchi, 1993). For example, Stearns and Mizruchi (1993) found that the amount of funds a company borrows is positively associated with their presence on boards of representatives of financial institutions that are the main providers of these funds. In addition, a financial institution may be more willing to lend money to a company if it believes the company is run by respectable and trustworthy directors. Therefore, the probability that a financial institution will lend money to a company could increase if it has director interlocks with the company (Mizruchi, 1996). In addition, having a member of a financial institution serving as a director may communicate that the firm is in need of capital and that the needs and concerns of capital suppliers are important to the firm. This could represent the first step toward securing essential capital resources (Hillman et al., 2000). Therefore, we propose the following:

Hypothesis 1: High levels of director interlocks with financial institutions are positively associated with the adoption of a proactive environmental strategy.

3.3.2 Proactive Environmental Strategy and Director Interlocks with Firms Providing Equipment

Environmental technologies are usually complex (Shrivastava, 1995), requiring technical and expert knowledge. For example, environmental technologies associated

with renewable resources require new and sophisticated equipment (e.g., photovoltaic panels).

Companies usually do not create the pollution prevention solutions they adopt; they look outside their organizations for answers to the challenges they face. A supplier may create new technological systems that serve the utilities' needs (Marcus & Geffen, 1998). For example, General Electric is especially good at combining and configuring technologies to provide the utilities with what they need to comply with the Clear Air Act (Marcus & Geffen, 1998).

Director interlocks with firms from the equipment sector may provide support from specialists who can advise management and help them acquire resources and incorporate knowledge regarding the internal processes of the firm (Hillman et al., 2000; Markerian & Parbonetti, 2007). Director interlocks facilitate access to broader sources of information and improve the quality, relevance and timeliness of that information (Adler & Kwon, 2002). Therefore, these director interlocks may increase knowledge regarding new technological systems and pollution prevention and encourage their use. That is, they may contribute to the strategic decisions of the companies where they hold a position (Carpenter & Westphal, 2001; Ruigrok, Peck & Keller, 2006), thus encouraging new investments in new equipment.

According to Tsai and Ghoshal (1998), social ties allow innovators to move across formal lines in the organization and find what they need. These links contribute to a firm's ability to create value in the form of innovation because social relations encourage productive resource exchange and combination. Extra-firm networks may produce similar effects. Director interlocks can provide valuable links with equipment firms and encourage productive resource exchanges and combinations needed for

innovation. For example, director interlocks have been related to an increased formation of joint ventures and technology transfers (Gulati & Westphal, 1999).

For these reasons, we propose the following:

Hypothesis 2: High levels of director interlocks with equipment suppliers are positively associated with the adoption of a proactive environmental strategy.

3.3.3 Proactive Environmental Strategy and Director Interlocks with Firms Providing Business Knowledge-Intensive Services

In general, directors may be seen as experts who use their prior experience to solve strategic problems and provide useful knowledge (Rindova, 1999; Zahra & Filatotchev, 2004). However, the specific information, expertise, and skill resources that a director can bring to the board may be very diverse depending on the specific director's characteristics (Hillman et al., 2000; Markarian & Parbonetti, 2007). Along these lines, some authors (e.g., Hillman et al., 2000; Markarian & Parbonetti, 2007) distinguish among four categories of directors: insider, business specialist, support specialist and community influential. Although insiders possess valuable firm-specific information, business experts provide expertise and knowledge that are related to strategic decision making. Support specialists provide expertise and knowledge that support strategy formulation (e.g., law, capital markets) and community influentials provide networking and reputation (Markarian & Parbonetti, 2007). Director interlocks with firms providing knowledge-intensive business services are in a special position to act as business experts, helping to make strategic decisions.

First, firms that provide knowledge-intensive business services play an essential role in the creation, accumulation and dissemination of knowledge (European Commission, 2003; Miles et al. 1995). These firms, by joint knowledge development with their clients, have the ability to create considerable positive network externalities and possibly accelerate knowledge intensification across the economy (Muller & Doloreux, 2007). The knowledge-intensive business services sector includes a high diversity of firms comprising -amongst others- computer and related activities, research and development, and other business services, such as data processing, accounting, tax consulting, advertising or architectural and engineering activities (Muller & Doloreux, 2007). Toivonen (2006: 2) defines these firms as “*expert companies that provide services to other companies and organizations*”, and Den Hertog (2000: 505) defines them as “*private companies or organizations who rely heavily on professional knowledge, i.e., knowledge or expertise related to a specific (technical) discipline or (technical) functional-domain to supply intermediate products and services that are knowledge based*”. Miles et al. (1995) identified three principal characteristics of firms that provide knowledge-intensive business services: (1) they rely heavily upon professional knowledge; (2) they are either themselves primary sources of information and knowledge or they use knowledge to produce intermediate services for their clients' production processes; and (3) they are of competitive importance and are supplied primarily to business.

Those directors exercising their functions in companies within this sector require substantial up-to-date knowledge and experience to properly perform their duties of consultancy and control in these firms. Furthermore, through the execution of their duties, directors they may acquire a deeper knowledge and improve their potential to

contribute value. Thus, these directors may have knowledge and skills that exceed the ordinary requirements of board service. That is, these directors may provide firms with capabilities emerging from their superior skills in strategic reasoning, vision, ability analysis and interpretation, planning and decision-making. In this way, these director interlocks may support expert decision making.

According to McDonald and others (2008), effective complex decision making depends to some considerable degree on decisions makers' abilities to manage the information overloads inherent to complex decisions and evaluate the long-term implications of the alternatives they are considering. In a similar fashion, Finkelstein and others (2000) focus attention on the relationship between cognitive complexity and the ability to process complex information. The authors state that cognitively simple individuals carry relatively few conceptual categories in their minds, whereas cognitively complex individuals carry many conceptual categories that they view as intricately interconnected (Finkelstein et al., 2009: 69).

Through their experience in this sector, director interlocks with knowledge-intensive business services may acquire a more complete mental model of critical causal relationships and the capability to differentiate between important and unimportant information. That is, directors may be more cognitively complex individuals, and as a result, they may also be better equipped to recognise the long-term implication of investment in renewables. The adoption of a proactive environmental strategy requires that the decision maker be able to evaluate complex and diverse benefits of these strategies (e.g., improving the relationship with stakeholders, improving the firm's legitimacy) and short- and long-term implications of these decisions. In fact, taking into account short-term financial criteria, the decision maker may give priority to traditional

strategies because fossil fuel combustion is still the cheapest way of getting electricity in the absence of carbon pricing and if one neglects the environmental costs. Thus, firms without the capacity to make this reasoning at decision-making levels may have problems with adopting these decisions. As a result, these higher strategic capabilities may be relevant in the search for and evaluation of alternative and innovative solutions necessary for the adoption of proactive environmental strategies.

In addition, these director interlocks are well informed of strategic changes that occur within the sector or within other companies. In this way, they can play an important role in the rapid search for diverse knowledge regarding alternative practices and policies. Therefore, director interlocks aid in the identification of possible alternatives in decision making, and they increase the organization's ability to gather information on available alternatives (Schoorman, Bazerman & Atkin, 1981). The director interlocks not only possess valuable information, but also make the interpretation of the different alternatives easier (Carpenter & Westphal, 2001; Davis, 1991; Palmer, Jennings & Zhou, 1993), thus favouring the company's assimilation and expedient use of the information. In this manner, these director interlocks may increase the company's knowledge absorption capacity. Absorption capacity refers not only to the acquisition or assimilation of information by an organization, but also to the organization's ability to use that information for commercial purposes (Cohen & Levinthal, 1990). Therefore, directors can play an important role in promoting the firm to seek diverse knowledge and expand the company's absorption capacity (Zahra & Filatotchev, 2004; Zahra & George, 2002).

Given the important role of information in the search for alternative and innovative solutions that are necessary for the adoption of proactive environmental

strategies (Sharma, 2000), we propose that environmental strategies will be more proactive when the firm has its own mechanisms set up to easily access this information. Interlocking directors with firms providing consulting and other knowledge-intensive services can be one of these mechanisms.

Due to the acquisition of (1) skills for strategic reasoning, vision, and analysis and (2) up-to-date information, director interlocks with firms providing knowledge-intensive services are in a special position to provide business expertise that may facilitate the adoption of a proactive environmental strategy.

Hypothesis 3: High levels of director interlocks with firms providing knowledge-intensive services are positively associated with the adoption of a proactive environmental strategy.

3.3.4 Proactive Environmental Strategy and Director Interlocks with Firms Providing Fossil Fuels

Investments in renewable energy technologies represent a significant shift from fuel-generating technologies such as coal (Delmas et al., 2007). For a utility that depends heavily on coal, an expansion to include new technologies, such as renewable resource generation, represents a step away from its competency base in a large, centralised coal-fired plant (Delmas et al., 2007).

Although environmental and performance conditions may motivate renewable investments, forces in organizations may increase resistance to change and make adaptation problematic (Goodstein & Boeker, 1991). Barriers or inertial pressures on firms may come from many quarters, such as sunk investment in specialized assets,

bureaucratic control, internal political and cultural constraints and external restrictions (Hannan & Freeman, 1977).

Corporate structures may be an important source of resistance within firms. In this view, Goodstein and Boeker, (1991) link governance structure changes to strategic change. According to them, one important internal source of political resistance may be the prevailing distribution of power in an organization. This power may constrain the flexibility with which an organization can respond to new environmental contingencies.

Director interlocks within the fuel sector may suggest strong commitment with an actual network. The goal of achieving stability and predictability regarding fossil fuels through director interlocks with traditional suppliers implies imposing constraints on the autonomy of the firms (Pfeffer and Salancik, 1978). We state that these constraints limit the possibility of adopting a proactive environmental strategy.

As such, by having a representative on a utility firm's board, fossil fuel provider firms can influence decisions regarding the adoption of renewable strategies to continue providing traditional fuel. That is, director interlocks may induce enduring and irreversible commitments between partners. In this way, the demands of traditional suppliers constrain the organization in its future actions, including responding to the demands of others (e.g., green consumers and society). Firms lose some of their own independence and discretion. These constraints limit the potential set of feasible solutions.

Moreover, director interlocks within the fuel sector may induce a minor external search of information and as such act as a barrier for new strategic opportunities (Adler & Kwon, 2002). In a similar fashion, Nahapiet and Ghoshal (1998) recognised that

strong networks may lead firms to become ossified through their relatively restricted access to diverse sources of ideas and information. Close relationships may insulate firms from other external sources of information (Uzzi, 1997; Yli-Renko, Autio, & Sapienza, 2001). The artificial establishment of a stable environment may also lead to an incomplete search for feasible solutions and result in the acceptance of non-optimal solutions (Bazerman & Schoorman, 1983).

Therefore, we propose that director interlocks with fuel suppliers may reflect enduring and irreversible commitments between partners and can hinder a firm through restricted access to diverse sources of information. Therefore, we propose the following:

Hypothesis 4: High levels of director interlocks with fuel suppliers are negatively associated with the adoption of a proactive environmental strategy.

3.4 Methodology

3.4.1 Sample

Practices associated with sustainable development are often context-specific (Bansal, 2005). Proactive environmental strategy analysis requires a limited industry selection. As a result, the number of companies analyzed is not very large. We focused on electric utilities, that is, firms that generate, transmit and distribute electricity for public use (Energy Information Administration, 2000). Utilities can be classified into four subcategories based on ownership: investor owned, federally owned, other publicly owned, and cooperatively owned. These categories of utilities operate under different objectives and rules. The selection of only investor owned firms allows analysis of a set of companies with similar characteristics and facilitates public access to internal

information. Our analysis included 102 investor-owned U.S. electric utilities (100 per cent investor-owned U.S. utilities were identified in the 2005 eGRID Egrig database). This population represents 42.32 per cent of the total electric generation in the U.S in 2005 (eGRID2007). Because of the availability of financial and corporate governance data, the final sample was 93 firms (91.18 per cent of the analyzed population). Together, we analyzed 828 board members who have 3,497 interlock ties with other firms. In other words, in addition to a position in a specific electric firm, a board member simultaneously holds between four and five director's positions in different firms, thus illustrating the importance of this paper's topic. There were no systematic differences in the environmental performance or in the size measures between the final sample and population.

Information relative to environmental proactivity for the year 2005 was obtained from the eGRID database (U.S. Environmental Protection Agency), which contains data regarding generation and generation technologies used along with plant identification, location, and structural information for nearly all electricity generators in the U.S. Financial information for each firm in 2004 was obtained from the Capital IQ database (linked to Standard & Poor's). The Edgar database (which contains public access documents of companies bound by law to disclose information to the U.S Securities and Exchange Commission) provides information regarding corporate governance issues. Finally, to control geographic and contextual factors, we used data from the Energy Information Administration, which offers official energy statistics from the US Government used to control for deregulation and renewable portfolio standard measures in each state, and from the Toxics Release Inventory database (U.S. Environmental

Protection Agency) for control of the level of emissions in the states in which each firm operates.

3.4.2 Measurement of Variables

Proactive environmental strategy

Our aim was to study the connection between director interlock and environmental proactivity. Firms with renewable energy generation - i.e., energy from biomass, solar, wind, geothermal, and hydro resources - are using alternative generation processes and are preventing their negative environmental impact; that is, these firms are developing a proactive environmental strategy in the electric sector. To capture the proactive decision to invest in renewable generation, we define the dependent variable as a dichotomous variable. We assign the value of 1 if the firm generated electricity from renewable sources in the year 2005 and 0 if the firm did not. We are aware that the decision to invest in renewable systems of energy generation may have been adopted during the year 2004 or in previous years. Director interlocks have been analyzed in the year 2004; however, the average tenure on the board of directors for the year 2004 for U.S investor-owned electric firms was 7.032 years (Edgar database). As a result, the majority of director interlocks were present not only during year 2004, but also during the previous years.

Director interlocks

Most studies on director interlocks measure the number of companies with which the company under study has interlocking directors (Palmer et al., 1993; Ruigrok et al., 2006) or the number of interlocking ties with other companies (Haunschild &

Beckman, 1998). In our analysis, we used this latter measure because it best captures the number of sources of information available to the company (Haunschild & Beckman, 1998). We also divided each of these independent variables by the total number of directors (Filatotchev, 2006) to assess the relative influence of these members on the board. The larger the size of the board, the less influence an interlocking individual would have in the decision making (Schoorman et al., 1981). Finally, although some studies limit their analysis to a certain type of interlocking director, it would seem reasonable to assume that all links or networks coming from both internal and external directors can have a strong influence on the boards' decisions (Westphal, Seidel & Stewart, 2001).

