UNIVERSIDAD DE SEVILLA

DEPARTAMENTO DE DIRECCIÓN DE EMPRESAS Y COMERCIALIZACIÓN E INVESTIGACIÓN DE MERCADOS (MARKETING)

THE POSITIVE EFFECTS PRODUCED BY FIRM VOLATILITY ON FIRM GROWTH, EMPLOYMENT GENERATION AND FIRM PROFIT.

D. José Antonio Zarrías Adame

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2014.

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José Antonio Zarrias Adame

“Porque investigar es otra forma de amar al prójimo”.

Anónimo

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SPANISH SUMMARY

1.- INTRODUCCIÓN.

Durante los últimos años, la crisis económica global ha provocado que las empresas hayan modificado la forma de desarrollarse al necesitar competir en un entorno cada vez más complejo y turbulento. Este entorno competitivo ha cambiado sustancialmente y de manera más especial para las empresas asentadas en países desarrollados. Hasta 2007, las empresas situadas en estos países estuvieron orientadas a ser marcos competitivos en un mundo en constante crecimiento y partiendo de una base interna sólida en busca de una posición sostenible y competitiva en un mercado global.

En este sentido, existe una larga tradición de estudios que han abordado desde diferentes perspectivas teóricas el campo del crecimiento de las pequeñas y medianas empresas. Wiklund et al., (2009) presentaron una revisión de las principales perspectivas teóricas que han tratado de explicar el fenómeno del crecimiento de la empresa. En gran medida, el interés en este crecimiento viene justificado por las repercusiones directas en la creación de empleo (Birch et al. 1994), especialmente producido por las empresas de alto crecimiento denominadas "gacelas" (Henrekson y Johansson, 2010) que a su vez tienden a ser generadoras de innovación (Michael y Pearce, 2009).

Así mismo, en muchos países desarrollados, después un largo período de crecimiento estable, el entorno ha cambiado convirtiéndose en incierto y volátil, donde las tradicionales estrategias de crecimiento que se habían llevado a cabo hasta entonces, no son viables para muchas PYMEs. Por esa razón, nos preguntamos en esta investigación cómo es posible que las empresas puedan generar nuevos puestos de trabajo en un contexto que a priori al ser volátil e incierto, tiende al no crecimiento.

Los diferentes estudios sobre el crecimiento de las empresas se han dividido tradicionalmente entre los que investigan acerca de qué factores son los que desencadenan el crecimiento de las empresas, y aquellos otros que se han centrado en buscar propiamente cómo crecen las empresas (Gilbert et al 2006; McKelvie y Wiklund, 2010). Sin embargo, a lo largo de nuestra investigación teórica nos encontramos que la literatura relativa a emprendedores ha prestado poca atención al fenómeno de la volatilidad, a pesar de ser un derivado del crecimiento (Delmar et al., 2003; Headd y Kirchoff, 2009).

Por consiguiente, hemos querido centrar nuestro interés en el estudio y la investigación sobre la volatilidad de las empresas debido a que la mayoría de los estudios anteriores han tendido a centrarse en descubrir cómo crecen las empresas, siendo muy pocas de las investigaciones que han prestado atención a los efectos de la volatilidad y a la forma en que esos efectos podrían influir en el crecimiento de las empresas.

En este sentido, las investigaciones sobre volatilidad se han llevado a cabo de manera más profunda en dos áreas concretas, tales como son la económica y la financiera. Sin embargo, en el área de gestión "*management"*, las investigaciones sobre la volatilidad han sido muy limitadas. De las investigaciones realizadas en gestión, podemos decir que gran parte de ellas se centran en predecir los efectos de la volatilidad en las empresas (Powell et al., 2006) y a su vez, dichos estudios han focalizado su atención principalmente en empresas de gran tamaño (Tosi et al., 1973; Milliken, 1987; Powell et al., 2006; Thomas y D' Aveni, 2009) y menos en las pequeñas empresas (Delmar et al., 2003; Davis et al., 2007).

De estos estudios de investigación, podemos extraer una definición "común y aproximada" de la volatilidad, que puede ser definida como el aumento o la disminución de ingresos que vienen determinados de alguna forma como consecuencia de la incertidumbre existente en el entorno donde se desarrolla la empresa (Tosi et al., 1973). Por este motivo, la

volatilidad es un aspecto importante dentro del mundo de la investigación científica, siendo vinculada por algunos autores al denominado proceso de la destrucción creativa de Schumpeter (1942). Desde la perspectiva de este autor, las empresas más pequeñas tienden a ser más volátiles con el fin de adaptarse a las diferentes innovaciones y cambios que se van produciendo en su entorno. Este efecto multiplicado por el número de empresas existentes en una misma zona geográfica o sector, da lugar a generar un dinamismo que tiene su reflejo directamente en la propia economía de la zona donde se sitúan.

Sin embargo, a la hora de valorar los efectos que produce la volatilidad, la literatura que ha estudiado este fenómeno de manera mayoritaria, suele ser pesimista cuando describe los resultados que produce la volatilidad en las empresas, ya que tienden a realzar sobre todo los efectos más negativos (Pindyck 1991; Ramey y Ramey, 1995; Martin y Rogers, 1997; Imbs, 2007; Aghion et al., 2010) siendo minoritarios los estudios que abordan las consecuencias positivas (Black, 1987; Blackburn y Pelloni, 2004).

Por el contrario, la literatura que estudia el mundo de los emprendedores, al focalizar sus investigaciones en pequeñas empresas ha sostenido tradicionalmente que estas son menos rígidas que las grandes empresas (Park, 2003; Greve, 2011) y que, por tanto, esto las hace absorber los impactos y cambios producidos en su entorno de mejor forma que lo hacen las empresas más grandes (Dean et al., 1998). Esta idea se fundamenta bajo el argumento que las empresas pequeñas tienden a ser más flexibles y ágiles que las de mayor tamaño, lo que les hace obtener cierta ventaja competitiva (Feigenbaum y Karnani, 1991; Chen y Hambrick, 1995; Dean et al., 1998; Ruigrok et al., 1999).

Es por ello, que las empresas pequeñas son capaces de reaccionar con mayor rapidez y eficacia a las condiciones cambiantes de su entorno debido a su simplicidad y flexibilidad organizativa, que las hace más funcionales al adaptarse mejor y más rápido, no solo a los

cambios, sino también a las nuevas tecnologías (Cohen y Klepper, 1996; Roper, 1997). De ahí, que en nuestra investigación hayamos considerado importante introducir un marco teórico que está adquiriendo bastante relevancia en los últimos años, como es el de las capacidades dinámicas (Teece et al., 1997), el cual podrá ayudarnos a encontrar un posible vínculo entre el desempeño de estas capacidades por parte de las empresas más pequeñas y la propia volatilidad.

Esta idea nos ofrece la oportunidad de contribuir a la literatura de gestión a través de una perspectiva novedosa acerca de la investigación en la volatilidad, ya que consideramos que si se confirmaran las hipótesis propuestas la volatilidad podría desempeñar un papel relevante en el desarrollo de las empresas, ofreciendo una visión novedosa respecto de los tradicionales efectos negativos de las empresas, que darían paso a considerar también sus efectos desde un punto de vista positivo. En suma, con el fin de investigar los efectos positivos de la volatilidad en las empresas, utilizaremos dos marcos teóricos que nos servirán de apoyo científico y nos ayudaran en esta investigación, como son la teoría del crecimiento y también la teoría de las capacidades dinámicas.

En primer lugar, comenzamos nuestra investigación con el análisis del marco teórico que aborda el crecimiento de las empresas con el fin de comprender como se desarrolla el proceso de expansión empresarial y sus factores explicativos. Por este motivo, hemos comenzado con una revisión de la literatura tradicional sobre crecimiento, la cual suele mantener que volatilidad y crecimiento son acontecimientos inconexos (Whittaker, 1923; Stigler, 1978; Hodrick y Prescott, 1980). Sin embargo a lo largo de las investigaciones realizadas se encontraron varios autores que si consideraron que el crecimiento y la volatilidad de las empresas tenían una raíz común, al estar compuestos por variables económicas similares (Nelson y Plosser, 1982; Black, 1987). Siguiendo esta idea, Ramey y Ramey (1995) confirmaron años más tarde la relación entre volatilidad y crecimiento, haciendo la salvedad que esa relación podría ser positiva o negativa sobre la base de los mecanismos que articulan y componen dicha relación.

La teoría del crecimiento describe que el desarrollo de las empresas viene determinado por la influencia de dos tipos de factores: externos e internos. Estos factores podrían restringir o potenciar la capacidad de las empresas tanto en su forma de crecer como en la propia voluntad de hacerlo, o en ambas (Davidsson, 1989). Es por ello, que para entender esta argumentación, acudimos a su vez a la teoría del ciclo económico que complementa a la teoría del crecimiento, las cuales respectivamente estudiaron los conceptos de volatilidad y de crecimiento, de manera conjunta.

Por otra parte, el segundo marco teórico que nos ayuda en nuestra investigación a determinar los efectos positivos de la volatilidad en las empresas es el enfoque de las capacidades dinámicas. Este enfoque de las capacidades dinámicas permite explicar por qué algunas empresas tienen dificultades y no son capaces de adaptarse con éxito a los cambios de su entorno (Teece y Pisano 1994; Harreld et al., 2007). Podemos decir que las capacidades dinámicas son "las competencias de alto nivel que determinan la capacidad que tiene la empresa para integrar, construir y reconfigurar tanto recursos como competencias internas y externas, para abordar rápidamente los cambios en el entorno de los negocios" (Teece, 2012). Por lo tanto, poseer estas capacidades permite a las empresas producir beneficios superiores (Zollo y Winter, 2002; Adner y Helfat, 2003). Es por ello que las capacidades dinámicas son relevantes tanto para los entornos volátiles como para el desarrollo de las pequeñas empresas.

En este contexto, la teoría de las capacidades dinámicas propuesta, atendiendo a la volatilidad del entorno, considera la naturaleza del cambio en el entorno, como algo esencial (Teece y Pisano, 1994; Teece, 2012) y muy importante (Zahra et al., 2006) para adaptar, integrar y reconfigurar las habilidades, así como los recursos y las competencias que se desarrollan en las empresas. Zahra et al., (2006) señalaron como importante la necesidad de las capacidades dinámicas en las empresas, puesto que estas no sólo emanan de la volatilidad del entorno, desde una perspectiva de volatilidad externa, sino también de las condiciones volátiles de la propia

organización de la empresa, lo que se traduce propiamente en volatilidad interna. Si consideramos sólo el contexto externo o del entorno en sentido estricto no alcanzaremos a conocer la verdadera naturaleza de las capacidades dinámicas (Zahra et al., 2006), si bien es cierto que el cambio continuo del entorno propicia especialmente el aumento en el desarrollo y uso de las capacidades dinámicas (Zahra et al., 2006).

Bajo esta idea, las pequeñas empresas necesitan de las capacidades dinámicas, puesto que les permiten sobrevivir y crecer (Zahra et al., 2006). Aunque la investigación sobre estas capacidades para las pequeñas empresas ha evolucionado de manera lenta, sin embargo de esos estudios se deriva que el desarrollo de las capacidades dinámicas desempeña un papel muy importante para las mismas (Zahra et al., 2006; Doving y Gooderham, 2008; Barreto, 2010).

En definitiva, esta investigación analiza un fenómeno poco investigado como es la evolución dinámica de una empresa mediante el análisis de la volatilidad a la que se somete la misma. Por este motivo, pretendemos con el presente trabajo estudiar en qué medida el crecimiento de la empresa es un ejemplo concreto del dinamismo y cambio en la propia evolución de las empresas (volatilidad). En consecuencia, en nuestro análisis proponemos que las empresas más pequeñas muestran una mayor volatilidad que las más grandes. En otras palabras, estamos interesados en conocer que sucede con las empresas que presentan niveles similares de crecimiento pero que se someten a diferentes niveles de volatilidad, haciéndonos entonces la pregunta acerca de cuál de ellas sería capaz de crear el mayor número de puestos de trabajo. Además, esta investigación proporciona una aproximación empírica a la creación de empleo durante las etapas en las que la volatilidad desempeña un papel importante en el desarrollo de la empresa, proporcionando la oportunidad de aclarar diferentes aspectos sobre el concepto de volatilidad en su relación con el riesgo y la incertidumbre.

Finalmente, los resultados de esta investigación nos darán la oportunidad de contribuir a la literatura en diferentes ámbitos, por un lado ampliando la perspectiva tradicional acerca de los efectos de la volatilidad, constituyendo un punto de inflexión de la visión negativa a positiva, ya que proponemos que el efecto producido sobre las pequeñas empresas puede aumentar las ventas y por consiguiente la rentabilidad empresarial. La volatilidad es una construcción teórica que supone un aspecto importante dentro del mundo científico y de desarrollo de las empresas para ser investigada a través del tiempo. Es un concepto que precisa una mejor delimitación y por ello se construye en una gran variedad de formas relacionadas con diferentes áreas de investigación como son la financiera o la económica. La volatilidad se muestra en los análisis como la desviación de la trayectoria normal o aparente que un activo debería seguir. En este sentido, pretendemos contribuir en el ámbito de la delimitación teórica del concepto de volatilidad a nivel empresa.

Los puntos de vista tradicionales en el mundo de la investigación consideran que a mayor volatilidad, mayor riesgo. Por tanto esta situación supone teóricamente la capacidad de aprender acerca del comportamiento de la volatilidad con el fin de pronosticar cuál podría ser el mejor camino para entender la volatilidad y sus efectos. En consecuencia, la volatilidad puede ser considerada una medida más próxima del riesgo, configurándose este como la posibilidad de la aparición de eventos inesperados. Es por ello, que en el contexto de la volatilidad, el riesgo está relacionado con todos esos acontecimientos inesperados que ocurren en un período concreto de tiempo. Esta volatilidad podría ocasionar dificultades a las empresas que deberán adaptarse al nuevo contexto y que se traduce inicialmente en adversidad e incertidumbre. En otras palabras, la volatilidad es la suma de la incertidumbre o del riesgo que puede ocurrir en el entorno de las empresas.

La volatilidad como tal, tiene un papel importante en el marco del accionariado de las empresas debido a que una gran volatilidad determinara la estabilidad de los valores, la cual

puede aumentar considerablemente en un corto período de tiempo y en cualquier dirección y es ahí donde puede radicar el beneficio. En este sentido, la evolución de los mercados en respuesta a los sorprendentes cambios de las diferentes variables económicas que actúan en este contexto, puede ser la razón para que no sigan un recorrido estable o lineal. Es por lo que la incertidumbre se torna en inevitable y a esta fluctuación es a lo que se llama volatilidad.

Sin embargo, la volatilidad es considerada un tipo de ineficiencia del mercado que en cantidades exacerbadas puede llegar a convertirse en irracional, tal y como ocurre en ocasiones a consecuencia de informaciones incompletas o de las políticas económicas de los mercados. Esta realidad desarrolla reacciones asimétricas tanto en positivo como en negativo, lo que implica que nos encontremos en definitiva ante la propia volatilidad.

En esta investigación estudiamos la denominada volatilidad histórica, con el fin de descubrir el efecto ya producido sobre las empresas, puesto que la volatilidad futura no puede ser estudiada como tal, a no ser que sea mediante una estimación de sus valores con el fin de lograr una aproximación a la tendencia que puede seguir en el futuro. La motivación de esta investigación pivota en el estudio del concepto de volatilidad y de sus consecuencias a través de tres análisis diferentes, con la intención de que podamos aprender y descubrir más acerca de las implicaciones de la propia volatilidad, de sus efectos y de sus resultados. Es por ello que nuestra investigación se ha centrado en dos perspectivas teóricas relacionadas con la variabilidad o volatilidad, como las capacidades dinámicas en el marco de la empresa y el sentido que adquiere el crecimiento de las empresas en el contexto de la volatilidad.

2.- VOLATILIDAD DE LA EMPRESA: MARCO TEÓRICO.

La volatilidad es entendida como el conjunto total de los cambios que se producen en una empresa en un período de tiempo determinado (Tosi et al., 1973). Mientras más estabilidad se produzca, mayor será la certeza en el curso de las empresas. A sensu contrario, a mayor variación, menor validez o seguridad en la empresa. El concepto de volatilidad ha sido estrechamente asociado al riesgo y la incertidumbre (Bourgeois, 1985; Milliken, 1987). En este sentido, la investigación de la volatilidad en el contexto actual de crisis económica y de continuo cambio, es más necesaria que nunca. Tradicionalmente la volatilidad ha sido analizada desde tres perspectivas diferentes: financiera, macroeconómica y de gestión.

En primer lugar y desde un punto de vista macroeconómico, se considera que la volatilidad no es un concepto sólo relacionado con hechos aislados sino que depende de la situación económica y del clima político global (Voth, 2002; Brown et al., 2006), además de la política económica y monetaria (Clarida et al., 2000), de las diferentes instituciones de los países (Acemoglu et al., 2003) y de su riqueza (Acemoglu y Zilibotti, 1997; Kraay y Ventura, 2007), siendo desde esta perspectiva la relación entre la volatilidad y el crecimiento económico teóricamente ambigua.

Por una parte, el crecimiento puede verse afectado negativamente por la volatilidad dentro de los ciclos económicos a través de la presencia de irreversibilidad en las inversiones. Aunque por otra parte, el crecimiento podría verse afectado positivamente por la presencia de reservas de dinero y de liquidez (Imbs, 2007). En este sentido, las diferentes investigaciones han mostrado que no hay ningún efecto significativo de la volatilidad en los países económicamente avanzados (Aghion et al., 2006), si ocurriendo que los países más ricos son menos volátiles que los pobres (Acemoglu y Zilibotti, 1997; Kraay y Ventura, 2007).

En segundo lugar, desde la perspectiva de los mercados financieros, tales como los mercados de valores, las bolsas extranjeras y de los instrumentos financieros, tales como acciones, bonos, fondos de inversión, etc, la volatilidad es asociada al concepto de incertidumbre. En este sentido, la volatilidad está condicionada tanto por los acontecimientos económicos (Brown et al., 2006), como por los sociales (Kren, 1992), así como por los factores políticos (Brown et al., 2006), que en definitiva se asocian con la discontinuidad (Bourgeois, 1985). Por lo tanto, la volatilidad se convierte en un aspecto relevante para las inversiones, así como para la gestión de riesgos (Poon y Granger, 2003).

Por estos motivos, la volatilidad es entendida de manera diferente a la propia esencia del riesgo, puesto que en ocasiones es el eje o la clave para la toma de decisiones inusuales, que son adoptadas como una verdadera inversión de riesgo. Por otra parte, la volatilidad es estocástica por naturaleza y no se puede anticipar fácilmente (Kren, 1992). Es por lo que aquellos cambios que se producen en los valores o acciones no se pueden explicar en todos sus movimientos dentro de los precios de los mercados financieros (Schwert, 1989).

En tercer lugar, bajo la perspectiva teórica de la gestión empresarial, la volatilidad se considera asociada o influenciada por una serie de factores tales como son los hábitos de consumo, el papel de la tecnología, las políticas gubernamentales, los productos de la competencia, etc. Delmar et al., (2003) en un artículo trascendental sobre emprendedores, describieron la volatilidad como un importante tema de estudio en sí mismo, es decir, no necesitaba ser asociado a otro aspecto económico o empresarial para tener relevancia. En este sentido, consideraron importante la volatilidad por las diferentes implicaciones que para la gestión y el desarrollo de las empresas podía tener a largo plazo (Delmar et al., 2003). Alrededor de este punto de vista, encontramos dos aspectos importantes que se vinculan a la volatilidad.

El primer aspecto sostiene que las empresas en su desarrollo, a pesar de ser similares obtienen resultados diferentes y por este motivo, se verían afectados de manera diferente por la volatilidad (Penrose, 1959). Es por ello que Bradley et al., (2011) sostienen que atendiendo a la teoría del crecimiento de Penrose, es el papel de la gestión de las empresas a la hora de utilizar los recursos, la verdadera razón por la que se crea una oportunidad para realzar el crecimiento de las empresas y de suyo su posible expansión. Penrose (1959) argumentó que los recursos son la base de la empresa para su regeneración y cambio, en consecuencia, todas las fuerzas orientadas en acumular recursos darán lugar a la futura dirección que sigan las empresas en su desarrollo.

Además, la aplicación de recursos inactivos es la clave para el crecimiento basado esto en la recombinación de los recursos existentes. Bradley et al., (2011) consideraron que existen oportunidades de expansión, si bien dependerá de la capacidad de los gestores y de cómo perciban ellos las oportunidades para operar con dichos recursos. En consecuencia, algunos autores (McKelvie y Wiklund, 2010) consideraron que la teoría más completa, adecuada, y popular en el marco teórico del crecimiento se desarrolló hace unos cincuenta y cinco años con la publicación por Penrose en 1959 de su "*Teoría del Crecimiento de las empresas*", que ofrecía respuesta a preguntas como "¿cómo crecen las empresas?", argumentando que esencialmente las empresas crecen a través de la capacidad y de la percepción de sus gestores o directores, quienes consiguen nuevas oportunidades, a la vez que utilizan los recursos ya existentes para el desarrollo de sus empresa. Por ello, Mckelvie y Wiklund (2010) consideraron que cuanto mayor sea el conjunto de oportunidades, mayor será el potencial de crecimiento.

Además, Chen, et al., (2012) sostuvieron que desde que se publicó el trabajo fundamental de Penrose (1959), se ha derivado una rica y extensa corriente de investigación que se ha centrado en la importancia de las capacidades heterogéneas de las empresas y de su rendimiento. Consideran estos autores como impedimentos para el crecimiento de las empresas,

características tales como su tamaño, la edad y la experiencia tecnológica. Argumentan que el efecto del tamaño en el crecimiento de las empresas se ha tenido en cuenta también desde la publicación de la ley de Gibrat (1931). Sin embargo, Penrose (1959) en su investigación argumentó que no todas las empresas crecen de la misma forma o siguiendo los mismos pasos. Y es por esto, por lo que posteriores investigaciones han comparado la tasa de crecimiento de las grandes y de las pequeñas empresas, encontrando que son las pequeñas las que crecen más rápidamente que las grandes.

Siguiendo esta argumentación, Gilbert et al., (2006) examinaron la influencia de la teoría de Penrose que se relaciona con el crecimiento derivado de la aplicación de los mecanismos internos o externos. Según estos autores, esos resultados de crecimiento endógeno o interno suelen ser más constantes y relacionarse con el aumento en las ventas, siendo más lento o menos significativo, el crecimiento de las empresas derivado de circunstancias externas.

En este sentido, Zahra et al., (2006) consideraron la posibilidad de que la unión de múltiples capacidades de una forma coherente podía reducir reiteraciones, asegurándose de esta forma la congruencia en la dirección estratégica de la empresa. Es por ello, que la eficacia en la utilización de los recursos podría ser propuesta debido a la necesidad de combinar los cambios con la capacidad de gestión de los directores de las empresas, con el fin de integrar y recombinar los recursos.

Las investigaciones más recientes en el marco teórico de las capacidades dinámicas han mostrado cómo las empresas jóvenes pueden obtener beneficios derivados de la volatilidad de la empresa. En este sentido, las capacidades dinámicas son un aspecto necesario para hacer frente a los efectos inmediatos de la volatilidad (Teece, 2012), ya sea bien de la volatilidad del entorno, o bien de la propia volatilidad de la empresa (Zahra et al., 2006). Por su parte, Schilke (2013) sostiene que el sentido principal de las capacidades dinámicas es proporcionar una

ventaja competitiva a las empresas, lo que en definitiva significa obtener un mayor rendimiento que el resto de sus competidores actuales o posibles, dentro de su sector. Sin embargo, este efecto está directamente relacionado con el nivel de dinamismo del propio entorno de la empresa.

Sin embargo, Zott (2002) considera que la investigación en dirección estratégica no ha cubierto del todo la extensión y atributos derivados de los propios recursos y capacidades, así como de las condiciones de mercado y que en definitiva permitiría encontrarnos ante una ventaja competitiva sostenible. Es por ello que considera no tener suficiente información sobre el sentido que las capacidades dinámicas representan y sobre cómo influyen en la materialización de los resultados de las empresas, respecto del sector. Conforme al argumento anterior, Schilke (2013) considera que no siempre es necesaria la condición de encontrarnos ante un entorno turbulento para que se desarrollen dichas capacidades dinámicas, pudiendo existir incluso en entornos constantes. A pesar de ello, y desde un punto de vista teórico, la presencia de capacidades dinámicas ha sido tradicionalmente asociada a situaciones ambientales caracterizadas por alto dinamismo (Zahra et al., 2006).

A lo largo de nuestra investigación hemos encontrado varios estudios (Teece y Pisano, 1994; Teece et al., 1997; Teece, 2012) que dibujaron la configuración de las capacidades dinámicas dentro de tres grupos o tipos de actividades, tales como: (1) la identificación y la evaluación de la oportunidad, (2) la movilización de recursos frente a nuevas oportunidades con el fin de capturar nuevos valores, así como también (3) la renovación continua.

En este sentido, las capacidades dinámicas podrían describirse como rutinas organizacionales que producen ventajas competitivas dentro de una empresa, respecto de otras, con el fin de hacer cambios o volver a configurar los recursos existentes en las empresas (Teece et al., 1997; Eisenhardt y Martin, 2000), siendo este enfoque una extensión de la teoría de

recursos y capacidades. Bajo esta argumentación, destaca que las capacidades dinámicas son compatibles con las rutinas organizativas, comúnmente entendidas como aprendizaje modelado a lo largo del tiempo, siendo repeticiones de diferentes modelos de comportamiento para acciones entre empresas interdependientes (Zollo y Winter, 2002).

Por tanto, la importancia de las capacidades dinámicas pivota en torno a su posible influencia sobre la ventaja competitiva de las empresas, afectando directamente a los resultados de las mismas y siendo el elemento clave para la teoría de las capacidades dinámicas (Teece et al., 1997). Por esta razón, aunque estas capacidades puedan existir de manera independiente, el dinamismo del entorno promueve el desarrollo de capacidades dinámicas (Zollo y Winter, 2002). Por ello, que la literatura ha asumido un efecto universalmente positivo de las capacidades dinámicas como ventaja competitiva, mediante la modificación de los recursos existentes, desarrollando mejores relaciones entre los recursos de una empresa y las circunstancias cambiantes del entorno que la rodean (Teece y Pisano, 1994).

En este sentido, una parte de nuestra investigación va dedicada al esfuerzo de aumentar nuestro conocimiento en relación a cómo crecen las empresas. Por lo que nos proponemos responder a las siguientes preguntas: ¿En qué medida los antecedentes tradicionales de crecimiento de la empresa son, de hecho, antecedentes de la volatilidad de la empresa? Y ¿cómo la volatilidad de la empresa influye en el crecimiento de la empresa?

3.- CRECIMIENTO DE LA EMPRESA: CONCEPTO Y PERSPECTIVAS.

Durante los últimos años el fenómeno del crecimiento ha sido estudiado con profundidad y detalle (Gilbert et al 2006; Wiklund et al., 2009), mientras que el estudio de la volatilidad ha quedado relegada a un segundo plano. Sin embargo, el análisis de la volatilidad en las empresas es importante porque tanto el crecimiento como la volatilidad, pueden producir diferentes consecuencias para la gestión y el desempeño de las funciones de la empresa a largo plazo (Delmar et al., 2003).

En este sentido, Delmar et al. (2003) sostienen que las investigaciones en crecimiento han tratado de estudiar las diferencias habidas entre dos puntos localizados en el tiempo. Sin embargo, este enfoque no tiene en cuenta el desarrollo que ha habido durante el transcurso del tiempo que se encuentra situado en medio de dichos momentos. Por ello, nuestra investigación, supone una continuación del estudio realizado por Delmar et al. (2003) al explorar los efectos producidos por la volatilidad del entorno, pero esta vez atendiendo al lapso de tiempo, es decir al periodo completo que estudiamos, no a los dos puntos de inicio y fin que tradicionalmente se habían computado respecto de la evolución de las empresas. Mientras que la literatura ha centrado su interés en el análisis de las empresas de alto crecimiento, que aumentó considerablemente desde mediados de la década de los 90 (Henrekson y Johansson, 2010). Estas empresas denominadas de alto crecimiento, o gacelas, son las empresas capaces de experimentar una alta tasa de crecimiento en un periodo de tiempo muy corto (Birch et al., 1994).

Tanto en la investigación señalada de Birch et al., (1994), así como en otros estudios de la época, todos demostraron la existencia de una mayor concentración de empresas gacela en los estados, regiones o zonas geográficas donde se había observado una mayor turbulencia. Así,

ciertas áreas geográficas tienden a mostrar una alta tasa de concentración de empresas, tanto en lo relativo al crecimiento de las mismas, como a su vez, respecto de la disolución y cierre de otras (Bartelsman et al., 2004; Tödtling y Wanzenböck, 2003). Estas regiones se caracterizan por tener un mayor dinamismo económico, ya sea debido a una alta población de empresas, o bien de un entorno que es favorable para la creación de nuevos negocios, al dotarse a los emprendedores de ciertos incentivos financieros, proyectando políticas de apoyo a la vez que eliminando barreras burocráticas y dando un mayor acceso a la financiación de las mismas, entre otros aspectos.

Este aumento en la capacidad para crear nuevos proyectos empresariales da lugar también a la creación y destrucción de empresas que no son viables a largo plazo y que por tanto están condenadas a desaparecer, propiciando en este tipo de entorno la presencia de nuevos empresarios emprendedores, que se presentan sin temor a los riesgos que entraña un entorno incierto y con riesgo (Iacobucci, 2002; Westhead y Wright, 1998).

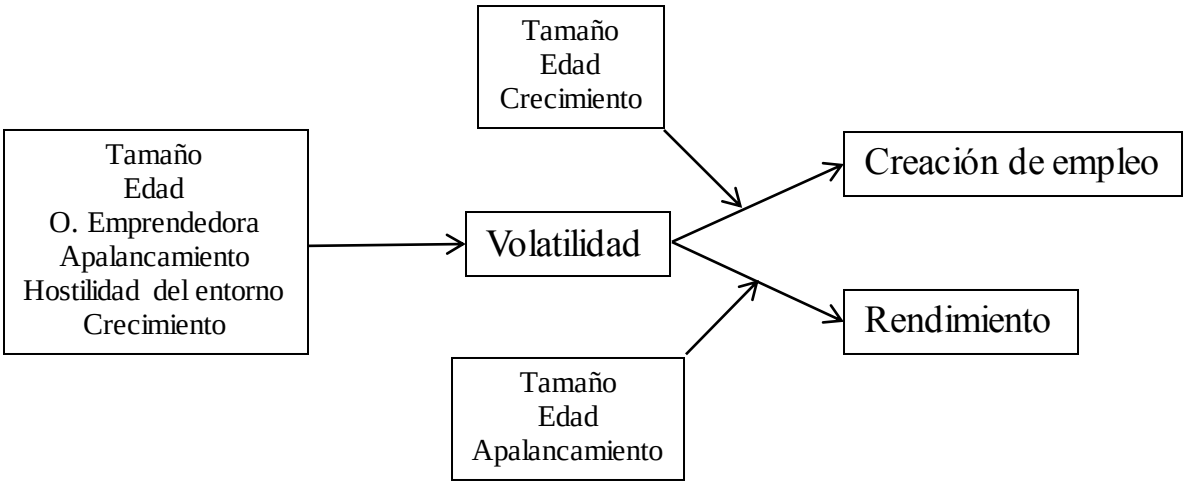
Por tanto desde esta perspectiva, el alto crecimiento estaría asociado a su vez con el dinamismo empresarial, ya sea a través de la creación de nuevas empresas o bien por medio de la renovación de las empresas ya existentes. Por tanto, la cuestión a resolver se centra en la identificación de los factores que estimulan ese mayor dinamismo que es observado en la creación de un número desproporcionado de nuevas empresas, así como en el crecimiento irregular en algunas empresas (gacelas) e incluso, en la destrucción de un número desigual de las empresas.

En torno a esta idea, nuestra investigación a través de tres estudios relacionados, tratamos de investigar con la finalidad de confirmar la posible relación existente de carácter positivo entre las empresas de alto crecimiento y los entornos dinámicos donde se desarrollan (Lumpkin y Dess, 1996, 2001; Wiklund et al., 2009). En este sentido y bajo los aspectos desarrollados en

esta investigación, nuestra opinión enlaza el crecimiento asimétrico de las empresas gacela con la creación de la gran mayoría de los nuevos puestos de trabajo, siendo un ejemplo particular o una de las consecuencias directas del fenómeno de dinamismo empresarial. Por esa razón, nos preguntamos cómo es posible que se pueda genera empleo en el marco de un entorno que no propicia el crecimiento.

El presente trabajo se estructura en tres investigaciones relacionadas en torno al concepto de volatilidad (ver figura 1). La primera de ellas se centra en el análisis de os determinantes de la volatilidad, mientras que la segunda y la tercera ponen su atención en la influencia de la volatilidad sobre la creación de empleo y el rendimiento. En este último caso, nuestra investigación se circunscribe al contexto de las pequeñas y medianas empresas.

Figura 1: Esquema general de la investigación



4.- FACTORES EXPLICATIVOS DE LA VOLATILIDAD.

El tema principal de esta investigación trata sobre el crecimiento de las empresas en relación al propio dinamismo y al cambio asociado a la evolución de las empresas. Por tanto, hemos tomado en consideración la mayoría de los factores que tradicionalmente se han

propuesto para explicar el crecimiento asociado a dicho dinamismo y en general al cambio. Para ello, vamos a utilizar el concepto de volatilidad, como la variabilidad anual en el volumen de la actividad (ventas) de las empresas.

Este concepto de volatilidad supone un contraste respecto del concepto de estabilidad, el cual implica la ausencia de cambios significativos en dichos volúmenes de actividad de las empresas durante un período de tiempo determinado. Entendiendo que la máxima estabilidad para una empresa se alcanza al mantener el mismo volumen de ventas, durante un período de cuatro años consecutivos. En este sentido, la volatilidad es un concepto más amplio que el propio concepto del crecimiento. La volatilidad implica cambios mientras que el crecimiento implica cambios asociados al éxito de la empresa. Incluso, cuando la volatilidad lleva al éxito, el crecimiento podría ser alcanzado a través de diferentes índices de volatilidad.

La literatura sobre el crecimiento de las empresas es bastante extensa, por lo que hemos adoptado una selección de los indicadores más comunes relativos al alto crecimiento de la empresa, y a su vez que pudieran servir como posibles predictores de la volatilidad empresarial. Además, hemos combinado las características demográficas de las empresas tales como su tamaño y su edad, la actitud relativa a la orientación emprendedora de los directivos de las empresas, así como componentes de su estructura financiera, además de una variable del entorno, como es la hostilidad. Asimismo, el propio crecimiento como un predictor adicional dada la raíz común que comparte con la volatilidad. Aunque, en ese sentido, nuestra investigación considera la volatilidad como un concepto autónomo e independiente respecto del crecimiento, a pesar de entender que ambos son conceptos relacionados, proponiendo una hipótesis adicional sobre la relación crecimiento-volatilidad. Por último, proponemos dos efectos moderadores del crecimiento.

En este sentido, los predictores tradicionales del crecimiento respecto de la volatilidad asociada a la empresa, asumen que tanto crecimiento como volatilidad son fenómenos diferentes pero a su vez relacionados. Como mencionamos anteriormente, consideramos que el crecimiento es un tipo particular de la volatilidad, en otras palabras, mientras que el crecimiento puede dar lugar a volatilidad, el crecimiento puede lograrse con diferentes índices de volatilidad, sin embargo la volatilidad no siempre implica crecimiento para las empresas. Sin embargo, a pesar de las relaciones existentes desde un punto de vista teórico entre el crecimiento y la volatilidad como instrumentos indicadores de diferentes medidas, argumentamos que existe una influencia positiva en el crecimiento de las empresas de la volatilidad.

El crecimiento en las ventas ha sido clasificado como una de las medidas más importantes relativas al crecimiento en empresas que son consideradas de riesgo (Gilbert et al., 2006). Las nuevas empresas necesitan recursos para crecer (Westhead, 1995) siendo la transición hasta obtener esos recursos el proceso que ha de seguir la empresa para lograr el éxito (Zhao y Aram, 1995; Reid, 2003). En este sentido, las empresas están obligadas a obtener recursos no solo de dentro sino también desde fuera de la empresa con el objetivo de crecer (Harrison et al., 2004). Varios autores (Cooley y Quadrini, 2001; Cabral y Mata, 2003) argumentaron en relación a los recursos financieros que la falta de estos afecta negativamente al crecimiento de nuevas empresas. Sin embargo, el acceso a dichos recursos financieros es difícil para las pequeñas y medianas empresas (Bechetti y Trovato, 2002). A raíz de la propuesta de Wiklund et al. (2009), nuestro modelo investiga la influencia que tienen en el crecimiento de la empresa, aspectos tales como el tamaño, la edad, la orientación emprendedora, la estructura financiera y la hostilidad del entorno. Estos cinco factores predictivos se basan en los modelos de integración y de crecimiento de las empresas propuestos por Wiklund et al. (2009) y Henrekson y Johansson (2010).

