

Evolution of the Debate on Control Enhancing Mechanisms: A Systematic Review and Bibliometric Analysis

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This paper aims to assess the state of the art, the structure and the evolution of the debate on control enhancing mechanisms (hereafter CEMs). It combines bibliometric and qualitative methodologies to analyze 210 articles published in scientific journals up to 2014. The findings show that the academics' interest has increased over time, and the research has simultaneously developed along two main poles: antecedents and consequences of the proportionality principle. The analyses also reveal that the debate stems from the US studies on the legal principles of disproportionate ownership devices at the end of 19th century, and has been strongly fueled by the 'law and finance' theorists. This paper has both theoretical and practical implications. First, it provides insights into underexplored issues where future research efforts could be focused. Second, it supports new policy-making interventions to CEMs and encourages investor regulation and corporate transparency.

Introduction

In recent decades, the wave of corporate scandals has put company ownership under increasing scrutiny. The growing demand for protection of minority investors, and the strong pressures for the harmonization of commercial law in Europe have placed control-enhancing mechanisms (CEMs) at the center of the corporate governance debate. The interest around these devices has steadily boosted after reports of takeover bids (Winter *et al.* 2002), the application of the one share—one vote (hereafter OSOV) rule in Europe (Deminor Rating 2005; Institutional Shareholder Services 2007), and has been fueled by the OECD Steering Group on Corporate Governance (2007).

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The concern of policy-makers about the negative impact of CEMs on national economic systems has raised a number of questions on the diffusion and the outcomes of these devices (Barca and Becht 2001; Gugler 2001; La Porta *et al.* 1999). From a theoretical standpoint, the governance literature suggests that CEMs are tools for deviating from the proportionality principle (the so-called OSOV rule, between cash-flow rights and voting rights (Burkart and Lee 2008; Intrisano 2012; Saggese 2013). As a result, companies ruled by a CEM present large agency costs between controlling and minority shareholders. This issue may compromise the efficiency of the market for corporate control and exacerbate the misalignment between majority and minority interests (Fama and Jensen 1983; La Porta *et al.* 1999).

The governance literature has extensively explored the CEMs in terms of determinants and effects of these devices. In particular, scholars have focused on the entrenchment effect (Almeida and Wolfenzon 2006a; Bhaumik and Gregoriou 2010; Burkart *et al.* 1997; Y.L. Cheung *et al.* 2006), the

performance (Azofra and Santamaría 2011; Bennesen and Nielsen 2010; Cronqvist and Nilsson 2003; Maury and Pajuste 2005), the role of context (Chernykh 2008; Faccio *et al.* 2010; Gianfrate 2007; B.F. Smith *et al.* 2009) and the owners' identity (Gugler 2001; Gugler and Yurtoglu 2003; Thomsen and Pedersen 2000).

Despite the growing interest and the relevant insights of these investigations, the research is still fragmented and far from conclusive. Moreover, most studies provide incomplete classifications of CEMs (Burkart and Lee 2008; Institutional Shareholder Services 2007) and fail to present a comprehensive picture of the structure and the development of this academic field, even though a number of years have passed since interest in this topic began (Durisin and Puzone 2009). These gaps raise the following questions: (i) What is the intellectual structure of the research on CEMs? (ii) What are the existing trends of studies on the topic and the future pathway of the research? Our contention is that a clearer understanding of this academic field is essential to limit the ambiguity around CEMs. Thus, in an effort to provide clearer answers to these questions, this paper aims to assess the state of the art of this field, to reveal its internal subfields and to discuss developments in research. It combines the keyword analysis of 210 articles published in peer-reviewed scientific journals and the qualitative analysis of papers on the topic between 1891 and 2014.

This research provides theoretical, practical and methodological contributions. With regard to the former, this study brings order and clarity to the academic field by identifying and interpreting the main investigated research issues on CEMs and the evolutionary pattern of the debate on the topic. Moreover, it provides insights into never covered or underexplored issues where future research efforts could be focused, and highlights additional avenues to advance the understanding of these devices. In this respect, compared with previous literature reviews, this paper sheds light on the intellectual structure of the disproportionate ownership mechanism research from its early stage to recent development. For example, unlike Adams and Ferreira (2008) and Burkart and Lee (2008), this paper specifically focuses on the debate on CEMs (instead of the OSOV rule or the company's security voting structure). In addition, compared with their works, this article provides a comprehensive overview of the historical origin and the research tendencies on the devices under investigation by reconstructing the debate in terms of scholarly journals,