Four types of suppliers with director interlocks are distinguished in our analysis:

Financial institutions. Within this category, we counted the number of interlock ties with commercial banks, savings institutions, credit unions, foreign banks and branches, central reserve and functions closely related to banking (Standard Industrial Classification-SIC 60).

Equipment suppliers. Within this category, we counted the number of interlock ties with industrial machinery, electronics and other equipment suppliers (SIC 35 and SIC 36).

Firms providing knowledge-intensive business services. Within this category, we counted the number of interlock ties with companies belonging to the business service sector that provide services such as advertising, credit reporting, computer programming services and data processing, among others. We also counted engineering

and management services dealing mainly with the provision of engineering, accountancy, research, management and other related services (SIC 73 and SIC 87).

Fossil fuel suppliers. These are any entities that produce or supply coal, natural gas, oil, or other fuel (SIC 12, SIC 13, and SIC 29). The use of these fossil fuels is associated with increased emissions of carbon dioxide and other greenhouse gasses.

Control variables

Annual net generation. Economies of scale are a major feature that must be considered in this sector (Delmas & Tokat, 2005) and are a determinant of environmental behaviour (Aragon-Correa, 1998; Christmann, 2004). We determined firm size by using annual net generation in thousands of megawatts per hour, as previously used in studies such as those by Delmas et al. (2007).

Historic financial profitability. Weak profitability may encourage boards of directors to play a particularly substantial role, and their influence on strategy may become more pronounced (Goodstein & Boeker, 1991). Profitability may also be associated with the attention given to environmental issues or whether or not they are considered a threat (Etzion, 2007; Sharma, 2000). We used the average of return on assets from the three previous years, which is frequently cited in the literature as an indicator of a company's financial performance.

Change in capacity. Changes in capacity may cause variations in the proportion of renewable energy generation. For this reason, we controlled for percentage change in capacity as nameplate capacity of the firm in thousands of megawatts in the year 2005 minus the capacity in year 2004 divided by the capacity in the year 2005. We expressed this proportion as a percentage.

Board size. Kassinis and Vafeas (2002) found that a company's likelihood of becoming a lawsuit defendant increased with board size, due to weaker effectiveness and greater diffusion of responsibility. We determined board size by counting the number of directors.

Deregulation. According to Delmas et al. (2007), deregulation introduced to this industry has stimuli environmental differentiation. To pick up the effect of deregulation, we follow Delmas et al. (2007), who created a variable that represents whether or not retail deregulation policy had been enacted in a given state. To do so, we used information from the U.S. Energy Information Administration (2010). The formal adoption of retail deregulation is an important threshold that is tractable and consistent across states (Delmas et al., 2007; Delmas & Tokat, 2005). The variable takes the value of 1 if a retail deregulation has been enacted or a regulatory order has been issued and 0 otherwise. This variable was then weighted based on the percentage of electricity generated by the utility in each state to create the variable deregulation used in the regression.

Region emission. To pick up the influence of environmental conditions in the state, we included a variable to proxy the level of emissions in the states where the utility operates in analyses. Following Delmas et al. (2007), King and Lenox (2000), and Kassinis and Vafeas (2002), we used the state's toxic emissions (the total amount of on-site and off-site toxic release) from the U.S. Environmental Protection Agency (EPA) Toxics Release Inventory (TRI) database (U.S. Environmental Protection Agency 2004), and then divided this number by the state's land area (U.S. Census Bureau, 2008). For firms that operate in several states, we weighted this measure by the percent of electricity generated in each state.

Renewable portfolio standard. This variable captures the effect of operating in a state with an established renewable portfolio standard (RPS) (Lawrence Berkeley National Laboratory, 2008). This variable takes the value 1 if a state has enacted RPS, and 0 otherwise. For multi-state utilities, this variable was weighted based on the percentage of electricity generated within each state by the firm.

3.4.3 Data Analysis

The objective of this analysis was to examine the relationship between the adoption of a proactive strategy (defined as a dichotomous variable) and the presence of director interlocks with financial institutions (Hypothesis 1), with equipment firms (Hypothesis 2), with firms providing knowledge intensive business services (Hypothesis 3) and with fossil fuel suppliers (Hypothesis 4). We tested these four hypotheses using a logistic regression model. This model estimates how much more likely (or unlikely) it is that these interlocks are present among those who invest in renewable generation ($y=1$) than among those who do not ($y=0$).

3.5 Results

Table 3.1 reports descriptive statistics and correlations for the variables examined in our study. Results from the logistic used to test the hypotheses are listed in Table 3.2.

Table 3.1 Means, Standard Deviations and Correlations^a

Variable	Mean	S.D	Min	Max	1	2	3	4	5	6	7	8	9	10	11
1. Proactive environmental strategy	0.47	0.50	0	1											
2. Historic financial profitability	4.22	1.77	-2.40	9.30	.13										
3. Annual net generation	17.46	19.28	0.03	94.11	.15	.14									
4. Change in capacity	-0.57	4.54	-42.97	0.89	-.15	-.06	-.07								
5. Board size	8.14	3.49	3	18	-.08	-.03	.15	.12							
6. Deregulation	0.48	0.46	0	1	-.06	-.07	-.18	-.15	-.13						
7. Renewable portfolio standard	0.41	0.46	0	1	.30**	.03	-.22*	-.04	-.02	.41***					
8. Region emission	1.99	1.75	0.15	6.32	-.18†	.03	.15	-.18†	-.10	.02	-.32**				
9. Interlocks with financial institutions	20.93	24.68	0	90.91	-.15	.03	.03	.09	.17	-.24*	-.07	-.09			
10. Interlocks with equipment suppliers	8.95	17.30	0	108.33	-.06	-.02	-.02	.07	.22*	.17	.17	-.07	-.01		
11. Interlocks with firms providing knowledge intensive business services	9.04	12.71	0	66.67	.25*	.02	-.09	.09	.31**	.01	.16	-.28**	.18†	.22*	
12. Interlocks with fossil fuel suppliers	5.10	13.66	0	100	-.46***	-.05	-.02	.05	.08	.04	-.05	-.07	-.03	.03	-.01

^a N=93. The correlation involving the dichotomous variable (variable 1) are polyserial correlations. All other are Pearson's correlation. Significant at the †.10; * .05; ** .01; *** .001 level

Table 3.2 Influence of Interlocking Directors on Corporate Environmental Strategy ^a

	Model 1	Model 2	Model 3	Model 4	Model 5
Control variables					
Historic financial profitability	0.08 (0.34)	0.09 (0.40)	0.08 (0.35)	0.07 (0.25)	0.06 (0.18)
Annual net generation	0.02 (2.34)	0.02 (2.22)	0.02 (2.24)	0.02 † (2.73)	0.02 (2.27)
Change in capacity	-0.06 (0.65)	-0.06 (0.59)	-0.05 (0.55)	-0.06 (0.54)	-0.05 (0.41)
Board size	-0.04 (0.43)	-0.03 (0.22)	-0.02 (0.11)	-0.07 (0.77)	-0.04 (0.19)
Deregulation	-0.85 (2.04)	-1.02† (2.77)	-0.98 (2.50)	-1.07† (2.69)	-0.86 (1.68)
Renewable portfolio Standard	1.46* (5.71)	1.49* (5.75)	1.52* (5.93)	1.55* (5.62)	1.48* (4.87)
Region emission	-0.14 (0.86)	-0.15 (1.04)	-0.15 (1.04)	-0.08 (0.25)	-0.11 (0.44)
Independent variables					
Interlocks with financial institutions		-0.01 (1.95)	-0.01 (1.97)	-0.02† (2.81)	-0.02† (3.67)
Interlocks with equipments suppliers			-0.01 (0.28)	-0.01 (0.63)	-0.01 (0.53)
Interlocks with firms providing knowledge intensive business services				0.05* (4.54)	0.05* (3.85)
Interlocks with fossil fuel suppliers					-0.07* (3.87)
Intercept	-0.37 (0.15)	-0.11 (0.01)	-0.14 (0.02)	-0.20 (0.04)	-0.03 (0.00)
ΔChi-square (d.f)	12.80† (7)	2.05 (1)	0.28 (1)	5.10* (1)	5.95* (1)
-2 Log-likelihood	115.86	213.81	213.53	108.43	102.47
R2 Nagelkerke	.17†	.20†	.20†	.26*	.33**
Percentage correctly classified	62.4	64.5	64.5	67.7	69.9

^an=93 Wald statistics are in parentheses. Significant at the †.10; * .05; ** .01; *** .001

Model 1 presents the baseline model and includes the control variables. Of these, only the removable portfolio standard variable yielded significant results ($p < .05$) in all models. Models 2, 3, 4 and 5 successively include additional independent variables from our analysis. We also performed the -2 log likelihood (-2LL) to check for goodness of fit (Hosmer & Lemeshow, 1989). Smaller values of the -2LL measure indicate better model fit (Hair et al., 2010). In our model, the -2LL value was reduced from the base model value of 115.82 to 102.47. The percentage correctly classified also improved from Model 1 to Model 5. Moreover, we have taken into account the Hosmer and Lemeshow measure of overall fit. The test showed a non-significant value for all models, indicating that the model fit is acceptable (Hair et al., 2010). Moreover, the R square of Nagelkerke showed an improvement with respect to all previous models.

Hypothesis 1 suggests that companies that have high levels of director interlocks with financial institutions are more likely to adopt proactive environmental strategies. The Wald statistic provides the statistical significance for each estimated coefficient (Hair et al., 2010). As the logistic coefficient for the variable director interlocks with financial institutions is statistically insignificant, we conclude that the data do not support this hypothesis.

The data also do not support Hypothesis 2. The Wald test for this variable, including Model 3, showed that it does not have a significant effect. This hypothesis suggests that companies that have high levels of director interlocks with equipment suppliers are more likely to adopt proactive environmental strategies.

Hypothesis 3 suggests that companies with director interlocks with firms providing knowledge-intensive business services are more likely to adopt proactive environmental strategies. The data support this hypothesis. Model 4 showed that the

coefficient associated with this variable is positive and significant at the 5 per cent level ($p < .05$). In addition, we performed the Chi-square test for assessing the difference between Model 3 and Model 4; this test showed a significant improvement of the model ($p < .05$).

Finally, Hypothesis 4 suggests that director interlocks with fuel suppliers are negatively connected with the adoption of proactive environmental strategies. Again, the data support this hypothesis. Model 5 showed that the coefficient associated with this variable is positive and significant at the 5 per cent level ($p < .05$).

3.6 Discussion, Limitations and Future Research

In recent decades, topics related both to environmental concerns and to corporate governance have drawn the attention of researchers from different academic fields. Over the last few years, we have also seen the public authorities' growing concern regarding both the environment (e.g., Kyoto Protocol) and corporate governance (e.g., the Sarbanes-Oxley Act of 2002, U.S.). The exponential growth of director interlocking has generated specific attention among regulators in the U.S. New regulations by the FERC on director interlock in the U.S. (section 305 of the FPA) reveal concerns about potential abuse situations that may derive from director interlock in the case of electric utilities.

This paper aimed to shed light on the positive and negative implications of director interlock scenarios. Our study revealed that director interlock influences the environmental strategy adopted by a company. Director interlocks with firms providing knowledge-intensive business services are beneficial to the adoption of proactive

environmental strategies due to the acquisition of (1) skills for strategic reasoning, vision, and analysis and (2) up-to-date information regarding alternative strategies. However, director interlocks with fossil fuel suppliers have a negative effect on the adoption of proactive environmental strategies. These director interlocks hinder firms through their relatively restricted access to diverse sources of ideas and information and commitment with established courses of action, making the development of environmental proactive strategies more difficult.

Our results did not show a positive influence of director interlocks with financial institutions on a proactive environmental strategy. The lack of a significant result may be due to opposing forces. Although financial institutions may encourage the availability of capital resources, they may also impart interorganizational influence on a firm. Financial institutions may be unwilling to provide firms with resources to invest in projects with large, firm-specific assets because in the case of a default, the value obtained from asset liquidation would be extremely low, and the financial institution would recover only a small fraction of their loaned funds. To test this approach, Balakrishnan and Fox, (1993) defined research and development intensity as an indicator of firm specificity of the assets. Proactive environmental strategies may be seen as an investment in specific assets. Moreover, some of the benefits of developing a proactive environmental strategy are long-term and diffuse (e.g., improving legitimacy and reputation), generating resistance for lenders who may only be concerned about obtaining the cash flow derived from their loans. In fact, we can modestly observe this negative effect on our Model 4 and Model 5 (although only significant at .10 levels). This result opens the door to more exhaustive analysis of the effect of director interlock with financial institutions. For example, David, O'Brien and Yoshikawa (2008) have

distinguished between transactional lenders (who consider only the direct returns from debts) and relational lenders (who consider the indefinite duration of the multiple sources of revenue from the borrowers). Therefore it would be interesting to analyze if depending on the nature of the relation with financial institutions, the effect on environmental proactivity may be different.

The results also do not support a positive influence of director interlocks with equipment suppliers on a proactive environmental strategy. The lack of significance of director interlocks with equipment suppliers may be due to lack of specificity of director interlocks with equipment suppliers because they may also include traditional equipment suppliers whose effect may be as a barrier in the same line of fossil fuel suppliers. As a result of positive and negative forces of traditional versus new technologies suppliers, this test may not be significant.

Our results have important implications for the literature across three fields: analysis of the board's strategic role from a resource-dependence view, contribution to the existing debate about the influence of director interlocks on the company, and extensions to approaches regarding the requirements and implications of environmental management. We shall now analyze each of these.

In terms of a board's strategic role, the Enron and WorldCom scandals at the beginning of the 21st century revealed that boards need to participate more actively and influence more directly an organization's strategic decisions. This paper responds to calls in the literature (e.g., Golden & Zajac, 2001; McNulty & Pettigrew, 1999; Ravasi & Zattoni, 2006) for a more thorough analysis of how directors influence the development of an organization's strategy. This paper contributes to our knowledge about directors' strategic roles by focusing on a specific feature, namely, director

interlocks. We based our work on a well-established theory -resource dependence theory - but in contrast to the prevalent previous theory, we state that facilitation of resource acquisition by the board does not always have a positive result from a strategic point of view. According to the resource dependence theory, the board is considered to be a boundary spanner that could help the corporation to acquire important resources from the environment and thus reduce corporations' dependence on external stakeholders or protect the corporation from external threats (Huse, 2005). We complete this view in the analysis of the board of directors stating that reduction of uncertainty about critical resources by director interlocks may also constrict a firm's autonomy, thus making change more difficult.