Estos autores identifican cinco enfoques teóricos a través de las construcciones teóricas que son predominantes en la literatura actual con el fin de aclarar cómo crecen las empresas más pequeñas. Sin embargo, sus argumentos no son independientes unos de otros, debido a que tienen que servir de guía respecto de las posibles divergencias que puedan surgir respecto de las hipótesis y en relación con el crecimiento de las empresas bajo ciertas circunstancias.

En primer lugar, Wiklund et al. (2009) demostraron que bajo la perspectiva teórica basada en la los recursos y capacidades, el entorno produce limitaciones al crecimiento de las empresas siendo el incremento en la adquisición de ciertos recursos, un extremo restringido en base a los altos precios de los mismos, lo que da lugar a la disminución de sus ingresos por las ventas. En este punto, nos sirve de enlace la teoría de las capacidades dinámicas que hemos mencionado anteriormente, siendo las capacidades o habilidades de la dirección de la empresa para reconfigurar los recursos disponibles, el punto de inflexión respecto de las restricciones o efectos negativos que para el crecimiento de la empresa, son producidos por el entorno. Sin embargo, Wiklund et al. (2009) mantuvieron que desde la perspectiva del entorno, las oportunidades de crecimiento se dan sólo si el contexto donde la empresa se desarrolla, directamente se extiende hasta esta. Esta interpretación subraya una limitación relativa a que las pequeñas empresas sólo pueden crecer en base a las oportunidades que les ofrece el entorno, dejando a un lado el resto de aspectos. En consecuencia, existen evidencias acerca de la interdependencia entre el entorno de la pequeña empresa y la capacidad de estas para crecer.

El mayor riesgo existente en el contexto de las pequeñas empresas está principalmente impulsado por una de sus características más distintivas como es la falta de los recursos necesarios para su desarrollo. En concreto, las empresas pequeñas tienden a carecer del capital necesario tanto a nivel financiero, humano, social y relacional (Cooper et al., 1994; Schoonhoven et al., 1990), agravándose esa falta de recursos por tener lo que se denomina "informaciones asimétricas".

En este sentido, las pequeñas empresas fundadas por emprendedores se caracterizan por tener dicha asimetría, que se representa mediante la desigual distribución de quienes tienen los recursos y quienes realmente son los empresarios (Amit et al., 1998) lo que a su vez incrementa la reticencia de los inversores para invertir en este tipo de empresas pequeñas (Bhide, 2000; Schoonhoven y Romanelli, 2001). Es por ello, que la falta de recursos, especialmente los financieros, hace que las pequeñas empresas persigan un número muy limitado de oportunidades, lo que da lugar a reducir el grado de diversificación de sus recursos en diferentes oportunidades de negocio.

Por el contrario, las grandes empresas poseen un mayor número de recursos, lo que les permite participar en la búsqueda de una gama más amplia de oportunidades y de suyo propicia que tengan una estrategia que tienda a la diversificación. Motivo por el cual, las grandes empresas logran obtener diversos flujos de ingresos que a su vez proporcionan estabilidad a la empresa. Esta es una de las principales ventajas de la estrategia de diversificación, que a su vez sirve para reducir la volatilidad de las inversiones, propiciando alejarse del riesgo y obteniendo una mayor estabilidad (Hill y Hoskisson, 1987; Amit y Linvat, 1988).

Por último, en el caso de las pequeñas empresas, el éxito o el fracaso de un único proyecto u operación hacen que tenga una influencia, prácticamente decisiva sobre los resultados empresariales, sufriendo una mayor volatilidad, mientras que en las empresas más grandes, esa diversificación compensa el rendimiento de las diferentes operaciones y proyectos, dotándolas de mayor estabilidad. Por ello proponemos:

Hipótesis 1: Existe un efecto negativo del tamaño de la empresa respecto de la volatilidad de la empresa, de tal manera que mientras menor sea la empresa, mayor será su volatilidad.

Nuestra segunda hipótesis propone que las empresas más veteranas, de mayor edad, son más estables que los más jóvenes. En este sentido, las empresas más jóvenes carecen de cierta legitimidad en el contexto de la aceptación social, sobre su idoneidad y su conveniencia, lo que les dificulta el acceso a recursos financieros, que en definitiva les den la oportunidad de crecer (Zimmerman y Zeitz, 2002). Mientras menor sea esa aceptación social, menor será también la probabilidad de adquirir recursos (Aldrich y Fiol, 1994) y, en consecuencia, mayor será la volatilidad de la empresa, puesto que las propias empresas serán generadoras de incertidumbre sobre su propio desarrollo futuro en términos financieros, al no ser capaces de diversificar y reducir el riesgo a través de dichos procesos o estrategias. Esa falta de antecedentes y de legitimidad lleva en definitiva a encontrar una falta de credibilidad y confianza hacia las pequeñas empresas por parte de los clientes, proveedores, distribuidores y por supuesto de los servicios financieros (Starr y Macmillan, 1990).

Por tanto las empresas más jóvenes, al carecer de dicha legitimidad, están avocadas a ser responsables del desarrollo de su propio atractivo (Stinchcomb, 1965), contrarrestando los factores de influencia negativa, tales como los costes de aprendizaje de nuevas tareas o la ausencia de estructuras organizativas más desarrolladas (Singh et al. 1986). Este aspecto de la responsabilidad de las propias empresas sobre sí mismas, hace que dicha responsabilidad se convierta en el elemento clave y directo de la mortalidad de un gran número de nuevas empresas (Venkataraman et al. 1990), disminuyendo ambas conforme avanza el desarrollo de la empresa a lo largo de los años (Hannan, 1998).

Este argumento implica que las empresas más antiguas y que a su vez tienden a ser más grandes son más estables que las pequeñas empresas que tienen a su vez una trayectoria reducida. Esta dicotomía relativa a la estabilidad entre pequeñas y grandes empresas ha sido descrito por la literatura como que las empresas más jóvenes muestran tasas de crecimiento más

variables (Fariñas y Moreno, 1997), por tanto y como argumentó Delmar et al. (2003) las empresas jóvenes tienen una mayor volatilidad de las ventas, que las empresas más antiguas.

Además, las empresas más jóvenes tienen poco o ningún registro de sus resultados anteriores en aras de demostrar su potencial de crecimiento. Aunado a esto, que las empresas más jóvenes tienen menos experiencia y por tanto suelen carecer del conocimiento que les ayude a interpretar sus propios resultados, de acuerdo a los problemas de interpretación propuestos por Zajac y Bazerman (1991). Las empresas necesitan tiempo para comprender adecuadamente las implicaciones de su edad y tamaño, y hasta que esto ocurra, pueden realizar interpretaciones erróneas de sus resultados. En este sentido, las empresas jóvenes evolucionan de una forma más irregular que las empresas más maduras, tendiendo a evolucionar mediante un proceso de ensayo y error. Por lo que siguiendo estos argumentos, proponemos:

Hipótesis 2: Existe un efecto negativo de la edad de la empresa respecto de la volatilidad de la empresa, de tal manera que mientras más joven sea la empresa, mayor será su volatilidad.

La idea básica en la literatura de "*orientación emprendedora*" es que las empresas con una orientación empresarial mayor tienden a desarrollar comportamientos más innovadores, lo que en definitiva las orienta de manera directa a enfrentarse al riesgo con una conducta proactiva (Miller, 1983), todo ello con el fin de aprovechar las oportunidades de negocio (Shane y Venkataraman, 2000) y para mejorar sus resultados (Lumpkin y Dess, 1996). Aunque Lumpkin y Dess (1996) consideran cinco dimensiones, la literatura sobre orientación emprendedora está plenamente de acuerdo en que las tres dimensiones centrales de la orientación emprendedora son las tres propuestas por Miller (1983): la propensión a la innovación, la actitud ante el riesgo y la proactividad.

En primer lugar, la capacidad de innovación anima a la empresa atrayendo y apoyando nuevas ideas o nuevos servicios mediante procesos creativos que den lugar a nuevos productos / servicios o procesos tecnológicos (Lumpkin y Dess, 1996), bien sea mediante el lanzamiento de productos o mediante la innovación de procesos, de forma que la empresa innovadora tendrá que tomar decisiones para las que existe poca o ninguna información (Busenitz y Barney, 1997). Bajo este proceso, las empresas innovadoras se involucran en un proceso de prueba-error que busca el éxito, bajo los parámetros del proceso de destrucción creativa de Schumpeter. La toma de decisiones en condiciones de incertidumbre implica resultados financieros volátiles impredecibles. Sin embargo, también podemos argumentar que una actitud innovadora puede reducir la volatilidad. En este sentido, las capacidades desarrolladas en torno a la innovación pueden ser la clave para lograrían una ventaja competitiva (Ireland y Hitt, 1999). Por este motivo, las empresas innovadoras lograr un rendimiento superior (Roberts, 1999; Zahra et al 2000.). Ambos aspectos, el logro de una ventaja competitiva y lograr un rendimiento superior aumentará la cantidad de recursos (financieros) a disposición de una empresa, por lo que este tipo de gestión logrará que la empresa sea menos volátil debido a un flujo más estable de sus ingresos.

En segundo lugar, un comportamiento empresarial orientado al riesgo implica tanto, la voluntad de comprometer más recursos para proyectos en los que el coste del fracaso puede ser alto (Miller y Friesen, 1982), como invertir en proyectos en los que los resultados son desconocidos (Wiklund y Shepherd, 2005). Estas conductas de riesgo son necesarias para hacer frente a la incertidumbre provocada por el propio desarrollo de la empresa. Sin embargo, en ocasiones un comportamiento de riesgo puede conducir a la desaparición de la empresa (Shepherd et al. 2000) o bien a una bajada en su rendimiento (Naldi et al. 2007), que en su caso, deberían tener un impacto positivo, debido a la volatilidad.

Por último, la proactividad se puede definir como la toma de iniciativas para mejorar la situación actual de la empresa, o la creación de otras nuevas (Crant, 1996, 2000). Un empresario proactivo identifica las oportunidades y los persigue con insistencia mientras las situaciones de su entorno son cambiantes y debe adaptarse a ellas. En primer lugar, podemos argumentar que una actitud proactiva puede llevar a una menor volatilidad de la empresa, puesto que esta actitud proactiva es la opuesta a una actitud reactiva. La mejora de las actuales circunstancias requiere una alineación o ajuste de los recursos de la organización con las oportunidades respecto de las amenazas del entorno (Andrews, 1971; Hofer y Schendel, 1985). Tal ajuste es relevante en un entorno empresarial (Wiklund y Shepherd, 2005) y se logra mediante la adaptación de los recursos que se poseen en la empresa derivados del esfuerzo empresarial respecto de su entorno. Las actuaciones de las empresas que se desvían desde un punto de vista financiero por los desajustes del entorno tienen peores consecuencias que propiamente las actuaciones de las empresas que persiguen un ajuste estratégico (Zajac et al 2000;. Kraatz y Zajac, 2001). Una empresa que se adapta a su entorno suavizará los efectos de este y por tanto, disminuirá su volatilidad. En segundo lugar, también podemos argumentar que la proactividad conduce a un mayor nivel de volatilidad. Una mayor estrategia ajustada dará lugar a que la empresa mejore en sus actuaciones. Esta mejora supondrá para la empresa un rápido crecimiento de las ventas, lo que dará lugar a entender de manera positiva la volatilidad de la empresa, en sí misma. En resumen, la literatura ofrece argumentos opuestos sobre la relación existente entre la orientación emprendedora y la volatilidad de la empresa. Por lo tanto, es posible proponer dos hipótesis contradictorias:

Hipótesis 3a: hay un efecto positivo de la orientación emprendedora en la volatilidad, de tal manera que cuanto mayor sea la orientación emprendedora de la empresa, mayor es su volatilidad.

Hipótesis 3b: hay un efecto negativo de orientación emprendedora en la volatilidad, de tal manera que cuanto mayor sea la orientación emprendedora de la empresa, mayor es su volatilidad.

Muchos estudios empíricos han identificado una asociación especifica entre la estructura financiera de la empresa y la volatilidad de sus ingresos (Bekaert y Wu, 2000; Wu, 2001). En este sentido, la estructura financiera se relaciona positivamente con el rendimiento. Sin embargo tal y como hemos mencionado, el crecimiento de las pequeñas empresas se ve limitado por los fondos disponibles (Carpenter y Petersen, 2002). Según este enfoque, se entiende que el capital de una empresa tiene una relación directa con el crecimiento. El capital financiero crea una amortiguación para las empresas que sirve contra los choques inesperados o aleatorios, lo que también permite la búsqueda de estrategias en el uso intensivo del capital, con el fin de generar una verdadera ventaja competitiva (Cooper et al., 1994).

En este sentido, la cuestión acerca del uso de la deuda o del capital para financiar el crecimiento también ha sido investigada bajo la denominada teoría de la jerarquía. Las empresas tienden a utilizar las ganancias para reducir sus niveles de deuda, ya que prefieren usar los fondos internos de su propia empresa, que servirse de financiación externa con todo lo que ello conlleva (Myers y Majluf, 1984; Sogorb-Mira, 2005). Sin embargo, el crecimiento provoca el uso de recursos para sus deudas, sin embargo la empresa sigue necesitando más fondos, por lo que uso de la deuda a largo plazo se convierte en omnipresente (Degryse et al., 2012). El efecto de apalancamiento en el riesgo se ha estudiado en profundidad en la literatura financiera. El apalancamiento en las operaciones de tipo financiero tienen un impacto positivo en la beta de las empresas, y por tanto, en la medida de riesgo de la empresa (Mandelker y Rhee, 1984; Darrat y Mukherjee, 1995). Hamada (1972) y Rubinstein (1973) estimaron que el apalancamiento

financiero explicaba aproximadamente el 20 % del riesgo sistemático de la empresa. Crutchley y Hansen (1989) encontraron que una mayor volatilidad en los ingresos, en ocasiones era asociada con el apalancamiento, siendo a su vez el apalancamiento una característica típica de las crisis económicas (Corsetti et al., 1999; Mishkin, 1999), puesto que anteriormente al comienzo de una crisis, las empresas tienden a tener altos niveles de apalancamiento. Por lo tanto proponemos:

Hipótesis 4: Existe un efecto positivo del apalancamiento en la volatilidad, de tal manera que cuanto mayor sea el apalancamiento de la empresa, mayor es su volatilidad.

En relación con el entorno, La medida de hostilidad se ha utilizado en investigaciones anteriores como predictor del crecimiento de la empresa (Covin y Covin, 1990; Kolvereid, 1992), en este sentido, creemos que esa característica del entorno ayuda a explicar principalmente por qué se produce la volatilidad. Por ello, los ambientes hostiles son intrínsecamente inciertos y se caracterizan por ajustes precarios en los sectores, intensa competencia entre empresas, climas de negocio estresantes, y a la vez la relativa falta de oportunidades explotables (Covin y Slevin, 1989). Dentro de los ambientes hostiles nos encontramos con una competencia dura respecto de los precios, así como la disminución de los productos en los mercados, las interferencias de los gobiernos y la escasa oferta de mano de obra y materiales (Miller y Friesen, 1982). Por tanto, la hostilidad deriva tanto de los cambios radicales en los diferentes sectores, así como de la intensidad en la rivalidad entre empresas competidoras (Zahra, 1993).

Los cambios radicales en los sectores empresariales, en aspectos tales como la disminución de la demanda o la introducción de innovaciones radicales, son los aspectos citados más continuamente (Zahra, 1993). En este sentido, la disminución de la demanda de un mercado

conduce a la disminución de los ingresos de los competidores y por tanto genera la volatilidad en sus ventas. Las innovaciones radicales producen la volatilidad de las ventas en todas las empresas, sin embargo la empresa que introduce dicha novedad se ve más beneficiada, mientas que el resto de los competidores se ven sometidos a la pérdida de su cuota de mercado debido a la introducción de dicha innovación. Asimismo, la intensidad de la rivalidad obligará a las empresas a reorganizarse como respuesta directa a la creciente competencia (Zahra, 1993). Dicha reorganización empresarial conduce de manera directa a generar volatilidad en el desarrollo de la misma. Por este motivo, proponemos la siguiente hipótesis:

Hipótesis 5: Existe un efecto positivo de la hostilidad del entorno en la volatilidad, de tal manera que cuanto mayor es la hostilidad, mayor será la volatilidad de la empresa.

Las empresas de alto crecimiento se caracterizan por la necesidad de fondos para financiar sus operaciones relacionadas con el crecimiento (Harrison et al., 2004). En consecuencia, las empresas que reciben recursos financieros a través del apoyo de los préstamos externos propician una gran incertidumbre en dos sentidos. Por un lado, el endeudamiento conlleva la posibilidad que las empresas no sean capaces de devolver los préstamos o pagar sus interese. Por otro lado, viene determinada la incertidumbre sobre si los proyectos de las empresas llevaran aparejado realmente éxito, derivando obviamente beneficios.

En este sentido, investigaciones previas han encontrado pruebas de la existencia de una raíz común entre el crecimiento y la volatilidad, lo que sugiere que el crecimiento de las empresas y la volatilidad de las mismas podrían estar relacionadas porque ambas están compuestas por importantes y similares variables (Mirman, 1971; Nelson y Plosser, 1982; Black, 1987; Ramey y Ramey, 1995). Por lo tanto, la relación entre el crecimiento y la

volatilidad es directa, puesto que debido el aumento en el crecimiento de las empresas tiene efectos inmediatamente sobre la volatilidad de las ventas. En este sentido, estamos de acuerdo con la mayor parte de la literatura que ambos conceptos tienen una raíz común y por tanto formulamos la siguiente hipótesis:

Hipótesis 6: Existe un efecto positivo del crecimiento de la empresa en la volatilidad, de tal manera que cuanto mayor es el crecimiento, mayor será la volatilidad de la empresa.

Por último, siguiendo la idea relativa a que el crecimiento y la volatilidad son diferentes pero en definitiva, fenómenos relacionadas, entendemos que quizás el crecimiento de la empresa podría explicar, en cierta medida, en qué condiciones la orientación emprendedora y la volatilidad están relacionadas positiva o negativamente, según nuestra hipótesis tercera. Como sugerimos anteriormente, el impacto de la orientación emprendedora en la volatilidad depende de los resultados positivos o negativos de las acciones innovadoras, arriesgadas y proactivas que lleven a efecto las empresas.

La literatura anterior ha asumido que por lo general existe un impacto positivo de la orientación emprendedora y del crecimiento (Moreno y Casillas 2008; Wiklund et al., 2009), aunque a veces las actividades empresariales no alcanzan los rendimientos esperados. Considerando esta visión alternativa acerca de la orientación emprendedora, sugerimos que dependiendo del impacto de la misma en el crecimiento de la empresa, las empresas serán capaces de controlar su nivel de volatilidad. En otras palabras, cuando la orientación emprendedora conduce al crecimiento de la empresa, la empresa es capaz de reducir su nivel interno de volatilidad. Sin embargo, cuando la orientación emprendedora no se acompaña del

crecimiento de la empresa, la volatilidad de la misma tiende a ser mayor. Por esa razón, proponemos como hipótesis final:

Hipótesis 7: El crecimiento modera la relación entre la orientación emprendedora y la volatilidad de la empresa. En concreto, cuando el crecimiento de la empresa aumenta, la relación entre la orientación emprendedora y la volatilidad, tiende a ser menos intensa.

5.- EFECTO DE LA VOLATILIDAD EN LA CREACIÓN DE EMPLEO.

La relación entre la volatilidad de la empresa y el empleo no es un aspecto que se haya estudiado o investigado en profundidad. Es por ello que esta relación muestra resultados contradictorios debido a la desviación producida por los cambios en el entorno, no afectando de igual manera en cada país debido a los efectos del desarrollo económico y del empleo (Valliere y Peterson, 2009). En este sentido, Davis et al. (2007) obtuvieron una evidencia significativa acerca del aumento de la volatilidad en el empleo en relación a las grandes empresas que cotizan en bolsa, encontrando que las empresas pequeñas disfrutaron incluso de una disminución de la volatilidad que les afectaba. Sin embargo, Taymaz (2005) identificó un significativo aumento de la volatilidad en el empleo en las pequeñas empresas, constituyendo un proceso vital para el desarrollo económico de 1980 y para la organización de la industria en general.

Basándonos en la literatura que hemos descrito a lo largo de este trabajo, vemos como algunos autores estudiaron la relación de la volatilidad con el entorno de la empresa y otros estudiaron la volatilidad relacionada con la empresa. En nuestra investigación analizaremos propiamente la volatilidad relacionada con la empresa, que es la volatilidad que se puede observar en la actividad diaria de la misma y que no es imputable al sector (Delmar et al., 2003)

En este contexto, la volatilidad se constituye como un resultado, como un comportamiento pero no como una variable del entorno. .

Teniendo en cuenta esos argumentos, entendemos que la volatilidad de la empresa tendrá un efecto curvilíneo (en forma de U invertida) respecto de la creación de empleo y como consecuencia de dos aspectos diferentes. De una parte, niveles moderados de volatilidad podrían interpretarse como una señal de oportunidades de negocio, tales como la promoción de decisiones de expansión, con la subsiguiente creación de empleo, sin embargo niveles más elevados de volatilidad podrían interpretarse como una señal de excesiva incertidumbre sobre su futuro, lo que a su vez supondría promover decisiones relativas a externalizar la mano de obra de la empresa.

Desde finales de los 80, diversos estudios analizaron las decisiones de expansión y los problemas relacionados con la sobrecapacidad (Lieberman, 1989). Esta línea de investigación ha demostrado que las empresas toman decisiones estratégicas basadas en interpretaciones y que no siempre tienen éxito al atender a sus propios resultados (Zajac y Bazerman, 1991; Paich y Sterman, 1993). Es por ello que, las empresas tratan de anticiparse a las oportunidades de negocio para expandir sus capacidades a fin de tener la máxima cuota de mercado (Porter, 1980).

De acuerdo con este razonamiento, entendemos que cabe la posibilidad de interpretar que el aumento en los niveles de volatilidad, es un signo de futuras oportunidades de negocio, y que pueden ser aprovechadas por los requerimientos de las decisiones de expansión (Zajac y Bazerman, 1991). En este sentido, niveles moderadamente crecientes de volatilidad son comunes en ambientes inestables siendo típicamente observados en negocios emergentes.

Sin embargo, mientras que los aumentos moderados de volatilidad podrían interpretarse como una señal de potenciales oportunidades de crecimiento en el futuro, los aumentos

superiores de la volatilidad son a su vez interpretados como un indicador de alto riesgo para la toma de decisiones relativas a la expansión de las empresas. Chau y Walker (1994) argumentaron que los empresarios tienden a maximizar el beneficio derivado de la mano de obra minimizando su coste. Esta se lleva a cabo mediante la organización de una empresa de la manera más eficiente y deduce entre otros aspectos, la presencia de la subcontratación para el desarrollo de las empresas y de los sectores.

Pollak (1985) sostuvo que las dificultades de contratación y los problemas de la negociación son los aspectos centrales dentro de los costes de transacción, puesto que tienen una influencia directa en la organización de la producción. Atendiendo a este argumento, la incertidumbre adquiere un papel relevante, en cuanto a la forma en la que estas empresas adoptan para reducir la estructura de esos costos fijos a fin de dotarse de cierta flexibilidad. Esta reducción se lleva a cabo a través de la subcontratación de personal de la empresa, esto es, las empresas reducen el número de empleados con el fin de reducir el riesgo en condiciones de incertidumbre.

En este contexto, la teoría de los costes de transacción expone los beneficios de la externalización de determinados costes con la intención de salvar la estabilidad de la empresa (Pollak, 1985; Klaas et al. 2010). Es por ello que las empresas son más propensas a contratar a personas directamente cuando sus habilidades son específicas para esa empresa y contribuyen de manera directa al desarrollo del núcleo duro de la empresa y de sus competencias básicas (Lepak y Snell, 1999). De acuerdo con este argumento, la incertidumbre del entorno crearía la necesidad de contratar empleados, si bien podrían hacerse de manera externa (Klaas et al. 2010), reduciendo por lo tanto la creación de empleo interna dentro de la propia empresa. Enlaza con esta afirmación el argumento que propuso Van Mieghem (1999) y que dependiendo de la

estructura de costes de la empresa contratante y de la propia de la subcontratada, además del tipo de contrato suscrito entre las partes, la subcontratación o *outsourcing* se sugiere como la mejor manera de resolver los problemas de crecimiento, respecto de la incertidumbre, puesto que reduciendo el coste asimilado en materia de empleo, esto hace que la empresa sea más resistentes a los efectos de la volatilidad.

Sobre esta base, argumentamos que podría existir una relación en forma de U invertida entre la volatilidad de la empresa y la creación de empleo. Considerando que durante la primera etapa, y tomando como base la percepción equivocada de los resultados y los argumentos de exceso de capacidad, la empresa contratará empleados y por tanto estará sometida a una mayor volatilidad, lo que generara una relación positiva entre la volatilidad y el empleo. Sin embargo, en torno a este argumento y atendiendo a la teoría de los costes de transacción, el incremento en la volatilidad dará lugar a vertiginosas reducciones de empleo, puesto que hará que la empresa sea menos costosa, más flexible y sometida a un menor riesgoso, orientando entonces a la empresa a subcontratar. En este nuevo contexto, la relación entre la volatilidad y los cambios originados en torno al empleo, hacen que relación anterior de carácter positivo se vuelve negativa. Por lo tanto, podemos proponer:

Hipótesis 1: La volatilidad de la empresa presenta una relación curvilínea (forma de U invertida) respecto de la creación de empleo.

La literatura ha discutido ampliamente la relación entre el crecimiento y el tamaño de las empresas (Delmar et al 2003; Wiklund et al., 2009; Herenkson y Johansson, 2010). En este sentido, la teoría de Gibrat (1931) sugirió que no debería haber ninguna diferencia entre las tasas proporcionales de crecimiento entre las pequeñas y grandes empresas. Sin embargo, Delmar et al. (2003) refutaron esta idea argumentando que el tamaño de la empresa si tenía un

efecto sobre el crecimiento, y la consecuencia de ello es que las pequeñas empresas generan más empleo que las grandes empresas (Wiklund et al 2009; Henrekson y Johansson, 2010).

Las pequeñas empresas presentan al mismo tiempo tanto ventajas como desventajas respecto a las grandes empresas. En primer lugar, aparece como una desventaja que las pequeñas empresas tienen más dificultades para interpretar de manera adecuada sus propios resultados y por tanto para evaluar la evolución de sus resultados en el futuro. En este sentido, las pequeñas empresas tienen menos capacidad de control sobre su entorno, y sufren de manera más acuciada la falta de conocimiento, a través de la experiencia en el desarrollo de su planificación futura, un aspecto más común en las grandes empresas. En este caso, las empresas pequeñas son más propensas a confundir la interpretación de sus propios resultados, cayendo en problemas de exceso de capacidad (Lieberman, 1989; Zajac y Bazerman, 1991), lo que originara que ese problema persista hasta que la empresa modifique sus escalas, por ejemplo de producción, con el fin de reducir al mínimo nuevamente sus costes de producción.

Por el contrario, aparece como una ventaja el que las pequeñas empresas sean más ágiles, adaptables y flexibles que las grandes empresas (Chen y Hambrick, 1995; Deutsch et al., 2007). En este sentido, las grandes empresas encuentran más dificultades para adaptarse a un entorno cambiante que las pequeñas empresas, motivo por el cual, las pequeñas empresas tienden a ser más inmunes en un entorno cambiante (Davis et al., 2007).

La adaptación a un aumento en la volatilidad implica en este sentido, que las empresas subcontratarán trabajos puntuales a proveedores de servicios externos, por lo tanto, las pequeñas empresas reducirán la generación de empleo propio, lo que generará una gran influencia en las estrategias de organización utilizadas para lograrlo (Casson, 1994). Ocurriendo, que como las grandes empresas encuentran más dificultades para adaptarse al entorno sometido a volatilidad, la consecuencia directa de ello será que retrasarán la adaptación

al nuevo entorno y de suyo la creación de nuevo empleo. Esta falta de flexibilidad en las grandes empresas las llevará a parar la contratación de personal debido a la volatilidad. Por su parte, las pequeñas y medianas empresas recurrirán a la externalización de esos recursos humanos para poder proveerse de sus servicios (Klass et al. 2010). Esta argumentación nos lleva a concluir que:

Hipótesis 2a: El tamaño de la empresa ejerce como moderador en la relación (U invertida), entre la volatilidad de la empresa y la creación de empleo. En concreto, para las empresas más pequeñas la relación será más intensa que para las empresas más grandes.

Asimismo, la edad de la empresa tiene un papel importante en relación con la volatilidad y el empleo, ya que las decisiones adoptadas por las organizaciones jóvenes son diferentes que las adoptadas por las más veteranas (Henrekson y Johansson 2010). Ante la volatilidad, las empresas jóvenes tenderán a adaptarse al entorno, por lo que el empleo será creado a través del *outsourcing*, como una opción real y viable para ellas.

En este sentido, podemos decir que este marco está vinculado con la teoría del ciclo de vida de las empresas, el cual produce cambios continuos en las mismas y por tanto, su contribución al empleo varía en cada etapa. Es por ello que esa pueda ser la razón de la falta de crecimiento del empleo en las investigaciones ceñidas al estudio de las etapas que componen el ciclo de vida de las empresas (Baines et al. 1997). En este sentido, numerosos estudios han argumentado que el ciclo de vida de la empresa está compuesto por etapas que se definen como una configuración única de las variables relacionadas con su propio contexto y su estructura (Hanks et al 1993; Phelps et al., 2007). Esos resultados vinculados a las primeras

investigaciones, definen las etapas de la empresa como el nacimiento, la juventud y la madurez (Lippitt y Schmidt, 1967; Lewis y Churchill, 1983).

La teoría del desarrollo de la empresa muestra evidencias de que una empresa en la primera etapa se caracteriza por un alto crecimiento en las ventas y por tanto, del número de empleados (Koberg et al. 1996). Sin embargo cuando las empresas alcanzan el estado denominado de madurez se enfrentan de manera habitual a un crecimiento lento (Lumpkin y Dess, 2001). Sirve de ejemplo el estudio realizado por Headd y Kirchhoff (2009) que demostró que las PYMEs que tenían un rápido crecimiento en su primer año, tendían a generar empleo a partir de entonces.

En definitiva, los argumentos anteriores sugieren que las empresas en sus fases iniciales de existencia, tienden a estar sujetas a una alta volatilidad lo que conduce a un aumento en el empleo. En este contexto, una mayor volatilidad dará lugar a su vez al aumento en la creación de empleo con el fin de obtener un mayor volumen de ventas, buscando tener una relación eficiente respecto de su tamaño. Por tanto, la relación entre la edad de la empresa y el crecimiento tiende a disminuir con la aumento de edad de la empresa. Este resultado destaca de manera independiente de la muestra que se estudie (Barron et al 1994; Sutton, 1997).

Sin embargo, las empresas de mayor edad son menos adaptables que las pequeñas y por tanto acusan cierto retraso en su proceso de adaptación, tomándose más tiempo para externalizar la contratación de empleados. Este argumento muestra evidencia de que la interacción entre la volatilidad de la empresa y la edad de la misma genera un efecto negativo sobre la creación de empleo. Esta idea es apoyada por Delmar et al. (2003) quienes afirman que existe una relación más clara entre la edad de la empresa y el crecimiento, donde las tasas de crecimiento de las empresas tienden a disminuir con el aumento de la edad de la empresa. Dicho retraso dará lugar a un impacto negativo sobre el empleo. Por este motivo, postulamos la siguiente hipótesis:

Hipótesis 2b: La edad de la empresa tiene un efecto moderador en la relación (U invertida) entre la volatilidad y el empleo. En concreto, para las empresas más jóvenes la relación será más intensa para las empresas mayores.

Como mencionamos anteriormente, la volatilidad de la empresa y el crecimiento de la misma son aspectos relacionados a nivel conceptual. Por ello, proponemos que el crecimiento de la empresa ejerce un efecto moderador sobre la relación habida entre la volatilidad y la creación de empleo. En este sentido, encontramos una línea de investigación relacionada con la volatilidad de la empresa que se ocupa de los efectos positivos y negativos del crecimiento. Así, una mayor volatilidad lleva aparejado un menor crecimiento cuando las circunstancias económicas son desfavorables y por tanto, las empresas suelen recortar sus gastos respecto de la contratación de personal. Esas consecuencias derivan en efectos negativos sobre el crecimiento económico en el futuro (Martin y Rogers, 1997). En relación con dicha disparidad, la relación entre la volatilidad de la empresa y el crecimiento varía dependiendo de la elección de los periodos de análisis, respecto de corto o largo plazo (Kroft y Lloyd-Ellis, 2002). Sin embargo, los autores concluyen que el efecto producido de manera global por la volatilidad respecto del crecimiento es negativo en términos absolutos.

Por este motivo, proponemos que la interpretación que pueda hacer el director de una empresa en relación a los efectos de la volatilidad, dará lugar a resultados diferentes dependiendo del contexto de crecimiento en el que se desarrollen. En un contexto de crecimiento de la empresa, independientemente de su dimensión, la influencia de la volatilidad en la generación de empleo será más o menos intensa pero siempre positiva, mientras que un contexto en declive hará que la volatilidad influya de manera directa en la destrucción de empleo. Por ello, proponemos:

Hipótesis 2c: El crecimiento de la empresa moderara la relación (U invertida) entre la volatilidad y el empleo. Si el crecimiento de la empresa es mayor, la tasa de creación de empleo asociado se incrementa debido al aumento de la volatilidad, pero cuando el crecimiento de la empresa es menor, dicha tasa de creación de empleo que se asocia al aumento de la volatilidad es más pausada.

6.- VOLATILIDAD Y RENDIMIENTO EN EL CONTEXTO DE LAS PYMEs

La literatura tradicional sobre emprendedores ha sostenido durante mucho tiempo que, en condiciones volátiles, las grandes empresas tienen menos ventajas que las pequeñas empresas (Cohn y Lindberg, 1974; MacMillan, 1980; Feigenbaum y Karnani, 1991; Chen y Hambrick, 1995; Dean et al., 1998; Park, 2003; Greve 2011). Las grandes empresas son menos flexibles, menos adaptables y ágiles que las empresas más pequeñas (Dean et al., 1998; Park, 2003; Greve, 2011). Por el contrario, las empresas más pequeñas son menos burocráticas y más flexibles, siendo capaces de reaccionar con rapidez y eficacia a las condiciones cambiantes del entorno y como consecuencia, su simplicidad y flexibilidad organizacional es una ventaja competitiva (Cohen y Klepper, 1996; Roper, 1997).

Por lo tanto, una corriente sólida de la literatura tradicional apoya la idea de que la volatilidad de la empresa puede tener un efecto beneficioso en el rendimiento de las pequeñas empresas. En este sentido, adoptamos el marco teórico de las capacidades dinámicas, para ayudarnos a la plantear el modelo acerca de una posible relación entre la evolución de las empresas más pequeñas y la volatilidad de la empresa.

El concepto de capacidades dinámicas permite explicar por qué algunas empresas tienen dificultades y no son capaces de adaptarse con éxito a los cambios en su entorno (Teece y Pisano, 1994; Harreld et al., 2007). En este sentido, las capacidades dinámicas fueron definidas como "competencias de mayor nivel que determinan la capacidad de la empresa para incorporar, construir y reconfigurar sus recursos, con el fin de abordar más rápidamente los cambios tanto en el entorno de empresa, como en su interior" (Teece, 2012, p. 1395). Consecuentemente, el control de estas capacidades permite a las empresas obtener beneficios superiores (Teece et al 1997; Zollo y Winter 2002; Adner y Helfat, 2003). Es por ello que las capacidades dinámicas son relevantes respecto de la volatilidad del entorno como de las propias empresas pequeñas.