topics, theoretical frameworks and settings. As for the practical contribution, this study supports policy-making interventions to promote equitable protection of shareholders and corporate transparency. In addition, it brings to the minority investors' attention their risk of expropriation in firms adopting CEMs, and helps managers to appreciate the benefits and disadvantages of disproportionate ownership devices. Finally, with regard to the methodological contribution, this paper combines qualitative and bibliometric analyses. The former examines in-depth interests and attitudes of the scholars that have provided their contribution to the academic field (Bos and Tarnai 1999; Insch *et al.* 1997). The latter enhances the findings of the qualitative literature study and validates what experts may have only intuitively inferred (Furrer *et al.* 2008; Marsilio *et al.* 2011; Ramos-Rodríguez and Ruiz-Navarro 2004).

The paper is organized as follows. The next section presents an overview of the development of the debate on CEMs. The third section describes the research design. The fourth section reports the results of the study. The fifth section discusses the findings, and the final section presents the implications of the paper and an agenda for future research.

The development of the debate on CEMs: an overview

The governance literature has recently focused on CEMs as devices that foster dominant shareholders to enhance their control over the firm by diverting the proportionality rule between cash-flow rights and control rights (Bebchuk *et al.* 2000; Deminor Rating 2005; Institutional Shareholder Services 2007; Robinson *et al.* 1996).

This debate stems from the seminal work of Berle and Means (1932) on the separation between ownership and management in the American corporations and some scattered academic works. Their conclusions fueled the interest around the topic and led to the development of managerial theories in the 1950s and 1960s (Manne 1965; Marris 1964). These ideas were expanded further in the following decade, driven by the agency model of Jensen and Meckling (1976), and strengthened the notion that the ownership structure affects the divergence of interests between owners (principals) and managers (agents) (Daily *et al.* 2003). Since then, research has evolved along two main streams: the first has examined the relationship between ownership and control (Grossman and Hart

1988; Hart and Moore 1990), and the second has focused on the antecedents of ownership structures (Demsetz and Lehn 1985). This line of literature has had a noteworthy impact on studies published in the 1990s, and has underpinned discussion on the characteristics of ownership structures around the world (Intrigano 2009). The debate has encouraged scholars to investigate the diffusion and consequences of ownership structures in different settings, as well as to combine the research on capitalistic systems and corporate ownership (La Porta *et al.* 1999). Rebalancing the view of Berle and Means (1932), the empirical investigations have shown that, outside Anglo-Saxon countries, large blockholders are extremely common (Barca and Becht 2001; Faccio and Lang 2002; Nicodano 1998; Thomsen and Pedersen 2000). In these circumstances, the separation between ownership and control produces the second type of agency conflict between controlling (principals) and minority shareholders (agents). On the basis of these premises, the research agenda has moved towards the owners' incentive to extract private benefits of control (Bebchuk *et al.* 2000; Burkart *et al.* 2000) and its implications for firm performance (Gugler 2001; Thomsen and Pedersen 2000). In this respect, a growing debate on this topic has been boosted by the seminal works of Adams and Ferreira (2008) and Burkart and Lee (2008) on the OSOV rule issue, leading scholars gradually to take into account that shareholders are also able to rule the company with little equity involvement. This is especially true in the presence of a large set of legal devices that foster the dominant shareholders to enhance their control over the firm (i.e. the CEMs) (Cuomo *et al.* 2012; Deminor Rating 2005; Intrigano 2009, 2012; La Porta *et al.* 1999; Saggese 2013).

However, a strong contribution to the debate on CEMs has been provided by efforts towards their identification and taxonomy. The anecdotal and empirical evidence suggests that some CEMs enhance the existing blockholders' control by leveraging voting power (e.g. pyramidal structures) or by functioning as coordination devices (e.g. voting trusts). Others lock-in the control (e.g. priority shares, depository certificates, voting right and ownership ceilings, supermajority provisions), and others leverage the legal structures of the firm (e.g. partnerships limited by shares) or take advantage of privatization processes (e.g. golden shares) to separate ownership and control (Almeida and Wolfenzon 2006a; Burkart and Lee 2008; Doidge 2004; Gianfrate 2007; Hoi and Robin 2010; Zattoni 1999). However, it is worth noting that