As for the debate on the influence of interlocking directors on the company, our results serve as a bridge between those who point to the negative implications of director interlocks and those who highlight the positive implications. Our results show that the influence of interlocking directors may vary depending on the type of resources that director interlocks can transfer to their organizations. Director interlocks can influence strategy in different ways. Although director interlocks with firms providing knowledge-intensive business services have a positive effect through acquisition of new information regarding alternative strategies, those with fuel suppliers can have a negative effect on the adoption of proactive strategies.

Regarding the requirements and implications of environmental management, this paper helps to better integrate a new analysis variable that has attracted little attention thus far. We conclude that interlocking directors may play a relevant role by providing resources that encourage the development of proactive environmental strategies but also may act as a barrier through an ossified relationship with traditional suppliers.

3.6.1 Limitations and Future Research Directions

This study has several limitations. First, we analyzed the effect of interlocking directors within a single sector and a single national context. This makes obtaining homogeneous data easier, but this may also imply some complications in terms of extending conclusions.

In addition, the analysis was conducted using cross-sectional data. It would be interesting to develop a longitudinal study approach that covers an extended period of time because proactive environmental strategies are clearly oriented toward the long-term (Shrivastava, 1995).

Additionally, we wish to consider causality. In this paper, we analyzed the association between the adoption of a proactive environmental strategy and the presence of director interlocks with firms' suppliers. Here, we state that the presence of these director interlocks have an effect on firms' decision making; however, we recognise that their presence on the board may also be a consequence of the firm's strategy. In other words, we recognise that more proactive firms may be more inclined towards looking for directors with the appropriate knowledge base, not simply that the director interlocks are able to encourage firms toward environmental proactivity.

The doubts about causality are not a unique result of our cross-sectional analysis. In fact, Mizruchi (1996) has stated that even for longitudinal analysis, it is undeniable that in the absence of detailed information about the firm's decision making policies regarding the reason for the interlock and the process by which the interlock affects subsequent decisions, the causality between interlocking and corporate strategies will be difficult to untangle. Mizruchi (1996) illustrates this situation with the following

example “A firm may have decided in 1959 to embark on a long-term expansion that would require a large amount of external financing. As part of this strategy, the firm in 1960 or 1961 appoints one or more bankers to its boards. Then in 1961 or 1962 the firm’s borrowing increases sharply. Did the interlock influence the borrowing, or did the borrowing influence the interlocks?” (Mizruchi, 1996: 221).

Despite this limitation, we think that our results are valuable because even if interlock were a consequence of an initial decision to invest in renewable resources, it still may be viewed as a means by which firms have access to critical resources. In a similar fashion, interlocks with traditional suppliers show commitment with traditional strategy regardless of the order of this decision and implementation of interlocks.

Our study of these issues is not exhaustive. Our understanding of several aspects would require deeper research.

First, in this paper, we proposed that director interlocks through provision of resources may encourage or constrain the adoption of a proactive environmental strategy. However, director interlocks may also be a vehicle of diffusion of environmental capabilities and practices. That is, the literature on interlocks suggests that interlocks lead firms to adopt practices that have been adopted by other firms to whom they are connected via board interlocks. Thus, if a director sits on two boards and he or she deems that a particular practice works well for one of those firms, he or she is likely to recommend it to the other, thus resulting in the increased probability of the second firm adopting the same practice. Therefore, it would be interesting to study whether directors are serving to transfer corporate practices.

It would also be interesting to analyze whether the effects of director interlocks are conditioned by the characteristics of the environments in which the firms operate, the characteristics of the firms, the characteristics of the board and the characteristics of the involved directors.

Regarding environmental characteristics, it would be interesting to analyze whether the effects of director interlocks are conditioned by the characteristics of given sectors or countries because both the success of the environmental strategy (Aragon-Correa & Sharma, 2003) and the effectiveness of corporate governance (Aguilera, Filatotchev, Gospel & Jackson, 2008) are affected by contingent variables. This can make it difficult to establish universally valid corporate models (Aguilera et al., 2008).

We also think that an interesting extension of this study would be the analysis of some internal firm characteristic that may have made the interlocking effect stronger. For example, it is possible that the effect of director interlocks with financial institutions may be moderated by the firm's financial slack resources because resource dependence theory suggests that organizations relying on external entities to obtain critical resources are more susceptible than others to control and influence by these external entities (Pfeffer & Salancik, 1978). Another example of internal characteristics that may affect the role of director interlocks is the moment in the company's life cycle when the interlock takes place. It would be interesting to analyze whether the effects of interlocking directors vary depending on the moment in the company's life cycle because corporate governance must adapt their functions to the relevant strategic and resource needs of a company at a given moment (Filatotchev & Bishop, 2002).

Boards' characteristics may also influence the interlocks' effects; for example, size. Research on group decision making has shown that large groups may experience

low motivation and problems with coordination, thus generating lower levels of members' participation (e.g., Gladstein 1984). In this sense, Judge and Zeithaml (1992) found that the size of the board was negatively associated with board involvement in the strategic decision process. The director interlocks' ability to influence boardroom discussion and their motivation to do so is an important determinant of their ability to transfer their experience, knowledge and information effectively (Forbes & Milliken, 1999; Shropshire, 2010). Hence, it would be interesting to analyze whether the board size reduced effectiveness of the director interlocks' involvement.

At the individual level, some director characteristics (such as educational background) may also be interesting to analyze as variables that may moderate the effect of director interlocks on the firm's strategy. The analysis of the specific sectors in which director interlocks are shared is a way to ascertain the professional background of the directors. Both professional and educational backgrounds are individual director characteristics highly related to the resources and capabilities that a director may bring into the board. Therefore, this analysis may aid in the challenge to look for directors who not only act as a mechanism of control for companies, but also as a source of resources that will help generate a sustainable competitive advantage.

3.6.2 Implications for Managers and Policy Makers

Our study increases the understanding of director interlocks. Despite the benefits of director interlocks reported under dependence theory, our paper illustrates a case in which director interlocks constrain strategy options. That is, uncertainty reduction is likely to be tied to loss of autonomy, and this tradeoff may be of importance. As a result, analysis of the specific interlock and its connection with the strategy the firm

wants to develop become very important. This knowledge may be very useful for nominating committees for the board itself and/or for a company in general. The company, in turn, must acknowledge that its directors have a strategic role and must pay special attention to their appointment.

In addition, our research analyzes specific, relevant features that may be useful in the development of good governance guidelines or even policymakers' regulations regarding the controversial topic of director interlocks.

Long-term organizational legitimacy depends on how organizations handle their responsibilities toward the natural environment (Shrivastava, 1994). Knowledge of the role that the directors can play regarding environmental issues may encourage their strategic use and facilitate a proactive environmental behaviour.

3.7 References

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CAPÍTULO 4

SEEING THE FUTURE: THE IMPORTANCE OF UPPER ECHELONS' TIME PERSPECTIVE IN SHAPING CORPORATE ENVIRONMENTAL PERFORMANCE²

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SEEING THE FUTURE: THE IMPORTANCE OF UPPER ECHELONS' TIME PERSPECTIVE IN SHAPING CORPORATE ENVIRONMENTAL PERFORMANCE

ABSTRACT

At the heart of environmental decisions is an intertemporal choice problem (businesses must pay now for rewards later). Firms have to manage this intertemporal choice problem in order to achieve better environmental performance; those governed with a future time perspective put greater value on investments that have greater longer-term payoffs. In this paper we analyze the corporate governance characteristics that explain the firm's time perspective (i.e., CEO/board age, CEO/board tenure and CEO/Chair separation) and corporate environmental performance, using pooled OLS estimation with 165 observations from the U.S. electric utilities sector. We show that the firm's future time perspective is important in corporate environmental performance.

Keywords: Corporate governance; environmental performance; future time perspective.

4.1 Introduction

Are younger CEOs more likely than older CEOs to invest in improving the firm's environmental performance? Those who would support younger business leaders point to their greater awareness of both environmental issues and the pressures to respond to them. At no other time in history have environmental issues been more salient. The world's population has doubled in the last 40 years (U.S. Census Bureau, 2010). Further, economic development has propelled consumption, which is taxing the earth's resources and generating vast amounts of waste, including massive carbon sinks (Energy Information Administration, 2010). This argument posits that young CEOs have grown up in a society with these issues at the forefront of public consciousness.

The other side of the argument focuses on time, rather than timing: older CEOs care more for the natural environment because of their time perspective. Their age offers them a wider lens through which to view present-day issues, and from this experienced vantage point they can envision a more enduring impact of their firms' operations on the world. Older CEOs are more likely to be thinking about the quality of their legacy (Zimbardo & Boyd, 2008), and, therefore, more apt to make the major investments in technologies that are needed to improve their firms' environmental performance.

In this paper we argue that a time perspective is more salient than timing effects. We argue that firms governed by CEOs and boards of directors who hold a future perspective—a perspective that anchors their perspective deeper into the future and in the past—are more likely to aspire to better environmental performance. We argue that the time perspective of the CEO and board of directors shapes the organization's time orientation (Das, 2006; Slawinski & Bansal, 2009).

Prior research has recognized the importance of the upper echelons on corporate environmental performance (Berrone & Gomez-Mejia, 2009; Kassinis & Vafeas, 2002), and has focused attention on the ethical position of managerial values (Flannery & May, 2000), issue labeling and interpretation (Cordano & Frieze, 2000; Flannery and May, 2000; Kassinis & Vafeas, 2002; Sharma 2000) or financial incentives (Berrone & Gomez-Mejia, 2009). This prior work, however, is silent on issues of time, which is surprising given that time is so central in shaping corporate decisions that influence the firms' environmental performance. Environmental investments generally have significant short-term costs with uncertain long-term rewards; in other words, these decisions involve intertemporal choices. We argue that a manager's time perspective is critical in intertemporal choices involving environmental investments.

In this paper we analyze the corporate governance characteristics that explain a firm's time perspective (i.e., CEO/board age, CEO/board tenure, and CEO/Chair separation) and its corporate environmental performance, using pooled OLS estimation. Our sample is drawn from the U.S. electric utilities sectors and consists of 126 firms over three years, yielding 165 observations. Our results support the argument that an organization's time orientation is an important factor in its corporate environmental performance.

Our research contributes to two bodies of literature. The first pertains to organizations and the natural environment. Here, we join a small but growing chorus of researchers who recognize the importance of time in corporate environmental decisions (Wade-Benzoni, Sondak & Galinsky, 2010; Shu & Bazerman, 2010; Slawinski & Bansal, 2009). Given the importance of time to issues of 'sustainability,' it is important

to recognize the multiple ways in which time perspective permeates corporate decisions, including within the upper echelons.

Second, we contribute to the field of corporate governance. Whereas prior research has recognized the importance of the CEO age and tenure on firm performance, most prior work has them to risk aversion. Our results are contrary to this prior work; we find that the future time perspective of older and longer-tenured CEOs, especially when the CEO and Chair are separated, are likely to appear to take larger risks in the case of environmental performance. We attribute the differences in our results relative to prior results, because of the societal aspects of decisions pertaining to the natural environment.

4.2 Theoretical Background

4.2.1 Environmental Performance as an Intertemporal Decision

Environmental performance is defined as the impact of the firm's processes and products on the ecosystem (Azzone & Noci, 1996). Environmental performance can be improved through pollution control or pollution prevention. Pollution control means that emissions and effluents are trapped, stored, treated, and disposed of using pollution-control equipment, while pollution prevention means that emissions and effluents are reduced, changed, or prevented through better house-keeping, material substitution, recycling, or process innovations (Hart, 1995). Environmental performance has previously been measured through a range of variables including, pollutants, solid wastes, energy consumption and waste water (Azzone & Noci, 1996).

In the early stages of pollution prevention, behavioural and material changes are often relatively inexpensive and can result in large emission reductions. However, further reductions become increasingly more expensive and difficult, often requiring significant changes in processes or even entirely new production technology (Hart, 1995; Hart & Ahuja, 1996). Capital-intensive changes that require broader changes to underlying product designs and technology are often required to reach zero emissions (Hart 1995; Hart & Ahuja, 1996). In addition to investments in new technologies and processes (Shrivastava, 1995), the firm often has to impose controls, such as through environmental audits (Bansal, 2005), and seek behavioral changes, such as training for employees (Darnall & Edwards, 2006). Therefore, to significantly improve environmental performance, firms must make significant financial investments, while the returns on those investments are often long-term and uncertain.

The choice between receiving a set of rewards now versus reaping a different and usually higher reward later represents an intertemporal choice problem (Laverty, 1996). Such problems are common among most pollution prevention, versus control, decisions. In fact, intertemporal choice problems are endemic to most major corporate investments, such as research and development (R&D), and have attracted considerable attention both by researchers and the popular press. Researchers acknowledge that U.S. firms tend toward “short-termism” (Laverty, 1996; Porter, 1992), because they are either unwilling or unable to make the long-term investments necessary for future growth. Such short-termism is argued to place U.S. firms at a competitive disadvantage relative to their overseas competitors (particularly those from Japan and Germany) (Porter, 1992).

Enron offers a good example supporting this view. Zimbardo and Boyd (2008) argued that Enron executives prioritized immediate over future returns. They may have considered the future consequences of falsifying earning reports at some point, but by 2001 they had lost sight of the long-term goal of building a successful business and were focused myopically on generating high-flying quarterly earnings. The same short term emphasis could also be argued to have contributed to the collapse of the U.S. housing industry, and to bank and mortgage companies (Zimbardo & Boyd, 2008).

4.2.2 Organizational Time Orientation and a Future Time Perspective

The “future time perspective” is the individual’s view of time when the temporal depth is wide and the temporal focus is the future. “Temporal depth” refers to the temporal distances both into the past and into the future that individuals or groups typically consider when they are contemplating events that have happened, may have happened, or may happen (Bluedorn, 2002). People with wide depth, look longer both into the past and into the future. “Temporal focus” refers to the importance these individuals or groups attach to the past, present, and future (Bluedorn, 2002). A future focus means that these individuals anchor in the future, as opposed to the present or the past.

Firms with future focused executives shape the time orientation of the firm to also be in the future. Although there have been relatively few studies that have explored the time orientation of firms, those that do point to positive outcomes for firms that focus on a more distant future in their planning and strategic decision-making leads to positive outcomes, including greater innovation and firm performance (Das, 2006; Slawinski, 2010). Slawinski (2010) also found that firms with a future time perspective

are more likely to address climate change through their operations. These firms are more likely to justify a higher investment in reducing greenhouse gas emissions by arguing that they will benefit over the long term, even though the future benefits are uncertain (Slawinski & Bansal, 2009).

Existing research suggests that individual, organizational, and environmental factors shape an organization's time perspective (Slawinski, 2010). In this paper, we will focus on decision-makers' influence on the firm's future time perspective.