La volatilidad del entorno obliga a las empresas a desarrollar sus capacidades dinámicas, puesto que tener en cuenta la naturaleza cambiante del entorno es esencial tanto para lograr el crecimiento de la empresa (Teece y Pisano, 1994; Teece, 2012) como para adaptar, integrar y reconfigurar las habilidades, recursos y competencias (Zahra et al., 2006). Por ello, las capacidades dinámicas son muy importantes para las empresas que operan en entornos altamente volátiles (Eisenhardt y Martin, 2000), siendo de mayor valor en entornos que cambian rápidamente (Zollo y Winter, 2002; Zahra et al., 2006).

Estos autores señalaron la importancia de la necesidad de las capacidades dinámicas, puesto que estas no sólo vienen propiciadas por la volatilidad del entorno sino también por la volatilidad interna de la propia empresa, aspecto que también debe ser tenido en cuenta para llegar a conocer la verdadera naturaleza de las capacidades dinámicas. Si bien, el cambio continuo del entorno aumenta el desarrollo y uso de estas capacidades (Zahra et al., 2006). Por lo tanto, la literatura apoya las capacidades dinámicas como aspectos importantes a ser tenidos en cuenta en entornos volátiles, que a su vez sirven para desarrollar dichas capacidades. En este sentido, entramos ahora a valorar si estas son aplicables a pequeñas empresas que atendiendo a

emprendedores, el desarrollo y la utilización de las capacidades dinámicas corresponderían directamente a este (Zahra et al., 2006; Teece, 2012).

El espíritu empresarial se ha asociado tradicionalmente con la creación de un nuevo negocio por parte de un emprendedor (Teece, 2012), no limitándose el uso de este tipo de capacidades dinámicas a ningún tipo de empresas, ni siquiera a las de nueva creación (Teece, 2012). En este sentido, aunque las capacidades dinámicas son útiles para las pequeñas y grandes empresas, algunos autores han considerado que el desarrollo de las capacidades dinámicas es especialmente importante para las pequeñas empresas (Arthurs y Busenitz, 2006;. Zahra et al 2006; Doving y Gooderham, 2008; Barreto, 2010).

Las pequeñas empresas necesitan de capacidades dinámicas para sobrevivir y crecer (Zahra et al., 2006). Las pequeñas empresas poseen capacidades dinámicas específicas, tales como la gestión del abastecimiento externo (Uhlaner et al., 2012), la gestión del conocimiento (Alegre et al. 2013), la innovación en la creación de productos (Branzei y Vertinsky, 2006), y ser empresas de valores y principios relacionados con la ética empresarial (Arend, 2013).

Aunque la literatura concluye que las pequeñas empresas poseen capacidades dinámicas, investigaciones recientes muestran evidencias de que estas se benefician menos de poseer capacidades dinámicas. En este sentido, Arend (2013) sostiene que las empresas de menor tamaño tienden a obtener un menor rendimiento que las empresas más grandes ya que las primeras se benefician menos de las capacidades dinámicas que las empresas más grandes, debido a las economías de escala. Estas economías provienen de la aplicación de las capacidades dinámicas a un conjunto más amplio de recursos, productos y capacidades operativas. En resumen, la literatura tradicional en emprendedores ha argumentado que la volatilidad beneficiará a las pequeñas empresas. Por lo tanto:

Hipótesis 1: La volatilidad influye positivamente sobre el rendimiento de las pequeñas y medianas empresas.

Sin embargo la literatura tradicional ha sostenido que la volatilidad afectará de diferentes formas a las empresas dependiendo de su tamaño. En este sentido, la literatura capacidades dinámicas ha sostenido lo contrario. Esta controversia se fundamenta en la idea primitiva derivada de la teoría del crecimiento sobre la cual aquellas empresas de mayor tamaño tenían mayores dificultades para cambiar y adaptarse al entorno, puesto que su propia estructura de una parte les sirve como seguro generándoles de una parte estabilidad, pero a la vez las lastraba y en cierta forma las inmovilizaba a la hora de hacer cambios o de tomar decisiones rápidas para que pudieran adaptarse a las modificaciones o cambios del entorno. Sin embargo, la literatura de capacidades dinámicas desliga el tamaño como elemento dominante en esos cambios, haciendo que dependa en la mayor parte de las ocasiones de las propias capacidades de gestión y administración que posean los directores de las empresas, puesto que con los recursos de que dispongan o con los que puedan adquirir, muestren destreza y habilidad a la hora de reconfigurar la empresa o partes de ellas, adaptándolas a las necesidades del entorno. Por lo tanto:

Hipótesis 2: El tamaño de la empresa moderará la relación entre volatilidad y rendimiento dela empresa, por tanto dicha relación será menos intensa cuanto menor sea el tamaño de la empresa.

En relación con la edad de la empresa, la cuestión que abordamos ahora es si las empresas jóvenes poseen las capacidades dinámicas en virtud de las cuales se beneficiarán en su desarrollo empresarial respecto de la volatilidad. Varios autores han desarrollado argumentos sobre la existencia de capacidades dinámicas para las empresas más jóvenes (Autio et al., 2000; Newbert, 2005; Sapienza et al., 2006; Zahra et al., 2006; Arend, 2013). En este sentido, Zahra et al. (2006) argumentaron que las empresas jóvenes eligen la improvisación y la practica a través del ensayo-error para desarrollar y utilizar las capacidades dinámicas.

La cantidad y la velocidad en la que se producen los cambios son esenciales para el desarrollo de las capacidades dinámicas y el mejor modo de aprendizaje. Las capacidades dinámicas facilitan el nacimiento y la supervivencia de las nuevas empresas (Newbert, 2005), sobre todo en un contexto de internacionalización (Sapienza et al., 2006). Empresas jóvenes, dado su corto período de existencia, tienen mayores ventajas de aprendizaje puesto que les resulta más fácil desaprender (Autio et al., 2000).

De ahí que las empresas jóvenes posean como tal esas capacidades dinámicas. Dichas capacidades se desarrollan a través de los cambios que se producen tanto en el entorno como dentro de la propia organización de la empresa, propiciando estos el aumento en el desarrollo y la utilización de estas capacidades (Zahra et al., 2006). Por tanto, la volatilidad ayudará a las empresas jóvenes y pequeñas a desarrollar sus capacidades dinámicas. La pregunta es si esas capacidades desarrolladas llevarán a las pequeñas empresas jóvenes a obtener mayores rendimientos.

En este sentido, la edad de las empresas tiene un papel importante a la hora de tomar decisiones, puesto que las empresas más jóvenes tienden a estar menos estructuradas y ser menos jerárquicas que las más longevas (Henrekson y Johansson, 2010). Este marco teórico

viene a estar relacionado a su vez con la teoría del ciclo de vida empresarial que se compone de varias etapas, produciéndose contribuciones diferentes a la hora de generar empleo para cada una de las etapas. En consecuencia, esas etapas implican más que la simple supervivencia o crecimiento de la empresa, a la hora de tomar decisiones.

En este sentido, Arend (2013) ha estudiado la existencia de capacidades dinámicas en las empresas más jóvenes, encontrando evidencias de una mayor rentabilidad de las empresas más jóvenes al aplicar sus capacidades dinámicas, respecto del uso que le dieron empresas más veteranas. Por ello, las empresas más jóvenes que se enfrentan a la volatilidad desarrollarán capacidades dinámicas que les ayudarán a obtener mejores resultados. Por lo tanto:

Hipótesis 3: El tamaño de la empresa moderará la relación entre volatilidad y rendimiento de la empresa, de forma que dicha relación será menos intensa cuando menor sea el tamaño de la empresa.

Por otra parte, ahora procedemos a argumentar que la volatilidad tiene un impacto negativo en las pequeñas empresas que tienen un elevado apalancamiento. Hay dos teorías que predicen los efectos de la deuda en las empresas como son la teoría del flujo de caja (Jensen, 1986) y la teoría de la jerarquía (Myers, 2001). En este sentido, la primera define que existen intereses diferentes dentro de una misma empresa, por ejemplo entre directivos y accionistas, lo que da lugar a entender que a mayor nivel de endeudamiento, mayor será la capacidad de generar beneficios. Esta teoría defiende que hay una relación positiva entre el endeudamiento y la rentabilidad.

Atendiendo a la teoría de la jerarquía, se establecen las estructuras del capital sobre la base de un orden de preferencia (Myers y Majluf, 1984; Myers, 2001). Es por ello, que las empresas que tienden a ser rentables prefieren fondos internos al uso de fondos externos (Myers, 2001). Sin embargo las empresas que no son tan rentables optan por una financiación a través del endeudamiento. Por tanto, esta teoría sostiene que existe una relación negativa entre el endeudamiento y rentabilidad (Myers, 2001).

En el contexto de las pequeñas empresas, los conflictos entre los directivos y los accionistas serán menos relevantes (Degryse et al., 2012). Por lo tanto, la teoría de flujo de efectivo será de uso limitado, mientras que la teoría de la jerarquía será más aplicable. Hay pruebas sólidas de que la teoría de la jerarquía se mantiene para las pequeñas empresas mediante las investigaciones de Vanacker y Manigart (2010) y de Degryse et al. (2012).

Además, las empresas más volátiles tenderán a pagar un interés más alto por la deuda que las empresas más estables. Las instituciones financieras modificarán los precios de la deuda de acuerdo con el riesgo percibido por cada una de las empresas, siendo las de mayor riesgo las empresas que presenten resultados más discontinuos o volátiles. En este sentido, el precio del dinero para las empresas altamente volátiles será mayor, lo que les reducirá la rentabilidad de su uso. En consecuencia las empresas volátiles serán menos rentables cuanto mayor sea su nivel de deuda. Por lo tanto:

Hipótesis 4: Un alto nivel de apalancamiento de las pequeñas empresas las beneficiará menos en sus resultados cuando estén sometidas a la influencia de la volatilidad, siendo los beneficios mayores de las empresas con menor nivel de apalancamiento que se sometan a esa misma volatilidad, siendo por tanto el tamaño de la empresa moderador de la relación entre volatilidad y rendimiento de la empresa.

7.- METODOLOGÍA

7.1. MUESTRA

La muestra para la primera investigación fue tomada de la base de datos denominada "Central de Balances de Andalucía", que contenía información financiera y económica de manera continuada de 4.735 empresas de Andalucía (España) a lo largo de un periodo de 4 años. El gobierno de La Junta de Andalucía realiza esta base de datos, utilizando los informes anuales que se han registrado en el Registro Mercantil. Para nuestra investigación hemos examinado muy de cerca la muestra, eliminando las empresas que carecían de la información completa o que presentaban resultados contradictorios, lo que dejó un total de 4.330 empresas que son representativas de la población andaluza, en aspectos tales como el sector, la distribución geográfica y el tamaño.

A las empresas resultantes de esta muestra les enviamos un cuestionario por correo, recibiendo un total de 462 respuestas, de las que 29 tuvieron que ser eliminados, al estar incompletos, resultando una muestra final de 433 empresa, lo que supone un índice de respuesta del 10%, que es el habitualmente utilizado en investigaciones en este campo (Wiklund y Shepherd, 2005). Con el fin de evitar el sesgo de respuesta, se comparó la distribución de la muestra en relación con el tamaño, la edad, los sectores, y la ubicación de las empresas, respecto de la población inicial. Siendo los datos más representativos, que el mayor número de empresas está dentro del grupo compuesto entre 11 y 25 empleados, siendo el 38,75%. El sector manufacturero es el grupo que mas empresa aglutina con un 38,1% de la muestra. Siendo el grupo más grande atendiendo a la edad de la empresa, el comprendido entre 11 y 25 años, formado por el 37.87% de las empresas.

Para la segunda investigación, se ha tomado la base de datos española SABI, escogiendo aquellas empresas que tenían la información financiera necesaria y completa para todos los años respecto de un periodo de diez consecutivos (1998-2008). En este sentido, el número inicial de empresas que figuran en la base de datos respecto de la muestra final es menor puesto que como en la primera investigación, eliminamos todas aquellas empresas que contenían información incompleta o contradictoria, siendo la muestra definitiva de 2.180 empresas.

Por otra parte, merece la pena destacar que es posible realizar un análisis sobre el crecimiento en un período mínimo de tres años, pero para llevar a cabo tal acción respecto de la volatilidad, es necesario analizar un período más largo de tiempo para tener una visión real de la evolución. Resaltar que en relación con la edad, el grupo mayoritario de empresas es aquel entre 11 y 25 años de edad, compuesto por 832 empresas, y atendiendo al número de empleados, el grupo más grande abarca empresas entre 11 y 25 empleados a un total de 1.091 empresas.

Por último, respecto de la tercera investigación, los datos utilizados fueron tomados igualmente de la base de datos SABI (Sistema de Análisis de Balances Ibéricos-Sistema de Análisis de Balances Ibéricos) suministrados por Bureau van Dijk, para el período 2000-2008. La información que recoge SABI es la contenida en el Registro Mercantil, lugar donde todas las empresas españolas deben por ley a depositar sus cuentas, debiendo las mismas ser fiables, pudiendo sancionarse la presencia de información falsa con la responsabilidad civil y penal de los administradores de dichas empresas. En este sentido, seleccionamos las empresas con información financiera disponible por un período mínimo de nueve años (6 años + 3 años), con el fin de investigar los efectos de la volatilidad de la empresa durante seis años y sus efectos durante los tres años siguientes. Obteniendo una muestra de 39.800 empresas, siendo una cifra equivalente a un tercio del total de la población de empresas españolas existentes en 2011 con un segmento de entre 10 y 499 empleados. Los datos erróneos y los valores atípicos redujeron finalmente la muestra final a 39.416 empresas.

En relación con el tamaño, el mayor grupo incluye a las empresas que tienen entre 10 y 25 empleados (52,7%), con 20.824 empresas. Respecto a la edad de las empresas, el grupo más amplio incluye las empresas de entre 21 y 35 años (51,7%) con 20.429 empresas. Finalmente atendiendo a las ventas, el grupo más grande son las empresas que facturaron entre uno y cinco millones de euros (38,13%) con 15.057 empresas.

7.2.- VARIABLES

Con el fin de resumir las variables empleadas en la investigación, hemos elaborado la siguiente tabla 1. Algunas de estas variables han sido utilizadas en las tres investigaciones empíricas.

Tabla 1: Variables de la investigación

Variable	**Descripción**
Volatilidad	Coeficiente de desviación estándar de la regresión de las ventas durante el período analizado.
Tamaño	El número de empleados (Ln).
Edad	La diferencia entre el primer año de análisis y el año que la empresa fue fundada (Ln).
Orientación emprendedora	El promedio de sus tres dimensiones (capacidad de innovación, la asunción de riesgos y proactividad). Escala de Covin y Slevin (1989)
Apalancamiento	Pasivo total dividido por activos totales.
Crecimiento	El coeficiente estándar de la regresión en la evolución de las ventas.
Crecimiento del empleo	El incremento del número de empleados durante el período analizado (Ln).
Solvencia	El capital de explotación dividido por los activos totales de los recursos prestados.
Liquidez	Activos de explotación divididos los pasivos corrientes.
Rentabilidad (ROA)	Ganancias antes de intereses e impuestos dividas por los activos totales. Rentabilidad de la empresa (ROA) promedio de los tres años siguientes (2006-2008).
Sector	Media del sector menos el valor de la empresa.

8.- RESULTADOS Y DISCUSIÓN

8.1.- Determinantes de la volatilidad

En relación con la primera investigación y con el fin de probar nuestras hipótesis, utilizamos una regresión jerárquica para analizar y estimar los cuatro modelos de regresión (ver

tabla 2). El modelo 1 es el modelo de referencia que incluye sólo las variables de control. El modelo 2 incluye como variables independientes los cinco predictores tradicionales de crecimiento. Y por último, el modelo 3 añade el crecimiento de la empresa como un predictor directo de la volatilidad. El modelo 4 incluye el efecto de la interacción entre la orientación emprendedora y el crecimiento, repitiendo los últimos tres modelos, distinguiendo las tres dimensiones tradicionales de EO (capacidad de innovación, la asunción de riesgos y proactividad) en los modelos de 5 a 7.

Tabla 2: Síntesis de los Resultados: determinantes de la volatilidad.

Hipótesis	**Relación propuesta**	**Beta y significación**	**Test**
Hipótesis 1	Relación negativa entre el tamaño de la empresa y la volatilidad	β = -0.230; p-value < 0.001	Se confirma
Hipótesis 2	Relación negativa entre la edad de la empresa y la volatilidad	β = -0.052; p-value < 0.05	Se rechaza
Hipótesis 3	Efecto positivo de la orientación emprendedora sobre la volatilidad	β = 0.025; p-value < 0.01	Se confirma
Hipótesis 4	Relación negativa entre el apalancamiento financiero y la volatilidad	β = -0.109; p-value < 0.05	Se confirma
Hipótesis 5	Efecto positivo entre la hostilidad del entorno y la volatilidad	β = 0.039; p-value < 0.05	Se confirma
Hipótesis 6	Relación positiva entre el crecimiento de la empresa y la volatilidad	β = 0.157; p-value < 0.01	Se rechaza
Hipótesis 7	Efecto de interacción entre la orientación emprendedora y la volatilidad	β = -0.156; p-value < 0.01	Se rechaza

Esta investigación muestra y confirma que las empresas más pequeñas sufren una mayor volatilidad que las empresas de mayores dimensiones. Por otra parte, las empresas no se ven influenciadas de distinta forma dependiendo la edad de las mismas, por lo que la volatilidad no tiene ningún efecto ni significativo ni diferente si tomamos como referencia la edad de las empresas. El apalancamiento y la volatilidad están relacionados negativamente, y finalmente descubrimos una relación positiva entre la hostilidad del entorno y la volatilidad. En relación con la orientación emprendedora nuestra investigación muestra una influencia positiva en la volatilidad, siendo dicha relación moderada por el crecimiento de las empresas. En

consecuencia, el aumento de la orientación emprendedora implica mayores niveles de volatilidad, para los casos en los que las empresas no están creciendo.

En resumen, nuestros resultados permiten confirmar la mayoría de las hipótesis planteadas. Así mismo, estos resultados permiten que desarrollemos dos contribuciones relevantes a la literatura ya publicada. En primer lugar, podemos concluir que el crecimiento de la empresa y la volatilidad de la misma, a pesar de ser conceptos relacionados, son diferentes. Sin embargo, estos conceptos están relacionados como resultado del efecto del crecimiento en la volatilidad de las empresas, lo que ayuda a explicar cómo influye la orientación emprendedora en la evolución de la volatilidad de las ventas, ya que las empresas tienen que ser dirigidas en un entorno dinámico e incierto, por lo que necesitan para hacer frente a mayores niveles de volatilidad.

Por último, esta investigación tiene limitaciones importantes como, por ejemplo, que el estudio empírico se basa en una muestra relativamente pequeña de las empresas. Por tanto, sería interesante llevar a cabo investigaciones que sean capaces de acudir a las bases de datos más grandes, y que sean más representativos de la población de las empresas en un país o región. La segunda limitación se refiere al momento en el que se desarrolla la obtención y el análisis de los datos, porque fue justo antes de comenzar la crisis económica internacional

actual. Sin embargo, y a pesar de estas limitaciones, esta investigación proporciona nuevas áreas para futuras investigaciones como las relativas a la relación entre la volatilidad y la creación de empleo u otras similares sobre la base de la supervivencia de las empresas en relación con los devastadores efectos de la volatilidad.

8.2.- Volatilidad y empleo

En relación con la segunda investigación, y con el fin de descubrir la importancia del efecto de la interacción de la variable dependiente, se la ha relacionado con otros efectos dentro de la regresión, proporcionando unos resultados que pueden ser comparados con los valores obtenidos sólo con la variable dependiente (Cohen y Cohen, 1983). Para ello, hemos desarrollado ocho modelos (se resumen los resultados en la tabla 3). El modelo 1 es el modelo de referencia y sirve de base para el análisis. El modelo 2 incorpora las tres variables moderadoras como predictores directos: tamaño, edad y crecimiento. El modelo 3 incluye el efecto directo de la variable independiente: la volatilidad. El modelo 4 incluye el efecto cuadrático de la volatilidad sobre la creación de empleo y los siguientes tres modelos (modelos de 5, 6 y 7) añaden los efectos de la interacción de las tres variables moderadoras (tamaño, edad y crecimiento), por separado. Por último, el modelo 8 incluye al mismo tiempo, los tres efectos moderadores, resultando el modelo al completo.

Tabla 3: Síntesis de los Resultados: Volatilidad y empleo

Hipótesis	**Relación propuesta**	**Beta y significación**	**Test**
Hipótesis 1	La volatilidad tiene una relación lineal respecto de la creación de empleo. La volatilidad tiene una relación curvilínea (U-invertida) respecto de la creación de empleo (curvilínea)	$\beta = 0.236$; p-value < 0.01 $\beta = -0.161$; p-value < 0.05	Se confirma

Hipótesis 2a	La creación de empleo está influenciada por el efecto de interacción producido por la volatilidad y el tamaño de la empresa. La creación de empleo está influenciada por el efecto de interacción producido por la volatilidad y el tamaño de la empresa (curvilínea)	β = -0.043; p-value < 0.05 β = 0.004; p-value < 0.05	Se rechaza
Hipótesis 2b	La creación de empleo está influenciada por el efecto de interacción producido por la volatilidad y la edad de la empresa. La creación de empleo está influenciada por el efecto de interacción producido por la volatilidad y la edad de la empresa (curvilínea)	β = -0.069; p-value < 0.05 β = 0.137; p-value < 0.1	Se confirma
Hipótesis 2c	Existe un efecto moderador del crecimiento de la empresa respecto de la volatilidad. Existe un efecto moderador del crecimiento de la empresa respecto de la volatilidad (curvilínea)	β = 0.094; p-value < 0.05 β = -0.054; p-value < 0.05	Se rechaza

Las conclusiones sobre el efecto de la volatilidad de la empresa respecto a la creación de empleo, tienen en cuenta la literatura empírica sobre el crecimiento y la volatilidad siendo este argumento desarrollado en dos sentidos diferentes, uno positivo y otro negativo basado en los mecanismos y efectos relacionados con el éxito o el fracaso de las empresas (Gimeno et al., 1997).

Así, la empresa tiende a contratar nuevos empleados para alcanzar el crecimiento. Sin embargo, las empresas más veteranas tienen una mayor cautela en la interpretación de la volatilidad y su crecimiento, por lo que apenas se incrementan las tasas de crecimiento en entornos volátiles. Como expusimos en el desarrollo teórico, estos resultados vienen a corroborar la idea de que las empresas más jóvenes tienen menos conocimientos sobre cuál debe ser el tamaño adecuado y tienden a interpretar las diferentes tasas de actividad como las oportunidades de crecimiento, incurriendo en ocasiones en problemas de exceso de capacidad (Porter y Spence 1982). En cambio, las empresas más maduras y con experiencia son más claras

sobre cuál debe ser el tamaño óptimo y tienden a asumir los efectos de la volatilidad sin efectuar cambios significativos en su empresa.

En resumen, en este estudio hemos examinado el impacto de la volatilidad de la empresa en el crecimiento del empleo y su interacción con tamaño de la empresa, y la edad de la misma, junto a su crecimiento para desarrollar el marco de trabajo de nuestras cuatro hipótesis. El desarrollo de la empresa tiene un proceso irregular y no siempre se construye mediante el mismo patrón. Sin embargo, el nacimiento de nuevas empresas podría ser un medio poderoso para la creación de empleo, aunque la magnitud del efecto sobre el incremento del empleo respecto de la creación de nuevas empresas es bastante incierto (Fritsch y Weyh, 2006).

Basándonos en nuestros resultados, quedamos en parte de acuerdo, siempre y cuando la volatilidad sea moderada, que ésta tiene un impacto positivo en la creación de empleo. En este contexto de cambio, las empresas buscan oportunidades de expansión para obtener una mayor cuota de mercado (Porter, 1980). Puesto que las empresas consideran que la volatilidad implica una oportunidad para crecer, siempre desde una visión optimista, y que de suyo produce efectos en la creación de nuevos puestos de trabajo (Lieberman, 1989). En consecuencia, el aumento de los niveles de volatilidad se puede interpretar como signos de futuras oportunidades de negocio, que requerirán decisiones para su expansión (Zajac y Bazerman, 1991). Es por ello que, esta reducción se lleva a cabo a través de la subcontratación de personal de la empresa ya que las empresas reducen el número de empleados con el fin de reducir el riesgo de la viabilidad de la propia empresa en condiciones de incertidumbre. Este argumento nos ofrece una explicación a la disminución en la curva de empleo cuando la volatilidad aumenta de manera considerable. Por lo tanto, la empresa contrata a los empleados de forma indirecta a través de servicios de outsourcing externos que producen a la empresa una reducción de sus costes de transacción.

Basado en el descenso de la curva de regresión, las empresas se ven afectadas por la realidad y se ajustan a la situación real de la economía, observando cómo sus recursos adquiridos no están alineados con el estado de la economía y por tanto tienden a reducir el empleo para adaptarse al entorno. Esta investigación ofrece resultados interesantes acerca de la relación positiva existente entre la experiencia que conduce al aprendizaje y el éxito empresarial (Westhead y Wright, 1998; Ucbasaran et al., 2003; Colombo y Grilli, 2005). Sin embargo las empresas más veteranas han progresado a través de un período de aprendizaje (Bandura, 1977) ya experimentado mediante errores anteriores por los efectos de la volatilidad, no haciéndolas ser demasiado optimistas sobre las oportunidades futuras de oportunidad.

Por otra parte, esta investigación contiene varias limitaciones. En primer lugar, la investigación empírica se basa en una muestra relativamente reducida de 2.180 empresas. La razón es el bajo número de empresas que contienen información financiera completa en los registros oficiales, siendo interesante para futuras investigaciones que pudieran obtener más información de manera directa de las empresas. En segundo lugar, que no se ha podido demostrar plenamente la hipótesis específica que atiende a la relación positiva o negativa entre la volatilidad y el tamaño de la empresa. Esta consecuencia limita la complejidad de investigación. En tercer lugar, las empresas que figuran en la muestra se encuentran en la misma área geográfica. Esta característica reduce las posibilidades de encontrar grandes diferencias en el desarrollo de las empresas, puesto que todas ellos están condicionadas por el mismo mercado geográfico y las mismas influencias estatales y financieras.

Por lo tanto, una muestra que contiene las firmas de diferentes países podría ofrecer una perspectiva amplia. Por último, la investigación es un estudio transversal basado en un periodo concreto de diez años. Este aspecto limita una visión longitudinal y reduce las posibilidades de identificar relaciones causales entre los factores anteriores o posteriores en torno a los factores estudiados. A pesar de estas limitaciones, creemos que la volatilidad es un tema interesante de

interés para la investigación futura y es por lo que animamos a la realización de futuras investigaciones para explorar estas cuestiones.

8.3.- Volatilidad y resultados en las PYMEs

Finalmente, en relación con la tercera investigación, hemos testado tres relaciones de interacción que tradicionalmente han afectado a la rentabilidad de la empresa, como son la edad de la misma, el tamaño medido como el número de empleados y el apalancamiento, todo ello con respecto a la volatilidad de la empresa, mostrando alguno de los resultados cierto efecto de correlación pero siendo un efecto modesto y que por tanto no afecta a los resultados. Los resultados de los modelos de regresión se resumen en la tabla 4.

Tabla 4: Síntesis de los Resultados: PYMEs y volatilidad

Hipótesis	**Relación propuesta**	**Beta y significación**	**Test**
Hipótesis 1	La volatilidad influye positivamente en el rendimiento de las empresas pequeñas.	β = -0.075; p-value < 0.001	Se rechaza
Hipótesis 2	El rendimiento de las pequeñas empresas se verá menos beneficiado que el de las grandes por la influencia de la volatilidad	β = 0.000; p-value < 0.05	Se rechaza
Hipótesis 3	El rendimiento de las pequeñas jóvenes se verá beneficiado por la influencia de la volatilidad	β = -0.006; p-value < 0.001	Se confirma
Hipótesis 4	El alto nivel de apalancamiento de las pequeñas empresas se verá menos beneficiado que el aquellas con un menor nivel apalancamiento por la influencia de la volatilidad	β = -0.008; p-value < 0.001	Se rechaza

La volatilidad es importante para la supervivencia y el rendimiento de las pequeñas empresas (Zahra et al., 2006; Teece 2012). La volatilidad tiene implicaciones para la gestión y

el rendimiento a largo plazo de las pequeñas empresas (Delmar et al., 2003; Zahra et al., 2006). En consecuencia, tratar de comprender los efectos de la volatilidad en las pequeñas empresas es un tema de investigación que merece la pena ser tratado en profundidad y de manera específica. Este tema ha cobrado importancia recientemente y será aún más importante en los próximos años, ya que las empresas están sufriendo de manera continua el impacto de la volatilidad derivado de un entorno en continuo cambio e impredecible.

En nuestra investigación, hemos comenzado con una pregunta básica, que es si la volatilidad firma tiene un impacto positivo o negativo en las pequeñas empresas. Algunos autores sostienen que la velocidad y la flexibilidad, a la vez que el tamaño es una ventaja respecto de las empresas más grandes (Chen y Hambrick, 1995; Greve, 2011). En segundo lugar, hemos estudiado si el tamaño y la edad de la empresa interaccionan con la volatilidad obteniendo algún efecto sobre su rendimiento, mostrándose evidencias que a través del desarrollo en las capacidades dinámicas, si tienen efecto en estas empresas (Zahra et al., 2006; Arend, 2013).

Los resultados de nuestra investigación confirman el carácter de las investigaciones tradicionales de la volatilidad, ya que los resultados indican que la volatilidad tiene un impacto negativo en el rendimiento de las empresas pequeñas, no siendo acreditada nuestra primera hipótesis. Los resultados confirman los postulados de la perspectiva tradicional volatilidad que apoyaban el efecto negativo de la volatilidad en las empresas, incluso para aquellas de pequeño tamaño.

En segundo lugar, no encontramos evidencias de nuestras predicciones, en el sentido que las empresas pequeñas pudieran o no beneficiarse de la volatilidad. No encontrándose pruebas en relación a que las grandes empresas tengan una desventaja sobre las pequeñas. Los resultados de las hipótesis primera y segunda contradicen la literatura tradicional en la cuanto a los efectos

de la velocidad y agilidad de las pequeñas empresas, ya que muestran evidencia de que la volatilidad les afecta negativamente y que el tamaño no supone ningún beneficio a la hora absorber los efectos de la volatilidad.

En tercer lugar, las empresas más jóvenes si se benefician más de los efectos de la volatilidad que las empresas más antiguas. Estos resultados se alinean con la literatura de las capacidades dinámicas que claramente ha argumentado esto (Zahra et al. 2006) y además ha mostrado pruebas (Arend, 2013) que a través de la utilización de las capacidades dinámicas, las empresas más jóvenes se benefician de la volatilidad. En este sentido, el efecto negativo de la volatilidad que afecta a todas las empresas, es menor para las empresas más jóvenes.

En este sentido, nuestra investigación también muestra un poco de luz acerca de la acumulación de capacidades dinámicas, puesto que a pesar de ser las empresas más jóvenes más susceptibles de recibir los efectos de la volatilidad el uso, el desarrollo y la acumulación de las capacidades dinámicas supone una ventaja para el rendimiento de las empresas más jóvenes. La cuarta y última contribución de nuestra investigación se refiere a los efectos de la volatilidad en las pequeñas empresas con alto nivel de apalancamiento. Nuestros resultados muestran que tener una alta proporción de deuda tiene un impacto negativo en el desarrollo de las empresas pequeñas afectadas por la volatilidad. Nuestra investigación confirma la teoría de la jerarquía.

En este sentido investigaciones futuras sobre la volatilidad de la empresa y emprendedores, suponen un campo de estudio nuevo y muy abierto, puesto que sabemos muy poco sobre el impacto de la volatilidad en las pequeñas empresas. Así mismo, encontramos aspectos interesantes en la investigación de la volatilidad para ser desarrollados y que puedan dar respuesta a preguntas tales como, ¿puede la orientación emprendedora ayudar a las empresas a hacer frente a los efectos de la volatilidad tanto interna como del entorno?. En

segundo lugar, los investigadores que estudian los efectos macro de los emprendedores, podrían estar interesados en conocer los efectos de la volatilidad en la generación de empleo y en la aplicación de la innovación. Así como también las organizaciones gubernamentales deberían estar interesadas en este tipo de resultados, con la finalidad de introducir programas que sirvan para ayudar a las pequeñas empresas y hacer frente a la volatilidad de las mismas.

9.- CONCLUSIONES.

Nuestra investigación lleva el estudio de la volatilidad como el núcleo de nuestro estudio, encontrando importantes argumentos teóricos que vinculan la volatilidad al proceso de destrucción creativa de Schumpeter (1942). Bajo esta perspectiva, las empresas individuales se convierten en volátiles con el fin de adaptarse a los nuevos cambios del entorno y a la introducción de nuevas tecnologías. Este aspecto dota de un efecto multiplicador el dinamismo que sufre la economía. Esta incertidumbre produjo que la mayoría de la literatura sobre la volatilidad tendiese a ser pesimista cuando describía los efectos de la volatilidad en las empresas, poniendo de relieve sobre todo sus efectos negativos (Pindyck 1991; Ramey y Ramey 1995; Martin y Rogers 1997; Imbs 2007; Aghion et al . 2010) sobre los positivos (Black, 1987; Blackburn y Pelloni, 2004).

Sin embargo, la literatura en el área de dirección y gestión, a pesar de ser limitada en cuanto al número de investigaciones, trata de predecir los efectos de la volatilidad aunque se centra más en las grandes empresas (Tosi et al, 1973 (Powell et al, 2006.);. Milliken, 1987; Powell et al, 2006; Thomas y D'Aveni, 2009) que en las pequeñas (Delmar et al, 2003;.. Davis et al, 2007). En este sentido, hemos encontrado que la literatura de emprendedores ha sostenido tradicionalmente que las pequeñas empresas son menos rígidas que las grandes (Park 2003;

Greve 2011) debido a que son capaces de absorber los cambios del entorno mejor que las empresas de mayor tamaño (Dean et al 1998.). Esta idea apoya el argumento de que las pequeñas empresas se caracterizan por su flexibilidad y agilidad siendo esto una ventaja competitiva al adaptarse mejor y más rápido a los cambios, así como a las nuevas tecnologías (Feigenbaum y Karnani 1991; Chen y Hambrick, 1995; Cohen y Klepper, 1996; Roper, 1997; Dean et al., 1998; Ruigrok et al., 1999).

Por lo tanto, su simplicidad y flexibilidad organizativa funcional es la fuente para reaccionar rápida y eficientemente a las condiciones cambiantes del entorno, lo que en definitiva nos da la oportunidad de investigar en torno al concepto de la volatilidad y sus efectos desde un punto de vista teórico y a la vez práctico con el fin de descubrir los aspectos menos estudiados en la volatilidad y sus posibles efectos positivos en las empresas, considerando además el marco de las capacidades dinámicas y de la teoría del crecimiento.

Como resultado, la literatura anterior ha asumido universalmente el efecto positivo de las capacidades dinámicas como ventaja competitiva. Sin embargo, esta teoría de las capacidades dinámicas ha sido criticada por considerar algunos autores que no tiene bien delimitados sus límites y por tanto su argumentación queda algo confusa (Arend, 2013).

Sin embargo, cuando el dinamismo del entorno es bajo Schilke (2013) ha considerado que el potencial de las capacidades dinámicas queda limitado, al haber pocas ocasiones para ejercerlo de manera efectiva. Mostrando Adner y Helfat (2003) que "cuanto menor es la necesidad de un cambio, es menos probable la posibilidad de ejercitar ciertas acciones, haciendo que las capacidades dinámicas tengan menos valor". Esta idea pone de relieve la importancia de utilizar las capacidades dinámicas en reiteradas ocasiones con el fin de que adquieran un valor significativo para el aumento de su eficiencia en la empresa y de su productividad. De acuerdo con esto, Rumelt (2011) argumentó que las capacidades dinámicas tienden a vincularse

a la estrategia de la empresa, permitiendo a esta el desarrollo de los productos adecuados, que dirigidos a los mercados oportunos hacen frente a las necesidades de los clientes y las oportunidades viables para el futuro.

En definitiva, las capacidades dinámicas ayudan a la dirección de las empresas a desarrollar estrategias que las validen o refuten con la finalidad de trasladar los activos según se requiera, requiriéndose por tanto habilidades en la gestión empresarial. Siendo la imitación y la experimentación los métodos utilizados para desarrollar estas habilidades y generar la configuración alternativa de los recursos que una las capacidades dinámicas con resultados de la empresa (Zott, 2002).