the research focused on these devices has evolved along a number of lines of inquiry. Some studies have analyzed determinants and effects of disproportionate ownership as a result of CEMs, especially in terms of entrenchment (Almeida and Wolfenzon 2006a; Bhaumik and Gregoriou 2010; Burkart *et al.* 1997; Cheung *et al.* 2006; Saggese, 2013) and performance (Azofra and Santamaría 2011; Bennedsen and Nielsen 2010; Cronqvist and Nilsson 2003; Maury and Pajuste 2005). Other studies have contributed to the debate by exploring the influence of context and owners' identity (e.g. families, banks, state and institutional investors) prompted by the policy-making intervention aiming to harmonize European commercial law (Institutional Shareholder Services 2007). The research that has followed highlights that regulation framework and investor protection influence CEMs: the effectiveness of separation between ownership and control, and the potential entrenchment of the controlling owner depend on the context in which these devices are used. Each mechanism may be beneficial in the presence of widely dispersed share ownership and harmful in companies with controlling owners (Faccio and Lang 2002; Institutional Shareholder Services 2007; Liu and Magnan 2011; Saggese 2013). Even the identity of these shareholders may influence CEMs, as it affects their power to drive firm decisions in terms of objectives and outcomes (Ben-Amar and Andre 2006; Kang *et al.* 2006; King and Santor 2008; M. Levy 2009).

Today CEMs have assumed a pivotal relevance for corporate governance academic curricula, since many focused research groups are active in some universities. This is also witnessed by the spread of dedicated strategic interest groups in the most renowned international governance conferences (e.g. EURAM, EIASM Corporate Governance workshop), and also by symposia completely devoted to the topic (e.g. Copenhagen Conference on Control enhancing Mechanisms in Corporate Governance).

Despite this academic interest, the existing studies fail to provide a comprehensive picture of the 'intellectual structure' of the research field on CEMs. On the basis of these premises, this paper aims to shed light onto the articulation of the academic field and to identify the evolution of the debate.

Research design

To explore the content of the literature on CEMs, to trace its evolution and to identify the main streams of

the academic field, the research design is framed as follows: (i) literature and journal identification; (ii) keyword analysis; (iii) identification of most influential articles; and (iv) qualitative analysis of papers.

Literature and journal identification

This research started with the identification of the literature. The search strategy builds on the list of CEMs provided by Institutional Shareholder Services (ISS) in the *Report on the Proportionality Principle in the European Union* (Institutional Shareholder Services 2007, p. 10). We followed this classification for three main reasons. First, this is the official study commissioned by the European Union to ISS Europe and its partners (Sherman & Sterling LLP and the European Corporate Governance Institute) in order to identify the existing diversion from the proportionality principle across firms. Second, it offers a systematic review of the mechanisms for deviating from the OSOV rule and provides an unambiguous and accurate definition of the existing CEMs. Third, it avoids the risk of using synonyms of the keywords for CEMs that are not related to the deviation from the proportionality principle.

To identify the literature, we focused on peer-reviewed articles published in international journals in English. This is standard practice in bibliometric studies, since these sources are considered ‘certified knowledge’ and enhance the results’ reliability (Cuccurullo *et al.* 2013; Fernandez-Alles and Ramos-Rodríguez 2009; Rashman *et al.* 2009; Sarto *et al.* 2014; Torchia *et al.* 2013). Since the field of research on CEMs is relatively new, following the approach of Charvet *et al.* (2008) we did not have selected a set of journals focusing on the subject, in order to avoid a loss of literature. In addition, in order to gather all relevant papers on the topic, we applied our search protocol without imposing any time restrictions.

To extract the papers for our collection, we conducted Boolean searches using truncated combinations of two groups of search strings (Furrer *et al.* 2008; Sarto *et al.* 2014; Torchia *et al.* 2013). The first consists of keywords concerning the main research field in the governance domain (‘corporate governance’ and ‘ownership structure*’). The second includes the list of CEMs identified by the *Report on the Proportionality Principle in the European Union* in 2007 (Institutional Shareholder Services 2007, p. 10). In particular, we used the EBSCOhost search engine and the Social Sciences Citation Index (SSCI) incorporated in the ISI Web of Science internet li-

brary to search for all papers whose ‘topic’ (i.e. title, publication, abstract, keywords and research area) includes at least a keyword belonging to one of the selected sets. We opted for these databases because they are considered the largest, most commonly used and generally accepted sources for bibliometric studies (Furrer *et al.* 2008; Marsilio *et al.* 2011; Ramos-Rodríguez and Ruíz-Navarro 2004; Rashman *et al.* 2009; Sarto *et al.* 2014; Torchia *et al.* 2013; Unger *et al.* 2011).