Psychology researchers have demonstrated that time plays a central role in shaping individual and group behaviors (Zimbardo & Boyd, 2008). One's time perspective is a psychological bias that influences one's judgments and decisions. According to Zimbardo and Boyd (1999), individuals have a tendency to habitually overemphasize the past, present, or future temporal frame when they make decisions, which means that they have a cognitive temporal "bias" toward being past-, future-, or present-oriented, respectively. "When chronically elicited, this bias becomes a dispositional style, or individual-differences variable, that is characteristic and predictive of how an individual will respond across a host of daily life choices" (Zimbardo & Boyd, 1999: 1272). For example, Das (1987) showed that there is a significant association between near and distant future time perspectives of managers, on the one hand, and firms' short-range and long-range planning horizons on the other. The planning horizon is a critical factor in the strategic planning process, because it forms the basis for the allocation of corporate resources and energies as well as for the coordination of short-run and long-range planning (Das, 1987).

There are a limited number of studies investigating the relationship between time perspective and organizational sustainability. Most of them are from psychology

science. For example, some studies link a future perspective to pro-environmental behaviors such as public transport preferences or green consumerism (e.g., Lindsay & Strathman, 1997; Joireman, Lange & Vugt, 2004). In the same vein, Corral-Verdugo, Fraijo-Sing and Pinheiro (2006) identify that an individual's time perspective has a role in modifying or directing water conservation efforts. Future-oriented individuals reported a higher engagement in water conservation actions, while the more present-oriented tended to be less conservationist. On the other hand, Milfont and Gouveia (2006) found that time perspectives and values underlie environmental attitudes. Thus, according to these previous studies, a future time perspective seems to accord with socially and environmentally concerned persons.

In a firm's intertemporal decisions, the decision-makers' values, preferences, interpretations, and attitudes have an important effect. When people experience ethical dilemmas, psychological biases operate to influence moral awareness and judgments (Wade-Benzoni et al., 2010). "Decision-making errors," or biases, are defined as "pervasive departures from rational thought in predictable directions" (Shu & Bazerman, 2010: 3). The long list of specific biases that have been identified has hugely impacted the existing models of decision making in the fields of economics, financial markets, consumer behavior, negotiation, medicine, and organizational behavior (Shu & Bazerman, 2010). Also, there is extensive literature describing and documenting the impact of bounded rationality and individual bias on intertemporal choices (Laverty, 1996; Loewenstein & Thaler, 1989). Research on decision-making biases does not discredit all models of economic rationality; rather, the behavioral perspective aims to uncover predictable departures from economic rationality (in specific domains and decision contexts) to better improve existing models of behavior (Shu & Bazerman,

2010). We apply the research into these biases on the intertemporal choices made by CEOs and boards of directors in explaining their firms' environmental performance.

4.2.3 The Upper Echelon Antecedents of Organizational Time Orientation

According to the upper echelons literature, organizational outcomes can be viewed as reflections of the values and cognitive bases of top managers in the organization (Hambrick & Marson, 1984). This theory is based on two interconnected ideas: (1) executives act on the basis of their personalized interpretations of the strategic situations they face, and (2) these personalized construals are a function of the executives' experiences, values, and personalities (Hambrick, 2007). Moreover, as a complementary idea to upper echelon theory, managerial discretion helps to clarify the impact of top executives on organizational outcomes. As Hambrick and Finkelstein (1987) stated, discretion exists when there is an absence of constraint and when there is a great deal of means-ends ambiguity—that is, when there are multiple plausible alternatives. Discretion emanates from sociological conditions (e.g., industry growth), from organizational factors (e.g., a weak board), and from the executive himself or herself (e.g., tolerance for ambiguity).

A managerial discretion perspective reconciles upper echelon theory with the opposite view that states that executives have little effect on organizational outcomes because organizations are essentially inert, swept along by external forces and constrained by a host of conventions and norms (e.g., DiMaggio & Powell, 1983). As Hambrick (2007:335) says,

The implications of managerial discretion for upper echelons theory are straightforward and profound: upper echelons theory offers good predictions of organizational outcomes in direct proportion to how much managerial discretion exists. If a great deal of discretion is present, then managerial characteristics will become reflected in strategy and performance. If, however, discretion is lacking, executive characteristics do not much matter.

Previous literature has highlighted the effects of the top members' characteristics on firms' environmental outcomes. Because decisions are made by individuals, to understand the relationship between organizations and the natural environment it is necessary to study the decision processes of organizational participants (Flannery & May, 2000). In fact, previous literature shows an important connection between the manager's characteristics and incentives and a company's environmental performance. The variables that have been previously analyzed include managers' interpretations, attitudes, social background, and psychological dimensions (Cordano & Frieze, 2000; Flannery & May, 2000; Sharma, 2000) and managerial incentives such as environmental manager compensation or long-term pay for a CEO (Berrone & Gomez-Mejia, 2009; Russo & Harrison, 2005). For example, Bansal and Roth (2000) found that the ecological responsibility of the manager induces corporate ecological responsiveness.

Although the characteristics of the entire top management team may have an interesting impact on organizational outcomes, some executives have much more to say than others, and their biases should accordingly be given more weight in firms' actions. American CEOs simply have greater potential to put their distinctive marks on their firms (Hambrick, 2007). Therefore, researchers need to know what most influences CEOs' decisions, and how strongly, so that they can effectively direct future research

and design societal and organizational systems, policies, and procedures to support sustainable practices (Flannery & May, 2000).

Although the upper echelon literature has focused mainly on CEOs and other senior executives, the directors of the board may also contribute to better firm decisions by monitoring the executive team's actions and by advising the executive team (Zahra & Filatotchev, 2004). In fact, scandals such as that which transpired with Enron at the beginning of the twenty-first century, revealed a governance gap when boards of directors fail to engage and participate actively in organizational decisions (Tricker, 2009). As a result, corporate governance guidelines and codes of ethics are now unanimously requiring that boards be more involved in firm decisions (Kroll, Walters & Wright, 2008). The Sarbanes-Oxley Act was a direct consequence of these issues. The Act empowers boards of directors and requires them to be more effective in achieving their firms' major goals. In respect to environmental decisions, Kassinis and Vafeas (2002) call for greater focus on boards. In spite of this call, there is relatively little research in this area, and it has focused on only a few variables, such as the board size, the number of directorships held by corporate directors, and the presence of a specialized environmental board committee (e.g., Berrone & Gomez-Mejia, 2009; Kassinis & Vafeas, 2002). In this paper, we argue that the executives' and directors' time perspective are important in shaping the firm's environmental outcomes.

4.3 Hypotheses

4.3.1 CEO's and Directors' Age

A person's time perspective is not fixed; it changes over the course of their lives. One key marker for individual time perspective is chronological age (Zimbardo &

Boyd, 2008). Although the process of aging is biological, it carries with it important social meanings, culturally based expectations for behavior, and socially defined needs and priorities (Lowry, 2009).

Older executives are more likely to have a future time perspective than their younger peers because they have a longer past that confers on them the ability to see further. Several studies (e.g., Bluedorn, 2002; El Sawy, 1983) have found that the distances into the past and future that individuals typically consider when contemplating events (that is, their temporal depth) are significantly and positively correlated, with the past depth seemingly determining the future depth (El Sawy, 1983). This time perspective will exert a dynamic influence on many of their important judgments, decisions, and actions (Zimbardo & Boyd, 1999).

Older executives may also have a future time perspective because they are more worried about their legacy. The concept of a legacy emerges when a person's behavior impacts others in the future. The enduring impact of one's behavior over time is an idea central to creating a legacy: one cannot create a legacy by having a fleeting impact or by affecting merely one's own future self (Wade-Benzoni, 2006). Peoples' desire to create a positive legacy and to avoid a negative legacy can be a very motivating force. In business contexts, legacy building can take the form of working to ensure the long-term viability of an organization, by leaving the organization stronger, more productive, and more valuable than the way one found it (Wade-Benzoni et al., 2010). Older executives are more concerned with their legacies, because they are closer to the ends of their careers. Wade-Benzoni et al. (2010) found that under the conditions that define intergenerational allocations—the conditions under which the present generation can potentially impose large and not easily reversed long-term consequences on future

generations—concerns about legacies, ethics, and responsibility temper, or even trump, self-interest. Such “others-oriented” concerns promote greater generosity toward others in resource allocations.

The decision to invest to improve environmental performance is highly complex (Lewis & Harvey, 2001). Because this decision can potentially impose large and not easily reversed costs, environmental decisions clearly involve intertemporal considerations that require choosing between the present and the future. Therefore, decision-makers must face multiple and conflicting goals, as well as great ambiguity, as they try to arrive at a strategic solution in a context of uncertainty and incomplete information. These complex decisions, therefore, invoke numerous behavioral considerations, such as cognitive biases, beliefs, knowledge, assumptions, and values of decision-makers.

We expect that executives with a future time perspective give greater weight to resource allocations that value future benefits, which will result in higher environmental performance through pollution control. Investments to cut emissions are highly dependent on managers’ perceptions. Managers may become more concerned with the environment as they grow older. Therefore, we propose:

Hypothesis 1a: Firms with older CEOs have better environmental performance.

As is the case with the CEO, the age of the directors of the board may affect the board’s future time perspective, which will in turn affect the way in which they direct the organization. Boards influence strategy formulation, policy making, and supervision

of executive management. Older directors have more of a future time perspective, which affects the firm's intertemporal choices such as environmental decisions. We propose:

Hypothesis 1b: Firms whose board members have a high age average have better environmental performance.

4.3.2 CEO's and Directors' Tenure

Another upper echelon characteristic that influences the organization's future time perspective and its approach to environmental decisions is the CEO's tenure. Long tenure confers a future perspective, which encourages environmental investments. Several arguments support this argument.

First, managers with longer tenures look further both into the future and into the past because of the longer history they have with the firm (Slawinski, 2010). For example, El Sawy (1983, cited in Bluedorn, 2002) found that when executives were asked to look to the distant past of their own personal organizational history, and then to the future, their planning horizons became longer. The longer the CEOs' personal history with their firms, the longer the period of time, not only to the past but also to the future, they consider in their intertemporal choices.

Second, the length of a CEO's tenure helps to mitigate the risk of managerial opportunism, where managers favor personal rewards over corporate rewards (Lavery, 1996). Sometimes, the optimal personal intertemporal choice for a manager is a suboptimal intertemporal choice for the organization. In competitive labor markets where managers are free to recontract with new firms, managers have an incentive to select myopic investments in order to convince the labor market that they have

relatively high ability (Campbell & Marino, 1994). These executives, therefore, favor short-term rewards over those that take longer to realize.

Consistent with this argument, Porter (1992) looked to executives' tenure when he studied the problem of short-termism among U.S. firms. He observed that Japanese managers were not as short-sighted as their American counterparts. Japanese managers usually spend their careers with one company, they are internally promoted career employees, and their inter-firm mobility is almost nonexistent. This tendency for Japanese managers to stay in their job encourages long-range investments (Campbell & Mariano, 1994; Porter, 1992). CEOs are more short-term oriented in companies with quick and frequent CEO changes and who are often brought from outside the firm. Managers with short tenure look to produce quick results and prove themselves to be competent, whereas long-tenured managers are under less pressure to prove themselves (Kor, 2006). Indeed, in the past 20 years, the average U.S. CEO's tenure has decreased from about 8 years to less than 4 years, and that change has been linked to the increase of the pressure on CEOs to deliver quick results (Antia, Pantzalis & Park, 2010). Short-tenured CEOs are unlikely to invest in pollution prevention technologies that improve the firm's environmental performance. Therefore, we propose:

Hypothesis 2a: Firms with long-tenured CEOs have better environmental performance.

As in the case of CEOs, the board members' tenure may affect their preferences and behavior and thus impact firm-level outcomes. In fact, board members' tenure is a big concern among investors and regulators. For example, Citigroup has recently revamped its board, with two long-standing members departing after these directors'

abilities to supervise the company's executives and strategy were criticized (Guerrera, 2009).

Hypothesis 2b: Firms with a board of high average tenure have less carbon emission intensity.

4.3.3 The Combined Effect of Age and Tenure

As we argued earlier, older executives have more of a future perspective than their younger peers, so they are more willing to allocate resources in a way that values the long-term investments needed to address environmental issues. However, not all upper echelon members have the same opportunities to translate their time perspective to firm-level outcomes. According to Golden and Zajac (2001) in studies addressing the effect of demographically based preferences on the organizational outcomes, it is important to consider the conditions under which these inclinations or preferences are likely to be realized. In this line, we argue that the future perspective of a CEO attributable to age is moderated by his or her tenure, for two reasons.

First, a critical challenge for top-level managers when faced with intertemporal choices is convincing investors to accept the decreases in profitability that often accompany strategies to secure positions for greater future profits (Lavery, 1996). Communicating a long-range vision is a fundamental challenge for top managers (Lavery, 1996). Because of their high power in the firm and legitimacy among stakeholders, long-tenured managers have more liberty to pursue the strategy they like even if it does not maximize profits in the short term (Canella & Shen, 2001; Zajac & Westphal, 1996). Therefore, longer-tenured CEOs may have more communication capability to improve the quality and availability of information with the shareholders

when long-range prospects are not correlated with short-term performance. As a result, older executives with longer tenure may have more opportunities to translate their future time perspectives to the firm's outcomes. They are more willing to allocate resources in a way that values the long-term investments needed to address environmental issues, and they have more communication capability and power to do that.

Second, a CEO's tenure is also related to the CEO's identification with the firm. Identity reflects an actor's desire for affiliation, which causes actors to align their own identity with the target party, and to behave in ways that are consistent with the other party's expectations because of the meritorious benefits that accrue from such behaviors (Johnson, Chang & Yang, 2010). Persons who belong to one company for a long time are more committed to it and may be more worried about its future (Buchanan, 1974). A proactive natural environmental strategy is strongly related to the future of the company. Moreover, longer-tenure executives are more likely to draw continued socio-emotional benefits centred on their public persona for years to come, and thus are likely to foster environmental friendly policies with benefits likely to take extended time to materialize. For example, this usually happens in cases of executives in family-controlled firms, by virtue of their longer tenure in the firms (Berrone, Cruz, Gomez-Mejia & Larraza-Kintana, 2010). Therefore, older executives with longer tenure may be strongly motivated to apply their future time perspectives to the firm's outcomes.

In conclusion, a CEO's age has a stronger effect on the firm's environmental performance when she or he has longer tenure because (1) the CEO has more capability to transfer his or her future time perspective to shareholders and other stakeholders and (2) the CEO more strongly identifies with the company and is thus motivated to encourage long-range investment for the company. Therefore we propose:

Hypothesis 3a: In firms with long-tenured CEOs, the effect of CEO age on the environmental performance is higher.