El otro marco teórico utilizado en esta investigación con el fin de apoyar nuestra investigación es la teoría del crecimiento. Tradicionalmente los autores (Whittaker, 1923; Stigler, 1978; Hodrick y Prescott, 1980) creyeron que el crecimiento y la volatilidad de la empresa eran situaciones inconexas. Sin embargo, otros autores encontraron argumentos que indicaban que la etimología del crecimiento y de la volatilidad eran similares (Mirman, 1971; Nelson y Plosser, 1982; Black, 1987). El estudio desarrollado por Ramey y Ramey (1995) confirmó dicha relación entre la volatilidad y el crecimiento. Siendo Caballero y Hammour (2000) quienes entendieron que esta relación se construye sobre la idea de la destrucción creativa desarrollada por Schumpeter (1942), que explica la evolución del capitalismo en la democracia social. Estos autores entienden que en muchas ocasiones la recesión simboliza la purificación de la economía, ya que las empresas menos productivas e ineficientes caen, lo cual supone un proceso que contribuiría a un mayor crecimiento en el futuro. En este sentido, el crecimiento de las empresas se ve influenciado por factores externos e internos, que en definitiva influyen en la capacidad de crecer (Davidsson, 1989).

Las perspectivas entorno a la teoría del ciclo de vida mostrarón que el recorrido de las empresas está determinado por diferentes etapas (Lippitt y Schmidt, 1967), sirviendo estas como modelos y que bien pudieran ser utilizados como hojas de ruta para identificar las reacciones a los cambios estructurales críticos y que en definitiva proporciona soluciones a los cambios surgidos en la empresa o su entorno. Esas etapas se han configurado como un conjunto de dimensiones contextuales y estructurales, que en definitiva sirven para darse cuenta de cómo crecen las empresas.

Por todo lo ya expuesto, el estudio de la volatilidad es importante porque tanto el crecimiento como la volatilidad pueden producir diferentes consecuencias para la gestión y dirección de la empresa largo plazo (Delmar et al., 2003). Estos marcos teóricos enunciados nos dan la oportunidad de apoyar nuestra investigación analizando un fenómeno poco investigado en la evolución dinámica de una empresa, como es su nivel de volatilidad. Para ello, hemos tomado como medidas o predictores más importantes del crecimiento empresarial, la edad, la orientación emprendedora, el apalancamiento y la hostilidad del entorno (Wiklund et al., 2009).

En este sentido, los resultados de nuestra investigación nos han permitido descubrir que las firmas más pequeñas muestran una mayor volatilidad que las empresas más grandes. Atendiendo a la edad de la empresa, no encontramos ninguna influencia significativa respecto de la volatilidad. Por su parte, apalancamiento y volatilidad se relacionan negativamente, tal como se propone en nuestra hipótesis, y si hemos encontrado una relación positiva entre la hostilidad del entorno y la volatilidad. En cuanto a la orientación emprendedora hemos encontrado una influencia positiva en la volatilidad, que es moderada por el crecimiento de las empresas, de manera que el aumento de la orientación emprendedora implica mayores niveles de volatilidad cuando la empresa no está creciendo.

En definitiva, nuestros resultados permiten confirmar la mayoría de las hipótesis propuestas, lo que nos permite realizar diferentes contribuciones a la literatura anterior, tales como que el crecimiento de la empresa y la volatilidad son conceptos relacionados, pero a su vez diferentes, ya que nuestros resultados muestran que el crecimiento de las empresas tiene un efecto en la volatilidad, y al mismo tiempo, el crecimiento contribuye a explicar cómo la orientación emprendedora influye en la volatilidad de la evolución de las ventas. Sin embargo, no hemos encontrado ningún efecto de la edad de la empresa, respecto de la volatilidad.

Estos resultados son interesantes no sólo para las investigaciones académicas, sino que también pueden tener aplicación práctica por parte de los profesionales. Para los primeros, abrimos una nueva ventana para la investigación, con la identificación de la volatilidad interna de la empresa, y como variable de rendimiento relevante a analizar en investigaciones futuras.

Nuestros resultados sugieren que la intención de crecimiento podría ser una variable relevante a considerar, puesto que permite distinguir aquellas empresas que buscan el crecimiento de aquellas que son empresas estables. Entendiendo que las intenciones de crecimiento y el éxito están vinculados a índices altos de volatilidad que podrían dar lugar a una mayor orientación al crecimiento, a pesar de no tener un claro éxito en su comportamiento. Sin embargo, se necesitan más investigaciones para confirmar nuestra hipótesis.

Las conclusiones sobre el efecto de la volatilidad de la empresa en la creación de empleo se han desarrollado a través de la investigación de la literatura empírica del crecimiento y de la volatilidad, la teoría del crecimiento y del ciclo económico teoría estudió ambos conceptos de manera independiente y pocos autores encontraron argumentos que relacionaran ambos conceptos. Por lo que teniendo en cuenta este argumento, la relación entre el crecimiento y la volatilidad de la empresa fue desarrollada en dos argumentos diferentes, en el sentido de

entender como positiva o negativa dicha relación, en base a los mecanismos que los guiaron y dio lugar al éxito o al fracaso de la empresa (Gimeno et al., 1999).

Además, nuestra investigación evalúa las consecuencias derivadas de la generación de empleo y que se basan en la relación habida entre el crecimiento del empleo y la volatilidad de la empresa y que rara vez ha sido analizada. El objetivo de nuestra investigación ha sido analizar una muestra de 2.180 empresas españolas en un período de diez años para comprobar la influencia en el empleo de su relación con la volatilidad. Combinando este trabajo un marco teórico donde desarrollar tres hipótesis.

En esta parte de nuestra investigación, ofrecemos dos contribuciones principales a la literatura sobre la volatilidad de la empresa y el crecimiento del empleo. En primer lugar, encontramos una influencia de tipo curvilíneo de la volatilidad de la empresa en el crecimiento del empleo. Y en segundo lugar, que habrá una influencia positiva en el crecimiento del empleo basado en el efecto de la interacción entre la volatilidad y la edad de la empresa. No pudiendo encontrar una relación positiva o negativa entre la volatilidad de la empresa y el tamaño de la empresa.

En resumen, esta investigación proporciona una aproximación empírica a la generación de empleo durante las etapas del desarrollo empresarial, jugando la volatilidad un papel importante en su desarrollo. Ofreciendo a su vez la oportunidad de aclarar algunos aspectos de la concepción de la tradicional volatilidad asociada al riesgo e incertidumbre. Esperando que nuestra investigación fomentare trabajos futuros en esta área.

Por último, las conclusiones sobre el efecto moderador de la edad, el tamaño y el apalancamiento a pesar de la volatilidad, constituye igualmente un área de estudio menos investigado a pesar de ser de crucial importancia, mostrando los resultados que la volatilidad tiene un impacto negativo en las empresas pequeñas. Los pequeños beneficios que se derivan

de la volatilidad dependerán de la edad y del tamaño de la empresa. Nuestra investigación pone de manifiesto la influencia significativa de la volatilidad en las pequeñas empresas, y prepara el escenario para futuras exploraciones de este importante constructo.

FIRST CHAPTER:

INTRODUCTION

During last five years, the economic crisis has challenged how firms need to compete in an increasingly complex and turbulent environment. The competitive environment has changed substantially, especially for businesses in developed countries. Until 2007, firms from developed nations were oriented towards being competitive in a growing world, searching for a sustainable competitive position in a global market from a solid domestic base.

In this sense, there is a long tradition of studies from different theoretical perspectives in the field of growth in small and medium firms. (Wiklund et al. 2009) put forward a review of the principal theoretical perspectives that have attempted to explain the phenomenon of company growth. To a large extent, the interest in growth is justified by its direct repercussions on employment creation (Birch et al. 1994), especially by high growth –gazelle– firms (Henrekson and Johansson, 2010) and the generation of innovation (Michael and Pearce, 2009).

Moreover, in many developed countries, a long period of stable growth has become an uncertain and volatile context, where growth strategies are not feasible for many SMEs. For that reason, we wonder how it is possible to generate new jobs in a non-growing context. Studies on growth have traditionally been divided between those researching on the factors triggering growth and those looking at how firms grow (Gilbert et al. 2006; McKelvie and Wiklund, 2010). Nevertheless, we find that entrepreneurship literature has paid little attention to volatility, a growth derivative (Delmar et al. 2003; Headd and Kirchoff, 2009).

Consequently, we focus our research interest on firm volatility because the majority of previous researches tend to discover how firms grow, but only a few of those investigations paid attention on volatility effects and how those effects could influence on firm growth.

In this sense, volatility has been studied at length in two areas of research, the economics and financial areas. However in the management area, research on volatility has been limited.

Management literature predicting the effects of volatility on firms (Powell et al. 2006) has focused mainly on larger firms to (Tosi et al. 1973; Milliken, 1987; Powell et al. 2006; Thomas and D´Aveni, 2009) and less on small firms (Delmar et al. 2003; Davis et al. 2007).

Volatility can be defined as the increase or decrease in revenues which determines firm or environmental uncertainty (Tosi et al. 1973). Volatility is an important area of research as such is linked to the process of creative destruction or Schumpeterian waves (Schumpeter, 1942). Through the Schumpeterian lens, individual firms become volatile in order to adapt to the introduction of new technologies. This effect multiplied by a number of firms induces dynamism in the economy.

Literature on volatility tends to be pessimistic when it describes the effects of volatility on firms as it highlights mainly the negative effects (Pindyck 1991; Ramey and Ramey 1995; Martin and Rogers 1997; Imbs 2007; Aghion et al. 2010) over the positive ones (Black, 1987; Blackburn and Pelloni, 2004).

In contrast, entrepreneurship literature has traditionally argued that small firms are less rigid than larger firms (Park 2003; Greve 2011) and can absorb environmental shocks better than larger firms (Dean et al. 1998). Such is argued on the basis of their flexibility and agility as an advantage of small firms (Feigenbaum and Karnani 1991; Chen and Hambrick 1995; Dean et al. 1998; Ruigrok et al. 1999).

Therefore, they are able to react quickly and efficiently to changing conditions. Because of it, their organizational simplicity and functional flexibility is a source of competitive advantage as they adapt better and adopt faster new technologies (Cohen and Klepper, 1996; Roper, 1997). Hence, we now consider a more recent framework, dynamic capabilities, to help us hypothesize a potential link between smaller firm performance and firm volatility.

Consequently, those arguments give us the opportunity to research on a complex volatility view in order to discover the aspects less studied on volatility and its possible positive effects on firms. This idea offer us the break to contribute to the management literature through an under research perspective of volatility. Moreover, we consider that if the majority of our hypotheses are confirmed then volatility would play an important role in the firm development and obviously on a positive way.

In order to research the positive effects of volatility on firms, two theoretical frameworks help us in this study as growth theory and dynamic capabilities theory.

Firstly, we start our research analyzing the theoretical framework of firm growth in order to understand the process in which firms grow.

In this sense, we had to review the traditional literature on firm growth which believed that volatility and growth were unconnected events (Whittaker, 1923; Stigler, 1978; Hodrick and Prescott, 1980). Nevertheless through those researches we found several authors who considered that growth and firm volatility had a common root being composed by similar economic variables (Nelson and Plosser, 1982; Black, 1987).

Follow this idea, Ramey & Ramey (1995) confirmed the relationship between volatility and growth, considering that could be positive or negative based on the mechanisms, which articulate this relationship. Growth theory describes that firm development is influences by external factors and internal factors. Consequently, those factors may restrict the firm ability to grow, the willingness to grow, or both (Davidsson, 1989). To understand this argument two theories as business cycle theory and growth theory respectively, studied both concepts.

Traditional perspectives on business cycle theory argue that firms have predetermined life cycles (Lippitt and Schmidt, 1967), consequently researchers or firm managers could use those "models" as roadmaps to discover theoretical answers to critical firm changes offering

general ideas about it. Moreover, those stages have been configured as a set of contextual and structural dimensions in order to understand how firms grow.

Nevertheless, there is a different view (Phelps et al., 2007) around business cycle theory considering that no exist precise elements to make the configuration of those business cycle stages. Then, business cycle researches are grouped following or not this idea. But the strongest and majority researchers consider the existence of stages that compose the firm life-cycle. In this sense, our investigation focuses on it following the idea about the existence of the relationship between volatility and firm growth.

Moreover, we consider as (Delmar et al., 2003) that the research of firm volatility is important because growth and firm volatility can produce different implications for management and long-term firm performance. Our research, as an extension of Delmar et al. (2003) investigates the in-between effects on small firms' performance through three independent cases and variables.

Therefore, our research goes further because one of the cases studied is related to the employment creation understanding that firm volatility produces a positive effect in order to force firms to generate new jobs. Around this context, firms generated employment and wealth through expansion, internationalization and growth-oriented strategies. This research follows the literature idea which has repeatedly mentioned about the need of more studies related to how firms grow (Gilbert et al. 2006; McKelvie and Wiklund 2010).

The firm growth research tries to look for the relationship between high growth firms and dynamic environments (Lumpkin and Dess, 1996, 2001). In this sense, Wiklund et al., (2009) identified five different conceptual perspectives related to firm's growth (entrepreneurial orientation, environment, strategic fit, resources, and growth attitudes). All of these dimensions implicitly convey the idea of change while their relationship with the idea of "success" (growth)

is indirect. Then, firm's growth predictors can be identify also as firm's volatility predictors, considering that growth is a particular case (successful) of volatility.

Finally, the interest in growth is justified by its direct repercussions on the creation of new jobs, especially in high growth –gazelle– firms, which has produced the development of an entire stream of works in order to understand the nature of this type of firm (Henrekson and Johansson, 2010). For that reason, we wonder how it is possible to generate new jobs in a non-growing context.

The second theoretical framework, which helps us to research the positive effects of volatility on firms, is the dynamic capabilities theory. The notion of dynamic capabilities aims to explain why some firms struggle and are unable to adapt successfully as their environment changes (Teece and Pisano 1994; Harreld et al. 2007). Dynamic capabilities are "higher level competences that determine the firm´s ability to integrate, build and reconfigure internal and external resources/competences to address rapidly changing business environments" (Teece 2012). The possession of these capabilities allows firms to produce superior profits (Zollo and Winter, 2002; Adner and Helfat, 2003). Dynamic capabilities are relevant both to environmental volatility and to small firms.

In regards environmental volatility, dynamic capabilities proponents argue that considering the changing nature of the environment is essential (Teece and Pisano, 1994; Teece, 2012) or very important (Zahra et al. 2006) to adapt, integrate and reconfigure skills, resources and competences. Zahra et al. (2006) has importantly pointed out that the need for dynamic capabilities do not only emanate from the volatility of the external environment (external volatility) but also on the organizational conditions volatility (internal volatility). Considering only the external environment "misses the true nature" of dynamic capabilities (Zahra et al.

2006). Finally, continual environmental change increases the development and use of dynamic capabilities (Zahra et al. 2006).

Small firms need dynamic capabilities as these allow them to survive and grow (Zahra et al. 2006). Research on dynamic capabilities for small firms has evolved cautiously. We know that the development of dynamic capabilities is very important to small firms (Zahra et al. 2006; Døving and Gooderham, 2008; Barreto, 2010). Small firms possess specific dynamic capabilities such as external sourcing (Uhlaner et al. 2012), knowledge management (Alegre et al. 2013), product innovation (Branzei and Vertinsky, 2006), ethics-focused (Arend 2013), etc. This author opened questions whether small firms possess dynamic capabilities and affirms that dynamic capabilities are what entrepreneurs do.

Recent researches about dynamic capabilities showed how young firms obtain benefits from firm volatility. Consequently, dynamic capabilities are necessary to cope with volatility (Teece 2012), both external environmental or organizational volatility (Zahra et al. 2006). This theory is one of the most significant theoretical views in the study of strategic management.

In this sense, Schilke (2013) considered that dynamic capabilities provide a firm competitive advantage which means acquiring greater success than others competitors in its industry. Nevertheless, the dynamic capabilities effect is connected with the level of dynamism of the firm's external environment although this is not always a necessarily condition to develop dynamic capabilities, which can exist even in constant environments.

In contrast, other authors (Zott, 2002) argued that strategic management researches has not developed attributes of resources and capabilities then because of this lack, there is not enough information about how dynamic capabilities influence creating a sustainable competitive advantage between firms. Adner and Helfat (2003) showed that "the lower the need

for change, the less likely the opportunity to strike the option, making dynamic capabilities comparatively less valuable".

Dynamic capabilities operate reconfiguring firm resources to the requirements and opportunities of the business environment to obtain positive returns (Teece, 2012) or to pursue opportunities in new, unpredictable markets (Doving and Gooderham, 2008). Being the specific strategic to organizational processes in order to merge resources into new competencies removing old ones in order to "achieve new resource configurations as markets emerge, collide, split, evolve and die" (Eisenhardt and Martin, 2000). Consequently, dynamism of a firm's environment generates the efficacy of dynamic capabilities (Zollo and Winter, 2002).

Around this theory, the literature has assumed a positive effect of dynamic capabilities on competitive advantage because of changing existing resources produces that dynamic capabilities could develop the firm's resources to adapt themselves to the external environmental circumstances (Teece and Pisano, 1994). The positive effect enhances the dynamic capabilities role in order to develop strategic firm options to reconfigure existing resources in order to increase the efficiency or productivity when needs increase. The relationship between dynamic capabilities and a fine firm strategy (Rumelt, 2011), allow the company to develop right products targeting right markets to deal with the customer needs and viable opportunities to the future.

Nevertheless, those dynamic capabilities are a consequence to the management's abilities or their entrepreneurial and leadership skills developing changes into the firm structure being the the methods of imitation and experimentation the manager abilities to generate alternative resource configurations (Zott, 2002). Under the dynamic capabilities view, Doving and Gooderham (2008) explained three implications in terms of the capacity to generate a large range of business suggested services.

Firstly, those authors focus in the manager `s capacity to configure a heterogeneous human capital into homogeneous in order to obtain the same target. Secondly, this manager´s ability must be subject to continuous improvement and development. Thirdly, managers use to balance the firm lacks outsourcing methods in order to improve the strategy derived of organizational routines, systems, allowing acquire and incorporate its knowledge reconfiguring its internal and external resources.

In the management literature, researches dealing with volatility treat volatility as a subproduct of growth. However, the same research uncovers the process about growth and volatility can become different but joined arguments as the results highlight how growth and volatility can have different sign and intensity effects. From this point of view, volatility gains autonomy as a concept worth studying isolated.

Consequently, the objectives of our research focus on three stages. In the first stage, we test the relationship between firm's size and firm's volatility and its effects, considering that the smaller the firm, the greater its volatility. Other firm variable that we have taken into account is firm age in order to analyze how its relationship with volatility affects firm in a positive or negative way.

Moreover, we consider that not all firms are oriented in the same way in order to solve firm problems then we analyze the relationship between entrepreneurial orientation and firm's volatility. In this sense, not all firms manage their financial resources in the same way, then we have considered interesting to research the role played by the firm leverage in a volatility context. This unpredictable environment produces interest in our analysis about how companies could be able to reorganize themselves as a response to growing competition through the effect of environmental hostility on volatility.

As a consequence of the previous research arguments we study the relationship between growth and volatility and its effects on sales volatility to discover the sense of this relationship that it could be conditioned by the impact of EO on firm's growth in order to reduce its firm-level volatility.

In the second stage, taking into account the previous learning we test the relationship between volatility and employment changes and how the inflexibility structure of large firms will lead them to keep hiring personnel upon firm volatility. Considering that small and medium firms are turning to human resources outsourcing to provide these services. Finally, we consider that not only firm size is an impediment to create employment, then we analyze to the interaction between firm volatility and firm age in order to discover its effects on employment.

In the third stage, we take into account Arend (2013) arguments that smaller firms are likely to obtain a lower performance than larger firms as the former will benefit less of the dynamic capabilities economies of scale and scope than larger firms. Then economies come from the appliance of dynamic capabilities to a larger set of resources, products and operating capabilities. Because of it, we test the importance about how firm volatility influences on small firms performance.

In this sense, several authors tested the existence of dynamic capabilities for younger firms as evidence that profitability by younger firms with dynamic capabilities was higher than that of older firms. This means that young small firms facing firm volatility developing dynamic capabilities. However traditional literature has mentioned that firm volatility will affect in different ways firms depending on its size and this is a strategic point where dynamic capabilities could play an important function that we try to discover empirically through our analysis.

Finally, we divide the complete research into six parts. This research is composed by a first chapter called introduction which starts introducing the main concepts and theories that are going to be developed in the research giving an idea about how firms lead with volatility effects. The second chapter analyses the theoretical volatility framework, which is the first part of our research in order to understand the sense of previous researches and how management literature focuses on the relationship between firms and volatility, taking into account different variables and how all are related.

The third chapter works in attempt to advance our knowledge related to how firms grow. So we will pursue to answer the following questions: *To what extent traditional antecedents of firm's growth are in fact antecedent of firm's volatility?* And, *How does firm's growth influence firm's volatility?*. The aim of the first chapter is to identify the influence of the firm's external and internal aspects on firm volatility.

The fourth chapter of our research will try to answer the question about the possibility of job creation in a non-growing context. Consequently the research gap is the volatility effect on job creation supported by the low researches on it. Hence, we contribute by answering the following questions: *how does a firm's volatility influence job creation?* And, *how do demographic characteristics of firms affect the volatility-job creation relationship?*.

Our fifth chapter will answer the following questions: *Is firm volatility beneficial or detrimental for small firms?. Does size or age benefit small firms under firm volatility conditions?*.

Finally, in the sixth chapter are represented all discussions about the three previous chapters to interpret the results giving us the opportunity to make conclusions and at the end suggesting future research lines to complement our research.

In summary, this research analyses an under-investigated phenomenon of a firm's dynamic evolution: firm-level volatility. We intend with the present research to study to what extent firm growth is a particular example of dynamism and change in a firms' evolution.

Consequently, we can found that smaller firms show a higher volatility than larger firms, confirming most of the hypotheses proposed. In other words, it would be possible to consider firms with the same level of growth but different levels of volatility and we make a question about which of these would be capable of creating the greatest number of jobs.

Moreover, this research provides an empirical approach to the employment generation in stages when volatility has an important role in firm development, providing the opportunity to clarify several aspects of volatility concept related to risk and uncertain.

The results will give us the opportunity to contribute to the business literature, on the one hand to extend the traditional view of volatility such negative turning into positive because it had been demonstrated its effect on small firms increasing sales and consequently in firm profitability.

SECOND CHAPTER:

THEORETICAL FRAMEWORKS ON FIRM VOLATILITY AND FIRM GROWTH.

2.1.- INTRODUCTION.

Worldwide economic and financial crisis has challenged firm's growth. Firms are facing increasing environmental uncertainty which introduces more unpredictability on future results and higher volatility of sales along time. In this context, some of the underlying arguments of the growth literature become relevant. Cognetics researches argue that high-growth firms emerge at dynamic environments which are characterised not only by a higher proportion of new firms, but also a higher proportion of firm failure (Birch et al. 1994).

In fact, many of the predictors of high-growth are related to the ability of firms to deal with environmental dynamism, assuming the success of firm behaviour. For example, literature has shown that entrepreneurial orientation positively influences growth (Moreno and Casillas, 2008). Entrepreneurial orientation integrates innovativeness, risk-taking and proactiveness of firms. In our opinion, the positive effects of these dimensions on growth assume the success of innovative projects, commercial activities, and strategic behaviour of the companies. In an uncertain environment as the current one, the main impact of entrepreneurial orientation on firms is an increase in the risk borne. Such risk can drive both to better but also worse results, that is, to a higher volatility of firms' evolution.

Volatility is a theoretical construct being an important issue for time series research. It is an unclear concept, capable of being constructed in a variety of ways related to the different financial or economic areas. Volatility is shown as the deviation of the trajectory of an asset. The traditional research views consider that higher volatility implies risk then being able to learn of volatility behavior or to prognosticate it could be the best way to understand volatility and its effects. Consequently, volatility could be considered the most exact measure of risk. In this sense, risk is the possibility of unexpected events can appear.

Consequently, in the volatility context, risk is related to those unexpected events occurring in a particular period of time. This volatility could produce difficulties to the firms which must adapt themselves to the new context to be leading through adversity and uncertain. In other words, volatility means the sum of uncertainty or risk which happens in the firms' context.

Volatility has an important role in the firm share framework because of it a higher volatility denotes that a stable's value can possibly increase considerably over a short period of time in any direction and this could be the profit. It is related to the continuous markets negotiation in response to surprising changes in economic variables and maybe it could be the reason to not follow an evolutionary course in line. Then uncertainty is inevitably and this fluctuation is usually called volatility. Nevertheless, volatility is considered a type of market inefficiency which in exacerbate quantity can became irrational being sometimes a consequence to incomplete markets information or economic policies. This reality develops asymmetric reactions to positive and negative which implies volatility.

In this research, we study historic volatility to discover its effects on firms. Nevertheless future volatility couldn`t be known as such. Then future volatility is only an estimation of volatility values in order to make an approximation of their tendency. The motivation of this research is to study the concept of volatility and its implications through three different analyses which the intention that we can learn more about volatility implications, effect and its results in the volatility process. The work has focused on two theoretical perspectives related to the variability or volatility, such as dynamic capabilities on firm volatility and the meaning of firm growth in the volatility context.

2.2.- FIRM VOLATILITY: CONCEPT AND PERSPECTIVES.

Volatility can be conceptualized as the total set of changes that occur in a firm in a period of time (Tosi et al. 1973). The more stable the pattern of change, the more certainty. The more variance is in the pattern, the least valid as a measure. The concept has therefore been closely associated to risk and uncertainty (Bourgeois 1985; Milliken 1987). Volatility has been analyzed from three different perspectives: financial, macroeconomic and managerial. However, research on volatility is more needed than ever before.

Firstly, from a macroeconomic perspective volatility is not only related to isolated events but is also dependent upon the overall external economic and political climate (Voth, 2002; Brown et al. 2006), the economic and monetary policy (Clarida et al. 2000), a country´s institution (Acemoglu et al. 2003) and its wealth (Acemoglu and Zilibotti 1997; Kraay and Ventura 2007). From this perspective, the relationship between volatility and economic growth is theoretically ambiguous.

On one hand, growth may be negatively affected by business cycle volatility in the presence of irreversibility of investment. On the other hand, growth may be positively affected by the presence of reserve money and liquidity (Imbs, 2007). Studies have shown that there is no significant effect of volatility on financially advanced countries (Aghion et al. 2006) and that richer countries are less volatile than poor ones (Acemoglu and Zilibotti, 1997; Kraay and Ventura, 2007). A stronger monetary policy response to inflation fluctuations can reduce volatility (Clarida et al. 2000) and more generally, there is a strong relationship between institutions and volatility based on crises or growth (Acemoglu et al. 2003).

Secondly, from a financial markets perspective (stock markets, foreign exchanges, etc) and financial instruments (stocks, bonds, commodities, investment funds, etc), volatility is considered as uncertainty and has an internal nature. Volatility has been found to be conditioned

by economic (Brown et al. 2006), social (Kren, 1992) and political factors (Brown et al. 2006) and is associated with discontinuity (Bourgeois, 1985). Hence, volatility becomes important for investment, and risk management (Poon and Granger, 2003). Volatility is seen to be distinct from risk, as it becomes a key to making unusual decisions and sometimes these decisions are adopted as an investment risk. Moreover volatility is stochastic in nature and cannot be easily anticipated (Kren, 1992) changes in fundamental values cannot explain all of the price movements in financial markets (Schwert, 1989).

Thirdly, under the management perspective, volatility is considered to be influenced by a number of different aspects (consumer habits, technology role, government policies, competitor products, supplier changes, etc). Delmar et al. (2003), in their seminal entrepreneurship paper, described volatility as "*an important topic of study in itself!*". The topic is important because it can have different implications for management and long-term firm performance (Delmar et al. 2003). Around this perspective, there are two important themes linking with volatility.

The first theme argues how similar companies obtain different results and hence would be affected differently by volatility (Penrose, 1959). In this sense, Bradley, et al., (2011) argues that related to Penrose's growth theory is the role of management to utilize the resources the true reason which creates an opportunity to firm growth and expansion. In this sense, Penrose (1959) argued that resources are the base for firm regeneration, consequently the resources accumulation forces to consider the future direction in the firm development.

Moreover, they focus about the application of idle resources as a key to growth based on the recombination of existing resources. Then, Bradley, et al., (2011) consider that opportunity for expansion exist, being the managers ability to perceive those opportunities the solution to operate with them.

Consequently, several authors (Mckelvie and Wiklund, 2010) considered that the most comprehensive, adequate, and popular theory on growth was developed some 54 years ago with Penrose's (1959) publication of *The Theory of the Growth of the Firm*, offering answers to the question "how firm grow"? Essentially firms grow through the ability of manager perceptions achieving new opportunities using existing resources to develop the firm. Because of it, Mckelvie and Wiklund (2010) consider the larger the opportunity set, the larger the growth potential.

In addition, Chen, et al., (2012) argues that since the seminal work of Penrose (1959), a rich line of research has focused on the importance of heterogeneous firm capabilities and performance. Those authors consider impediments to growth three firm characteristics as size, age, and technological experience. Arguing that the effect of size on growth was taken into account since Gibrat`s 'law' (1931). Nevertheless Penrose (1959) shown that not all firms grow in the same form or following the same steps. Then, continuous researches have compared the growth rates of large and small firms finding that small firms grow more quickly than large firms.

Around this argument, Sapienza, et al., (2004) consider the race for survival and growth as a race for learning in the young firms. This idea is linked with Penrose (1959) because both believe that firm growth is motivated by firms' knowledge and physical resources. Because of firm learning will produce the capacity to manage different accumulation of knowledge and excess resources, then the creation of new knowledge and resources or using learning in a more efficiently way, generating better possibilities to the firm development.

Sapienza, et al., (2004) argued that in Penrose's theory, knowledge and learning are seen as central factors driving firm growth. Nevertheless learning is divided by external or internal being internal the learning providing by firm operations which contributes to improve the

procedures while learning from external sources encourage the firm to apply new knowledge combinations in order to create new growth opportunities. Being successfully to combine and assimilate diverse items of externally sourced knowledge with its internal knowledge base becoming more efficient.

Following this idea, Gilbert et al., (2006) considered the influence of Penrose theory related to growth resulting from internal or external mechanisms. Occurring that growth results produced by internal growth could be more constant and they are related to the increases on sales being slow the growth which results from external mechanisms which focus on the influence of growth outcomes.

Finally, not all learning represents success, only few will represent reasonable growth opportunities for the firm because of the inherent rigidities and inertia because the firm needs to maintain coherence in its activities. Following the Penrose arguments Danneels (2002) argued that the direction of innovation in a firm is not random because the presence of underutilized resources creates an original incentive to develop firms. Then it must be closely related to the nature of existing resources creating a great deal of innovation through the need to use its existing resources more efficiently.

Zahra, et al., (2006) consider the ability to join multiple capabilities in a coherent way can reduce redundancies, making certain congruence of firm strategic direction. The effectiveness using resources could be proposed by the need to change combined with the managerial capacity to integrate and recombine resources. The resources and capabilities of a firm make two similar companies with equal product, or number of employees, or similar management to obtain different results (Penrose, 1959) and hence would be affected differently by volatility.

Despite of it, contingency theory argues that uncertainty need be restricted to one measure given that the theory has been built upon a central concept which seeks to capture the environment's effects on the organization's functions (Downey et al., 1975). Those authors argue that if uncertainty is a useful concept in contingency theory, this concept must be related which a significant firm part as operationalization because its meaning could include effort to create and validate instrumentations of uncertainty through environments descriptions. Concluding that using those instrumentations we can test the propositions based on contingency theory.

Moreover, from the point of view of the contingency theory (Littunen and Tohmo, 2001) considered essential to take into account all changes in the action environment and its consequences in order to investigate firm growth. The reason provided by authors is that investors are influenced in their decisions for firm's local environment and their features about the action environment.

Environment and volatility are important concepts related to firm management, consequently Snyder and Glueck (1982) considered them significant to contingency theory and others as organization theory or open systems theory. In this sense, the use of contingency models implies that environmental variables influence the different organization forms and have a strong impact on organization theory.

Around this argument, firms perceive continuous change and such volatility are interpreted as uncertainty (Milliken, 1987). The second theme states that environmental variables influence different organization forms and may impact more adversely on firms near bankruptcy (Miller and Chen, 2003). Under this perspective, several authors (Miles et al. 1974; Osborn and Hunt, 1974) consider the need to take into account that environmental forces are obvious and widely accepted in the literature.

2.3.- DYNAMIC CAPABILITIES.

Volatility and diversity are included as components of an organization's external environment (Duncan, 1972; Tosi et al. 1973; Downey and Slocum, 1975) although applying measures of volatility such as price, sales or results show that volatility and their concepts involve much ambiguity. Definitely external or internal changes have always been considered like hurdles to the normal development of firms and require major influence on the organizational strategies used to reduce them (Casson, 1994). We focus our research in the perspective developed by management and organizational theory (Tosi et al. 1973; Snyder and Glueck, 1982; Palmer and Wiseman, 1999). The perspective acknowledges both, external volatility (environmental) and internal volatility (organizational/firm).

External volatility is part of the contingency school (Lawrence and Lorsch, 1967) as external volatility varies by industry (Feigenbaum and Thomas, 1988) or some industry characteristics (Woo, 1987). External volatility has an environmental nature. If environments are the playing field on which rivals compete, environmental forces affect volatility (Feigenbaum and Thomas, 1988; Palmer and Wiseman, 1999). External volatility occurs at the macro (political, social, economic, technological, etc.) and micro level (consumer habits, competitor products, supplier changes, etc.). It can produce positive (Black, 1987; Hall, 1991; Aghion and Saint-Paul, 1998) and negative effects in firms (Pindyck 1991; Martin and Rogers 1997). In any case, external volatility is perceived by most literature as negative (Martin and Rogers, 1997; Froot and Stein, 1998; Ruefli et al. 1999).

Palmer and Wiseman (1999) identified complexity, munificence and dynamism as the three environmental dimensions. Complexity describes the extent of competitive heterogeneity within an industry (Zajac and Bazerman, 1991; Palmer and Wiseman, 1999). Munificience describes an environment ability to support sustained growth (Beard and Dess, 1984).

Dynamism describes environments typified by change that is difficult to predict (Beard and Dess, 1984). Dynamic environments largely affect external volatility and organizational risk (Palmer and Wiseman, 1999).

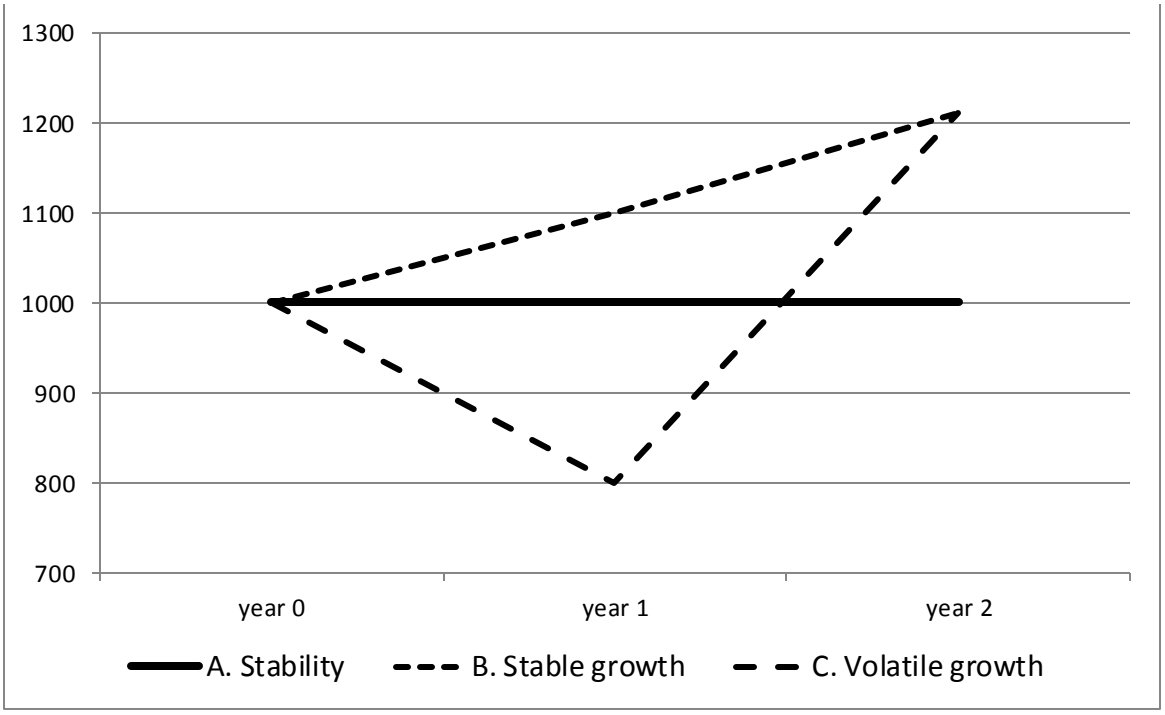
External volatility (environmental) and internal volatility (organizational/firm) are linked, as external volatility induces internal volatility or firm volatility. Macro environmental (social, political, technological and economic changes) and micro environmental (industry) changes produce firm volatility (Schumpeter, 1942; Palmer and Wiseman, 1999). Firm volatility is considered to have a behavioral component too as part of the variability is not attributable to its sector (Delmar et al. 2003; Zahra et al. 2006). Firm volatility has been the subject of research in the production (Iturriaga, 2000; Irvine and Schuh, 2005; Bo, 2011), internationalization (Riaño, 2011; Vannoorenberghe, 2012) marketing (Tuli et al. 2010), and strategy fields (Anderson et al. 2013), as well as, at the large (Palmer and Wiseman, 1999) and small firm level (Delmar et al. 2003; Davidsson et al. 2006). However, the amount of research has been modest.