This search strategy returned 712 hits (405 from SSCI and 307 from the EBSCO), originating from 412 disjointed articles. Papers focused on CEMs were selected by reviewing the title, keywords, abstract and, when necessary, the full text of each publication. This process was carried by two experts in the field, who independently classified the articles according to their relevance to the ISS definition of CEM (Institutional Shareholder Services 2007, p. 10). Furthermore, following previous literature (Rashman *et al.* 2009), we completed our list of papers by hand-searching and citation-tracking additional relevant articles across governance, finance, accounting and management top journals (see Figure 1). The final collection consists of 210 articles (148 from our internet library data sources and 62 from the hand-searching and citation-tracking strategy) published in 104 journals between 1891 and 2014. The resulting number of papers is not surprising, because the search terms to identify CEMs (the second group of search strings) were used without ‘quotation marks’ to capture all potentially interesting publications (Hart 2001).

In order to trace the evolutionary pattern of the research on CEMs, we split our time horizon into four sub-periods and assigned each article in our collection to one of them. We identified the four observation windows in accordance with the changes in the slope of the curve with the cumulative number of articles published over time (Pugliese *et al.* 2009), using the Lowess non-parametric-regression method (Cleveland and Devlin 1988). This procedure resulted in the following sub-periods: before 1986, 1986–1998, 1999–2006 and 2007–2014.

Keyword analysis

Coding. To examine the content of articles, we developed a list of major keywords. The coding process was necessary for two reasons. First, the collection of articles has a large number of idiosyncratic keywords associated with the articles by the authors and the databases. Second, most of them were used only

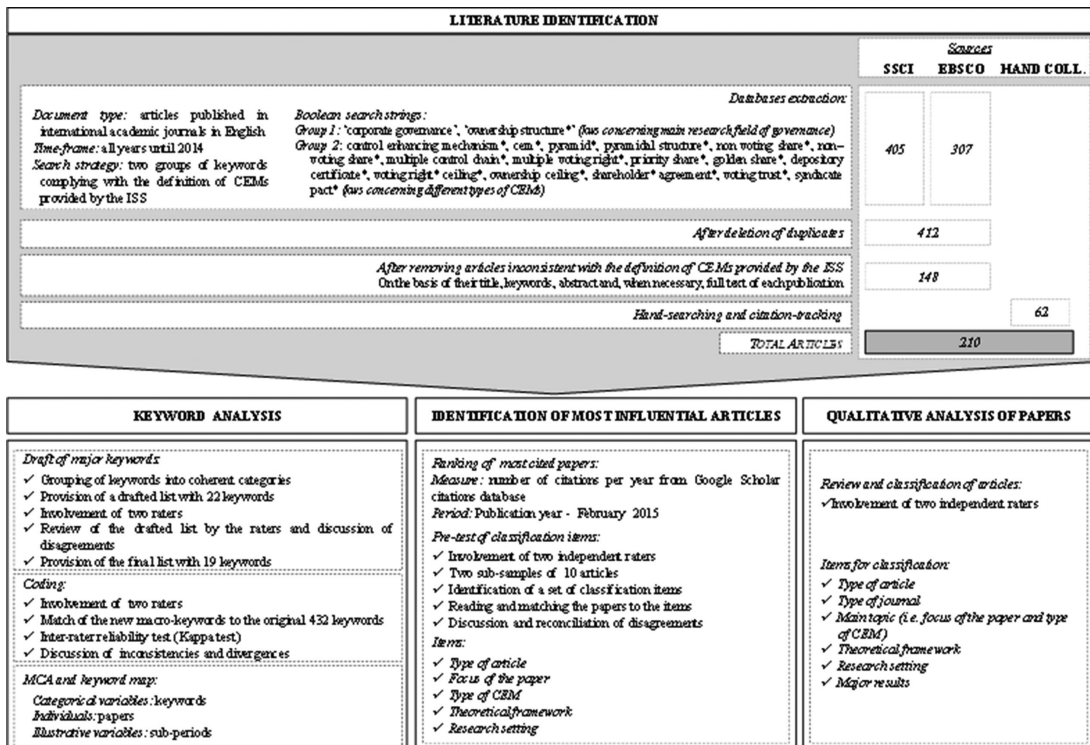


Figure 1. Research design

once. The coding process involved two raters. They drafted a list of major keywords by grouping those provided by the authors and the library databases into 22 coherent categories. They independently reviewed the list and discussed the disagreements. This led to a final list of 19 major keywords (see Table 1) plus a residual category that could not be grouped and was removed after the recoding process (Furrer *et al.* 2008).