Similar arguments can be extended to the board of directors. Older directors' members have a clearer future perspective than do younger ones, so they give greater weight to environmental issues when advising and controlling manager decisions. However, not all boards of directors have the same capability to transfer their time perspective to managers. In this line, Zajac and Westphal (1996) link the possibility of board preferences being realized to situations where the board is more powerful. The authors describe board tenure relative to CEO tenure as one of the measures of a board's power to influence decisions. In the same line, Golden and Zajac (2001) state that weak boards, regardless of their expertise, experience, confidence, and general inclinations and preferences, will not be as likely to influence strategy to the same extent as similarly inclined powerful boards. Accordingly, older directors with a long-tenured board may have more opportunity to influence managers when they make intertemporal decisions. Therefore we propose:

Hypothesis 3b: In firms with boards of high average tenure among its directors, the effect of board age on the environmental performance is higher.

4.3.4 Future Time Perspective and CEO Duality

“CEO duality” is the situation in which the same individual is both CEO and board Chair. Previous studies have suggested that CEO duality has a negative effect on environmental and social practices (McKendall, Sanchez & Sicilian, 1999; Lattemann, Fetscherin, Alon, Li & Schneider, 2009). For example, McKendall et al. (1999) states

that a Chair who is not a CEO may not be as pressured to produce positive short-term outcomes and may be better positioned to argue that noncompliance with environmental law produces undesirable long-term social and financial liabilities. On the other hand, taking a sample of Chinese and Indian multinationals, Lattemann et al. (2009) found that firms with dual CEOs communicate corporate social responsibility less than did multinational firms with a separate Chair.

Although older executives may have a longer future perspective, previous literature also states that they may have greater difficulty grasping new ideas and learning new behaviors (Hambrick & Mason, 1984). Managerial age has also been negatively associated with the ability to integrate information and with confidence in making decisions, though it appears to be positively associated with tendencies to seek more information, to evaluate information accurately, and to take longer to make decisions (Taylor, 1975).

The complex and systematic nature of the environment may generate high levels of uncertainty, which makes it more difficult to integrate environmental management into a company's strategy (Lewis & Harvey, 2001). Whether or not the company has proper knowledge about such issues will determine the environmental practices adopted. Thus, the capacity of an organization to learn about the business–natural environment interface and to manage this knowledge can have a fundamental influence on the development of sustainable solutions to environmental problems (Marcus & Nichols, 1999).

In companies with a separate Chair, the board Chair may help the CEO grasp new ideas and learn new behaviors and thus integrate information about new or emerging environmental issues. The Chair is responsible for seeing that the company

has an identifiable sense of purpose, and this purpose is regularly reviewed, in order to ensure the company's continuity (Cadbury, 2002). Therefore, the Chair can assist the CEO in setting strategy (Raynor, 2007). As a result, older CEOs may have more confidence to make the decisions to invest to improve the environmental performance if an external agent (the separate Chair) provides support (or just an umbrella), thus avoiding the feeling of risk that making decisions alone in a complex field. In addition, the Chair's role involves being responsible for leadership of the board and for ensuring its effectiveness in all aspects of its role, and for setting its agenda. Even though a board is composed of knowledgeable and highly experienced individuals, it still needs to be led well (Tricker, 2009). The Chair is responsible for ensuring that directors receive accurate, timely, and clear information and for managing the board so that they allow sufficient time to discuss complex or contentious issues. According to Higgs (2003), a Chair who was formerly the chief executive of the same company may simply take for granted his or her inside knowledge and fail to act as an informational bridge for the board of directors. As a result, the Chair/CEO duality may override the role of the firm's directors, and over play the executives' role (Higgs, 2003).

Therefore, in companies with a separate Chair, the Chair and the board may have an important role assisting the CEO in grasping new ideas and learning new behaviors, and thus in assimilating information about environmental issues, helping the CEO to overcome the learning and information capability difficulties caused by the age (Hambrick & Mason, 1984; Taylor, 1975). In this context, it would be more likely that the CEO's future time perspective derived from his or her age is enhanced through a separate Chair.

Hypothesis 4: In firms with a separate Chair, the effect of CEO age on the environmental performance is higher.

The same argument that applies to CEO age can be extended to CEO tenure. With each passing year, managers receive less information and acquire task knowledge more slowly (Kor, 2006). Over the time, organizations' members develop habits, establish "customary" information sources, and rely on past experience instead of on new stimuli (Katz, 1982). Most managerial learning occurs during the first few years in the firm; then, after early success and initial learning, managers may commit psychologically to strategies they feel comfortable with (Finkelstein & Hambrick, 1996).

When the CEO and the Chair are separate figures, the role of board members is more influential (Higg, 2003). Directors can be seen as experts who use their experience to solve strategic problems and as a knowledge resource for managers (Rindova, 1999). Board members may supply the managerial capabilities needed to integrate environmental issues into the firm's strategy. Consequently, the future perspective may better be implemented. We propose:

Hypothesis 5: In firms with a separate Chair, the effect of CEO tenure on the environmental performance is higher.

4.4 Methodology

4.4.1 Sample

Our sample contained 165 observations. We collected data for a three-year period from 126 electric utilities generating, transmitting, and distributing electricity for public use in the United States. The electric industry is an appropriate context for our research for two reasons. First, the process of generating electricity is the single largest source of carbon dioxide (CO₂) emissions in the United States (Energy Information Administration, 2010), hence the electricity industry is highly affected by the challenges of environmental investments. Emissions can be reduced significantly through the use of low-carbon fuel or renewable sources to generate electricity (Environmental Protection Agency, 2010).

Second, this industry underwent major deregulation, giving major discretionary power to managers and directors (Brennan, Palmer & Martinez, 2002; Dallas, Palmer & Heintzelman, 2001, Delmas, Russo & Montes-Sancho, 2007). Consistent with the pattern in other industries, as deregulation has unfolded in the electric generation industry, so has a range of strategic responses. Opening markets to competition generally gives firms better incentives to control costs, introduce innovations, and seek new ways to serve consumers (Brennan et al., 2002; Dallas et al., 2001). Just to illustrate, some firms stress low-cost power and focus on minimizing generation costs and prices to consumers, and others focus on offering power produced using less environmentally harmful methods (Delmas et al., 2007). Therefore, the process of deregulation offers an appropriate context for the potential of generating opportunities for managers' influencing new strategic orientations in the firms. In fact, although we have seen key advances in the pursuit of sustainability over the last few years in the

entire sector, there has been substantial variability between companies (Delmas et al., 2007).

Information relative to environmental performance was obtained from three databases: the Energy Information Administration (EIA), for information about the deregulations and renewable portfolio standard measures in each state; the Toxics Release Inventory (TRI) database, which records the level of emissions in different states where the firms operate; and the eGRID database (U.S. Environmental Protection Agency), which offers environmental information at the firm level. The eGRID contains data for the years 1996 through 2000, and for 2004 and 2005. So far, there are no data for other years available in eGRID. In selecting the three years' data to analyze, we chose years that would give us a range of values over time but also allow us to use the previous years' data as "control" data. As a result we chose to analyze the data for the years 2005, 2000, and 1997 (controlling the effects of 2004, 1999, and 1996). Because of the high rate of change in the electric industry, just 25.4 percent of all analyzed firms are present throughout all three years.

Financial information was obtained from the Capital IQ (linked to Standard & Poor's). Corporate governance data came from the EDGAR database, which contains public-access documents of companies bound by law to disclose financial information to the U.S. Securities and Exchange Commission (SEC). Subsidiary, these data come from the companies' Annual Reports (if the Form was missing).

4.4.2 Measurement of Variables

Environmental performance

Our dependent variable was measured by the firm's total emissions of carbon dioxide in tons. According to the U.S. Energy Information Administration (2010), energy-related CO₂ emissions represented 81.3 per cent of total U.S. greenhouse emissions in 2008, and generation of electricity emits more than twice as much CO₂ per unit as does the end-use of gasoline and other petroleum products, and three times as much as the direct use of natural gas. A future perspective would dictate the firms' logical decisions would be to make an investment to cut their carbon emissions, fossil fuel combustion (i.e., coal, oil, natural gas), the source of most carbon dioxide emissions (U.S. Energy Information Administration, 2010), is still the cheapest way of getting electricity, in the absence of carbon pricing and if one neglects the environmental costs.

The total firm's emissions have been weighted taking into account the net generation in megawatts per hour (MWh: the amount of electricity produced by the generator and transmitted to the electric grid and excluding any generation consumed by the plant). Finally, the variable has been reverse coded in order to simplify the interpretation. Thus, a high level of the dependent variable means better environmental performance.

Independent Variables

The age of the CEO. Information comes from proxy FORM 10K for the fiscal years 2004, 1999, and 1996, respectively, or from the firm's Annual Report for the year if the Form was missing. Ages are given as at the beginning of the reference years.

Board age. This variable is calculated as the average age of the directors. Information comes from proxy FORM DEF 14A for the fiscal years 2004, 1999, and 1996, respectively, or from the Annual Report for the year if the Form was missing. Ages are as at the beginning of the reference years.

CEO tenure. In order to best capture the CEO time orientation, we define the tenure of the CEO by taking into account the years since he or she was first appointed as director or manager for this company. Information comes from proxy FORM 10K for the fiscal years 2004, 1999, and 1996 or from the Annual Report for the year if the Form was missing.

Board tenure. This variable is calculated as the average of years that the directors of a company have been holding their positions. Information comes from proxy FORM DEF 14A for the fiscal years 2004, 1999, and 1996, respectively, or from the annual report for the year if the Form was missing.

Separate Chair. This is a categorical variable that takes the value 0 if the CEO and the Chair are the same person and the value 1 if they are not. Information was obtained from proxy FORM 10K for the fiscal years 2004, 1999, and 1996, or from the Annual Report for the year if the Form was missing.

Control Variables

Historic financial profitability. Weak profitability may encourage boards of directors to play a particularly substantial role, and their influence on strategy may thus become more pronounced (Goodstein & Boecker, 1991). Profitability may also be associated with the attention given to environmental issues or whether or not these issues are considered a threat (Etzion, 2007; Sharma, 2000). We used the return on

equity (ROE) from the previous year, frequently cited in the literature as an indicator of a company's financial performance.

Size. Economies of scale are a major feature that must be considered in this sector (Delmas & Tokat, 2005), as well as a determinant of environmental behavior (Aragon-Correa, 1998; Christmann, 2004). We controlled for firm size by using the total value of assets reported on the Balance Sheet.

Age of assets. Firms with older plants tend to pollute more and consequently exhibit worse environmental performance (Berrone & Gomez-Mejia, 2009). The age of assets is represented by the logarithm of the total portion of fixed asset cost written off by periodic depreciation charges since the assets were acquired over the total asset.

Equity financing. Debtholders will be unwilling to invest in projects with high firm- specific assets because, in case of default, the value obtained from these assets' liquidation would be extremely low and lenders would recover only a small fraction of their investments. In this sense, studies have shown that R&D intensity of a firm is negatively related to its leverage (Balakrishnan & Fox, 1993). Also, the literature states that the level of debt affects the diversification strategy, specifically, Kochhar and Hitt (1998) found that equity financing is preferred for related diversification, and debt financing for unrelated diversification. We control the effect of equity/debt financing in the choice to invest to cut carbon emissions including a variable defined as book value of equity over total asset.

CEO appointment. This variable is the number of years since he/she was appointed CEO. Reference years are 2004, 1999, and 1996, respectively. The

information comes from proxy FORM 10K for the fiscal years 2004, 1999 and 1996, or from the Annual Report for a year if the Form is not available.

Board size. Kassinis and Vafeas (2002) found that a company's likelihood of becoming a lawsuit defendant increased with board size, due to weaker effectiveness and greater diffusion of responsibility. We controlled for board size by counting the number of directors.

Region emissions. To pick up the influence of environmental conditions in the state, we included a variable to proxy the level of emissions in the states where the utility operates in analyses. Following Delmas et al. (2007), King and Lenox (2000), and Kassinis and Vafeas (2002), we used the state's toxic emissions (the total amount of on-site and off-site toxic release) from the U.S. Environmental Protection Agency (EPA) Toxics Release Inventory (TRI) database (U.S. Environmental Protection Agency, 2004), and then divided this number by the state's land area (U.S. Census Bureau, 2008). For firms that operate in several states, we weighted this measure by the percent of electricity generated in each state.

Deregulation. According to Delmas et al. (2007), deregulation introduced to this industry has stimulated environmental differentiation. To pick up the effect of deregulation, we follow Delmas et al. (2007), who created a variable that represents whether or not retail deregulation policy had been enacted in a given state. To do so, we used information from the U.S. Energy Information Administration (2010). The formal adoption of retail deregulation is an important threshold that is tractable and consistent across states (Delmas et al. 2007; Delmas & Tokat, 2005). The variable takes the value of 1 if a retail deregulation has been enacted or a regulatory order has been issued, and 0 otherwise. This variable was then weighted based on the percentage of electricity

generated by the utility in each state to create the variable deregulation used in the regression.

Renewable portfolio standard in place. This variable captures the effect of operating in a state with an established renewable portfolio standard (RPS) (Lawrence Berkeley National Laboratory, 2008). This variable takes the value 1 if a state has enacted RPS, and 0 otherwise. For multi-state utilities, this variable was weighted based on the percentage of electricity generated within each state by the firm.

Years. We use two dummy variables to take into account possible differences between the years included into the sample: *Year00*, which is a categorical variable that takes the value 1 for year 2000 and 0 in other cases, and *Year05*, a variable that takes the value 1 for year 2005, and 0 in other cases.

4.4.3. Data Analysis

Practices associated with sustainable development are often context-specific (Bansal, 2005). As a result, we limited our study to a single industry, in particular electric utilities in the US. Consequently, the sample of firms for which we extracted data is relatively small. However, we improved the reliability of the results by analyzing the data over 3 separate years: 1997, 2000, and 2005. We formed a pooled cross-section by combining the three years, which resulted in pooled OLS estimation regressions with 165 observations. We have followed the lead of prior work with a similar size data set specific to the U.S. electric utilities sector studies (Delmas et al., 2007).

4.5 Results

Table 4.1 reports descriptive statistics and correlations for the variables examined in our study. The variables are not highly correlated except for standard portfolio, which is significantly correlated with regulation (0.56), for the year dummies between them (-0.56), for size of the firm with size of the board (0.41), and for CEO appointment with CEO tenure (0.41).