Internal volatility, that is, the variability of firm activity not attributable to its sector, has been little studied and related to growth although both are different concepts. Internal volatility is defined as the degree of accuracy with which one can measure the future which can be accessed through the fluctuation of sales (Tosi et al 1973). Employment growth can occur through the growth of existing or new firms (Kirchhoff and Phillips, 1988). There is some debate about which has the greatest impact on employment (Lafuente, 1986; Belso, 2005).

Firm's volatility implies changes in the evolution of growth along time. In this sense, we conceptualize firm's volatility as the internal rate of variability of a firm's growth, once industry volatility has been discounted. Volatility could involve growth, decline or even stability. Figure

2.1 represents a hypothetical example of evolution by three different companies along a two-year time period.

Figure 2.1: Growth and volatility. Three examples



Firm A remains flat in terms of sales along the period (stable firm: no growth and no volatility). Firm B has grown 21 per cent (accumulated) over a two-year period, ten per cent each year (stable growth without volatility). Firm C has the same accumulated growth than firm B (21 per cent), but through a higher volatile evolution (volatile growth). In summary, volatility has been under explored. We agree with most of the literature that both concepts have a common root (Davis et al. 2007; Henrekson and Johansson, 2010) but we propose that they are different phenomena.

In the management literature, the study of firm volatility is part of this research area of how firms grow (Delmar et al. 2003) and the future investments on them (Bo, 2001). The topic

has only been slightly touched upon by some studies (Delmar et al. 2003; Ewing and Thompson 2008; Headd and Kirchoff, 2009).

The perception in the literature has traditionally been negative. However, we cannot draw rich conclusions from such scant literature. In contrast, in the economics literature firm volatility has been widely studied and the results conclude the topic is very important related to this effects (Irvine and Schuh, 2005; Irvine, 2007). In such literature, volatility has been considered to be a positive factor for the development of any economy, derived from the role such has in the creative destruction process proposed by Schumpeter (1942). Volatility is considered a byproduct of such creative destruction process. A healthy economy should be disturbed by technological and commercial innovations, the result of which is a process of creative destruction.

An economy´s long-term rate of growth is related to how well it responds to the creative destruction process (Aghion and Howitt, 1992; Caballero, 2006). In this context, volatility reflects the pace of restructuring and adjustment any economy suffers when involved in a creative destruction process (Davis et al. 2007). The fact that the process of adjustment is specially striking among small firms (Davis and Haltiwanger, 1992) makes the topic even more relevant in the small business area. More recent research under the dynamic capabilities framework has argued how young firms benefit from firm volatility. Dynamic capabilities are necessary to cope with volatility (Teece 2012), both external environmental or organizational volatility (Zahra et al. 2006).

Schilke (2013) argues the main sense of dynamic capabilities is provided a firm competitive advantage which means to obtain greater achievement than current or possible competitors in its industry, but this effect is directly related to level of dynamism of the firm's external environment. This theory is one of the most significant theoretical views in the study

of strategic management. Nevertheless, Zott (2002) considers that strategic management research has uncovered the attributes of resources and capabilities and the market conditions which allow sustainable competitive advantage. In this sense, we not have enough information about the senses that dynamic capabilities influence the materialization of differential industry firm performance.

Around this argument, Schilke (2013) considers that a turbulent environment is not always a necessarily condition to develop dynamic capabilities, which can exist even in constant environments despite of the presence of dynamic capabilities has frequently been associated to environmental situations characterized by high dynamism (Zahra et al., 2006). Teece (2012) defined dynamic capabilities as "the higher-level competences that determine the firm's skills to integrate, build, and reconfigure internal and external resources/competences" to deal with changing business environments. In this sense, this author suggests that dynamic capabilities establish the rate in which firm's resources can be reconfigured in order to link the requirements and opportunities of the business environment to obtain positive returns.

Doving and Gooderham (2008) considered dynamic capability as the firm capacity for the regeneration of its knowledge base to pursue opportunities in new, unpredictable markets. In this sense, Eisenhardt and Martin (2000) refer to dynamic capabilities are specific strategic to organizational processes in order to combine resources into new competencies and that renovate old ones in order to "achieve new resource configurations as markets emerge, collide, split, evolve and die".

Following this idea, several researches (Teece and Pisano, 1994; Teece et al., 1997; Teece, 2012) have configured that dynamic capabilities can be used into three groups of activities as "identification and assessment of an opportunity; mobilization of resources to address an opportunity and to capture value; and continued renewal". In this sense, dynamic

capabilities could describe as organizational routines which produce a firm's competitive advantage making changes or reconfiguring existing firm resource base (Teece et al., 1997; Eisenhardt and Martin, 2000) being the dynamic capabilities view as an extension of the resource-based view. This idea highlights that dynamic capabilities are supported on organizational routines, commonly understood as learned, highly patterned, repetitious behavioral patterns for interdependent corporate actions (Zollo and Winter, 2002).

The importance of dynamic capabilities pivots around their potential influence on competitive advantage, which is the key outcome variable in dynamic capabilities theory (Teece et al., 1997). Then dynamism of a firm's environment generates the efficacy of dynamic capabilities (Zollo and Winter, 2002).

Consequently, the literature has assumed a universally positive effect of dynamic capabilities on competitive advantage. Teece and Pisano (1994) considers that changing existing resources, dynamic capabilities could develop better matches between the relationship of a firm's resources and external environmental circumstances. Despite its recognition in the literature, the dynamic capabilities view has been criticized for its ill-defined frontier conditions and its confusing argument about the effect of dynamic capabilities (Arend, 2013). Being suggested that dynamic capabilities are less effective in highly dynamic environments (Eisenhardt and Martin, 2000).

Nonetheless Schilke (2013) considers the potential of dynamic capabilities is limited when environmental dynamism is low because there are few occasions to exercise them effectively. In those cases, organizational habits for adjusting the resource base may be of reduced value, in particular when considering the costs associated with them. This idea highlights the importance of balancing the costs of a given dynamic capability and its actual use.

Around this argument the importance of dynamic capabilities is related to develop the strategic firm options to relocate existing resources in order to increase the efficiency or productivity when needs increase. Adner and Helfat (2003) argued that "the lower the need for change, the less likely the opportunity to strike the option, making dynamic capabilities comparatively less valuable". This idea underlines the significance to use the dynamic capabilities repeatedly in order to obtain a significant value.

Teece (2012) considers dynamic capabilities as strategic distinguishing from ordinary capabilities. Moreover, firms can maintain and expand competitive advantage by converting ordinary capabilities into dynamic capabilities. However, dynamic capabilities, when joined with a good firm strategy (Rumelt, 2011), allow the company to site itself for developing the right products and targeting the right markets to deal with the customer needs and viable opportunities to the future.

Dynamic capabilities help firm`s managers to develop inferences to validate or refute them in order to relocate assets as required. Consequently, management's abilities or their entrepreneurial and leadership skills to develop or transforming are required to keep up dynamic capabilities. Then, although some component of dynamic capabilities may be inserted in the firm, the capability for calculating and setting changes into the structure of assets takes place over manager responsibility. In this sense, Zott (2002) considered the methods of imitation and experimentation the manager abilities to generate alternative resource configurations. Being those methods the link between dynamic capabilities and firm performance.

Winter (2003) separates dynamic capabilities from "ad hoc problem solving", but this may be a false dichotomy because in the majority of cases dynamic capabilities appear to resolve risky or uncertainty situations. Under the dynamic capabilities view, Doving and

Gooderham (2008) showed three implications in terms of the ability to produce a large range of business advisory services.

Firstly, they focus on the configuration of the practice's human capital resources linking with the ability to answer a variety of client requests and situation. This argument means the manager `s capacity to configure a heterogeneous human capital into homogeneous in order to obtain the same target. Secondly, those authors consider the ability to managers developing internal routines and systems which guarantee that human capital design is not inert, but is subject to continuous improvement and development. Finally, the third implication of the dynamic capabilities view proposed by Doving and Gooderham (2008) is that several firm practices lacking in strong internal association processes tend to be for standardized through external services complementary provide by other firms. Consequently, managers use to compensate the firm lacks outsourcing methods in order to improve the strategy derived of organizational routines, systems, allowing acquire and incorporate its knowledge reconfiguring its internal and external resources.

Otherwise authors as Zahra et al. (2006) argued that dynamic capabilities are the ability to change routines and integrate them into their operations. In their description, they introduce three components that have come to be confused in the literature: "*(1) the ability to solve a problem (a substantive capability); (2) the presence of rapidly changing problems (an environmental characteristic); and (3) the ability to change the way the firm solves its problems (a higher-order dynamic capability to alter capabilities)*".

Zahra et al. (2006) distinguished the substantive capability from the *dynamic ability to change or reconfigure existing substantive capabilities*, which was defined as the firm's dynamic capabilities. Consequently, Zahra et al. (2006) definition highlights the dynamism of manager capabilities avoiding focus on the environment. Then they have made that managerial

choices were the centre of the conversation. Because of it, those authors recommend to other researchers to avoid the tautology of propose that successful outcomes necessarily signal the control of dynamic capabilities or vice versa. Young small firms develop those capabilities through exposure to volatility (Zahra et al. 2006). Young small firms' performance benefits more from having dynamic capabilities than older firms (Arend 2013).

In the management literature, the studies dealing with volatility treat volatility as a subproduct of growth. However, the same research uncovers the process about growth and volatility can become different but linked concepts as the results highlight how growth and volatility can have different sign and intensity effects. From this point of view, volatility gains autonomy as a concept worth studying isolated. In this sense, a part of this research is an effort to increase our knowledge related to how firms grow. So we propose to answer the following questions: (1) *To what extent traditional antecedents of firm's growth are in fact antecedent of firm's volatility?* And, (2) *how does firm's growth influence firm's volatility?*

2.4.- FIRM GROWTH: CONCEPT AND PERPECTIVES.

Summarizing, of particular interest in the research of small firms is the role which plays the relationship between firm volatility and growth. Historically authors (Whittaker, 1923; Stigler, 1978; Hodrick and Prescott, 1980) considered growth and firm volatility unconnected events. However, some authors found arguments which indicated that the etymology of growth and firm volatility are similar as they are composed by similar economic variables (Mirman, 1971; Nelson and Plosser, 1982; Black, 1987). Ramey & Ramey (1995) confirmed such relationship then the relationship between volatility and growth may be positive or negative based on the mechanisms driving the relationship (Imbs, 2002).

Growth is influenced in firms by external factors (taxes, legislation, conditions on the product market, labor market and financial market) and internal factors (existing resources, competence and goals of the manager and firm´s employees). All of these factors may affect either the ability to grow, the willingness to grow, or both (Davidsson, 1989). Two theories, business cycle theory and growth theory respectively, studied both concepts.

On the one hand, traditional perspectives around business cycle theory which show the idea that firms have predetermined life cycles (Lippitt and Schmidt, 1967) using those life-cycle models as roadmaps to help identify reactions to critical organizational changes trying to provide solutions to the firm modifications. Those stages have been configured as a set of contextual and structural dimensions in order to understand how firms grow.

Lumpkin and Dess (2001) considered that the most successful start-ups are those launched in the growth stages of an industry's life cycle, then growth is related with the environment. Considering that the majority of new business start-ups generally occur in mature industries.

Nevertheless, there is a divergent view (Phelps, et al., 2007) which considers there has been no agreement to precise which elements make the configuration of those stages and their configuration or the nature and duration of stages. Then, organizations do not have even approximately predictable life cycles. The business cycle researches are configured based on follow or not this idea. Being the strongest and majority perspective these which consider the existence of stages that compose the firm life-cycle. This argument is related with the main idea which composes our research as the relationship between volatility and firm growth.

Aghion and Saint-Paul (1998) argue there is a positive effect in this relationship which is based on the "opportunity cost approach". In this sense, Black (1987) suggests that most of the volatility in the business cycle is determined by the choices made by investors, which reflect

the balance between volatile high growth and stable slow growth in each country, given risk aversion makes people invest more in industries with slow stable growth.

Another approach (Hall, 1991) deals with the central role played by the organizational capital and states that if the "matching" with volatility is efficient, organizational capital will increase. Finally (Caballero & Hammour, 2000) built on the idea of creative destruction developed by Schumpeter (1942) which explains the evolution of capitalism into social democracy. They discuss the idea that in many occasions recession represents the cleansing of the economy, as less productive and inefficient firms fall. Such process would then contribute to higher growth in the future.

Over the years growth has been studied at length (Gilbert et al. 2006; Wiklund et al. 2009) while firm volatility has been less researched. However, the study of firm volatility is important because growth and firm volatility can produce different implications for management and long-term firm performance (Delmar et al. 2003). Delmar et al. (2003) argue that growth research has studied differences between two points in time. The approach ignores the development in-between the two points in time. Our research, as a continuation of Delmar et al. (2003) explores the in-between effects on small firms' performance through three independent cases and variables.

In this sense, the literature has focused its interest in the analysis of high-growth firms increasing considerably since the mid-1990s (Henrekson and Johansson, 2010). High-growth (or gazelle) firms are companies that are capable to experience a high rate of growth in a very short time (Birch et al. 1994). This kind of firm is interesting because it generates a great number of new jobs (Acs et al. 2008; Birch 1979; Henrekson and Johansson, 2010; Storey 1994) and innovation (Timmons and Spinelli, 1994; Michael and Pearce, 2009). There are two main characteristics of high growth enterprises: (1) these companies experience strong growth which

in most cases doubles their size; and (2) this strong growth is concentrated over a very short period of time, ranging from four to five years.

Of particular interest in the empirical studies of gazelle firms is their volatility. In an investigation carried out in the United States, Acs et al. (2008) attempt to understand precisely: *"What were high-impact firms before their growth surge –start-ups, slow growers, decliners, or volatile or stagnant firms? How has this changed over time? What happens to high-impact firms after their intensive growth period? What percentages continue their growth surge; continue to grow but more slowly; or stagnate, decline, or go out of business? How has this changed over time?"* (Acs et al. 2008, p. 19).

The results demonstrate that few firms are able to maintain such intensive growth over long periods. In other words, only a small percentage of firms that were gazelles at a particular time continue to be so in the subsequent period. The reason for this fact might lie in the potential relationship between the high growth of gazelle firms and the turbulence or the environment volatility.

In Birch et al.'s early studies (1994) showed a higher concentration of gazelle firms in those states, regions or geographical areas in which there was greater turbulence. In other words, certain geographical areas show higher rates of both company creation and closure (Bartelsman et al. 2004; Tödtling and Wanzenböck, 2003). These regions are characterized by greater business dynamism, due either to a higher population of entrepreneurs, or a favourable environment to the creation of new ventures (financial incentives, support policies, fewer bureaucratic barriers and access to finance between others).

This increased ability to create new business projects encourages the creation of firms which are not viable in the long term and which disappear. This type of environment encourages

the type of entrepreneurs known as habitual or serial entrepreneurs (Iacobucci, 2002; Westhead and Wright, 1998).

From this perspective, high growth would be associated with entrepreneurial dynamism, either through the creation of new firms or through the renewal of existing firms. The question therefore centres on identifying the factors which stimulate this increased dynamism that is seen in the creation of a disproportionate number of new businesses, irregular growth in some firms (gazelles) and even, in the disappearance of an unbalanced number of firms.

It is interesting according to the study by Acs et al. (2008) *"for each four-year period and each firm-size class, job creation [by high-impact firms] was greater than the job destruction by decliners".* Therefore Henrekson and Johansson (2010) suggest that public policies aimed at job creation should try to reduce the barriers to the entry and exit of firms in order to encourage the entrepreneurial processes. Then, it could lead to the creation of potential gazelle firms in the near future (Wright and Marlow, 2012). Nevertheless, literature has repeatedly mentioned we need more studies on how firms grow as such is an under-researched area (Gilbert et al. 2006; McKelvie and Wiklund 2010).

Around this idea, researchers have tried to investigate in order to confirm a positive relationship between high growth firms and dynamic environments (Lumpkin and Dess, 1996, 2001; Wiklund et al. 2009). In our opinion, the asymmetrical growth of gazelle firms is responsible for the great majority of new jobs and it is a particular example or consequence of the much wider phenomenon of entrepreneurial dynamism.

Other particular examples or consequences, at a macro-economic regional level, would be the entry and exit rates of new firms. This view opens up new theoretical and empirical perspectives in the study of gazelle firms in particular and of firm growth. For example, in their recent review of the extensive literature on firm growth, Wiklund et al. (2009) identified five

different conceptual perspectives related to firm's growth (entrepreneurial orientation, environment, strategic fit, resources, and growth attitudes).

Of these five aspects, at least the first three could be linked not only to growth in itself but also to the phenomenon of entrepreneurial dynamism. Entrepreneurial orientation includes aspects such as innovativeness, risk-taking, proactiveness (Miller, 1983), competitive aggressiveness and autonomy (Lumpkin and Dess, 1996). All of these dimensions implicitly convey the idea of change while their relationship with the idea of "success" (growth) is indirect.

It makes sense therefore the fact that many studies confirm the positive relationship between entrepreneurial orientation and firm growth (Moreno and Casillas, 2008; Wiklund, 1999). However, this relationship might be the result of a direct relationship between entrepreneurial orientation and dynamism. As for the role of the environment, several works assume that the environment provides the small firm with growth opportunities that can be exploited (Davidsson, 1989; Stevenson and Jarillo, 1990; Jansson, 2011; Smallbone et al. 2012).

Some of the most frequently investigated dimensions of the environment related to growth are the environment's munificence, turbulence, heterogeneity, hostility, dynamics, customer structure, and competition (Covin and Covin, 1990; Kolvereid, 1992). Again, it can be observed that the majority of the dimensions related to change are those which promote the conditions for the process of high growth in gazelle firms.

Finally, strategic fit refers to a combination that is contingent on the two previous perspectives. Growth is hence encouraged when certain internal and external combinations are simultaneously in place (for example, increased entrepreneurial orientation in a highly dynamic

sector). Summarizing, firm's growth predictors can be identify also as firm's volatility predictors, considering that growth is a particular case (successful) of volatility.

In this sense, if we observe the last three decades have been ones of stable and continuous growth in the World economies. During this period of stability, entrepreneurship research has been paying much attention to firm growth (Gilbert et al. 2006; McKelvie and Wiklund, 2010). Around this context, firms generated employment and wealth through expansion, internationalization and growth-oriented strategies.

However, this picture has changed dramatically with the arrival five years ago of a complex international crisis, involving stagnation or falling domestic demand in developed economies and an increasingly competence by developing countries. Economic analyst consensus expects instability to be the new rule. In this new context, while large multinational corporations (MNCs) can move their value chain to other parts of their international base, domestic SMEs are faced with a very difficult new environment that is forcing them to restructure their activities, with consequences for employment.

The new context calls for a change in theoretical frameworks developed in recent decades. From the middle of the nineties, an extensive literature analyzed how high-growth firms were able to create new jobs (Birch et al. 1994; Barringer et al. 2005; Capelleras and Green, 2008; Wiklund et al. 2010).

Firm growth influences a country´s economic growth, innovation pipeline and employment creation (Timmons and Spinelli, 1994). Out of those three variables, employment growth and its interactions with other variables are one of the most studied relationships in the area of growth (Birley, 1987; Kirchhoff and Phillips, 1988; Birch et al. 1994) as growth triggers the creation of jobs.

To a large extent, the interest in growth is justified by its direct repercussions on the creation of new jobs, especially in high growth –gazelle– firms, which has generated the development of an entire stream of works aimed specifically at understanding the nature of this type of firm (Henrekson and Johansson, 2010). For that reason, we wonder how it is possible to generate new jobs in a non-growing context. Our study highlights the significant influence of firm volatility on small firm performance, setting the stage for future explorations of this important construct.

THIRD CHAPTER:

VOLATILITY EFFECTS ON FIRM GROWTH BASED ON ENTREPRENEURIAL ORIENTATION, FIRM SIZE, FIRM AGE AND LEVERAGE.

3.1.- INTRODUCTION.

The central theme of this investigation is about firm growth related to a particular example of dynamism and change in a firms' evolution. Consequently, the majority of the factors that have traditionally been proposed to explain growth are dynamism and change. To explain the concepts used, we will use the term volatility. By this, we mean the annual variability in the firm's volume of activity.

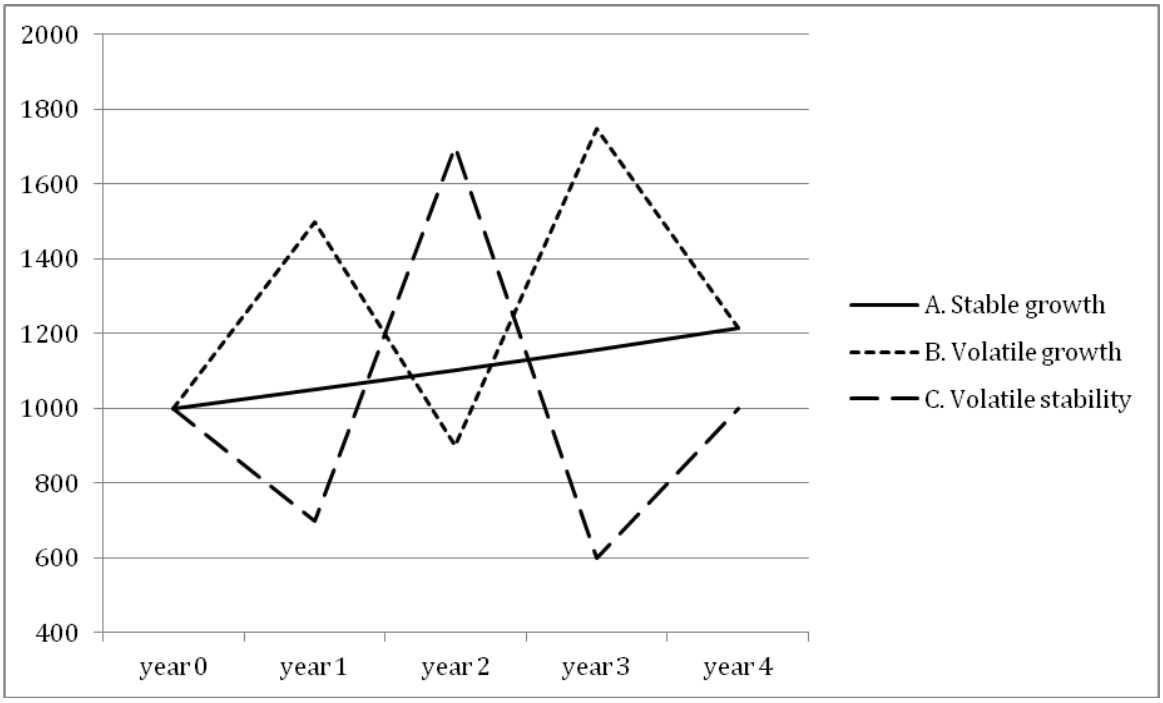
This volatility is in contrast to the concept of stability. Stability implies the absence of changes in the firm's volume of activity over a particular time period. Maximum stability would be a firm which maintained the same volume of sales, over a four-year period. Volatility is a wider concept than growth. Volatility involves change while growth involves change and also success. Even, when volatility leads to success, growth could be reached by different rates of volatility.

For example, considering three firms, A, B, and C (see Figure 3.1). Firms A and B have grown 20 per cent over a four-year period Firm. A has achieved this growth by an annual increase of 5 per cent. Firm B has experienced greater volatility, with very high growth rates in some years and negative growth in others. Firm C has the same volatility rate than firm B, but it has not been able to grow. To summarize, the premise of this work is that classic predictors of high growth are also, and sometimes to an even greater extent, the predictors of a firm's volatility over a period of time.

The literature on firm growth is quite large, so we adopt a parsimonious focus, selecting the most common predictors of high-growth as potential predictors of firm volatility. Moreover, we have combined firm demographic characteristics (size and age), attitudinal orientation of

firm managers (entrepreneurial orientation), financial structure of the firm, and an environment variable, as hostility.

Figure 3.1: Stable growth *versus* volatile growth



We have added growth as an additional predictor given the common root both share. Although we will consider volatility as an independent concept from growth, we assume that both of them are related concepts, proposing an additional hypothesis on the growth-volatility relationship. Finally, we propose two moderation effects of growth.

In this sense, traditional growth predictors with firm's volatility, assuming that growth and volatility are different but related phenomena. As we mentioned before, we consider that growth is a particular case of volatility; in other word, while growth implies volatility, growth can be achieved with different rates of volatility, and volatility do not always implies growth. However, despite of the methodological relationships between growth and volatility related to

measure instruments, we propose that there is a conceptual positive influence of firm growth on firm volatility.

Sales growth has been categorized as one of the most important measures of new venture growth (Gilbert et al. 2006). New firms need resources to grow (Westhead, 1995) being the transition to get strong resources the process to achieve the firm success (Zhao and Aram, 1995; Reid, 2003). Firms are obliged to get resources outside the firm to grow (Harrison et al. 2004). Several authors (Cooley and Quadrini, 2001; Cabral and Mata, 2003) argued about financial resources that the lack of financial resources affects negatively the growth of new firms. Nevertheless, the accessibility to financial resources is difficult for small and medium-sized firms (Bechetti and Trovato, 2002).

Following the proposal by Wiklund et al. (2009), our model researches the influence of size, age, entrepreneurial orientation, financial structure and hostility. These five predictors are based on the integrative models of firm growth proposed by Wiklund et al. (2009) and Henrekson and Johansson (2010). Those authors identified five theoretical approaches through theoretical constructs which are predominant in the present literature in order to clarify how small firm growth. Nevertheless, their arguments were not independent of each other, because of it they had to guide about divergence hypotheses concerning on growth under certain circumstances.

Firstly, Wiklund et al. (2009) showed that in the resource-based perspective, the environment produces several limits to the firm growth being the increase for particular resources restricted by the high resource prices at the same time that decrease revenues for their sales. At this point link the idea of dynamic capabilities that we have developed previously, being the manager`s ability to reconfigure the resources available the break to the environment restrictions.

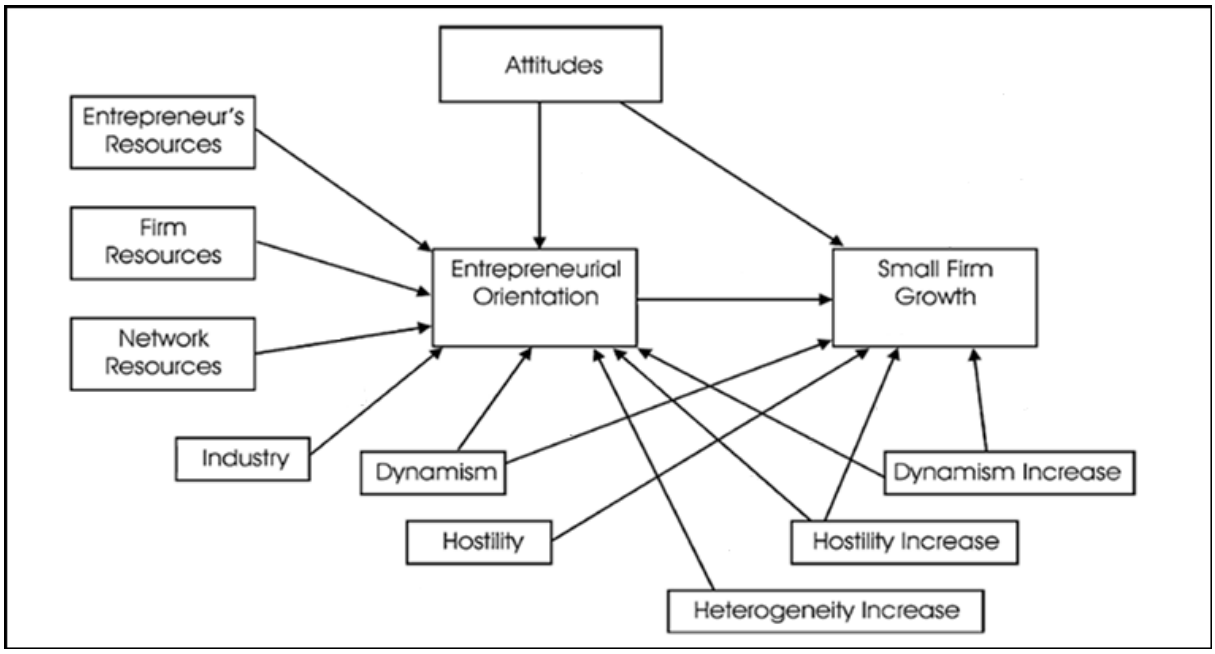
Nevertheless, Wiklund et al. (2009) argued that the environmental perspective shows that growth opportunities are given only by the framework where the firm is extended. This theory offers the limit to understand that small firms can only grow based on the opportunities offered by the environment. Consequently, there are evidences about the interdependencies between the small firm environment and the firm capacity to grow.

Secondly, Wiklund et al. (2009) formulate the answer to resolve the conflict between the different perspectives incorporating the strategic orientation view in which small firm tend to bring together the impact of resources, environment, and the manager`s attitude to develop firm growth. In this sense, those authors consider that firms are more likely to develop an EO under dynamic and aggressive environments in which has a essential role the firm`s manager. Being the leader's attitude a vital component for strategic choices of firms taking into account all the connotations that the rest of theoretical views have on small business growth.

Moreover, Wiklund et al. (2009) reflect the argument that EO could intercede between the effect of environment in the resources and the attitude to grow. In contrast, they consider that the EO-growth relationship depends on these constructs, explicitly the environment of the small firm. This idea is emphasized by the strategic fit perspective, which links the firm strategic to grow with the environmental conditions. Nevertheless, those authors consider that EO does not have a uniformly positive effect on growth or even it could have a negative effect to growth.

Following our purpose of research based on the previous argument around how firm growth is affected by firm volatility, we will now set out seven hypotheses. The first five hypotheses relate the most traditional predictors of growth to their degree of volatility. The sixth one proposes a direct relationship between firm's growth and firm's volatility.

Figure 3.2: Environmental perspective on firm growth



Based Wiklund et al., 2009.

3.2. HYPOTHESES.

Historically, literature has described how small firm development is plagued with high uncertainty and risk (Stinchcomb, 1965; Storey, 2011) and large firms have a lower risk profile (Winn, 1977) even in an international context (Mudambi and Zahra, 2007). Davis et al. (2007) find that the effect of volatility is stronger for privately held companies than for publicly traded companies.

High risk in small firms is chiefly propelled by a distinctive characteristic of small firms, which is the lack the resources necessary for their development. Specifically, small firms tend to lack the necessary financial, human, social, and relational capital (Cooper et al. 1994; Schoonhoven et al. 1990), and such lack of resources is worsened by an asymmetry of information.

Entrepreneurship is characterised by an asymmetry of information between resource holders and entrepreneurs (Amit et al. 1998) which increases reluctance by resource holders to contribute such to the small firm (Bhide, 2000; Schoonhoven and Romanelli, 2001). The lack of resources, especially financial ones, implies that small firms are required to pursue a very limited number of opportunities, reducing the degree of diversification.

Conversely, larger firms possess a larger amount of resources that will permit them to engage into the pursuit of a wider range of opportunities, leading to a diversification strategy. Under such, firms achieve several earning streams which provide earning stability to the firm. This is one of the main advantages of diversification strategy; this is to reduce the volatility of investments by easing away risk, providing earning stability (Hill and Hoskisson, 1987; Amit and Linvat, 1988).

Finally, in the case of smaller firms, the success or failure of one single project or operation has a greater influence on firm performance (higher volatility), while larger firms diversification compensates performance from different operations, projects, and businesses (higher stability). We therefore propose that:

Hypothesis 1: there is a negative effect of firm's size on firm's volatility, in such a way that the smaller the firm, the greater its volatility.

Our second hypothesis proposes that older firms are more stable than younger ones. Younger firms lack legitimacy, a social judgment of acceptance, appropriateness and desirability, which enables ventures access to other resources needed to grow (Zimmerman and Zeitz, 2002). The lower the legitimacy, the lower the chances to acquire resources (Aldrich and

Fiol, 1994) and, as a consequence, the higher the volatility of the firm, as firms will a) create uncertainty about the future financial performance of the organization b) not be able to diversify and lower the risk through such process.

Newness signals resource holder doubts on whether the firm is committed to abiding to the rules, norms, values and models on which the social system is based on (Zimmerman and Zeitz, 2002). Such lack of track records and legitimacy leads to a lack of credibility and trust by customers, suppliers, distributors, financial services providers and others (Starr and Macmillan, 1990).

Younger firms lack of legitimacy is hence caused by the liability of newness (Stinchcomb, 1965), deriving from negative influence factors such as costs of learning new tasks or the absence of organisational structures (Singh et al. 1986). The liability is responsible for the mortality of large numbers of new firms (Venkataraman et al. 1990). Also, liability of newness and mortality falls with age (Hannan, 1998). This argument implies that larger firms are more stable than small firms. Such stability dichotomy between small and large firms has been described by literature as younger firms show more variable growth rates (Fariñas and Moreno, 1997) and Delmar et al. (2003) found that young firms have greater sales volatility than older firms.

Additionally, younger firms have no or little record of past performance on which to prove their potential performance. Younger firms have less experiential knowledge to help them interpret their own results, according the interpretation problems proposed by Zajac and Bazerman (1991). Firms need time to adequately understand which their correct size is, and, until then, firms can mistake their interpretation of outcomes. Young firm evolve is a more erratic way than mature firms, searching their optimal size by trial and error. Following those arguments, we propose:

Hypothesis 2: there is a negative effect of firm's age on firm's volatility, in such a way that the smaller the firm, the greater its volatility.

The basic idea in the EO literature is that firms with a greater entrepreneurial orientation tend to develop innovating, risk-oriented and proactive behaviour (Miller, 1983), in order to exploit business opportunities (Shane and Venkataraman, 2000) to improve their results (Lumpkin and Dess, 1996).

First, innovativeness proxies a firm´s aim to engage and support new ideas, novelty and creative processes that may result in new products/services or technological processes (Lumpkin and Dess, 1996). Either in the launch of product or process innovation, the innovative firm needs to take decisions for which there is little or no information (Busenitz and Barney, 1997). Under such process, innovative firms get involved in a try-test process seeking success in Schumpeter´s process of creative destruction.

Taking decisions upon conditions of uncertainty involves unpredictable volatile financial results. However, we can also argue that an innovative attitude can reduce volatility. Innovation capabilities can be a key to achieve a competitive advantage (Ireland and Hitt, 1999). Innovative firms achieve superior performance (Roberts, 1999; Zahra et al. 2000). Both, attaining a competitive advantage or superior performance will increase the amount of (financial) resources available to a company. The higher the slack a firm has the less volatile the firm will be due to a stable stream of earnings.

Second, a risk-oriented behaviour implies both, a willingness to commit more resources to projects where the cost of failure may be high (Miller and Friesen, 1982) and to projects in

which the outcomes are unknown (Wiklund and Shepherd, 2005). A risk taking behaviour is necessary to cope with the uncertainty involved in the development of a venture. However, a risk taking behaviour can lead to higher venture mortality (Shepherd et al. 2000) or to lower performance (Naldi et al. 2007), which should have a positive impact on volatility.

Finally, proactiveness can be defined as taking initiative in improving current circumstances or creating new ones (Crant, 1996, 2000). A proactive entrepreneur identifies opportunities and pursues them with persistence until change is attained.