The raters independently matched the major keywords to the 432 keywords and to the papers. At the end of the coding procedure, an inter-rater reliability test was performed to measure the codified response matching level. The Kappa statistic is 0.760. We consider this score satisfactory, because a 0.60–0.80 range indicates a substantial strength of agreement (Landis and Koch 1977). At the final stage of the process, the coders discussed the 30 inconsistencies in the responses. To reconcile the disagreements, the articles were re-read and recoded. In the presence of additional discordance, a third rater was involved to provide a clarifying interpretation (Lee 1999).

Multiple correspondence analysis. We computed the multiple correspondence analysis (MCA) in order to provide the map of our keywords. This methodol-

ogy was chosen for two reasons. First, it allows the multivariate categorical data to be mapped graphically, and emphasizes the relationships between variables (Furrer *et al.* 2008). Second, it fits well with our research purposes, since it is an exploratory data analysis tool without any restrictive assumption that integrates multivariate and multidimensional scaling techniques (Abdi and Valentin 2007).

Our MCA was carried out by the SPAD statistical software package. It started with the creation of the 'units \times variables' data matrix. Its units are our collected papers, and its variables are the keywords codified through a complete disjunctive coding. These keywords were treated as dichotomous variables and were coded '1' if associated with the paper. Since the most cited articles are more representative of the field and influence its main streams (Furrer *et al.* 2008), we carried out the MCA by weighting the papers by their citations per year (i.e. average number of citations assigned to each paper every year) in order to undo the time effect. We used Google scholar as our citations database, since its quotations are continuously and frequently updated, and they also cover an outstanding range of scholarly articles (Meho and Yang 2007).