To reduce potential problems of collinearity, we centered the variables for the moderation regressions. We also calculated the variance inflation factor (VIF) after each regression to understand whether the results were subject to multicollinearity. Values were within acceptable limits, indicating that our calculations were free of any significant multicollinearity bias (the highest FIV is 2.68). We also tested the robustness of the findings, checking that the results are the same when we exclude the highly correlated control variables (comparison of Model 3 with Model 4) (Delmas & Tokat, 2005). On the other hand, the Durbin–Watson statistic indicates that there is no autocorrelation of the residuals and the White test statistics indicate that there is not presence of heteroscedasticity.

Results from the pooled regression analyses are listed in Table 4.2 Model 1 presents the results of the regression with the control variables, and serves as baseline model. As shown in the model, five of the control variables are statistically significant. They are financial profitability, size of the firm, equity financing, region emissions, and deregulation. According to the results, firms with more previous financial profitability and who operate in regions with high emission scores have worse environmental performance, while larger firms with greater equity financing that operate in states where retail is deregulated have better environmental performance.

Table 4.1 Descriptive Statistics and Correlations of Variables Used in Analysis^a

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
1. Environment. performance	-81.00	36.46	1.00																
2. Financial profitability	12.10	11.42	-.06	1.00															
3. Size	15.71	1.35	.17*	.05	1.00														
4. Age of assets	-0.91	0.51	-.08	-.13*	-.09	1.00													
5. Equity financing	0.62	0.10	.18**	-.07	-.10†	.36***	1.00												
6. CEO appointment	4.90	4.19	.05	-.07	.10†	-.08	-.07	1.00											
7. Board size	11.08	2.48	.09	-.00	.41***	.04	.22**	-.06	1.00										
8. Region emission	11.99	12.36	-.12†	.02	.30***	-.10†	-.20**	-.09	.10†	1.00									
9. Deregulation	0.39	0.44	.28***	.19**	.26***	-.24**	-.24***	.01	-.07	.25**	1.00								
10. Standard portfolio	0.30	0.40	.16*	.19**	.09	-.26***	-.18**	.24**	-.18**	.07	.56***	1.00							
11. Year 2000	0.30	0.46	-.02	-.04	.01	.05	-.12†	-.03	.06	-.13*	.18*	-.06	1.00						
12. Year 2005	0.43	0.50	.12†	.08	.15*	-.18**	-.00	.02	-.13*	.38***	.34**	.43***	-.56***	1.00					
13. CEO age	55.58	5.61	.17*	.03	.27***	.09	.03	.25**	.18**	.08	.03	.00	-.08	.05	1.00				
14. Board age	59.62	2.88	.02	-.17*	.19*	-.00	-.09	-.02	.02	.21**	.04	.00	-.06	.10†	.20**	1.00			
15. CEO tenure	11.69	7.28	-.11†	-.04	-.07	-.16*	-.15*	.41***	-.08	-.05	-.05	.14*	-.05	.01	.15*	.09	1.00		
16. Board tenure	7.95	2.79	-.14*	-.28***	-.08	-.00	.01	.17*	-.04	-.07	-.30***	-.13*	.19**	-.27***	.03	.38***	.08	1.00	
17. Separate CEO	0.22	0.42	.14*	.14*	-.04	-.03	-.01	-.18*	-.08	.11†	.19**	.06	-.10†	.21**	-.25**	-.11†	-.17*	-.26***	1.00

^a n=165. Table contains Pearson's correlation coefficient. Significant at the †.10; * .05; ** .01; *** .001 level.

Table 4.2 Pooled Regression Results^a

	Model 1	Model 2	Model 3	Model 4
Control variables				
Financial profitability	-0.44† (0.24)	-0.55* (0.24)	-0.48* (0.24)	-0.49* (0.23)
Size	4.01† (2.30)	2.84 (2.33)	3.31 (2.24)	3.83† (2.00)
Age of assets	-7.01 (5.63)	-10.68† (5.67)	-8.88 (5.59)	-10.10† (5.40)
Equity financing	91.42** (30.44)	88.85** (30.15)	81.09** (29.20)	88.58** (27.02)
CEO appointment	0.06 (0.66)	0.31 (0.74)	0.47 (0.72)	
Board size	0.48 (1.24)	0.25 (1.23)	0.60 (1.18)	
Region	-0.66** (0.25)	-0.68** (0.24)	-0.62** (0.24)	-0.58** (0.22)
Deregulation	32.30*** (8.31)	25.37** (8.67)	23.01** (8.34)	23.91*** (6.33)
Standard portfolio	-0.32 (8.89)	3.76 (8.81)	2.53 (8.61)	
Year 2000	-8.01 (7.76)	-4.75 (7.80)	-2.61 (7.52)	
Year 2005	-1.09 (8.29)	-3.75 (8.21)	2.33 (8.02)	
Direct effects				
CEO age		1.25* (0.52)	1.14* (0.51)	1.24* (0.48)
Board age		0.65 (1.06)	0.18 (1.05)	0.18 (0.99)
CEO tenure		-0.55 (0.40)	-0.64† (0.39)	-0.51 (0.35)
Board tenure		-1.04 (1.18)	-0.65 (1.16)	-0.75 (1.05)
Separate CEO		13.94* (6.74)	23.26** (7.22)	23.05** (7.08)
Moderating effects				
CEO age*CEO tenure			0.20** (0.06)	0.19** (0.06)
Board age* Board tenure			-0.32 (0.35)	-0.30 (0.33)
CEO age * separate			1.99† (1.21)	1.95† (1.18)
CEO tenure* separate			3.01** (0.95)	2.87** (0.93)
Constant	-209.70*** (38.27)	-187.85*** (38.69)	-194.43*** (37.33)	-199.29*** (36.23)
R ² adjusted	.17	.20	.27	.29
F(dl)	4.08*** (11)	3.64*** (16)	4.08*** (20)	5.46*** (15)
ΔF (dl)	4.08*** (11)	2.29* (5)	4.47** (4)	

^an=165. Table contains unstandardized regression coefficients. Standard errors are in parentheses.

Significant at the †.10; * .05; ** .01; *** .001 level.

Model 2 includes the direct effect of the independent variables analyzed. The F-test was used in all models to understand improvements as a consequence of the incorporation of the variables in each step. All the successive F-tests show statistically significant improvements of the model.

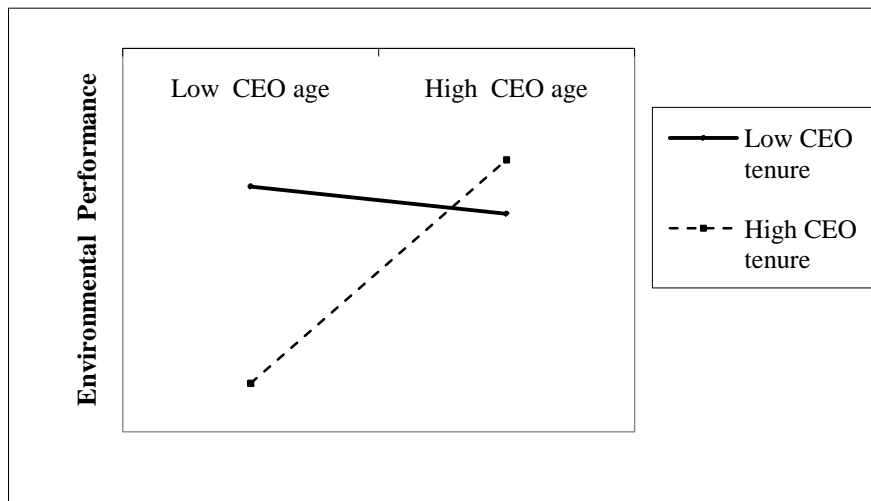
Hypothesis 1 suggests that firms with older CEOs have better environmental performance. Model 2 shows that the coefficient of the variable representing CEO age is positive and significant at the 5 percent levels in all models. This indicates that CEO age is positively related to corporate environmental performance. Therefore, Hypothesis 1a is supported. However the coefficient of the variable representing board age is not significant. Thus Hypothesis 1b, which suggests that firms with high board age average have better environmental performance, cannot be accepted for the sampled firms.

Regarding tenure effects, the Model 2 shows that the coefficient capturing CEO tenure and the coefficient capturing board's tenure are not significant. Therefore, neither Hypothesis 2a nor 2b, which predict a positive effect of CEO and of board tenure, respectively, can be accepted for the sampled firms. Model 3 will complement these results, showing the combined effect of age and tenure. Finally, an interesting observation that can be also made from Model 2 is that the main effect of a separate Chair is positive and statistically significant. That means that firms with a separate Chair have better environmental performance for our sample, supporting prior work in this area (McKendall et al., 1999; Lattemann et al., 2009).

Model 3 completes the analysis, including the moderating relationships. The Model shows that the interaction between CEO tenure and CEO age is significant at the 5 percent level. Figure 4.1 helps us better understand the moderating effect. The Figure shows that, although age is strongly related with better environmental performance for

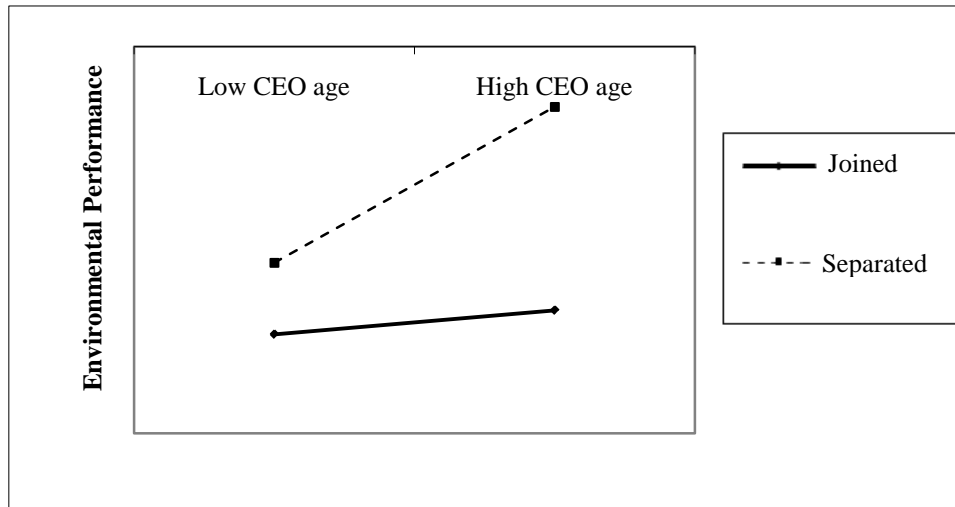
firms with long-tenure CEOs, the effect of CEO age is less when the tenure is short. Thus, Hypothesis 3a, which states that in firms with long-tenured CEOs the effect of CEO age on the environmental performance is higher, is accepted. However, the moderating influence of tenure in the effect of age on the environmental performance is not significant in the case of boards. As a result, Hypothesis 3b cannot be accepted for our sampled firms.

Figure 4.1 The Combined Effect of Age and Tenure



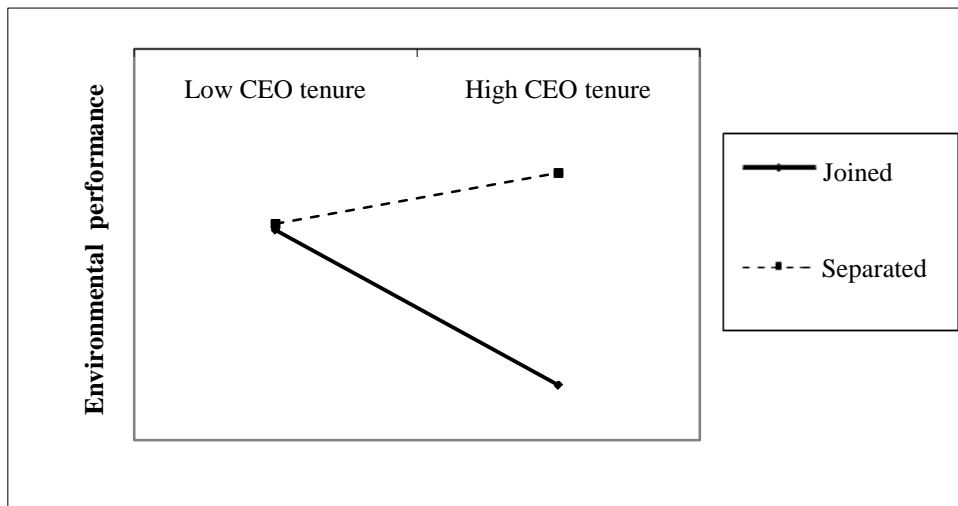
On the other hand, we find that the coefficient of the variable representing the interaction effect between separate Chair and CEO age is significant at the 10 percent level. Figure 4.2 helps us better understand the moderating effect. The Figure shows that, although age has strong effects on firms' environmental performance, the effect of CEO age is less when the Chair is not separate. Thus, we can accept Hypothesis 4, which states that the effect of CEO age on the environmental performance is higher in firms with a separate Chair.

Figure 4.2 CEO Age and CEO Duality



Finally, we find that the coefficient of the variable representing the interaction effect between separate Chair and CEO tenure is significant at the 1 percent level. To facilitate interpretation, we plotted this relationship in Figure 4.3. This Figure shows that, while tenure has a strong effect on the environmental performance in firms with a separate Chair, the effect of CEO tenure is less when the Chair is not separate. Thus, Hypothesis 5, which states that the effect of CEO tenure on the environmental performance is higher in firms with a separate Chair, is also supported.

Figure 4.3 CEO Tenure and CEO Duality



4.6 Discussion, Limitations and Future Research

In this paper we analyzed the relation between the firm's future time perspective and its environment performance. We analyzed corporate governance characteristics that explain a firm's time perspective (i.e., CEO/board age, CEO/board tenure, and CEO/Chair separation) and its corporate environmental performance, using pooled OLS estimation with 165 observations from the U.S. electric utilities sector. We showed that the firm's time orientation is important to its corporate environmental performance. At the heart of environmental decisions is an intertemporal choice problem (pay now for rewards later). Firms must manage this intertemporal choice for better environmental performance, and a future time orientation puts greater value in investments that have greater longer-term payoffs.

Prior studies that have examined the influence of the upper echelon members' age and tenure in the firms' decisions have focused primarily on their attitude toward risk, arguing that older CEOs and longer-tenured CEOs tend to be more risk-averse than their younger, newer counterparts. For example, Barker and Mueller (2002) find that older CEOs are less likely to spend money on R&D because they are looking for quicker results than younger CEOs. According to the authors, R&D spending involves considerable risk and high failure rates, deflects funds away from current profitability in favor of long-term payoffs. In other words, older CEOs make intertemporal choices that favor the short term over the long. This reasoning is intuitive, given that older CEOs have often have few years before retirement, so that they will not reap the rewards of the R&D investments, either by experiencing the firm level benefits or from the personal benefits through salary and bonuses. Along the same lines, previous literature has also argued that longer tenured managers and directors are less willing to take risks

than their newer counterparts. For example, using international acquisitions as a context for risk-taking, Matta and Beamish (2008) find that a longer career horizon is positively associated with the likelihood of international acquisitions, because of their increasing aversion to risk as they approach retirement.