Firstly, we can argue that a proactive attitude can lead to a lower firm volatility. A proactive attitude is opposite to a passive attitude. Improving current circumstances requires an alignment or fit of the organizational resources with the opportunities and threats in the environment (Andrews, 1971; Hofer and Schendel, 1985). Such fit is relevant in an entrepreneurial setting (Wiklund and Shepherd, 2005) and is attained by adapting resources possessed for the entrepreneurial endeavour to the environment.

The performance of firms deviating from a fit with the environment is worse than the performance of firms pursuing a strategic fit (Zajac et al. 2000; Kraatz and Zajac, 2001). A firm adapting to the environment will smooth out shocks from the environment and hence decrease volatility.

Secondly, we can also argue that proactiveness leads to higher volatility. A more adjusted strategic fit will lead the entrepreneurial firm to improved performance. Such improvement implies for the firm a faster sales growth, which will lead to firm (positive) volatility.

Summarizing, literature offers opposite arguments about the relationship between entrepreneurial orientation and firm's volatility. It is therefore possible to propose two contradictory hypotheses:

Hypothesis 3a: there is a positive effect of entrepreneurial orientation on volatility, in such a way that the higher the entrepreneurial orientation of the firm, the greater its volatility.

Hypothesis 3b: there is a negative effect of entrepreneurial orientation on volatility, in such a way that the higher the entrepreneurial orientation of the firm, the greater its volatility.

Many empirical studies have identified a particular association between the firm's financial structure and the volatility of its income (Bekaert and Wu, 2000; Wu, 2001). Financial structure is positively related to performance. The growth of small firms is constrained by the available funds (Carpenter and Petersen, 2002). The more capital a firm has the higher the growth. Financial capital creates a buffer for firms against random shocks. It also allows the pursuit of capital-intensive strategies more prone to generate a competitive advantage (Cooper et al. 1994).

The question of whether to use debt or capital to fund growth has also been researched under the pecking order theory. Firms use profits to reduce debt levels as they prefer internal funds over external funds (Myers and Majluf, 1984; Sogorb-Mira, 2005). However, growth triggers the use of debt as the firm needs more funds and the use of long-term debt becomes pervasive (Degryse et al. 2012).

The effect of leverage on risk has been pervasively studied in the financial literature. Financial and operating leverage have a positive impact on the firm´s beta, and hence on the firm´s measure of risk (Mandelker and Rhee, 1984; Darrat and Mukherjee, 1995). Hamada

(1972) and Rubinstein (1973) estimate that financial leverage explains approximately 20% of the firm´s systematic risk. Crutchley and Hansen (1989) found that greater earning volatility was associated with leverage. Also, leverage is a typical feature of economic crisis (Corsetti et al. 1999; Mishkin, 1999). Before a crisis starts, firms tend to be highly levered. Therefore, we propose:

Hypothesis 4: there is a positive effect of leverage on volatility, in such a way that the higher leverage of the firm, the greater its volatility.

Hostility has been used in prior investigations as a predictor of firm's growth (Covin and Covin, 1990; Kolvereid, 1992) and we believe that such feature of the environment helps explain mainly volatility. Hostile environments are intrinsically uncertain. Hostile environments are characterised by "*precarious industry settings, intense competition, harsh, overwhelming business climates, and the relative lack of exploitable opportunities*" (Covin and Slevin, 1989). In hostile environments we will find tough price competition, dwindling markets for products, government interference and scarce supply of labour and materials (Miller and Friesen, 1982). Hostility derives from both, radical changes in an industry or intensity of rivalry in an industry (Zahra, 1993).

First, there are examples of radical changes in an industry, the decline in demand or the introduction of radical innovations are cited as the most important ones (Zahra, 1993). The decline in the demand of a market leads to the decrease in the revenues of the competitors or the volatility in their sales. Radical innovations produce sales volatility in both, the firm introducing the radical innovation and those competitors losing market share due to the introduction of the radical innovation.

Second, the intensity of rivalry will force companies to reorganize as a response to growing competition (Zahra, 1993). Firm reorganisation is conductive of volatility in firm's performance. Finally, we propose the following hypothesis:

Hypothesis 5: there is a positive effect of environmental hostility on volatility, in such a way that the higher the hostility, the greater the firm's volatility.

High-growth firms are characterized for raising funds to finance their growth decisions (Harrison et al. 2004). Consequently, firms that receive financial resources through the support of external loans generate high uncertainty in two ways. On one hand, borrowing implies a possibility the firms will not be able to return the loans or pay back the interest. On the other hand, there is uncertainty on whether firm projects will lead to success and profits.

In this sense, previous research has found evidence on the existence of a common root between growth and volatility, suggesting that growth and firm volatility could be related because both are composed by important and similar variables (Mirman, 1971; Nelson and Plosser, 1982; Black, 1987; Ramey and Ramey, 1995). Therefore, the relationship between growth and volatility is direct because of the increase on firm growth has immediately effects on sales volatility. We agree with most of the literature that both concepts have a common root and we hypothesize the following:

Hypothesis 6: there is a positive effect of firm´s growth on firm's volatility, in such a way that the higher the firm's growth, the greater its volatility.

Finally, following the idea that growth and volatility are different but related phenomena, we propose that firm's growth could explain, in some extent, in which conditions EO and volatility are positively or negatively related, according to our hypothesis 3. As we suggested earlier, the impact of EO on volatility depends on the positive or negative performance of innovative, risky and proactive actions. Previous literature has usually assumed a positive impact of EO on performance and growth (Moreno and Casillas 2008; Wiklund et al. 2009) but, sometimes, entrepreneurial activities do not reach the performance expected.

Considering this alternative view of EO, we suggest that depending on the impact of EO on firm's growth, the firms will be able to control its level of volatility. In other words, when EO drives to firm's growth, the firm is able to reduce its firm-level volatility. Nevertheless, when EO is not accompanied with growth, firm's volatility will be higher. For that reason, we propose our final hypothesis:

Hypothesis 7: Growth moderates the relationship between EO and volatility. Specifically, when firm's growth is higher, the relationship between EO and volatility will be less intense.

3.3.- METHODOLOGY.

Our sample was taken from the public "Central de Balances de Andalucía" database (CBAdatabase), which maintains continuous financial and economic information on 4,735 firms in Andalucía, Spain. Andalusia is the southern region of Spain, with more than eight million inhabitants (17 per cent of Spain). It is the Spanish region with a high rate of unemployment and a low GNP per capita. The Andalusian regional government compiles the

database, using the annual reports registered with the Mercantile Registry. We closely examined the sample, eliminating firms with missing or contradictory information, which left a total of 4,330 firms representative of the Andalusian population of firms in terms of sector, geographical distribution, size, etc.

Using this sample, we sent out a postal questionnaire, and received a total of 462 replies. Twenty-nine questionnaires had to be eliminated as they had been incorrectly filled in or not fully completed, leaving a final sample of 433, yielding a response rate of 10%, which is similar to other investigations in the same field (Wiklund and Shepherd 2005).

Again, in order to avoid response bias, we compared the distribution of our sample in relation to size, age, sectors, and location to being similar the starting population. The process to obtain this primary information was carried out during 2004, which links it to the measurement of the independent variables. The sample group with more enterprises, according to the number of employees, represents 38.75% and it is composed of a number between 11 and 25 employees.

The biggest sample group related to the age of firms represents 37.87% and it is formed by firms of between 11 and 25 years. Finally, the manufacturing sector is the predominating t group of firms with 38.1% in the sample. Those variables are taken as the starting point in this study, so that the measurement of the dependent variables refers to the four years immediately following this point (2004-2007).

Financial data for the four years was obtained from the original CBA database. Table 3.1 shows the principal characteristics of each firm in the sample such as size, age and sectored distribution.

Table 3.1: Sample description

	No. firms	Percentage
Size of firms (employees)		
More than 100 employees	14	3.79%
Between 51 and 100 employees	37	8.91%
Between 26 and 50 employees	119	27.17%
Between 11 and 25 employees	170	38.75%
10 employees or less	93	21.38%
Age of firms (years)		
More than 50 years	15	3.47%
Between 26 and 50 years	52	12.01%
Between 11 and 25 years	164	37.87%
Between 6 and 10 years	106	24.48%
5 years or less	96	22.17%
Sector		
Agriculture	40	9.23%
Manufacturing	165	38.1%
Building	88	20.32%
Service sector	140	32.33%
Total	433	100%

3.3.1 VARIABLES.

Firm volatility. The sales evolution between 2004 and 2007 has been used to measure both growth and volatility of the firm (Davidsson and Wiklund, 1999; Delmar et al. 2003). We have sought two different measures, methodologically independent from each other. In order to consider not only the first and the last year of the period (2004 and 2007) but also the intermediate years (2005 and 2006), we have measured firm growth through the standard beta coefficient of the regression of sales evolution between 2004 and 2007.

Having once estimated these regression models, we have measured firm volatility with the error term of the estimations. In this way, firm volatility reflects the changes of sales evolution not explained by the growth vector (beta coefficient). With our measure volatility is statistically independent from growth.

Firm size (*LnSize*): Size was measured by the number of employees, expressed as a logarithm corresponding to 2004. Firm Age (*LnAge*): Age was measured as the difference between the first year (2004) and the year the firm was founded. Again, we used the logarithm of the firm's age.

To measure entrepreneurial orientation dimensions, we used the measurement scale developed by Tom Lumpkin (Lumpkin, 1998; Lumpkin and Dess, 2001) that has been generally accepted and tested, and used in numerous studies of entrepreneurial orientation (Wiklund, 1999; Mustakallio and Autio, 2002; Wiklund and Shepherd, 2005; Moreno and Casillas, 2008; Casillas and Moreno, 2010).

We therefore presented the directors with two opposing statements and they had to state how closely their firm matched the statements on a Likert scale of 1 to 7. We were interested in measuring the three main dimensions of entrepreneurial orientation (Miller, 1983) innovativeness, risk-taking and proactiveness. By using factor analysis it was possible to identify the three basic dimensions of entrepreneurial orientation (innovativeness, risk-taking and proactiveness).

Innovativeness was represented by four items (alpha = 0.706), risk-taking by three items (alpha = 0.673), and proactiveness by two items (alpha = 0.859). Entrepreneurial orientation was operationalized as the average of its three dimensions, after testing the scale validity (alpha = 0.793).

For debt level (*leverage*), we measured leverage as total liabilities divided by total assets (Wiklund et al. 2010). Finally, we measured environmental hostility by two items used in previous research (Lumpkin, 1998; Lumpkin and Dess, 2001). These items were also recorded as semantic differentials using a 7-point Likert scale (Alpha = 0.769). Finally, as we mentioned

earlier, *firm growth* was measured as the standard coefficient (beta) from the regression analysis of the firm sales evolution between 2004 and 2007.

Sector of activity: We have distinguished four sectors (agriculture, manufacturing, building, and services) by using three dummy variables with agriculture as the reference category.

3.4 RESULTS, DISCUSSION AND LIMITATIONS.

We start this section showing the table 3.2, which contains the principal descriptive statistics as well as the correlation matrix for all the measures used in our investigation. To control for possible multi-collinearity of the variables, we have estimated the variance inflation factor (VIF) indexes and we have verified that none of them reaches the threshold of 10 (maximum VIF= 2,196), in accordance with the criterion established by Neter et al. (1990).

To test our hypotheses, we use a hierarchical regression analyse estimating four regression models (Table 3.3). Model 1 is the baseline model including only control variables. Model 2 include as independent variables the five traditional predictors of growth. Model 3 adds firm's growth as a direct predictor of volatility. Finally Model 4 includes the interaction effect between EO and growth. We have also repeated the last three models, distinguishing among the three traditional dimensions of EO (innovativeness, risk-taking, and pro-activeness) in Models 5 to 7.

Table 3.2: Descriptive statistics and correlation matrix

	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11
1. Agriculture	0.03	0.16	1.00										
2. Manufacture	0.33	0.47	-0.12*	1.00									
3. Building	0.12	0.32	-0.06	-0.25**	1.00								
4. Other services	0.29	0.19	0.01	0.18	0.03	1.00							
5. LnSize	3.01	0.88	0.03	0.05	0.15**	-0.02	1.00						
6. LnAge	2.38	0.89	0.02	0.03	-0.03	0.03	0.08	1.00					
7. EO	3.20	0.13	-0.05	0.03	-0.09	0.12	0.16**	-0.03	1.00				
8. Leverage	0.25	0.26	0.08	0.00	-0.02	0.07	0.00	0.20**	-0.07	1.00			
9. Hostility	0.01	1.00	0.01	-0.01	0.04	-0.08	-0.10*	0.02	-0.05	-0.01	1.00		
10. Growth	2.13	3.82	0.11*	-0.11*	0.09*	0.00	0.23**	-0.11*	0.04	-0.08	-0.12*	1.00	
11. Volatility	4.29	4.58	0.01	-0.13**	0.14**	0.04	0.22**	-0.05	0.08	-0.09	-0.14*	0.19*	1.00

* $p < 0.1$; ** $p < 0.01$; *** $p < 0.001$

Table 3.3: Regression Analyses

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
(Constante)	1.028	1.662*	3.210	3.007	2.003*	1.250	1.443*
Manufacture	-0.182	-0.241†	-0.154	-0.187	-0.251†	-0.166	-0.241†
Services	-0.121	-0.127	-0.043	-0.088	-0.150	-0.065	-0.149
Building	-0.047	-0.006	0.016	-0.002	-0.025	-0.002	-0.064
LnSize		-0.309***	-0.268***	-0.230***	-0.305***	-0.267***	-0.230***
LnAge		-0.073	-0.027	-0.052	-0.091	-0.043	-0.070
E.O.		0.088*	0.075*	0.025†			
EO Innovativeness					0.091†	0.088†	0.102*
EO Risk-taking					0.076*	0.055	0.091*
EO Proactiveness					-0.054	-0.053	0.029
Leverage		-0.098*	-0.078*	-0.109*	-0.098*	-0.078*	-0.087*
Hostility		0.089*	0.073*	0.039	0.082*	0.068†	0.022*
Growth			0.311***	0.157*		0.305***	0.031†
Growth x EO				-0.156*			
Growth x Innovativeness							-0.180***
Growth x Risk-taking							-0.048*
Growth x Proactiveness							-0.172**
R2 adjust	0.022	0.151	0.240	0.245	0.147	0.233	0.269
Sig.	0.005	0.000	0.000	0.000	0.000	0.000	0.000
Inc R2		0.129***	0.089***	0.013*	0.125***	0.085***	0.047*
F Statistic	7293	9713	14922	10510	7987	12276	9628

† $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Results show that the baseline model is significant, with a low level of explanation power (R^2 = 0.022). Model 2 is also significant and offers a higher explanation power than Model 1 (adjusted R^2 = 0.129; ΔR^2 =0.013; p-value < 0.01). Results show that all the variables, except firm's age have a significant influence on firm's volatility. Model 3 adds the variable growth, as an additional predictor of firm volatility.

This model shows a higher explanation power (adjusted R^2 = 0.240; ΔR^2 =0.089; p-value < 0.001) than Model 2 and is also significant. Finally Model 4 shows a higher explanation power, also significant (adjusted R^2 = 0.245; ΔR^2 =0.013; p-value < 0.01). We find similar results when EO is broken into innovativeness, risk-taking, and pro-activeness dimensions (for Model 5, adjusted R^2 = 0.147; ΔR^2 =0.125; p-value < 0.001; for Model 6, adjusted R^2 = 0.233; ΔR^2 =0.085; p-value < 0.001; and for Model 7, adjusted R^2 = 0.269; ΔR^2 =0.047; p-value < 0.01).

Hypothesis 1 proposes a negative relationship between firm size and firm volatility. Results show a significant relationship between them with negative beta coefficient, as expected (β = -0.230; p-value < 0.001). This result confirms hypothesis 1 statement. Our results show that larger firms face lower volatility than smaller firms.

In the case of hypothesis 2 as we proposed the coefficient is negative but the relationship is not significant in any model, so hypothesis 2 has been rejected.

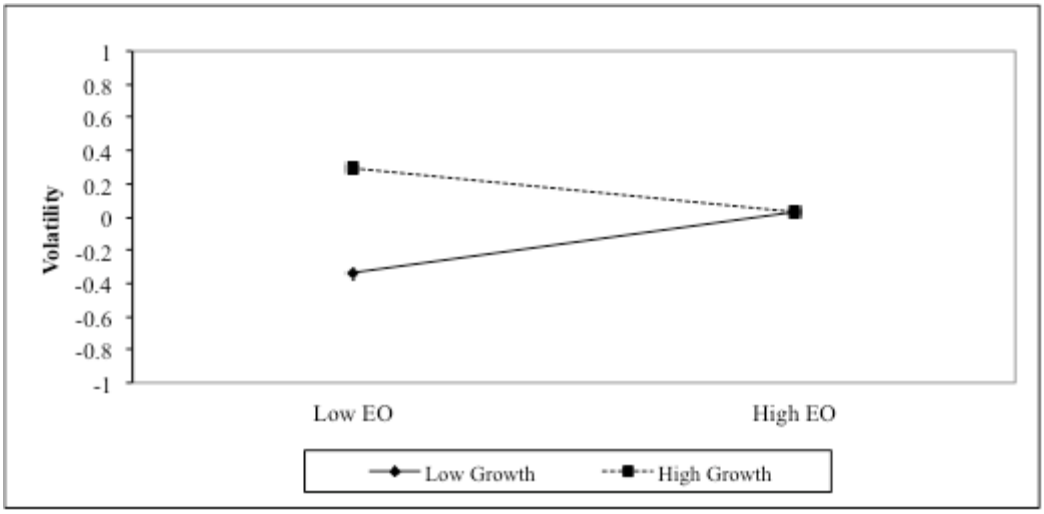
Hypotheses 3 proposed a positive *versus* negative effect of EO on firm volatility. Model 2 offers a positive influence of EO on volatility (β= - 0.056; p-value < 0.01) although the coefficient is positive, it is not significant (β=0.088; p-value < 0.01). Model 5 gives additional information, showing that innovativeness and risk-taking are also positively related to firm's volatility. For that reason, we can accept hypothesis 3a, and reject hypothesis 3b.

Hypothesis 4 proposes a negative relationship of leverage and volatility. This relationship has been confirmed in different models estimated ($\beta = -0.098$; p-value < 0.01). Hypothesis 5 proposes a positive effect of environmental hostility and firm volatility. In this case, we found again the result proposed ($\beta = 0.089$; p-value < 0.01), confirming hypothesis 5.

The last two hypotheses refer to the relationship between growth and volatility, as independent constructs. Hypothesis 6 suggested a positive direct relationship between both variables. Results in Model 3 show that both concepts are positively related ($\beta = 0.311$; p-value < 0.001) according to hypothesis 6. Consequently, firm growth tends to be more volatile than stable firms.

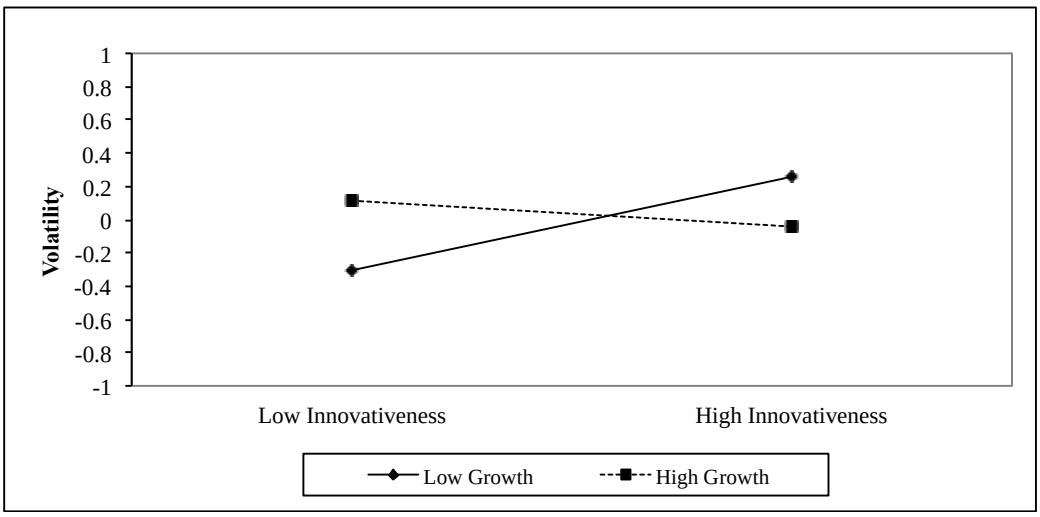
Finally, hypothesis 7 proposes an interaction effect of EO and growth on firm's volatility. This relationship has been estimated in Model 4 finding a negative interaction effect ($\beta = -0.156$; p-value < 0.01) and in Model 7 finding a negative interaction effect of the three EO dimensions and growth on firm's volatility (for innovativeness $\beta = -0.180$; p-value < 0.001; for risk-taking $\beta = -0.048$; p-value < 0.01; for proactiveness $\beta = -0.172$; p-value < 0.001). Figure 3.3 and 3.4 represent interaction effect for clearer interpretation of our results.

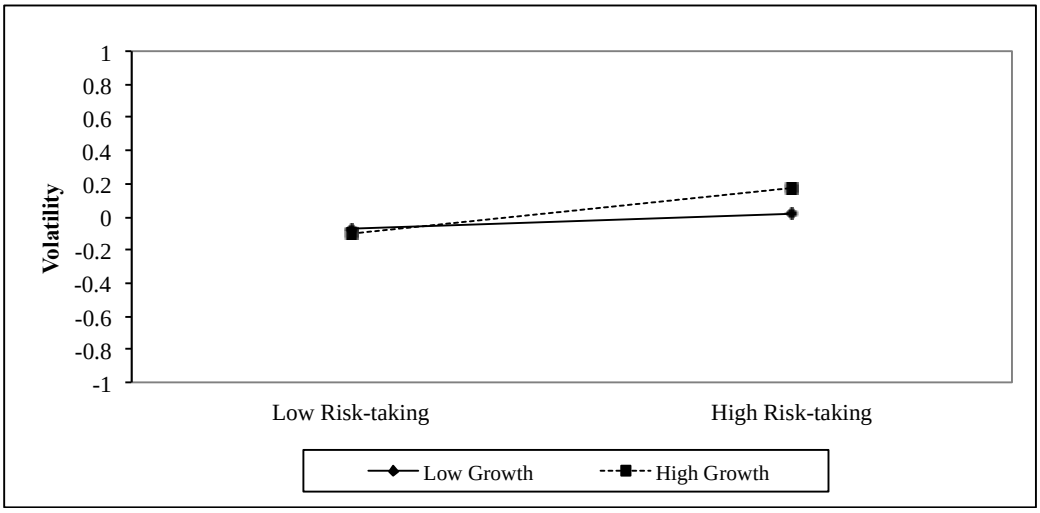
Figure 3.3. Interaction effect Interaction effects (EO x growth)

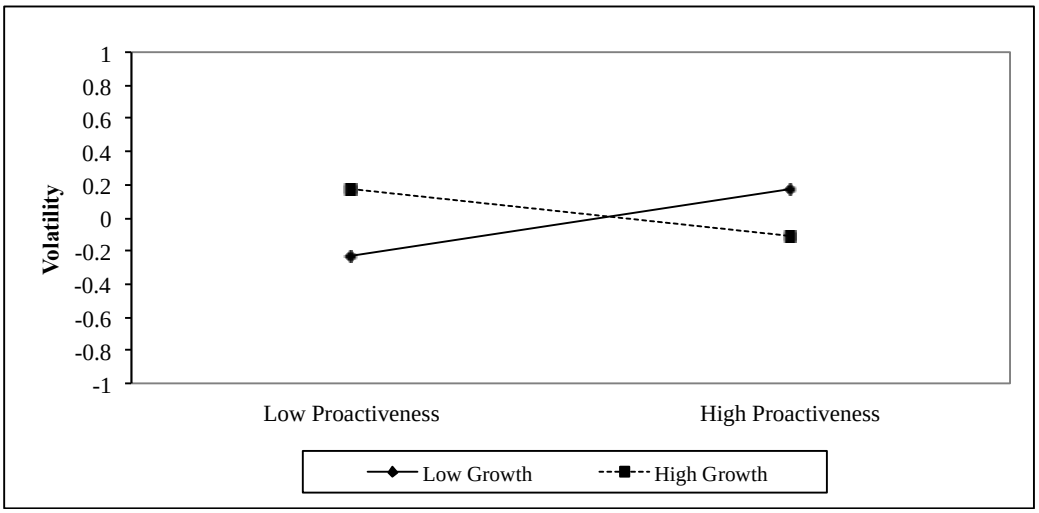


Finally, it is possible that the relationship between leverage and growth/volatility could be affected by a problem of endogeneity (financial structure influences growth and volatility and *viceversa*). In order to control this effect, we ran new regression models in which growth and volatility were introduced as predictors of financial structure at the end of the period of time analysed (2004-2007).

Figure 3.4. Interaction effects (EO dimensions x growth)







Results, represented in table 3.4, show that (1) volatility does not affect financial structure at the end of the period; and (2) as we have mentioned previously, a positive relationship was found between growth and final leverage and leverage. Considering results from tables 3 and 4, we could say there is a bi-directional relationship between financial variables as leverage / leverage and growth (financial structure of a firm at a given point of time "t" influencing the growth of the firm in a following period from "t" to "t+n" and this growth affecting financial structure of the firm at the end "t+n"), leverage and leverage influence volatility of sales but volatility does not influence neither leverage nor leverage.

Table 3.4: Influence of growth and volatility on leverage

	Leverage 2007 St. Beta
(Constant)	1.021
Manufacturing	-0.132
Building	-0.198
services	0.021
LnSize	0.031
LnAge	0.0015
E.O.	-0.015
Hostility	0.013
Growth	0.123*
Volatility	0.054
Sig.	0.000
R^2 adj	0.012

$p < 0.05$; ** $p < 0.01$; *** $p < 0$.

Our research covers an under-investigated phenomenon of a firm's dynamic evolution: firm-level volatility. In this sense, we have proposed to understand how firms growth in a dynamism and changing environment. To research this issue, we have taken into account other more relevant predictors of firm's growth such as, age, entrepreneurial orientation (EO), leverage and environmental hostility (Wiklund et al., 2009) with a firm's volatility during a four-year period.

This research shows that smaller firms confirm to suffer higher volatility than larger firms. Moreover, firm's age has not any significant influence on firm volatility. Leverage and volatility are negatively related and finally we discovered a positive relationship between environmental hostility and volatility. Related to EO our research shows a positive influence on volatility being moderated by firm growth. Consequently, higher EO implies higher levels of volatility in the cases that firms are not growing.

In summary, our results allow to confirm most of the hypotheses proposed. Moreover, those results let us to develop two relevant contributions to previous literature. Firstly, we can conclude that, firm growth and firm volatility despite of being related concepts, they are different because we have measured both constructs as statistically independent. However, those concepts are related as result of the volatility effect on firm growth which helps to explain how EO influences in the evolution of sales volatility. Firms have to manage under dynamic and uncertain environment, so they need to deal with higher levels of volatility.

Secondly, we contribute with the literature using the most traditional predictors of high-growth (size, entrepreneurial orientation, financial structure, and environmental hostility) discovering different effects on firm volatility. For example, firm's age has not any effect on volatility.

We have only researched one dimension of firm volatility, but new research can extend these concepts and analyse, for example, the effects of firm's volatility on job creation, the relationship between volatility and other performance variables, and so on. In this sense, more researches are needed to confirm our hypothesis.

Finally, this research has important limitations as the empirical study was based on a relatively small sample of firms. It would therefore be interesting to carry out investigations that are able to draw on larger databases, which are more representative of the population of firms in a country or region. The second limitation is related to the analysis extent because was just before to start the international economic crisis. Despite of these limitations, this research provides new areas for future research as new investigations about the relationship between volatility and job creation or a similar research based on firm survival related to the devastating volatility effects.

FOURTH CHAPTER:

THE EFFECT OF FIRM VOLATILITY ON JOB CREATION

4.1 INTRODUCTION.

The relationship between firm volatility and employment has been briefly studied. Such relationship shows conflicting results because the deviation produced by changes did not affect similarly in each country to the economic development or employment (Valliere and Peterson, 2009). Davis et al. (2007) obtained significant evidence of increased volatility in employment for large, publicly traded firms but they also found that small and private firms have even enjoyed decreased volatility. However, Taymaz (2005) identified the increase on employment volatility by the small businesses as a vital process in the 1980s economic development for the industrial organization.

Based on the described literature, some authors studied environmental related to firm volatility and others studied firm related volatility. In our research, we will analyze firm related volatility which is the volatility that can be observed in the daily activity of a firm, not attributable to the sector. We will reckon firm volatility to be closer to the concept used by Delmar et al. (2003) under which volatility can be observed in firm´s financial statements. In this context volatility is a result, a behavior but not an environmental variable.

Taking into account those arguments we propose that firm's volatility will have a curvilinear effect (inverted U-shaped) on job creation as a result of two different processes: (1) moderated levels of volatility could be interpreted as a signal of business opportunities, promoting expansion decisions (job creation), but (2) higher levels of volatility could be interpreted as a signal of high uncertainty about its future, promoting externalization decisions.

Since the late 80's, several studies analysed the decisions on expansion and overcapacity problems (Lieberman, 1989). This research trend has shown how companies take strategic decisions based on interpretations, not always successful, of their own outcomes (Zajac and

Bazerman, 1991; Paich and Sterman, 1993). The basic idea is that companies try to anticipate business opportunities to expand its capacity in order to take the maximum market share (Porter, 1980).

However, firms can err interpreting the signs about the future evolution of demand and future of the reaction of competitors. This process can result in too many companies trying to get ahead, expanding their capacity and leading hence to overcapacity in the industry (Porter and Spence, 1982). Their decision-making processes are influenced by their own mental models and, as Paich and Sterman (1993) suggest, "*people do not account well for feedback loops*."

According to this reasoning, it is conceivable that increased levels of volatility can be interpreted as signs of future business opportunities that can be seized and therefore require expansion decisions (Zajac and Bazerman, 1991). Moderately increased levels of volatility are common in unstable environments being typical of nascent and emerging business. In this sense, high levels of future performance are usually assigned to stages close to the maturity or decline while there are decreased levels of volatility (Porter, 1980; Birch et al. 1994; Storey, 1995; Acs et al. 2008; Henreksson and Johanson, 2010). This interpretation leads to optimistic views about the underlying reasons for increased volatility in firm growth obtaining a capacity expansion decisions, heading to the creation of new jobs (Lieberman 1989).

However, while moderated increases of volatility could be interpreted as a signal of potential opportunities for growth in the future, higher increases of volatility could be interpreted as high risk for expansion decisions. Chau and Walker (1994) argued that employers' maximize the profit derived from labor and minimize its cost. Such is carried out through the organization of a firm in the most efficient manner and infers among others, the nature of subcontracting to develop an industry.

Pollak (1985) argues that contracting difficulties and the problems of negotiation are central instances of transaction costs because they have an influence in the organization of production. Around this argument uncertainty takes an important role as such leads firms to reduce the fixed cost structure in order to achieve flexibility. This reduction is carried out through the outsourcing of company personnel. Firms will be reducing employees in order to reduce risk under uncertainty conditions.

4.2 HYPOTHESES.

In this context, the transaction cost theory proposes the benefits from externalization of several costs to save firm stability. Firms are more likely to employ people internally when their skills are firm specific and contribute to the core competencies of the firm (Lepak and Snell, 1999).

According to this argument, environmental uncertainty would create a need for employees who could be outsourced (Klaas et al. 2010), hence reducing the internal firm job creation. This assertion links with the argument (Van Mieghem, 1999) that depending on cost structure of manufacturer and subcontractor and the type of contract written between the two parties, either subcontracting or outsourcing can be an optimal way to resolve demand uncertainty. Definitely, less costs on employment makes firm more resistant to the effects of volatility.

Based on such, we argue an inverted U-shaped relationship between firm volatility and employment. We consider that at the early stage, based on misperception of outcomes and overcapacity arguments, a firm will hire employees upon a volatility increase, generating a positive relationship between volatility and employment. However, around this argument and

based on transaction cost theory, the increase on volatility will lead to employment reductions as it will be less costly and more flexible (less risky) for the firm to subcontract. Under this new context, the relationship between volatility and employment changes and the previous positive relationship turns negative. We can hence propose:

Hypothesis 1: Firm's volatility has a curvilinear (inverted U-shaped) relationship with job creation.

Literature has extensively discussed the relationship between growth and size of firms (Delmar et al. 2003; Wiklund et al. 2009; Herenkson and Johansson, 2010). In this sense, the Gibrat (1931) theory suggested that there should be no difference between the proportionate rates of growth between small and large firms.

Nevertheless this theory has been refuted as research has found (Evans, 1987; Wagner, 1992; Dunne and Hughes, 1994; Storey, 1995; Sutton, 1997) that growth rates diminish with increasing size. Consequently Gibrat's law is applicable only to large organizations, not to small firms. Delmar et al. (2003) refute this idea arguing that firm size has an effect on growth and a consequence of it is small firms generate more employment than large firms (Wiklund et al. 2009; Henrekson and Johansson, 2010).

Small firms have, at the same time, disadvantages and advantages related to large firms. Firstly, as a disadvantage, small firms have more difficulties to interpret adequately their own results and to evaluate the evolution of these results in the future. Small firms have less amount of control over their environment, suffer from a lack of expertise knowledge, and planning development is less common than in larger firms. In this case, small firms are more prone to

mistake the interpretation of their own results, falling into overcapacity problems (Lieberman, 1989; Zajac and Bazerman, 1991).

Conversely, as an advantage, small companies are more agile, adaptable and flexible than large companies (Chen and Hambrick, 1995; Deutsch et al. 2007). Small companies are much more agile and responsive than large organizations. In this sense, large organizations find more difficulties in adapting to a changing environment than small firms. For this reason, small firms are more adaptable and even largely immune to such a changing environment (Davis et al. 2007).

Adaptation upon a spike in volatility implies companies will outsource jobs to external service providers, hence small companies will reduce employment generation and these changes require a major influence on the organizational strategies used to reduce them (Casson, 1994). As large firms find more difficulties to adapt themselves to the environment in the face of volatility, as a consequence they will lag adaptation to the new environment.

This inflexibility within large firms will lead them to keep hiring personnel upon firm volatility. Because of it, small and medium enterprises (SMEs) are turning to human resources outsourcing to provide these services (Klass et al. 2010). Such argumentation leads us to conclude that:

Hypothesis 2a: Firm's size moderates the inverted U-shaped relationship between firm's volatility and job creation. Specifically, for smaller firms the relationship will be more intense for bigger firms.

When volatility hits the firm, the firm age has an important role, as decisions taken by young organizations are different than those taken by mature ones (Henrekson and Johansson 2010). Upon volatility, young organizations will tend to adapt to the environment. Employment will be shed, as outsourcing is an option for them.

This framework is linked with the argument that lifecycle of companies produces continuous change in firms and their contribution to employment varies at each stage. Such may be the reason for the lack of employment growth in key lifecycle stages research (Baines et al. 1997). The term life cycle of companies is used to describe the firm´s development process, definitely a concept that implies more than the survival or growth of the firm (Wiklund et al. 2010). Consequently, there are external (taxes, legislation, conditions on the product market, labor market and financial market) and internal factors (existing resources, competence and goals of the manager and firm´s employees) influencing lifecycle.

A variety of studies have argued business cycle is composed by stages which are defined as the unique configuration of variables related to organization context and structure (Hanks et al. 1993; Phelps et al. 2007). Those results linked to early research that described the firm stages as birth, youth and maturity (Lippitt and Schmidt, 1967; Lewis and Churchill, 1983).

Firm development theory shows evidence that a company at the first stage is characterized by high growth in both sales and number of employees (Koberg et al. 1996) when firms reach the mature stage, industries typically face slow growth (Lumpkin and Dess, 2001). For example Headd and Kirchhoff (2009) proved fast growing SMEs in one year tend to have employment increases thereafter.

At the same time, younger firms have less experiential knowledge to help them interpret their own results, according the interpretation problems proposed by Zajac and Bazerman (1991). Firms need time to adequately understand which their correct size is, and, until then,

firms can mistake their interpretation of outcomes. Young firm evolve is a more erratic way than mature firms, searching their optimal size by trial and error. For that reason, they tend to take immediate decisions on hiring new employees under growth condition or firing employees under declining conditions. Conversely, more mature firms have the experiential knowledge to interpret growth-declining evolution and are more reluctant to hire under growth conditions which will allow them to fire less employees under declining conditions.