Contrary to this prior work, we find that older CEOs with longer tenure tend to make potentially risky investments involving environmental performance. We believe our results are contrary to prior results because of the distinctive nature of environmental decisions. Although environmental investments present an intertemporal choice much like R&D investments, the former offer more societal payoffs than the latter. The CEO's and boards future time perspective is more relevant in decisions involving societal level outcomes, than firm level outcomes.

This paper also offers important insights into the separation of the CEO and Chair functions within companies. Prior research on whether role separation improves corporate performance and corporate value has been contradictory and inconclusive (Kakabadse, Kakabadse & Barratt, 2006). Some studies found a positive relationship between firm performance and role duality (Boyd, 1995), others found a negative relationship (Daily & Dalton, 1994), and still others find no effect (Dalton, Daily, Ellstrand & Johnson 1998). In the case of environmental issues, prior work has argued for a negative relationship between role duality and environmental performance (McKendall et al., 1999), but supporting evidence has not been uncovered (Berrone & Gomez-Mejia, 2009; McKendall et al., 1999). In this paper we find that CEO-Chair duality has a negative and significant effect on firm environmental performance. Firms that separate the CEO and Chair roles experience better environmental performance, which supports the empirical evidence of prior studies that state the separate Chair has

an important role in ensuring the company's continuity (Cadbury, 2002). Firms that separate the CEO and Chair roles are more apt to make the major investments necessary in technologies that improve their firms' environmental performance.

Moreover, we find that separating the CEO and Chair roles moderates the relationship between CEO tenure and environmental performance. A separate Chair can assist the CEO in understanding the value of new ideas, such as environmental performance and integrate information about environmental issues. In other words, the Chair can help the CEO overcome resistance to new ideas, which may come with tenure and age, especially related to the environment (Hambrick & Mason 1984; Taylor, 1975).

Our analysis failed to show a direct effect of CEO tenure or of board age and tenure on environmental performance. The lack of support for these predicted relationships may be due to several factors. First, in the case of CEO tenure, the notions of entrenchment and responsiveness to new ideas may supersede the benefits that accrue from their knowledge of the firm. This effect is demonstrated by the significance of the moderating effect of CEO/Chair separation. When the CEO and the Chair are separated, the Chair and the board members may offer the diversity of perspectives and capabilities to overcome the hurdles associated with a commitment to environmental performance. The Chair and board can help the CEO apply his/her future perspective.

Second, although boards have an increased involvement in the strategic direction of firms, we have not been able to show a significant effect of the directors' time perspectives on the environmental performance. We may not have found a positive relationship in part because of the ineffectiveness of board in promoting changes in the firm. Even if the board values the environment, their function is more of an auditing

function that aims to curtail management hubris and contain organizational risks. Although the natural environment may be framed as a risk to the organization, the effect may be too small to be seen as posing a significant risk to financial performance. Boards are more focused on major strategic decisions, and environmental investments may just not rank sufficiently high within the organizations in our sample. Supporting these results, Berrone and Gomez-Mejia (2009) did not find that firms adapting the board's structure in creating specific environmental board committees influenced the firm's decisions related to environmental issues, such as the decision to link the CEO total pay to environmental performance.

Several of the control variables we applied were significant. To our surprise, we found that firms with greater financial profitability have lower environmental performance. Financial profitability has been extensively studied as an antecedent of environmental performance. Some authors have found that previous profitability may also be associated with the attention given to environmental issues or whether or not these issues are considered a threat (e.g., Etzion, 2007; Sharma, 2000). However, weak profitability also indicates a lack of adaptation within the firms and it may encourage changes in the firm's strategy (Golden & Zajac, 2001). Our results support this second line, showing a negative influence of previous financial performance in the corporate environmental performance. In the case of our sample, power producers may confront a trade-off between low-cost fossil fuels and the higher priced lower carbon alternatives. These trade-offs are likely quite stark among the U.S. utilities in our sample, which further supports our use of this context to test our theory of organizational time orientation on environmental performance.

Previous studies (Delmas et al., 2007) have not found a significant effect between the emissions in an area and the investments in renewable energies. We found a significant negative effect. Regions with high emissions are home to firms with weaker environmental performance, which is consistent with our expectations. Consistent with other studies (e.g., Aragon-Correa, 1998; Delmas et al., 2007), we found organizational size to have a significant and positive associated the environmental performance. The degree of equity financing also has a positive effect. This result supports the view that debtholders are likely unwilling to support investments in projects with high firm-specific assets (such as an investment in reducing emissions) because, in case of default, the value obtained from these assets' liquidation would be extremely low (Balakrishnan & Fox, 1993). Equity is a better option to finance long term investments of this sort. Finally, firms that operate in deregulated states have better environmental performance. This positive effect of deregulation accords with the results obtained by Delmas et al. (2007), who states that deregulation introduced to this industry has stimulated environmental differentiation.

4.6.1 Limitations and Future Research Directions

Several important limitations of the study warrant discussion. First, we restricted our managerial focus to CEOs. Although the upper echelon theory does not require a focus on the top management team (and a number of significant contributions have examined CEOs and other individual leaders), attention to executive groups, rather than to individuals, often yields better explanations of organizational outcomes (Hambrick, 2007).

A second limitation is that we used publicly observable CEO and board characteristics (age and tenure) as proxies for unobservable or hard-to-observe variables (time perspective). As Hambrick (2007) proposed, alternative methodologies (e.g., simulations) may contribute to a better understanding of the psychological and social processes that serve to transform executive characteristics into strategic actions.

4.6.2 Implications for Managers and Policy Makers

Findings from this study have important managerial implications. First, the organization's time orientation matters to environmental decisions. As previous corporate experiences show (e.g., Enron), adopting a short-term perspective is not in the long-term best interest of the corporation. Therefore, firms have to manage this intertemporal choice problem in order to achieve better environmental performance. Our findings are important to prior work, which would likely have predicted that CEO values are the most important aspect of corporate governance in shaping environmental performance.

Second, directors should be seen as experts who use their experience in solving strategic problems and as a source of expertise knowledge that assists managers. Board members may complete the manager capabilities needed to integrate environmental issues into the firms' strategy.

On the other hand, we state that policy makers have to pay attention to the factors that affect the firm's time perspective when incentive instruments are designed. When the interests of future others are at stake, ethical considerations are relevant regardless of whether decisions involve the allocation of benefits or burdens. A central

challenge in intertemporal decisions is that the ethical implications of such decisions are not always evident. To the extent that people are made aware of their long-term impact on others, the ethical nature of these decisions will become more salient. Thoughts of one's legacy bring to the fore one's long-term impact on others (Wade-Benzoni et al., 2010). Highlighting the ethical implications of environmental choices could encourage present actors to think more about their legacies. Codes of ethics that focus on the long-term and multi-generational nature of organizations may make intergenerational beneficence more likely (Wade-Benzoni et al., 2010).

The tension between the short and long term are at the heart of the decisions to invest on environmental improvements. To better understand the determinants companies' future directions may ultimately help to encourage them to move toward the goal of environmental investment.

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CAPÍTULO 5

RECAPITULACIÓN Y CONSIDERACIONES FINALES

5.1 Introducción

Dedicamos este último capítulo a presentar un resumen general de las aportaciones obtenidas gracias a los estudios realizados en los tres artículos recogidos en esta tesis. La estructura del capítulo es la siguiente. En primer lugar, se resumen las principales conclusiones tanto a nivel general como las específicas de cada artículo. A continuación, se subrayan las implicaciones académicas, de gestión empresarial y para los reguladores públicos de dichos resultados. Finalmente, se presentan las limitaciones y las futuras líneas de investigación para próximos trabajos.

5.2 Conclusiones del Trabajo de Investigación

Este trabajo aporta una mayor comprensión sobre los importantes vínculos existentes entre el gobierno corporativo y el planteamiento medioambiental de las empresas. Para ello, se han utilizado los enfoques teóricos con mayor poder predictivo para cada una de las relaciones analizadas y una metodología rigurosa y diversa para la verificación de las hipótesis de investigación.

La relación de la empresa con el medio ambiente es una cuestión estratégica que se define, en buena medida, de acuerdo con las líneas marcadas por los participantes de la empresa al más alto nivel, esto es, a nivel corporativo. Por ello, los incentivos, las relaciones de poder, así como las percepciones temporales de estos participantes, tienen una importante influencia en las prácticas medioambientales que las empresas adoptan. A nivel general, podemos concluir que el gobierno corporativo de la empresa tiene una estrecha relación con el desarrollo medioambiental de la misma.

Por otro lado, la aportación de este trabajo no se circunscribe sólo a la gestión medioambiental, sino que también pretende ser de utilidad para la mejor comprensión de las relaciones de gobierno corporativo analizadas. En este sentido, los resultados obtenidos en los tres capítulos anteriores nos permiten concluir que, para la consecución del objetivo general de que las empresas sean gobernadas de manera que aseguren su supervivencia en el tiempo, la consideración de los incentivos de los propietarios, las dependencias gestionadas a través del consejo de administración y la perspectiva temporal de los directivos y consejeros tienen un notable efecto.

Procedemos, a continuación, a recoger las conclusiones de cada uno de los tres artículos de investigación donde se detallan cuáles son estos efectos.

Respecto al capítulo dos, que recoge el trabajo titulado “*The relationship between managerial and institutional ownership and corporate environmental performance*”, los resultados obtenidos muestran que son las empresas con menor porcentaje de inversión institucional las que más han mejorado el desempeño medioambiental en el periodo analizado. Esto puede deberse a que, como dicen algunos autores (ej. Graves, 1988), los inversores institucionales buscan ganancias a corto plazo dificultando que las empresas realicen fuertes inversiones en la mejora de desempeño medioambiental, por temor a que una menor rentabilidad a corto plazo motive la salida de estos grupos del accionariado de la empresa. En cambio, nuestros resultados también muestran que aquellas empresas que más están mejorando su desempeño medioambiental, son las que más han aumentado en su estructura de capital el porcentaje de inversores institucionales. El análisis conjunto de ambos resultados nos lleva a proponer una visión alternativa a la planteada por Graves (1988), esto es, es posible que empresas con menos inversores institucionales estén tratando de atraer este

capital a través de la mejora de su desempeño medioambiental. Respecto al efecto de la propiedad en manos de los ejecutivos, el análisis realizado arroja resultados no significativos. La falta de significación de la relación lineal que se proponía entre la propiedad en manos de los directivos y la mejora del desempeño medioambiental, puede venir explicada por la existencia de efectos contradictorios derivados del incremento de propiedad en manos de los directivos.

En el tercer capítulo recogemos el artículo titulado “*A resource dependence perspective on the effects of director interlocks on proactive environmental strategies*”.

Tras la realización de este estudio, concluimos que la presencia de consejeros compartidos con empresas dedicadas a suministrar servicios intensivos en conocimiento, se relaciona positivamente con la posibilidad de adoptar una estrategia medioambiental proactiva. Las personas vinculadas a este sector están acostumbradas a gestionar situaciones complejas e información procedente de distintas fuentes. También necesitan adaptar su conocimiento y la información que gestionan para su aplicación específica a cada una de las empresas a las que suministran servicios. Como consecuencia, estos individuos necesitan desarrollar importantes capacidades de análisis y gestión del conocimiento. Los consejeros de estas empresas, a fin de desarrollar con éxito sus funciones de asesoramiento, deberán conocer y participar en estos procesos. Por ello, a través de los consejeros compartidos con este sector, la empresa tiene la posibilidad de trasladar al proceso de toma de decisiones estas importantes capacidades, aumentando la probabilidad de adopción de estrategias cuya correcta valoración requiere la toma en consideración de complejas implicaciones (ej. los beneficios que su adopción supondrá para el aumento de la legitimidad de la empresa o la mejora de la relación con los stakeholders). Estos consejeros pueden ayudar, además, a introducir en

la toma de decisiones una perspectiva más amplia, esto es, que la empresa sea más abierta a reorientar sus valores, normas y comportamientos. Trabajos previos han señalado que, aunque es complicado introducir esta apertura *-open-mindedness-* en la organización, si se consigue, aumenta la capacidad de la empresa para comprender nuevas ideas y fortalece la creatividad y la capacidad de detectar nuevas oportunidades, lo cual se relaciona positivamente con la apuesta por la innovación (Hernández-Mogollón, Cepeda-Carrión, Cegarra-Navarro y Leal-Millán, 2010). Al otro lado de la balanza sobre los efectos de los consejeros compartidos para la empresa, nuestro trabajo concluye que los consejeros compartidos con los proveedores de recursos relacionados con los sistemas de producción actuales de la empresa, son una barrera para su conversión hacia procesos de generación menos contaminantes. La búsqueda de la reducción de la incertidumbre sobre los recursos necesarios para el desarrollo del proceso productivo, lleva a la empresa a crear vínculos con proveedores que pueden hacer compleja su adaptación futura al entorno cambiante. Estas relaciones no sólo pueden estar significando importantes compromisos tácitos o explícitos con los proveedores, sino también una menor inquietud para la búsqueda de nuevas estrategias que se alejen de los recursos sobre los que ya ha adquirido una relativa certeza de acceso.

Por último, en el capítulo cuatro se presenta el artículo titulado *“Seeing the future: the importance of upper echelons’ time perspective in shaping corporate environmental performance”*. De acuerdo con los resultados de este análisis, las empresas con altos ejecutivos de mayor edad son las que tienen un mejor desempeño medioambiental. En concreto, este efecto se hace más intenso cuando, además, mantienen una larga permanencia en la empresa. La literatura anterior sostiene que la

edad de los directivos se relaciona negativamente con la asunción de riesgo y esto lleva a invertir menos en I+D (Barker y Mueller, 2002). Otro argumento previo es que los ejecutivos de mayor edad son más reticentes a llevar a cabo inversiones en I+D porque, al estar más próximos a su jubilación, es probable que no continúen en la empresa para ser recompensados por esta inversión. Nosotros, en cambio, encontramos que los consejeros de más edad tienden a realizar las potencialmente arriesgadas inversiones necesarias para mejorar el desempeño medioambiental. Esto nos lleva a concluir que, en la evaluación de esta decisión intertemporal hay algo distintivo, esto es, en este tipo de decisiones los sujetos se plantean consideraciones que van más allá de su retribución o de los beneficios directos que su decisión tendrá para la empresa, se plantean los beneficios a nivel social y su legado. En otras palabras, tienen más protagonismo los valores. Por otro lado, este trabajo también muestra que la separación de funciones entre presidente del consejo y del primer ejecutivo tiene un efecto positivo en el desempeño medioambiental, dando apoyo a los trabajos previos que plantean esta relación (ej. McKendall, Sánchez y Sicilian, 1999). Además, la separación modera la relación entre la permanencia del primer ejecutivo en la empresa y el desempeño medioambiental. En estos supuestos, el presidente del consejo puede ayudar al primer ejecutivo a comprender el valor de nuevas ideas y a integrar la información sobre cuestiones medioambientales.

5.3 Implicaciones del Trabajo de Investigación

5.3.1 Implicaciones Académicas

Desde un punto académico, la conexión existente entre el gobierno corporativo y el planteamiento medioambiental de las empresas no ha sido objeto de una especial

atención, aunque podemos encontrar notables excepciones (ej. Berrone y Gómez-Mejía, 2009; Berrone, Cruz, Gómez-Mejía y Larraza-Kintana, 2010; Kassinis y Vafeas, 2002; Ricart, Rodríguez y Sánchez, 2005). Nuestro trabajo ayuda a completar las propuestas de estos trabajos abordando nuevas líneas de argumentación y proponiendo nuevas relaciones.

La aplicación de la teoría de la agencia (capítulo dos) y la teoría de la dependencia de recursos (capítulo tres) al marco de la gestión medioambiental ha ayudado a enriquecer estas teorías. Así, en el capítulo dos, comprobamos como, en ocasiones, los intereses de los propietarios (el principal) pueden ir más allá de la mera rentabilidad económica. De hecho, las empresas con mejor desempeño medioambiental están atrayendo más a los inversores institucionales. Esto es, en la actualidad no puede obviarse que la sensibilidad social hacia el medioambiente es creciente y puede ejercer un claro impacto en las preferencias de los accionistas. El capítulo tres completa la teoría de la dependencia de recursos, mostrando empíricamente un supuesto en el que los consejeros compartidos, aún desempeñando un papel de ayuda en cuanto al acceso de recursos y de reducción de la incertidumbre (en este caso, acceso a los combustibles fósiles), pueden suponer restricciones a la adaptación de la empresa, esto es, un perjuicio desde el punto de vista estratégico.

Por otro lado, completamos la literatura medioambiental desarrollando estas dos teorías que tienen un alto potencial predictivo en este campo pero que han recibido escasa atención hasta el momento.

La aplicación de la teoría de la perspectiva temporal de las organizaciones es muy novedosa no sólo en el marco de la gestión medioambiental, sino también en la gestión en general. Creemos que, a través de la aplicación de esta teoría a las decisiones

medioambientales, hemos contribuido de forma importante en la configuración de la misma. En concreto, nuestra aportación se basa en unir la perspectiva temporal de las organizaciones con la perspectiva temporal de los individuos que la dirigen, determinando las características que definen su orientación temporal y la capacidad de trasladarla a la empresa.

5.3.2 Implicaciones para la Gestión

Los resultados de esta tesis tienen importantes implicaciones prácticas. Estas son:

- Un buen desempeño medioambiental es atractivo para los inversores institucionales. Por tanto, los directivos deben prestar atención a los temas medioambientales y ver la oportunidad que puede presentarse en el desarrollo pionero de este tipo de estrategias.
- Los miembros del consejo de administración son importantes desde el punto de vista estratégico, ya que pueden facilitar la obtención de los recursos que necesita la empresa. Esto es, a la hora de nombrar a sus consejeros, las empresas deben tener en cuenta el valor que éstos le van a aportar, ya que no todos los consejeros tienen el mismo potencial. Asimismo, tienen que tener en cuenta el equilibrio entre el acceso a recursos y pérdida de autonomía, pues la búsqueda de reducir la incertidumbre sobre recursos necesarios para la estrategia actual puede dificultar el cambio de estrategia.
- Experiencias previas han mostrado que la adopción de una perspectiva temporal a corto plazo perjudica gravemente los intereses a largo plazo de la organización, véase el caso de Enron. Las empresas deben gestionar

correctamente la decisión intertemporal que se plantea para la obtención de un mejor desempeño medioambiental.

- La creación de figuras separadas de primer ejecutivo y presidente del consejo de administración se relaciona positivamente con el buen desempeño medioambiental de la empresa. El presidente del consejo puede ayudar a crear una perspectiva hacia el futuro. La empresa debe tener presente los efectos beneficiosos de la separación de figuras cuando lleve a cabo la elección de estos cargos. A día de hoy, a pesar de las numerosas llamadas de atención sobre la conveniencia de la separación de estas figuras, en la práctica es muy usual que ambas aparezcan combinadas (Tricker, 2009). En el caso español, para el año 2009, en el 58,3% de las empresas españolas que cotizaban en un mercado secundario oficial, el presidente del consejo era también su primer ejecutivo (Informe de Buen Gobierno Corporativo, 2009).

5.3.3 Implicaciones para los Reguladores Públicos y Agentes de Interés

Nuestro trabajo analiza rasgos específicos que, por su importancia, podrían ser útiles en el desarrollo de los códigos de buen gobierno o incluso en regulaciones con respecto a los polémicos temas relacionados con el gobierno corporativo. Por ejemplo, la regulación de los consejeros compartidos debe ir encaminada a dar transparencia a estas situaciones más que a imponer limitaciones en cuanto a su número, ya que, en determinadas situaciones, puede ayudar a la empresa en la consecución de sus objetivos.

Además, este trabajo apoya la línea marcada por los códigos de principios y directrices de buen gobierno de defender la necesidad de que los consejos de

administración participen más activamente y que influyan con más claridad en la dirección estratégica de su organización.

Por otro lado, nuestro trabajo pone de manifiesto que es importante mejorar y apoyar los mecanismos a través de los cuales las empresas comunican su desempeño medioambiental a los inversores. Las empresas pueden sumarse al esfuerzo de mejorar su desempeño medioambiental si son conscientes de que los mercados valoran este desempeño y si tienen la posibilidad de hacer llegar sus actuaciones en este campo. Pese a los crecientes esfuerzos por hacer más transparentes los resultados medioambientales de las empresas (ej. Toxics Release Inventory o European Pollutant Releases and Transfer Registers), aún existen importantes deficiencias de información (Delgado-Ceballos y Rueda-Manzanares, 2010). Por ello, mayores esfuerzos gubernamentales en esta línea incrementarían los incentivos de las empresas para mejorar su desempeño medioambiental.

Finalmente, mantenemos que las entidades reguladoras, cuando diseñan los instrumentos de incentivos para mejorar el comportamiento de las empresas ante el medio ambiente, deben prestar atención a aquellos factores que afectan la perspectiva temporal de las organizaciones. Cuando los intereses de futuro de otros están en juego, las consideraciones éticas se vuelven relevantes (Wade-Benzoni, Sondak y Galinsky, 2010). Las decisiones medioambientales suponen un reparto de recursos entre la generación presente y las futuras. Sin embargo, las implicaciones éticas de las decisiones medioambientales no siempre se toman en consideración. Un esfuerzo gubernamental por dar más publicidad a las implicaciones que las decisiones medioambientales tendrán para las futuras generaciones, puede ayudar a los directivos y consejeros a pensar más en su legado. La proliferación de códigos de ética en los que se

resaltara la naturaleza a largo plazo e intergeneracional de las organizaciones, podría ayudar a que se adoptaran las decisiones para la mejora del desempeño medioambiental.

5.4 Limitaciones del Trabajo de Investigación

Este trabajo no queda exento de diversas limitaciones. A continuación enumeramos aquellas detectadas durante la realización de los tres capítulos anteriores:

1. Los análisis empíricos realizados en los tres artículos son de corte transversal, lo cual impide analizar la evolución de las variables a lo largo del tiempo y puede, en ocasiones, llevar a plantearnos dudas acerca de la causalidad de las relaciones propuestas.
2. La limitación relacionada con la causalidad de las relaciones se plantea con mayor intensidad en el capítulo tres. Salvo en el supuesto de que se tengan datos exhaustivos del proceso de toma de decisiones en la empresa y de las intenciones y motivos que llevan al nombramiento de los consejeros, es muy difícil establecer el orden entre estrategia y consejeros compartidos, incluso cuando se tienen datos longitudinales (Mizruchi, 1996). No obstante, pensamos que nuestros resultados son valiosos ya que, incluso aunque el consejero compartido sea consecuencia de una decisión previa de invertir en renovables (en lugar de que la decisión de invertir sea consecuencia de la presencia de estos consejeros), los consejeros siguen operando como una herramienta de acceso de recursos necesarios para el desarrollo de la estrategia o como una barrera para la misma.
3. En los tres artículos hemos limitado el análisis a contextos específicos. En concreto, en el capítulo dos nos centramos en Estados Unidos y Reino Unido, y

en el capítulo tres y cuatro en la industria eléctrica en Estados Unidos. Esto facilita la obtención de datos homogéneos, sin embargo, puede implicar alguna complicación de cara a la extensión de las conclusiones.

4. En el capítulo dos, hemos analizado el efecto de los inversores institucionales como una categoría conjunta. Los distintos tipos de inversores institucionales pueden tener una diferente aproximación a la sostenibilidad medioambiental (ej. fondos de pensiones y fondos verdes versus sociedades de inversión).
5. En el capítulo cuatro, nos centramos en la perspectiva temporal de los consejeros y del primer ejecutivo. Aunque hay una gran cantidad de contribuciones que se han extraído examinando sólo al primer ejecutivo (ej. Barker y Mueller, 2002) y específicamente también en cuanto a decisiones en materia medioambiental (ej. Berrone y Gómez-Mejía, 2009; Sharma, 2000), el estudio de todo el equipo directivo a menudo ofrece mejores explicaciones de los resultados organizacionales.
6. Por último, de nuevo en el capítulo cuatro, reconocemos como limitación el uso de características observables (edad y permanencia) del primer ejecutivo y de los consejeros como instrumento para definir variables inobservables o difíciles de observar (la perspectiva temporal). Hambrick (2007) propone metodologías alternativas (ej. simulaciones) para comprender mejor los complejos procesos psicológicos y sociales a través de los cuales las características de los directivos se transforman en acciones estratégicas.

5.5 Futuras Líneas de Investigación

En general, debe profundizarse más en el conocimiento de aquellas condiciones que ayudan a un mejor desempeño medioambiental. En concreto proponemos que:

- Sería interesante analizar los distintos tipos de inversores institucionales y su posible diferente aproximación a la sostenibilidad medioambiental. Especialmente, sería interesante estudiar la función que los fondos ISR están teniendo en las empresas en las que invierten.
- La falta de significación de la relación lineal propuesta entre propiedad de los directivos y el desempeño medioambiental así como las contradicciones en los trabajos previos, animan a preguntarse acerca de la posible existencia de relaciones no lineales. En este sentido, creemos que tiene un gran potencial explicativo la propuesta de una relación cuadrática.
- En el capítulo tres de este trabajo se estudia el papel de los consejeros compartidos como proveedores de recursos. Los consejeros compartidos pueden ser también vehículos de transmisión de prácticas. Trabajos empíricos han constatado que la presencia de consejeros compartidos con otras empresas está asociada con que éstas adopten prácticas y estructuras previamente adoptadas por aquellas, especialmente cuando se ha conseguido éxito económico con esas estrategias (Westphal y Fredickson, 2001). Por ejemplo, se ha estudiado este fenómeno respecto a la estrategia de fusiones y adquisiciones (Haunschild, 1993), la adopción de estructuras multidivisionales (Palmer, Jennings y Zhou 1993) y la adopción de sistemas de calidad total (Young, Charns y Shortell, 2001). Creemos que sería interesante analizar si los consejeros compartidos son un vehículo de transmisión de capacidades y prácticas medioambientales y si el éxito de las mismas (en forma de unos mejores resultados económicos) potencia esta relación.

- También respecto al estudio sobre los consejeros compartidos, pensamos que algunas variables relacionadas con características de la empresa, del consejo y de los propios individuos, pueden estar moderando la aportación que realizan estos sujetos a la estrategia de la empresa. Por ejemplo, a nivel empresa, la influencia de los consejeros compartidos con el sector financiero puede venir moderada por la necesidad externa de financiación. Asimismo, el momento del ciclo de vida donde se sitúa la empresa puede ser un importante determinante de las necesidades de recursos (Filatotchev y Bishop, 2002). Por otro lado, la influencia de los consejeros compartidos con empresas que suministran servicios intensivos en conocimiento podría estar moderada por la predisposición que los consejeros y los directivos tengan para aplicar la nueva información que estos consejeros compartidos pueden aportar a la empresa. En este sentido, Berchicci y Tucci (2010) señalan que la medida en la que los decisores aplican la nueva información –adquirida, entre otras fuentes, a través de la observación, métodos de mercado o los consumidores - puede depender no sólo de sus competencias para la recolección, integración y asimilación de la información, sino también de sus valores. En el caso concreto de las decisiones medioambientales, los valores, perspectivas y actitudes de directivos tienen un importante peso (ej. Flannery y May, 2000; Sharma, 2000). Por tanto, sería interesante analizar si en aquellos supuestos en los que los consejeros (y directivos a los que asesoran) están más concienciados o preocupados por el medioambiente o cuando estos ven las cuestiones medioambientales como una oportunidad, existe una mayor probabilidad de explotar la información obtenida a través de los consejeros compartidos para el desarrollo de estrategias medioambientales proactivas.

- Siguiendo la propuesta de Hambrick (2007), sería interesante la realización de trabajos que utilizaran metodologías alternativas (ej. simulaciones) para comprender mejor los complejos procesos psicológicos y sociales a través de los cuales las características de los directivos, y en especial su perspectiva temporal, se transforman en decisiones estratégicas.
- Asimismo, planteamos el interés de un análisis en el que se estudie si los efectos propuestos en los tres artículos presentados se ven condicionados por características de determinados sectores o países, ya que tanto el éxito de la estrategia medioambiental (Aragón-Correa y Sharma, 2003) como la efectividad del gobierno corporativo (Aguilera, Filatotchev, Gospel y Jackson, 2008) se ven afectadas por variables contingentes.
- Finalmente, resulta de gran interés realizar estudios longitudinales de todas las relaciones propuestas que nos permitan analizar la evolución de las variables a lo largo del tiempo y dar una mayor robustez a las conclusiones obtenidas.

En definitiva, el estudio de estas cuestiones no está agotado. Son muchos los aspectos cuya comprensión requiere aún una importante labor de los investigadores para tratar de comprender, y de mejorar, la actuación de las empresas. Esta tesis pretende contribuir a la consecución de este objetivo, así como abrir la puerta a futuros esfuerzos en este camino.

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