In summary, previous arguments suggest that firms in the early stages tend to be subject to high volatility leading to employment increases. In this context, higher volatility drives to increases on employment in order to reach more and more volume, searching for a most efficient size. The relationship between firm age and growth tends to decline with the age of the firm. This result stands out independently of whether the sample of firms studied (Barron et al. 1994; Sutton, 1997).

However, older organizations are less adaptive than small businesses and they will lag in the adaptation process and take time to outsource services. This argument shows evidence that interaction between firm volatility and firm age generates a negative effect on employment. This idea is supported by Delmar et al. (2003) who state that a more clear relationship is found between firm age and growth, where firm growth rates tend to decline with the age of the firm. Such time lag will lead to a negative impact on employment. Thus we hypothesize the following:

Hypothesis 2b: Firm's age moderates the inverted U-shaped relationship between volatility and employment. Specifically, for younger firms the relationship will be more intense for older firms.

As we mentioned above, firm's volatility and firm's growth are different but related concepts. For that reason, we expect that firm's growth exerts a moderating effect on the relationship between volatility and job creation. One strand of research on firm volatility deals with the positive and negative effects of growth. Caballero and Hammour (2000) built on the idea of creative destruction developed by Schumpeter (1942) which explains the evolution of capitalism into social democracy. The authors discuss the idea that recession times represent the cleansing of the economy, as less productive and inefficient firms fall. Such process would contribute to higher growth in the future. On the other hand, there is research arguing the negative effects of firm volatility. Volatility produces the irreversibility of investments (Pyndyck, 1991).

Higher volatility leads to lower growth when economic circumstances are unfavorable and firms often cut back on personnel spending. Those consequences will derive negative effects on the economic growth in the future (Martin and Rogers, 1997). Related to such disparity, the relationship between firm volatility and growth varies depending on the election of short or long-term analysis (Kroft and Lloyd-Ellis, 2002).

However, those authors conclude that net effect of overall volatility on growth is negative in absolute terms. In regards firm volatility and growth, economists in the 80s (Hodrick and Prescott, 1980) believed growth and firm volatility were independent events.

Nevertheless, other authors found statistical evidence on the existence of a common root and suggested that growth and firm volatility could be related because both are composed by important and similar economic variables (Nelson and Plosser, 1982). Ramey and Ramey (1995) confirmed such relationship also Black (1987).

We propose that firm manager's interpretation of volatile outcomes will be different under a growing context than under a declining or stable context. A growth context will intensify the influence of volatility on job creation, while a decline context will intensify the influence of volatility on job destruction. So we propose:

Hypothesis 2c: Firm's growth moderates the inverted U-shaped relationship between volatility and employment. Specifically, when the firm's growth is higher, the rate of job creation associated with increasing volatility is higher and more pronounced; and when the firm's growth is lower, the rate of job creation associated with increasing volatility is slower.

4.3 METHODOLOGY.

The information to implement our research is taken from the Spanish SABI database. This database contains financial company and business comprehensive information for most Spanish companies. We selected companies that should have the necessary financial information for every year in a ten-year period (1998-2008).

We also needed the number of employees that was not available for all the companies given the information is not integrated into financial statements of companies in Spain. However, many firms report the number of employees voluntarily. In this sense, the initial number of companies contained on the database hasn`t been direct relationship with the final

number showed in the sample because we cleaned it, eliminating all firms with missing or contradictory information. Consequently, the sample of companies with full financial data and the number of employees during this time interval (1998-2008) includes 2,180 firms.

We tested representativeness of our sample in relation to the full sample based on basic variables such as firm size, number of employees and sector. It is worth emphasizing that it is possible to perform analysis on growth in a minimum period of three years but to perform such for firm volatility we need to analyze a longer period of time to have a real vision of the construct.

It is important to show the sample firms´ heterogeneity. In relation to age, the larger group covers firms between 11 and 25 years old with 832 companies. In relation to employees, the larger group covers firms between 11 and 25 employees with 1,091 companies. The smaller one includes 149 firms with 10 employees or less. Table 4.1 contains a description of the main traits of our sample: size, age and industrial distribution.

Table 4.1: Sample description

	No. firms	Percentage
Size of firms (employees)		
Between 101 and 500employees	203	9.31%
Between 51 and 100 employees	229	10.50%
Between 26 and 50 employees	508	23.30%
Between 11 and 25 employees	1091	50.05%
10 employees or less	149	6.84%
Age of firms (years)		
More than 50 years	526	24.13%
Between 26 and 50 years	805	36.93%
Between 11 and 25 years	832	38.16%
10 years or less	17	0.78%
Sector		
Service sector	11	0.5%
Manufacturing	1436	65.87%
Building	32	1.47%
Commerce	32	1.47%
Others	669	30.69%
Total	2180	100%

4.3.1 VARIABLES.

Employment growth shows changes taking place in the organizational composition or strategy of the firm (Hanks et al. 1993). We have opted to use the percentage of growth in employment for the period of study (growth of number of employees from 1998 to 2008). Job creation measures not only the extent of growth of a firm (as sales growth) but also the expectation of growth in the future.

While sales growth is only a measure of an outcome, employment growth integrates the current outcomes with the expectation of future outcomes, as firms are reluctant to hire new employees if they do not expect to maintain this level of outcomes in a short-time span. To avoid that variable distribution show a deviation from normality, we have used the logarithmic version of the variable.

As independent variables we use volatility of sales growth. Sales growth is the most widely used in empirical growth research (Delmar, 1997) while other indicators, as employment, profit and asset growth reflects a combination of growth in outcomes and resources (Delmar et al. 2003). An emerging consensus argue that if only one indicator is to be chosen as a measure of firm growth, the most preferred measure should be sales (Hoy et al. 1992; Ardishvili et al. 1998). Volatility of sales growth has been quantified through the average yearly standard deviation of the firm´s sales growth for the period of study: 1998-2008 (Poon and Granger, 2003). In order to isolate the firm's volatility from industry effects, we have subtracted the sectorial standard deviation of growth of each respective industry at 3-digit level (Wiklund et al. 2010).

We use three moderating variables in this research: size, age, and growth. Firm size and firm age were included because they are usually considered as important predictors of firm growth (Henreksson and Johansson, 2010). For firm size, we have used the sales relevant to

the first year of the period under study, 1998. To avoid the variable distribution showing a deviation from normality, we have logged the variable. Firm age was determined by the difference between 1998 (initial year) and the year of start-up.

This variable was also logarithm-transformed to correct its deviation from normality. Growth has been measured as a percentage of sales growth between 1998 and 2008 (Delmar et al. 2003). These three measures could be affected by relevant sector differences. In order to avoid this problem, we have used a relative measure of firm size, age and growth, calculating the difference between firm variable and the corresponding industry mean for the same variable (3-digit level). This procedure allows to measure the relative size, age and growth of a firm in relation to the rest of the firm in the same industry (Moreno and Casillas, 2008; Wiklund et al. 2010).

The research contains firms of different size and age, which exhibit different organizational and environmental characteristics (Wiklund and Shepherd, 2005). To complement the analysis we include several control variables. Firm solvency: It shows the capacity of the firm to meet all of its debt obligations. It is determined as working capital divided by total assets by borrowed resources (Wiklund et al. 2010).

We have measured firm solvency at the beginning of the period (Solvency1998) and the average solvency during the ten years interval of time (Solvency98-08). Liquidity of the firm: It measures the capacity of the firm to meet its payment obligations in the medium term. It is determined by dividing the operating assets by the current liabilities (Wiklund et al. 2010).

In the case of solvency, we measure liquidity at the beginning (liquidity1998) and the average liquidity of the whole period (liquidity98-08). Leverage was used to consider the financial structure of firms. For debt, we measured leverage as total liabilities divided by total

assets (Wiklund et al. 2010), differentiating between initial leverage (leverage1998) and the average leverage for the period (leverage98-08).

Return on assets (ROA): is the ratio obtained when dividing earnings before interest and taxes by total assets for the year. We have considered initial ROA (ROA1998) and the average ROA for the period (ROA98-08). These measures have been also adjusted to their respective industry average.

In order to test the hypotheses, we have used a hierarchical regression analysis. Our research analyzes the relationship between firm volatility and job creation using an interaction term in the hierarchical regression analysis to determine the link between volatility and job creation under various structural firm characteristics. We developed and tested our hypotheses with the regression hierarchical analysis, a model that describes the influence of volatility on job creation through the standardized forms and squared standardized forms to predict the relationship. A positive quadratic term would indicate a U-shaped upward curve, while a negative coefficient would indicate a ∩-shaped downward relationship (Hair et al. 1995).

Moreover, to formulate the relationship we consider it an appropriate method because the distribution of the error term is not truncated so the regression coefficients are consistent and unbiased (Kumar, 1984). For this reason quadratic model produces a better fit to the data than the simple linear model (Deeds and Hill, 1996).

The model of the relationship between firm volatility and employment incorporated the interactive effects between and within the strategy variables (Qian, 2002). The hyphoteses provided us a result related to the interaction effect, which is decisive for a group of comparisons (Burmeister and Schade, 2007). This kind of effects only exists if the interaction term provides a significant contribution over and above the direct effects of the independent variables (Cohen and Cohen, 1983; Pérez et al. 2010).

To discover the importance of the interaction effect the dependent variable is related to others into the regression equation and provides results that need to be compared with the values obtained only with the dependent variable (Cohen and Cohen, 1983). We have estimated eight models. Model 1 is the baseline model. Model 2 incorporates the three moderator variables as direct predictors: size, age and growth. Model 3 includes the direct effect of independent variable: volatility. Model 4 include the quadratic effect of volatility on job creation. The following three models (Models 5, 6, and 7) add the interaction effects of the three moderating variables (size, age, and growth), separately. And finally, Model 8 includes at the same time, the three moderating effects in a complete model.

4.4.- RESULTS, DISCUSSION AND LIMITATIONS.

Table 4.2 highlights the principal descriptive statistics and shows as well the correlation matrix for all the measures used in our investigation. Correlations are normal, showing a high correlation in the same variable but differing on the period of calculation. To control for possible collinearity of the variables, we have estimated the variance inflation factor (VIF) indexes, and have verified that none of them reaches the threshold of 10 (maximum = 1.408).

Table 4.2: Descriptive statistics and Correlation Matrix

	Mean	s.d.	Growth	LnAge	LnSize	Solv98	Solv9908	Liq98	Liq9908	Lev98	Lev9908	ROA_98	ROA9808	Volatility
Growth	4.510	2.736	1											
LnAge	3.019	.782	-0.051**	1										
LnSize	5.204	.897	-0.060**	0.149**	1									
Solvency98	2.321	.157	0.027	-0.021	-0.035*	1								
Solvency9908	-2.561	.139	-0.031	0.009	-0.076**	0.571**	1							
Liquidity98	-3.079	.232	-0.017	-0.043*	-0.071**	0.176**	0.054**	1						
Liquidity9908	-1.561	.205	-0.044*	-0.026	-0.092**	0.054**	0.141**	0.604**	1					
Leverage98	2.942	37.090	0.005	0.127**	0.067**	0.140**	0.152**	-0.346**	-0.238**	1				
Leverage9908	3.330	26.889	-0.009	0.100**	0.005	0.188**	0.299**	-0.294**	-0.426**	0.628**	1			
ROA_98	-5.689	16.379	-0.037*	-0.001	0.041*	0.205**	0.149**	-0.112**	-0.078**	0.392**	0.283**	1		
ROA9808	1.020	9.735	0.025	-0.011	-0.037*	0.195**	0.295**	0.007	-0.079**	0.021	0.363**	0.423**	1	
Volatility	.000	.217	0.167**	-0.065**	-0.077**	-0.009	-0.040*	0.058**	0.077**	-0.102**	-0.124**	-0.038*	0.070**	1

*, **, *** refer to significance at 0.1, 0.05, and 0.01 levels.

We can therefore conclude that there are no problems of collinearity between variables, in accordance with the criterion established by Neter et al. (1990). Table 4.3 presents results for the eight models testing our three hypotheses. Hypothesis 1 states that volatility has a quadratic relationship with employment. This relationship takes place with a curvilinear inverted U-shaped with an initial positive effect, which finally turns negative. The results support Hypothesis 1, which is shown in Model 4. An examination of the standardized beta of the related variables reveals a positive sign for the linear effect (β=0.236; p<0.000), and a negative sign for the quadratic effect (β= -0.161; p=0.002). The model is also significant (Sig=0.000) and the R^2 is (0.076). This R^2 is higher than that in Model 3 (linear effect).

Hypothesis 2a states employment is influenced by the interaction effect of volatility and firm size. Model 5 tests this hypothesis, showing that the interaction effect is not significant, so the results do not support Hypothesis 2a. Model 6 presents the results of the interaction effect of firm's age and volatility on job creation. In this case, results are significant (Linear effect: β=-0.609; p=0.002; quadratic effect: β=0,137; p=0.034).

This model significantly improves the explanation power of Model 4 (R^2 = 0.081), so Hypothesis 2b is contrasted. Model 7 tests the potential moderator effect of growth, according to hypothesis 2c. In this case the results do not show a significant interaction effect, so hypothesis 2c is not contrasted. Finally, Model 8 includes simultaneously the three moderations effects, showing similar results than the three previous models, with an explanation power equivalent to Model 6. In order to interpret adequately the significant results, we have represented graphically the curvilinear effect of volatility on job creation (Figure 2a) and the interaction effect of firm's age (Figure 2b).

Table 4.3: Regression Analysis

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7		Model 8	
	Est. E	Beta	Est. E.	Beta	Est. E..	Beta	Est. E..	Beta	Est. E..	Beta	Est. E..	Beta	Est. E..	Beta	Est. E..	Beta
(Constant)	0.058		0.057		0.056		0.097		0.103		0.097		0.097		0.104	
Solvency98	0.475	0.071*	0.462	0.067*	0.460	0.065*	0.460	0.064*	0.460	0.061*	0.458	0.062*	0.460	0.064*	0.459	0.061*
Solvency99-08	0.568	-0.060*	0.552	-0.058*	0.551	-0.054	0.550	-0.053	0.551	-0.050	0.549	-0.051	0.550	-0.053	0.550	-0.049
Liquidity98	0.344	0.003	0.334	-0.004	0.333	-0.002	0.332	-0.002	0.332	-0.001	0.332	0.000	0.333	-0.003	0.332	0.000
Liquidity99-08	0.414	-0.062*	0.403	-0.053	0.402	-0.058	0.402	-0.060*	0.402	-0.061*	0.402	-0.067*	0.402	-0.060*	0.403	-0.068*
Leverage98	0.236	-0.081*	0.231	-0.069*	0.230	-0.069*	0.230	-0.061	0.232	-0.057	0.230	-0.061	0.231	-0.062*	0.232	-0.057
Leverage9908	0.375	0.093**	0.366	0.056	0.366	0.049	0.367	0.038	0.367	0.035	0.366	0.041	0.368	0.040	0.368	0.040
ROA_98	0.004	-0.092***	0.004	-0.053*	0.004	-0.052*	0.004	-0.046	0.004	-0.042	0.004	-0.043	0.004	-0.048	0.004	-0.041
ROA9808	0.008	0.098***	0.008	0.053*	0.008	0.045	0.008	0.039	0.008	0.037	0.008	0.041	0.008	0.043	0.008	0.043
LnAge			0.058	-0.025	0.058	-0.024	0.058	-0.029	0.058	-0.029	0.096	-0.086*	0.058	-0.030	0.100	-0.093*
LnSize			0.064	-0.050*	0.064	-0.046*	0.064	-0.046*	0.124	-0.054	0.064	-0.048*	0.064	-0.046*	0.130	-0.041
Growth			0.018	0.234***	0.019	0.204***	0.019	0.188***	0.020	0.187***	0.020	0.178***	0.040	0.148**	0.041	0.135**
Volatility					0.285	0.081***	0.688	0.236***	0.709	0.250***	20.558	0.858***	0.762	0.263***	20.684	0.906***
Volatility Sq							0.508	-0.161**	0.572	-0.186**	0.513	-0.176***	0.543	-0.183***	0.614	-0.222***
Volatility x LnSize									0.757	-0.043					0.786	-0.018
Volatility Sq x SLnSize									0.725	0.004					0.782	-0.021
Volatility x LnAge											0.810	-0.609**			0.834	-0.618**
Volatility Sq x LnAge											0.474	0.137*			0.502	0.150*
Volatility x Growth													0.257	0.094	0.259	0.058
Volatility Sq x Growth													0.169	-0.054	0.172	-0.013
Adjusted R2	0.010		0.067		0.072		0.076		0.077		0.081		0.076		0.081	
Sig	0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000	
Inc R2	0.010		0.057***		0.005***		0.004***		0.001**		0.005***		0.000		0.005***	

*, **, *** refer to significance at 0.1, 0.05, and 0.01 levels.

Figure 4.1: Curvilinear effect of volatility on job creation

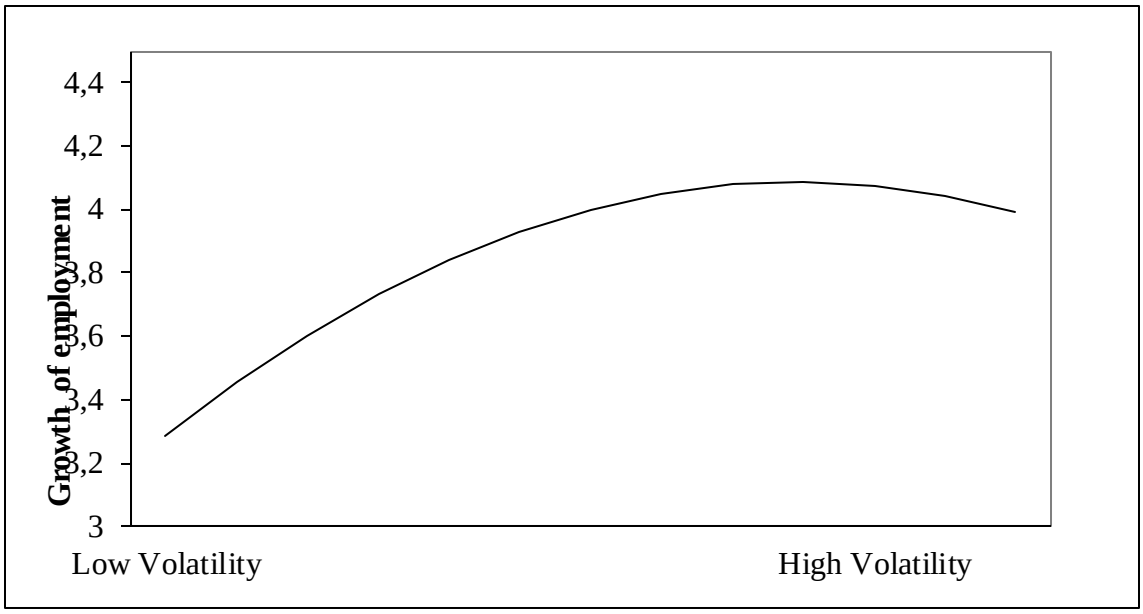


Figure 4.2: Interaction effect of firm's age

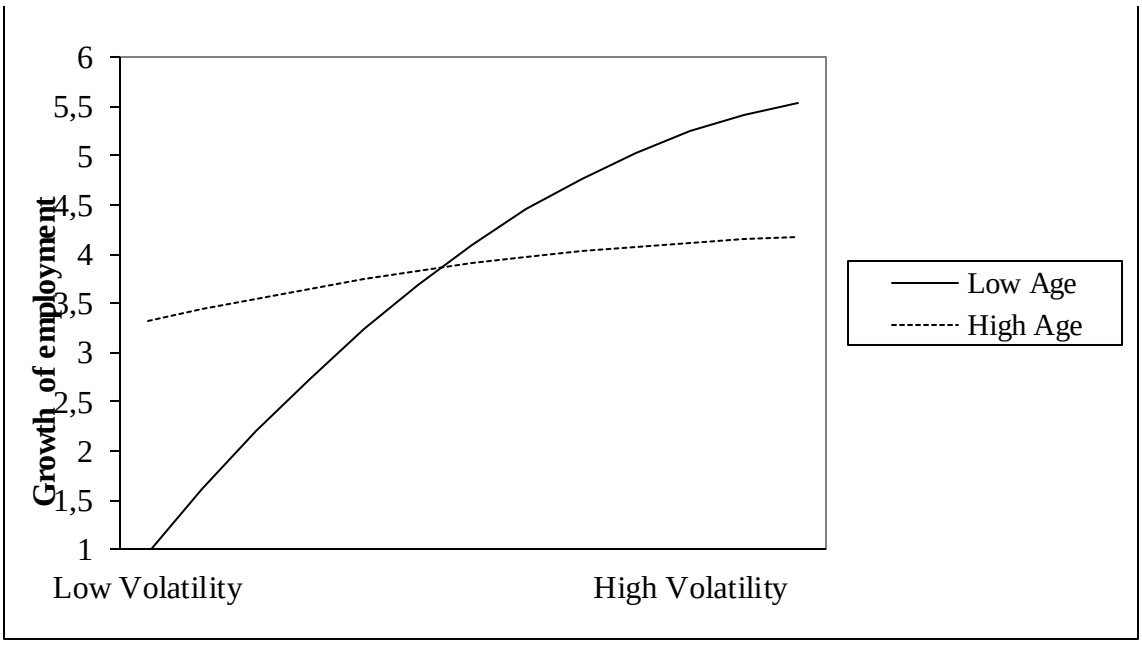


Figure 4.1 shows the curvilinear relationship between volatility and employment. We can observe that when growth volatility is low, the influence on employment is positive,

although the intensity of this relationship is losing strength as volatility increases (becoming less steep slope). Thus, a point is reached in which increased levels of volatility in the growth of the company not only does not help in the generation of new jobs but leads to the destruction of jobs (negative slope). Both, results of Model 4 and Figure 2a support hypothesis 1.

Figure 4.2 shows the moderating effect of firm age on the curvilinear relationship between volatility of growth and job creation, as this is the only one of the three moderating variables whose effect is significant (Models 6 and 8). We showed in the figure, the slope of the curve which is much steeper in younger firms than mature companies, where slope is rather flat. In accordance with the results obtained in Models 6 and 8, younger firms tend to evaluate the volatility of growth as a sign that the company will grow in the future.

The conclusions about the effect of firm volatility on job creation taken into account the empirical literature on growth and volatility which have historically been considered independent events: growth theory and business cycle theory studied both concepts in an independent manner. Nevertheless, some authors found arguments which related both concepts. Around this argument, the relationship between growth and firm volatility was development in two different arguments, a positive or negative relationship based on mechanisms driving such. Exit does not equate with either success or failure (Gimeno et al. 1997).

Therefore company needs to hire new employees to meet this growth. Mature companies, however, are more cautious in interpreting growth volatility, so that they hardly hire upon increasingly volatile growth rates. As discussed in the theoretical development, these results come to corroborate the idea that younger firms have less knowledge about what their appropriate size should be and tend to interpret varying rates of activity as growth opportunities, incurring in potential problems of overcapacity (Porter and Spence 1982).

Instead, more mature and experienced companies are clearer on what their optimum size should be and tend to assume upon volatility they should leave payroll unchanged.

Summarizing, in this research we have examined the impact of firm volatility in employment growth and its interaction with firm size, firm age and firm growth to develop a framework for our four hypotheses. The research starts by analyzing the volatility concept and continues researching the relationship between growth and firm volatility and their common root.

The firm development has an irregular process and not always is constructed by the same form. However, the emergence of new firms could be a powerful means for creating employment, although the magnitude of the employment effect of new firm formation is rather unclear (Fritsch and Weyh, 2006). From a Schumpeterian point of view (Schumpeter, 1942; Aghion and Howitt, 1996) the economic growth is developed by a process in which innovation takes an important role as new companies and products destroy prior competitive landscape. This argument supports the idea that volatility is healthy giving a cleanliness of the economy.

Based on our results, we partly agree as long as the volatility is moderate, given such positively impacts job creation. In this context, firms are looking for opportunities to expand to get a higher market share (Porter, 1980). Nevertheless, firms not always develop this process correctly because of wrong interpretations around the future evolution of demand and future of the reaction of competitors. These mistakes creep firms to expand their capacity and leading hence to overcapacity in the industry (Porter and Spence, 1982).

Firms consider that volatility implies an opportunity to grow under an optimistic view which produces its effects through the creation of new jobs (Lieberman, 1989). Consequently, the increase in the levels of volatility can be interpreted as signs of future business opportunities which require expansion decisions (Zajac and Bazerman, 1991).

If volatility keeps increasing there will be a point in which firms start reducing the rate of employment creation. In this context, the transaction cost theory proposes the benefits from externalization of costs (Pollak, 1985). This author argues that problems of negotiation are central instances of transaction costs because they have an influence in the organization of production. Moreover, uncertain takes an important role as such leads firms to reduce the fixed cost structure in order to achieve flexibility.

Consequently, this reduction is carried out through the outsourcing of company personnel because firms will be reducing employees in order to reduce risk under uncertainty conditions. This argument provides us an explanation to the decrease on the employment firm curve when volatility increases highly. Therefore firm hires employees indirectly through external outsourcing services which produce the firm reduction on transaction costs.

Based on the downslide of the regression curve, firms are hit by reality and adjust to the real situation of the economy. Firms become aware of reality and resources acquired are not aligned with the state of the economy and reduce employment. Given the high levels of volatility, a firm's management becoming more difficult and firms result to reduce employment and seek an option that will let them become more flexible, something necessary to adapt to the environment.

Despite of it, this process does not have to carry negative effects per se as those jobs which are being reduced will help outsource services to grow. Chau and Walker (1994) argued that employers' maximize the profit derived from labor and minimize its cost. Such is carried out through the organization of a firm in the most efficient manner and infers among others, the nature of subcontracting to develop an industry.

Our research has also highlighted how the increase in employment is higher in younger firms. Young companies have less management experience than older firms, as the former

have hardly gone through a process of high volatility. Young firms are more unrealistic in the assessment of opportunities than older firms. Such process induces them to take riskier decisions. Either they have never experienced a period of volatility or have not experienced such in a repeatedly fashion as to have learnt from such.

Research offers interesting results about the positive relationship of experience leading to learning and entrepreneurial success (Westhead and Wright, 1998; Ucbasaran et al. 2003; Colombo and Grilli, 2005). Older firms have however progressed through a period of learning (Bandura, 1977) as they have experienced prior lapses of volatility. Older firms' knowledge stock would steer them not to become too optimistic on future opportunity prospects.

We are surprised that the interaction effect between size and volatility does not hold. Typically, small firms have lower transaction costs than larger firms. Firm size leads to higher complexity which produces an increase in the transaction costs of firms. Under this argument, larger firms should hire fewer employees upon volatility spikes. Small firms should be more active in the job creation process given the lower complexity and transaction costs derived from its structure.

This research contains several limitations. First, the empirical research was based on a relatively reduced sample of 2,180 firms. The reason is the low number of firms which contain complete financial information consequently we cleaned the original sample eliminating all firms with missing or contradictory information. It would be interesting for future researches to obtain more information directly through the firms to compensate the low or incomplete financial data which companies send to the official database. Second, we're not able to prove fully the hypothesis specifically the relationship either positive or negative between firm volatility and firm size.

This consequence limits the research complexity. Third, the firms which are contained in the sample are located at the same geographical area. This characteristic reduces the possibilities to find high differences between the firm development because all of them are conditioned by the same geographical market and the same financial state influences. Therefore, a sample which contains firms of different countries would offer an extensive perspective.

Finally, the research is a cross-sectional study based on a concretely period of ten years. This aspect limits a longitudinal vision and reduces the possibilities to identify causal relationships between prior or later factors around the factors studied. Despite these limitations, we believe volatility is an interesting topic of interest for future research and we encourage future researches to explore these issues. The fact that volatility has a common root with growth and that it has been under researched allows us to suggest future researches on the topic. It would be interesting to look at the relationship between volatility and profits or between volatility and innovation. Around the more complex areas of research we can suggest the deepening of how small firms find it easier than larger firms to manage under a situation of highly volatile sales through the learning literature lens.

FIFTH CHAPTER:

VOLATILITY ON SMALL FIRMS, PERFORMANCE AND DYNAMIC CAPABILITIES.

5.1.- INTRODUCTION.

In the second chapter, we can find the literature which supports the negative effects of firm volatility. The central topic of our research is to find out whether firm volatility can exert, under any circumstance (age, size or leverage), a beneficial effect on small firm performance. We start hypothesizing whether firm volatility can have a positive effect on the performance of smaller firms.

Traditional literature on entrepreneurship has long argued that under volatile conditions, large firms have fewer advantages than small firms (Cohn and Lindberg, 1974; MacMillan, 1980; Feigenbaum and Karnani, 1991; Chen and Hambrick, 1995; Dean et al. 1998; Park, 2003; Greve 2011). Large firms are less flexible, adaptable, fast and agile than smaller firms (Dean et al. 1998; Park, 2003; Greve, 2011). In contrast, smaller firms are less bureaucratic and more flexible. They are able to react quickly and efficiently to changing conditions. Consequently, their organizational simplicity and flexibility is a resource of competitive advantage as they adapt better and adopt faster new technologies (Cohen and Klepper, 1996; Roper, 1997).

Hence, a solid body of traditional literature supports the idea that firm volatility can have a beneficial effect on small firms' performance. We now take into account a more recent framework, dynamic capabilities, to help us hypothesize a potential relationship between smaller firm performance and firm volatility.

The concept of dynamic capabilities aims to clarify why some firms struggle and are unable to adapt successfully as their environment changes (Teece and Pisano, 1994; Harreld et al. 2007). Dynamic capabilities are "*higher level competences that determine the firm's ability to incorporate, build and reconfigure internal and external resources or competences*

to address rapidly changing business environments" (Teece, 2012). Consequently, the control of these capabilities allows firms to obtain superior profits (Teece et al. 1997; Zollo and Winter 2002; Adner and Helfat, 2003) ecause of it, dynamic capabilities are relevant both to environmental volatility and to small firms.

The environmental volatility ought to firms developing dynamic capabilities because take into account the changing nature of the environment is essential to firm growth (Teece and Pisano, 1994; Teece, 2012) or very important (Zahra et al. 2006) to adapt, integrate and reconfigure skills, resources and competences. Dynamic capabilities either are very important to firms operating in highly volatile environments (Eisenhardt and Martin, 2000) or can be of more value in rapidly changing environments (Zollo and Winter, 2002; Zahra et al. 2006).

Zahra et al. (2006) has importantly pointed out that the need for dynamic capabilities do not only emanate from the volatility of the external environment (external volatility), then the organizational conditions volatility (internal volatility) must be considered too. Arguing that take into account the external environment "misses the true nature" of dynamic capabilities (Zahra et al. 2006). Hence, dynamic capabilities are useful to cope, not only with external volatility but with firm (internal) volatility. Finally, continual environmental change increases the development and use of dynamic capabilities (Zahra et al. 2006).

Therefore, literature supports dynamic capabilities are important for external and firm volatile environments, and these environments help firms develop dynamic capabilities. Now we consider whether such is applicable to small firms. In regards entrepreneurship, the development and use of dynamic capabilities corresponds to the entrepreneur, entrepreneurial team or senior management (Zahra et al., 2006; Teece, 2012).

5.2.- HYPOTHESES.

Entrepreneurship has been associated with the creation of a new business by an entrepreneur (Teece, 2012). Entrepreneurial management necessary for the creation and use of dynamic capabilities is not limited to start ups (Teece, 2012). Although dynamic capabilities are useful for small and large firms, several authors consider that the development of dynamic capabilities is very important to small firms (Arthurs and Busenitz, 2006; Zahra et al. 2006; Døving and Gooderham, 2008; Barreto, 2010).

Small firms need dynamic capabilities to survive and grow (Zahra et al. 2006). Small firms possess specific dynamic capabilities such as external sourcing (Uhlaner et al. 2012), knowledge management (Alegre et al. 2013), product innovation (Branzei and Vertinsky 2006), ethics-focused (Arend 2013).

Although literature concludes that small firms possess dynamic capabilities, recent research shows evidence that the performance of smaller firms will benefit less from possessing dynamic capabilities. Arend (2013) argues that smaller firms are likely to obtain a lower performance than larger firms as the former will benefit less of the dynamic capabilities economies of scale and scope than larger firms. These economies come from the application of dynamic capabilities to a larger set of resources, products and operating capabilities. In summary, traditional entrepreneurship literature has argued firm volatility will benefit small firms. Therefore:

Hypothesis 1: Firm volatility influences positively on small firms performance.

Nevertheless traditional literature has argued that firm volatility will affect in different ways firms depending on its size. In this sense, dynamic capabilities literature has argued the opposite. Therefore:

Hypothesis 2a: Small firm performances will be beneficed low for the influence of firm volatility than high firm performances.

Hypothesis 2b: High firm performances will be beneficed more for the influence of firm volatility than small firm performance.

The question we address now is whether young firms possess dynamic capabilities, which, under firm volatility, will benefit their performance. Several authors have developed arguments on the existence of dynamic capabilities for young firms (Autio et al., 2000; Newbert, 2005; Sapienza et al., 2006; Zahra et al. 2006; Arend, 2013). Zahra et al., (2006) propose young firms choose improvisation and trial-and-error to develop and use dynamic capabilities.

The amount and speed of change in substantive capabilities is greater from those modes of learning. Dynamic capabilities facilitate entry and survival of new firms (Newbert, 2005) especially in an internationalization context (Sapienza et al., 2006). Young firms, given their short period of existence, have learning advantages as they find it easier to unlearn (Autio et al., 2000).

Hence small young firms possess dynamic capabilities. Those capabilities are developed through continual environmental and organizational change, as these changes increase the development and use of dynamic capabilities (Zahra et al., 2006). So firm volatility will help

young small firms develop dynamic capabilities. The question is whether those developed capabilities will lead small young firms to a higher performance.

Firm age has an important function in order to take decisions by young organizations because are less structured and hierarchical than mature ones (Henrekson and Johansson, 2010). Moreover, young firms used to adapt themselves quickly to the environment changes. This frame is related to the idea that firm lifecycle is composed for several stages which produce continuous changes, then exist a different contribution to generate employment in each stage. Being the term life cycle of firms is used to show the firm´s development process. Consequently, those stages implies more than the survival or growth of the firm as the taking decision.

Arend (2013) tested the existence of dynamic capabilities for younger firms. He found evidence that profitability by younger firms with dynamic capabilities was higher than that of older firms. In summary, young small firms facing firm volatility will develop dynamic capabilities, which will help them to perform better. Therefore:

Hypothesis 3: Younger small firms will benefit more for the volatility influence in their firm performance than mature firms.

We now argue that firm volatility has a negative impact on highly levered small firms. There are two theories predicting effects of debt on firms: Free Cash flow theory (Jensen, 1986) and pecking order theory (Myers, 2001). Under free the Cash flow theory, the interest of managers and shareholders differ. Hence more debt disciplines managers to generate profits.

The theory defends that there is a positive relationship between leverage and profitability. Under the pecking order theory firms choose a capital structure based on a preference order (Myers and Majluf, 1984; Myers, 2001). Profitable firms prefer internal funds to external funds (Myers, 2001). Unprofitable firms choose to finance through debt. The theory argues that there is a negative relationship between leverage and profitability (Myers, 2001).

In a small firm context, conflicts between managers and shareholders will be less relevant (Degryse et al. 2012). Hence, the cash flow theory will be of limited use, whereas the pecking order theory will be applicable. There is solid evidence that the pecking order theory holds for small firms (Vanacker and Manigart, 2010; Degryse et al. 2012).

Additionally, volatile firms will pay a higher interest for the debt vis a vis stable firms. Financial institutions will price their debt according to the perceived risk. Bank managers perceive higher risk in firms presenting volatile results. The price of money for the highly volatile firms will be higher, reducing thus profitability. Consequently volatile companies will be less profitable when incurring in debt. Therefore:

Hypothesis 4a: High leverage level on small firms will benefit less in firm performance by the influence of firm volatility than firms with less leverage level which benefits could be high.

5.3 METHODOLOGY.

The data used to carry out our research, has been taken from the SABI database (Sistema de Análisis de Balances Ibéricos-Analysis System of Iberian Balance Sheets) supplied by

Bureau van Dijk, for the period 2000-2008. The database is an important resource as it contains continuous financial and business information about Spanish firms.

SABI has been used extensively in research (Rodriguez-Duarte et al. 2007; Serrasqueiro and Maçãs, 2012), as other similar databases existing in other countries (Delmar et al. 2003; Goldeng et al., 2008; Henrekson and Johansson, 2010; Bradley et al., 2011). The information is gathered by SABI from the Companies House. All the Spanish companies need by Law to deposit their accounts with the House. Data is considered reliable as false information may carry personal penalties to the firm administrators and executives, including personal liabilities for wrongdoing.

We selected firms with available financial information for a minimum period of nine years (6 years + 3 years). We research the effects of six years of firm volatility on the performance of the three subsequent years. We consider six years to be an adequate time lapse to observe the effects of volatility on small firm performance.

Small firm was defined as firms with fewer than 500 employees (Lafontaine and Shaw, 1998; Lu and Beamish, 2006; Zahra, 2010). We have excluded very small firms, those with less than 10 employees (Goldeng et al., 2008). Those authors consider that reporting errors are more common in firms with fewer employees. Also very small firms represent life style ventures and literature has often excluded the effects of such group for being considered distorting.

The number of firms with those attributes was 39,800. This number is consistent with the population of Spanish small firms. The number is the equivalent to 1/3 of the total 2011 Spanish population for the 10-499 employees segment. However, we are covering firms existing for a whole ten year period. Had we taken a shorter period of time for our analysis, the sample could have been larger.

We analyzed representativeness of our sample in relation to the full sample based on basic variables such as firm sales, number of employees, leverage, firm age and growth. We found no material differences between our sample and the full sample of companies. Missing data and outliers reduced the final sample to 39,416. We opted for analyzing a firm's volatility over a long period to include both, expansionary and recessionary economic periods. Economic cycle could have a large bias effect over our volatility variable. Firm demographics show the heterogeneity of our sample. Table 5.1 summarizes the main characteristics of our sample: number of employees, sector and sales.

Table 5.1: Sample description

	No. firms	Percentage
Size of firms (employees)		
Between 101 and 500 employees	3146	8.06%
Between 51 and 100 employees	4450	11.35%
Between 26 and 50 employees	10996	27.89%
Between 10 and 25 employees	20824	52.70%
Firm Age		
More than 51 years	1261	3.30%
Between 36 and 50 years	4383	11.18%
Between 21 and 35 years	20429	51.70%
Between 10 and 20 years	13343	33.82%
Sales		
Between €10M and €50M	4307	10.99%
Between €5M and €10M	10884	27.61%
Between €1M and €5M	15057	38.14%
€1M or less	9168	23.26%
Total	39416	100%

In regards size, the largest group includes firms between 10 and 25 employees (52.7%) with 20,824 companies. The smaller group is firms between 101 and 500 employees (8.06%) with 3,146 companies. We have distinguished four firm age range in our sample. The most extensive group includes firms between 21 and 35 years (51.7%) with 20,429 firms. The smallest group is firms with more than 50 years (3.3%) with 1261 firms. Finally, attending to sales, the largest group is firms between €1M and €5M (38.13%) with 15,057 firms and the less group has 4,307 firms (10.99%) between €10M and €50M.

5.3.1 VARIABLES.

In our research we have neutralized the sector effect on the firm results. For all our variables except for age and number of employees, we have subtracted the individual firm result from the sector result at the four-digit level. We have then eliminated the sector influence (Moreno and Casillas, 2008; Bradley et al. 2011) in our sample. Such process was carried out with the PASW "aggregate" function.

Research has traditionally used sales growth as a performance measure for small firms. However, profitability served as our study independent variable for firm performance. There are three reasons for this choice. Firstly, the central task of entrepreneurial firms is value creation and appropriation (Alvarez and Barney, 2004; Davidsson et al. 2009). Growth is not direct evidence of value creation and appropriation (Davidsson et al. 2009).

Secondly, our direct effect variable is volatility. Volatility is calculated as derivative of sales change. Our statistical analysis could lead to unreliable results if we use the same source to calculate the dependent and independent variable. Thirdly, sales growth is one of our control variables. There are many ways to calculate firm profitability. We opted for return on assets (ROA) which has been widely used in research (Delmar et al. 2003; Davidsson et al.

2009; Arend, 2013). Firm profitability represents the average ROA for the three subsequent years (2006-2008).

As independent variable we use sales volatility between 2000 and 2005. Sales volatility is calculated by the relative standard deviation or relative variance of such variable using the average of each year standard deviation of the firm's sales for the period 2000-2005 (Delmar, 1997; Poon and Granger, 2003).

Firm age (FirmAge) was determined as the natural logarithm of the age in years of the firm in 2000. This variable was also logarithm-transformed to correct its deviation from normality. Firm age was included because it is usually considered as important predictor of firm profitability (Henrekson and Johansson, 2010). Firm size (FirmSize): We have used the natural logarithm of the company full time employees for the first year of the period under study, 2000 (Wiklund et al. 2010; Arend, 2013).

This variable was also logarithm-transformed to correct its deviation from normality. Leverage (Leverage): Leverage is defined as total liabilities divided by total assets (Wiklund et al. 2010). Leverage was calculated as the average leverage for the 2000-2006 period.

Two variables have been used as control variables: Growth and liquidity. Growth (Growth): different parameters have been used to measure growth such as number of employees, cash flow, net income, customer base, sales, employment, and market share (Murphy et al. 1996). Some authors (Gilbert et al. 2006) suggest that the most important measures of new venture growth are sales, employment, and market share. We choose the first measure as it is the most preferred measure of firm growth (Delmar et al. 2003). The variable was calculated as the average sales growth for the 2000-2005 period.

Liquidity of the firm (Liquidity): It measures the capacity of the firm to meet its payment obligations in the medium term. It is determined by dividing the operating assets by the current liabilities (Wiklund et al. 2010) for year 2000.

We opted for not including the sector as a control variable in the model. As discussed above, the effect of the sector has been eliminated by subtracting the sector average to each company's value.

Our research explains the influence of firm volatility on small firm profitability. We also study the interaction effects of firm volatility with three variables (size, age and firm leverage) on profitability. We use interaction terms in the regression analysis to implement our research through a hierarchical regression analysis. Cohen and Cohen (1983) indicated in order to analyze the consequences of the interaction effects, the dependent variable should be related to others variables in the regression and subsequently comparing them with the interaction results.

The nature of the interactions and their main effects must be considered as a set (Stone and Hollenbeck, 1984; Cronbach, 1987; Wiklund and Shepherd, 2005). Burmeister and Schade (2007) stated that results must support the hypotheses developed previously. In our research, results maintain almost all the hypotheses through the theoretical arguments and by the interaction effects.

We used different models which represented the firm volatility effects on small firm profitability through the different interactions of age, size and leverage. In the hierarchical regression we applied standardized forms to test those relationships. Nevertheless, we only have taken into account significant results which give us a significant contribution through their effects on the independent variable (Cohen and Cohen, 1983; Pérez-Luño et al. 2010).

Finally, in order to analyze the results we have taken into account two possible theoretical consequences which can be produced by extreme results of the interaction. First, in the case of finding too low concentration in the interactions, their effects will not generate any novelty. Second, in the opposite case a high concentration of interdependence produced by the interaction effects will mean a "complexity catastrophe" associated to a non-adaptive relationship between variables (McKelvey, 1999). Those opposite ideas show a theoretical model called the "edge" of chaos (Dubinskas, 1994; Brown and Eisenhardt, 1997; Lichtenstein et al. 2007).

5.4 RESULTS, DISCUSSION AND LIMITATIONS.

The contribution of our research is the development of a conceptual model to test the positive or less adverse effects of firm volatility on small firms' profitability. In our study, we test a linear relationship between firm volatility and firm profitability. Subsequently, we test three interaction relationships traditionally impacting firm profitability: firm age, size (employees) and leverage with respect to firm volatility.

Table 5.2 presents the means and standard deviations for the dependent, independent and control variables of our study. It also displays the intercorrelations among those variables. Some of the pairs show correlation effect but the effect remains modest. Firm growth and firm volatility are positively and significantly associated. The coefficient is modest (0.218) and we can conclude they are different constructs. Neter et al. (1990) proposed a criterion to control the collinearity of variables. Following Neter et al. (1990), we have estimated the variance inflation factor (VIF) indices (all below 1.074) and they suggest collinearity is not a concern.

Table 5.2: Descriptive statistics and correlation matrix

	Mean	Std.Dev.	ROA0806	FirmAge	FirmSize	Liquidity	Leverage	Volatility	Growth
1. ROA0806	-,0077	,0945	1						
2. FirmAge	3,1941	,3726	,045**	1					
3. FirmSize	3,3535	,7703	,018**	,107**	1				
4. Liquidity	2,0717	56,4946	-,002	-,008	,000	1			
5. Leverage	,6134	,4574	-,129**	-,050**	,001	-,002	1		
6. Volatility	,2214	,1475	-,142**	-,077**	-,027**	,003	,076**	1	
7. Growth	,0957	,6879	-,072**	-,011*	-,016**	,000	,014**	,218**	1

p < 0.1; ** p < 0.01; *** p < 0.001

Values for FirmAge and FirmSize are on a logarithmic scale.

Table 5.3 presents the results for the seven models testing our four hypotheses. Models 1 and 2 regression ROA on the control variables and were significant explaining 1.8% and 2.3% of the variance.

Model 3 tests our hypothesis 1, which stated that small firm volatility, is positively associated to firm profitability. The analysis is significant (Sig=,000) and an examination of the standardized beta of the related variables reveals a negative sign (-,077). Results do not support Hypothesis 1 and adds 1.4% to the explanatory power of Model 2.

Our next analyses (Models 4 to 7) test four moderated regression models. Model 4 adds the interaction term for firm size to Model 3. Model 4 tests our hypothesis 2a and 2b which proposed firm volatility could or could not benefit smaller small firms. Our results do not support either hypothesis 2a or 2b as the analysis is not significant (Sig=,427).

Model 5 adds the interaction term for firm age to Model 3. Model 5 tests our hypothesis 3 which predicted firm volatility benefits the profitability of younger small firms. Results support hypothesis 3 as they are significant (Sig=,000) and add 0,4% to the explanatory power of Model 3. The standardized beta of the related variables reveal a negative sign (-,006) indicating firm volatility has a less negative effect on younger firms. Model 6 tests our hypothesis 4 which stated small firms performance is negatively affected by firm volatility.

Model 6 adds the firm leverage interaction term to Model 3. The model is also significant (Sig=,000) and adds .8% to the explanation power of model 3. Model 7 is the overall model and is also significant (Sig=,000). The overall model adds 1.2% to the explanatory power of Model 3. Finally, significant interactions were plotted in figures 5.1 and 5.2 in order to facilitate the interpretation of the interaction effects.

Table 5.3: Moderated regression results for Return on Assets (ROA0806)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
(Constante)	-,027	-,025	-,002	-,002	-,002	-,004	-,003
FirmAge	,009***	,009***	,007***	,007***	,007***	,007***	,007***
FirmSize	,002**	,002**	,001**	,001**	,001**	,001**	,001**
Liquidity	,000	,000	,000	,000	,000	,000	,000
Leverage	-,027***	-,026***	-,025***	-,025***	-,025***	-,023***	-,023***
Growth		-,010***	-,006***	-,006***	-,006***	-,006***	-,006***
Volatility			-,077***	-,077***	-,080***	-,072***	-,075***
FirmSizeXVolatility				,000			,000
FirmAgeXVolatility					-,006***		-,006***
LeverageXVolatility						-,007***	-,008***
Adjusted R2	,018**	,023**	,037**	,037**	,041**	,045**	,049*
Sig.	0.000	0.000	0.000	,427	0.000	0.000	0.000
R2Change	,018**	,005*	,014**	,000***	,004**	,010*	,014**
N	39416	39416	39416	39416	39416	39416	39416
F Statistic	184,166	196,610	554,219	,630	166,352	266,826	228,885

† p < 0.1; * p < 0.05; ** p < 0.01; *** p < 0.001. Dependent Variable: ROA0806

Figure 5.1: Moderating effect of firm age and Volatility

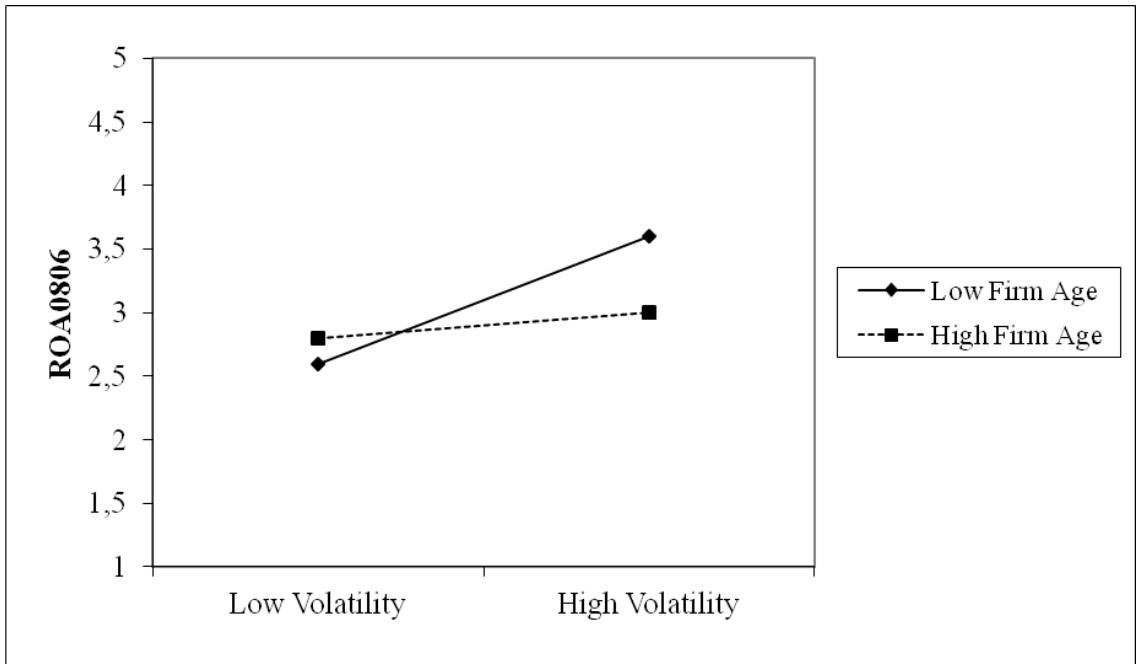
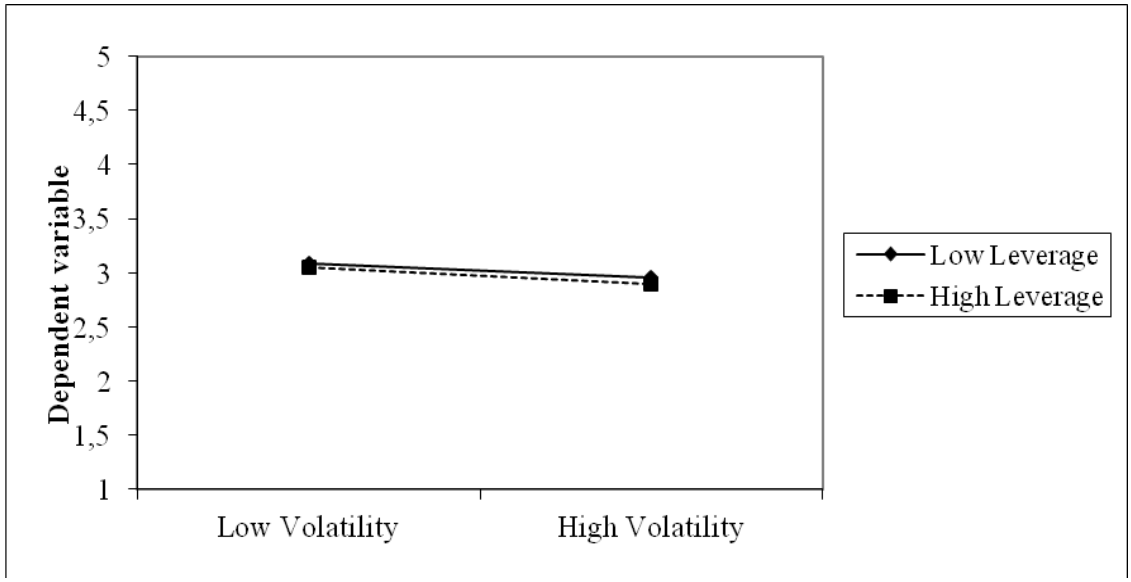


Figure 5.2: Moderating effect of leverage and volatility.



Firm volatility is important for the survival and development of small firms (Zahra et al. 2006; Teece 2012). Firm volatility has implications for management and the long-term performance of small firms (Delmar et al. 2003; Zahra et al. 2006). Consequently, understanding the effects of firm volatility on small firms is a worthwhile research issue. The topic has become more important recently and will become even more important in the next few years, as organizational volatility impact firms derived from a continual unpredictable environment.

In our study, we start by the most basic question, whether firm volatility has a positive or negative impact on small firm. Some authors argue that speed and flexibility turn smallness into an advantage vis a vis large firms (Chen and Hambrick, 1995; Greve, 2011). Secondly, we study whether small firms' size and age interaction with firm volatility has any effect on performance. More recent dynamic capabilities has argued (Zahra et al. 2006) and showed evidence (Arend, 2013) that is the case.

The results of our study reaffirm traditional volatility research and reconcile it with the entrepreneurship perspective. First, as the data in table II indicates, volatility has a negative impact on small firm performance and our hypothesis 1 is not supported. The results confirm the tenets of the traditional volatility perspective supporting the negative effect of firm volatility, even for small firms.

Second, we could not find evidence for our predictions that smaller small firms could (hypothesis 2a) or could not (hypothesis 2b) benefit from firm volatility. As reported in table II, we found no evidence that larger small firms have a disadvantage over small firms. The results of Hypothesis 1 and 2 contradict the traditional literature on speed and agility, as they show evidence that firm volatility negatively affects small firms and that size does not benefit from firm volatility.

Third, younger firms benefit more from firm volatility than older firms (supporting hypothesis 3). Those results are consistent with the dynamic capabilities literature which clearly has argued (Zahra et al. 2006) and showed evidence (Arend, 2013) that through the use of dynamic capabilities younger firms benefit from firm volatility more than older firms. As firm volatility negatively affects all small firms regardless their size, the negative effect is lower for younger firms. Our study also shows some light on the accumulation of dynamic capabilities. As young firms are more subject to firm volatility, the use, development and accumulation of dynamic capabilities benefits young firms' performance.

The fourth and final contribution of our research refers to the effects of firm volatility on highly levered small firms. Our results show that a high debt ratio has a negative impact on the performance of volatile small firms. Our research confirms the pecking order theory.

To recap, our research makes four contributions to the literature. First, firm volatility has a negative impact on small firms, as volatility literature has argued for larger firms. Second, size does not benefit small firm performance. Third, age does benefit small firm performance. Finally, firm volatility is friendly for levered small firms provided they grow, confirming the pecking order theory. Firm volatility has a negative effect for highly indebted no volatile small firms.

Our results should be of interest to managerial practice. Managing under firm volatile conditions is different from managing under stable or growing conditions. Managers should acknowledge that the appropriate management, especially under firm volatility conditions but not limited to it, should be aimed at the development of based dynamic capabilities. Those capabilities can be better developed by young companies

derived from the learning advantages they possess. Flexibility and speed are an advantage for young small firms, as firm volatility is managed through dynamic capabilities. Managers should also notice that older firms will benefit less from firm volatility as organizational learning and unlearning lags younger firms. Our research can also help managers in the financial sector. They will learn that small firms with a history of sales volatility will underperform. Firm volatility will not be of any help to small firms hit by firm volatility.

Our research has however limitations. First, our data has been carried based on a cross sectional sample and is a first approach into the new firm volatility research field. Research would benefit from studies panel data based. Second, although our data comes from a reliable primary source, given the size of our sample, the impact (R2) we evidence is small. But such is consistent with other studies with similar sizes (Delmar et al. 2003). Also, our study has been carried out in one country, namely Spain. More studies on the subject should cover other countries. These caveats suggest caution in fully extrapolating our results.

Future research on firm volatility and entrepreneurship, as a new field of study, is very open. We know very little on the impact of firm volatility on small firms. We find two interesting areas of firm volatility research. First, research on entrepreneurial orientation and firm volatility should be interesting. Entrepreneurial orientation has been researched at length with dynamism. The question is, how does EO help firms cope with internal (firm) volatility rather than external volatility? Second, entrepreneurship researchers studying macro effects of entrepreneurship could be interested on the effects of firm volatility on job and innovation generation. Governmental organizations should be interested in the results and ideally would introduce programs to help small firms to cope with firm volatility.

SIXTH CHAPTER:

DISCUSSION, CONCLUSIONS, LIMITATIONS AND FUTURE RESEARCHES.

The economic crisis during last years has produced the reorder of almost the majority of aspects, which compose our life. In this sense, the business world has felt directly this pressure obligating firms to be orientated to change competing in an increasingly complex and turbulent environment. This aggressive environment has changed substantially, especially for businesses in developed countries. Until 2007, firms from developed nations were oriented towards being competitive in a growing world, searching for a sustainable competitive position in a global market from a solid domestic base. Furthermore, in many developed countries, a long period of stable growth has become an uncertain and volatile context, where growth strategies are not feasible for many SMEs.

Those aspects had been researched previously under the different theoretical perspectives in the field of growth in small and medium firms. In this sense, (Wiklund et al. 2009) put forward a review of the principal theoretical perspectives that have attempted to explain the phenomenon of company growth. Consequently, the interest about firm growth is justified by its direct repercussions on employment creation (Birch et al. 1994), especially in terms related to high growth –gazelle– firms (Henrekson and Johansson, 2010) and innovation (Michael and Pearce, 2009). For that reason, we wonder how it is possible to generate new jobs in a non-growing context.

Around this idea, we focus our research on firm volatility because of we found that entrepreneurship literature has paid little attention to volatility, a growth derivative (Delmar et al. 2003; Headd and Kirchoff, 2009). Therefore, we center our research interest on firm volatility as a consequence that the majority of previous researches tend to discover how firms grow, but only a few of those investigations paid attention on

volatility effects and how those effects could influence on firm growth. Then, studies on growth have traditionally been divided between those researching on the factors triggering growth and those looking at how firms grow (Gilbert et al. 2006; McKelvie and Wiklund, 2010).

Our research takes volatility as the core of our study founding important theoretical arguments which link with volatility as the process of creative destruction or Schumpeterian waves (Schumpeter, 1942). Through the Schumpeterian lens, individual firms become volatile in order to adapt to the introduction of new technologies. This effect multiplied by a number of firms induces dynamism in the economy. Then, this dynamism defined volatility which is considered the increase or decrease in revenues which determines firm or environmental uncertainty (Tosi et al. 1973).

This uncertainty produced that the majority of literature on volatility tends to be pessimistic when it describes the effects of volatility on firms as it highlights mainly the negative effects (Pindyck 1991; Ramey and Ramey 1995; Martin and Rogers 1997; Imbs 2007; Aghion et al. 2010) over the positive ones (Black, 1987; Blackburn and Pelloni, 2004). Nevertheless, the literature in the management area, despite of being limited on few researches, predicts the effects of volatility on firms (Powell et al., 2006) focusing more on larger firms (Tosi et al., 1973; Milliken, 1987; Powell et al., 2006; Thomas and D´Aveni, 2009) than on small firms (Delmar et al., 2003; Davis et al., 2007).

In this sense, we have found that entrepreneurship literature has traditionally argued that small firms are less rigid than larger firms (Park 2003; Greve 2011) because of it they can absorb environmental changes better than larger firms (Dean et al. 1998). This idea supports the argument that small firms are characterized by their flexibility and agility as an advantage, they adapt better and adopt faster new technologies (Feigenbaum and

Karnani 1991; Chen and Hambrick 1995; Cohen and Klepper, 1996; Roper, 1997; Dean et al. 1998; Ruigrok et al. 1999).

Therefore, their organizational simplicity and functional flexibility is the source to react quickly and efficiently to changing conditions. Consequently, those arguments give us the opportunity to research around the concept of volatility and its effects from a theoretical and practice view in order to discover the aspects less studied on volatility and its possible positive effects on firms.

This idea give us the opportunity to contribute to the management literature through an under research perspective of volatility. Moreover, we now consider a more recent framework, dynamic capabilities, to help us hypothesize about the potential link between smaller firm performance and firm volatility. Consequently, we have researched the positive effects of volatility on firms through two theoretical frameworks which help us in this study as dynamic capabilities theory and growth theory. The reason to choice the dynamic capabilities framework is that they are considered necessary to cope with volatility (Teece 2012), both external environmental or organizational volatility (Zahra et al. 2006).

This theory is one of the most significant theoretical views in the study of strategic management, consequently Schilke (2013) considers that dynamic capabilities provide a firm competitive advantage because those capabilities are oriented to acquire better achievement than current or possible competitors in its industry. However, Zott (2002) argued that strategic management research had uncovered the attributes of resources and capabilities and the market conditions which allow sustainable competitive advantage. Schilke (2013) refuted this argument considering that a turbulent environment is not always a previous condition to develop dynamic capabilities. Dynamic capabilities can

exist even in constant environments despite of the presence of dynamic capabilities has frequently been associated to environmental situations characterized by high dynamism (Zahra et al., 2006).

Dynamic capabilities are defined as "the higher-level competences that determine the firm's skills to integrate, build, and reconfigure internal and external resources/competences" to deal with changing business environments (Teece, 2012). This idea is followed by several authors as Eisenhardt and Martin (2000) or Doving and Gooderham (2008) who consider dynamic capability as the firm capacity for the regeneration of its knowledge base to pursue opportunities in new or unpredictable markets. Moreover, this ability or capacity takes part into the strategic to organizational processes as the combination of existing resources into new competencies and that renovate old ones in order to "achieve new resource configurations as markets emerge, collide, split, evolve and die".

Dynamic capabilities, as an extension of the resource-based view, describe the organizational routines which produce a firm's competitive advantage making changes or reconfiguring existing firm resource base (Teece et al., 1997; Eisenhardt and Martin, 2000). This argument emphasizes that dynamic capabilities are supported on organizational routines, commonly understood as learned, highly patterned and repetitious behavioral patterns for interdependent corporate actions (Zollo and Winter, 2002). All of those procedures reconfigure resources in order to link the requirements and opportunities of the business environment to achieve positive returns.

Several researches (Teece and Pisano, 1994; Teece et al., 1997; Teece, 2012) have configured that dynamic capabilities could be used through three stages as "identification and assessment of an opportunity; mobilization of resources to address an opportunity

and to capture value; and continued renewal". As a result, the previous literature has assumed universally positive effect of dynamic capabilities on competitive advantage. Nevertheless, dynamic capabilities view has been criticized for its ill-defined frontier conditions and its confusing argument about the exact effect of dynamic capabilities (Arend, 2013).

However, when environmental dynamism is low Schilke (2013) considers that the potential of dynamic capabilities is limited because there are few occasions to exercise them effectively. Occurring that organizational habits for adjusting resources may be reduced in their value, as a consequence to the costs associated with them. This argument enhances the importance of equilibrating the costs of a given dynamic capability and its actual use.

In this sense, Adner and Helfat (2003) exposed that "the lower the need for change, the less likely the opportunity to strike the option, making dynamic capabilities comparatively less valuable". This idea highlights the significance to use the dynamic capabilities repeatedly in order to acquire a significant value increasing the firm efficiency or its productivity.

According to this, Rumelt (2011) argued that dynamic capabilities linked with a fine firm strategy, permit the firm to site itself for developing the right products and targeting the right markets to deal with the customer needs and viable opportunities to the future.

Summarizing, dynamic capabilities help firm`s managers to develop assumptions to validate or refute them in order to relocate assets as required. Consequently, management's abilities or their entrepreneurial and leadership skills to develop or transforming are required to keep up dynamic capabilities. Subsequently, despite of some

component of dynamic capabilities may be inserted in the firm, the capability for calculating and setting changes into the structure of assets takes place over manager responsibility. Being imitation and experimentation the methods of the manager abilities in order to generate alternative resource configuration linking dynamic capabilities with firm performance (Zott, 2002).

The other theoretical framework used in this research in order to support our analysis is the growth theory. Traditionally authors (Whittaker, 1923; Stigler, 1978; Hodrick and Prescott, 1980) believed growth and firm volatility unconnected events. Nevertheless, other authors found arguments which indicated that the etymology of growth and firm volatility were similar being composed by similar economic variables (Mirman, 1971; Nelson and Plosser, 1982; Black, 1987).

The research developed by Ramey & Ramey (1995) confirmed such relationship then the relationship between volatility and growth. Caballero and Hammour (2000) built on the idea of creative destruction developed by Schumpeter (1942) which explains the evolution of capitalism into social democracy. They discuss the idea that in many occasions recession symbolizes the cleansing of the economy, as less productive and inefficient firms fall. Such process would then contribute to higher growth in the future.

Firm growth is influenced by external factors (taxes, legislation, conditions on the product market, labor market and financial market) and internal factors (existing resources, competence and goals of the manager and firm´s employees). All of these factors may influence either the capacity to grow, the enthusiasm to grow, or both (Davidsson, 1989).

Traditional perspectives around business cycle theory showed the idea that firms have predetermined life cycles (Lippitt and Schmidt, 1967). In this sense, those life-cycle

models could be used as roadmaps to help identify reactions to critical structural changes providing solutions to the firm changes. Those stages have been configured as a set of contextual and structural dimensions to realize how firms grow. Lumpkin and Dess (2001) argued that the most successful start-ups are those launched in the growth stages of an industry's life cycle occurring in mature industries. Then, firm growth can be related to the environment.

Consequently, the study of firm volatility is important because growth and firm volatility can produce different implications for management and long-term firm performance (Delmar et al. 2003). Those authors argued that growth research has studied differences between two points in time but this approach ignores the development in-between the two points in time. Our research, as a continuation of Delmar et al. (2003) explores the in-between effects on small firms' performance through three independent cases and variables.

The literature focused its interest into the research of high-growth firms since the mid-1990s (Henrekson and Johansson, 2010). High-growth (or gazelle) firms are companies that are capable to experience a high rate of growth in a very short time (Birch et al. 1994). Around this idea, there are two main characteristics of high growth enterprises: (1) these companies experience strong growth which in most cases doubles their size; and (2) this strong growth is concentrated over a very short period of time, ranging from four to five years.

Finally, the main interest on firm growth is because it produces a great number of new jobs (Acs et al. 2008; Birch 1979; Henrekson and Johansson, 2010; Storey 1994) and therefore innovation (Timmons and Spinelli, 1994; Michael and Pearce, 2009). Black (1987) suggested that most of the volatility in the business cycle is determined by the

choices made by investors, which reflect the stability between volatile high growth and stable slow growth in each country, given risk aversion makes people invest more in industries with slow stable growth.

The researches on firm growth have take in into account a special form as some firms grow. This variety is called "gazelle" based on the speed and high growth of firms. Acs et al. (2008) revealed that few firms are able to maintain such intensive growth over long periods. Consequently, only a small percentage of firms that were gazelles at a particular time continue to be so in the subsequent period. The reason is that fact might lie in the potential relationship between the high growth of gazelle firms and the turbulence or the environment volatility.

Moreover, Birch et al. (1994) argued that exist a higher concentration of gazelle firms in concrete states, regions or geographical areas where there was greater turbulence. Then, certain geographical areas show higher rates of both company creation and closure (Bartelsman et al. 2004; Tödtling and Wanzenböck, 2003). A great business dynamism is the main characteristic in those areas, due either to a higher population of entrepreneurs, or a favourable environment to the creation of new ventures (financial incentives, support policies, fewer bureaucratic barriers and access to finance between others).

Finally, this increased ability to create new business projects encourages the creation of firms which are not viable in the long term and which disappear. This type of environment encourages the type of entrepreneurs known as habitual or serial entrepreneurs (Iacobucci, 2002; Westhead and Wright, 1998).

Those theoretical frameworks give us the opportunity o support our research analysing an under-investigated phenomenon of a firm's dynamic evolution: firm-level volatility. Then, we propose with the present research to study to what level of firm

growth is a particular example of dynamism and change in a firms' evolution. To investigate this issue, we have related other more relevant predictors of firm's growth such as, age, entrepreneurial orientation (EO), leverage and environmental hostility (Wiklund et al. 2009) with a firm's volatility during a four-year period.

In this sense, the results in our research allowed us to discover that smaller firms show a higher volatility than larger firms. In relation to a firm's age we did not find any significant influence on firm volatility. Leverage and volatility are negatively related, as proposed, and, we have found a positive relationship between environmental hostility and volatility. In relation to EO we have found a positive influence on volatility. This relationship is, however, moderated by firm growth, in such a way that higher EO implies higher levels of volatility when the firm is not growing.

In summary, our results permit to confirm most of the hypotheses proposed. This is interesting because it allows us to make, at least, two relevant contributions to previous literature. Firstly, we can conclude that, firm growth and firm volatility are related concepts but are different. We have measured both constructs as statistically independent. However, both concepts are related, as our results show that firm growth has an effect on firm volatility and, at the same time, growth contributes to explain how EO influence the volatility of sales evolution.

Secondly, most traditional predictors of high-growth (size, entrepreneurial orientation, financial structure, and environmental hostility) have an effect on firm volatility, but these effects are not the same, but different from their effects on firm's growth. For example, we have not found any effect of firm's age on volatility.

These results are interesting not only for academics but also for practitioners. For academics, we open a new window for research, identifying internal volatility (as a firm-

level variable) as a relevant performance variable to analyse. We have only shown one dimension of firm volatility, but new research can extend these concepts and analyse, for example, the effects of firm's volatility on job creation, the relationship between volatility and other performance variables, and so on.

Our results suggest that growth intention could be a relevant variable to be considered. It allowed distinguishing those firms that search growth from those that are stable firms. We sense that intentions and success influence of firms volatility are linked to higher rates of volatility which could be associated to higher orientation to growth despite of not have a clear success in their behaviour. However, more researches are needed to confirm our hypothesis. For practitioners, we think that our results show some interesting results in order to be applied by them, taking into account the environment at the time to make decisions.

Volatility could be a relevant variable in an increasingly uncertain environment. Firms have to manage under dynamic and uncertain environment, so they need to deal with higher levels of volatility. Again, we need more research in order to understand the antecedents and consequences on firm volatility and how to manage it.

This investigation, however, has important limitations. First, the empirical study was based on a relatively small sample of firms. It would therefore be interesting to carry out investigations that are able to draw on larger databases which are more representative of the population of firms in a country or region. Second, the analysis might also, to a certain extent, be contingent on the economic situation of the period analysed, which was just before the start of a deep international economic crisis.

Despite these limitations, this study opens up new areas for future research. As we have mentioned above, new investigations might try to seek some sort of relationship

between volatility and job creation. We could take into account firms with the same level of growth but different levels of volatility, then we make a question about which of these would be capable of creating the greatest number of jobs. A similar investigation could be carried out which links volatility to firm survival.

The following research question could then be posed: *Is there a link between high volatility rates and the probability of failure?* A third line of research might be an analysis of the determinants of volatility from new theoretical perspectives. Therefore, our understanding of firm's volatility could be enhanced adopting a different theoretical approach, using theories such as the resource-based view, population ecology, entrepreneurship, institutional theory, etc.

The conclusions about the effect of firm volatility on job creation were developed through the research of the empirical literature growth and volatility which have historically been considered independent events: growth theory and business cycle theory studied both concepts in an independent manner. Few authors found arguments which related both concepts. Taking into account this argument, the relationship between growth and firm volatility was development in two different arguments, a positive or negative relationship based on mechanisms driving such. Exit does not equate with either success or failure (Gimeno et al. 1997).

Our research evaluates the consequences in employment generation based in the relationship between employment growth and firm volatility. Such has rarely been analyzed. The objective of our research was to analyze a sample of 2180 Spanish firms over a ten years period to test the influence in employment of the relationship between firm volatility and growth. This research combines a theoretical framework to develop three hypotheses.

In this part of our research, we offer two main contributions to the literature on firm volatility and employment growth. Firstly, we found a curvilinear influence of firm volatility in employment growth. Secondly, there is a positive influence in employment growth based on the interaction effect of firm volatility and firm age. We were not able to find a relationship either positive or negative between firm volatility and firm size.

In sum, this research provides an empirical approach to the employment generation in stages when volatility has an important role in firm development. Moreover, our research provides the opportunity to clarify some aspects of the traditional concept of volatility associated with risk and uncertain. We hope that this research will encourage additional work in this area.

Finally, the conclusions about the moderating effect of age, size and leverage despite of being the firm volatility an area of study less researched despite its crucial importance, the results show that firm volatility has a negative impact on small firms. The small firm benefits that accrue from firm volatility depend on firm age and is irrelevant from firm size. Leverage does not benefit the performance of volatile small firms. Our study highlights the significant influence of firm volatility on small firm performance, setting the stage for future explorations of this important construct.

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