Table 1. Major keywords in CEMs literature

Major keywords	Keywords
Accounting and disclosure	Accounting earnings, Conservatism, Dividend announcements, Earnings forecasts, Earnings informativeness, Earnings management, Earnings quality, Information, International financial reporting standards (IFRS), Transparency
Agency problem	Agency, Agency conflicts, Agency costs, Agency problem, Agency problems, Agency theory, Cash-flow rights and voting rights separation, Contracts, Control-cash flow divergence, Divergence, Incomplete contracting, Information asymmetry hypothesis, Ownership and control, Ownership wedge, Separation of cash flow rights and control rights, Separation of ownership and control
Class of share	Common-stock, Dual class, Dual class equity, Dual class shares, Dual-class premium, Dual-class shares, Dual-class structure, Multiple voting rights shares, Preferred stock, Restricted voting shares, Share supply, Shareholding classes, Shares, Voting premium
Context	Asian financial crisis, Brazil, Canada, Chile, China, Chinese companies, Colombia, East Asia, East Asian corporations, East-Asia, Emerging economies, Emerging market, Emerging markets, Euro zone, Europe, Germany, Governance environments, Hungary, India, Italian model, Italy, Japan, Japanese management, Malaysia, Russia, Taiwan, Thailand, Transition economies, Transitional economies, Turkey, Turkish companies, UK companies, United States
Corporate governance (COGO) practices	Business governance, Charter amendments, Corporate governance practices, Corporate-control, One-tier board, Two-tier board
Corporate strategy and Corporate finance	Access to capital, Acquiring firms, Acquisition, Acquisitions, Acquisitions and mergers, Capital allocation, Capital investment, Capital structure, Capitalists and financiers, Cash dividends, Connected transactions, Corporate diversification, Corporate finance, Corporate risk taking, Cross-listings, Development intensity, Diversification, Diversification strategy, Dividend policy, Division, Equity carve-outs, Equity leverage, Finance, Financial market, Financing policies, Firm innovation, Going private, Going public, Industrial organization, Initial public offerings, Initial public offerings (IPOs), Internal capital market, Internal capital markets, Internal capital-markets, International cross-listings, Investment, Investment opportunities, Investment-cash flow sensitivity, IPO, Liquidation preferences, Mergers, Mergers and acquisitions, NASDAQ market system, Private placement of equity, Privately placed securities, Restructuring, Securities markets, Startups, Stock, Stocks, Strategic industries, Trust business, Universal banking, Venture capital
Entrenchment effects	Entrenchment, Entrenchment effects, Firm's opacity
Golden shares	Golden shares
Governance mechanisms	Bank directors, Board composition, Board of directors, Board size, Boards of directors, Directors, Golden parachutes, Greenmail, Mandatory bid rule, Multiple directorships, Outside directors, Shareholder activism, Shareholder proposals, Subsidiary board, Supervisory board, Takeover bids, Takeover defences, Takeovers, Target.
Investor expropriation	Expropriation, Free cash flow, Minority expropriation, Minority shareholders expropriation, Propping, Rent extraction, Tunneling, Tunnelling.
Ownership rights	Board rights, Cash flow rights, Cash holdings, Cash rights, Cash-flow rights, Control, Control dilution, Control rights, Cumulative voting, Disproportionality, Dividend and control rights, Limited liability, Majority voting, Majority voting rule, One share-one vote, One-share one vote, One-share-one-vote, Rights, Shareholder power, Shareholder voting power, Voting, Voting power, Voting right, Voting rights, Voting-rights.
Ownership structure	Blockholder ownership, Blockholders, CEO ownership, Chinese public corporations, Closely held corporations, Closely held firms, Controlling shareholder, Controlling shareholders, Corporate ownership, Cross-shareholding, De facto holding company, Direct ownership, Employee stock ownership, Executive stock ownership, Family businesses, Family concentrated ownership, Family control, Family firm, Family firms, Family leadership, Family management, Family ownership, Family ownership structure, Family stake, Founding-family ownership, Governance structures, Government ownership, Institutional investors, Large shareholders, Listed companies, Majority shareholders, Multiple blockholders, Multiple large shareholders, Multiple shareholders, Non-owner CEO, Owner CEO, Ownership, Ownership concentration, Ownership relations, Ownership structure, Ownership structures, Private, Privatisation, Privatization, Second blockholders, Share ownership, Shareholder, Shareholder identity, Shareholders, State ownership, State-owned enterprises, Stockholders, Ultimate owners, Ultimate ownership, Ultimate ownership structure, Ultimate shareholder

Table 1. Continued

Major keywords	Keywords
Performance	Analyst following, Bankruptcy, Bidder return, Capitalization, Cash flow, Cash flows, Company performance, Corporate performance, Corporate valuation, Corporate value, Cost of equity, Dividend, Earnings, Earnings per share, Financial distress, Financial indicators, Financial performance, Firm performance, Firm valuation, Firm value, Investment performance, Long-run performance, Marginal Q, Market efficiency, Market reaction, Market value, Operating performance, Organizational performance, Performance, Performance impact, Post-merger market performance, Quality, Return match, Returns, Shareholder value, Shareholder wealth, Small capitalization, Small-cap firms, Stock market liquidity, Stock performance, Stock prices synchronicity, Target returns, Valuation, Value impact, Wealth gains
Private benefits of control	Benefits, Compensation, Income shifting, Liquidity compensation, Private benefits, Private benefits of control, Underwriter reputation.
Pyramidal groups	Business conglomerate, Business group, Business groups, Chaebol, Conglomerates, Control chain, Corporate groups, Family business group, Family business groups, Group affiliated companies, Group affiliation, Group control motive, Group firms, Holding company, Indian business groups, Ownership pyramids, Parent companies, Pyramid, Pyramidal, Pyramidal group, Pyramidal groups, Pyramidal ownership, Pyramidal ownership structure, Pyramidal structure, Pyramids, Transaction cost theory
Regulation	Commercial law, Corporate governance reforms, Corporate-law, Corporation law, Deregulation, Electoral systems, EU company law, Federalism, Foreign ownership restrictions, Institutional and legal changes, Investor protection, Law, Legal, Legal origin, Legal reform, Legal systems, Managerial myopia, Political-institution, Regulation, Self-dealing regulation, Shareholder protection, Split share structure reform, Split-share structure reform
Taxation	Corporate tax planning, Corporate taxes, Dividends taxation, Double taxation, Non-tax costs, Tax.
Top management comp&eval	CEO compensation, Director turnover, Executive pay, Executive turnover, Executive-compensation, Incentive effects, Incentives, Internal labour market, Manager career development, Managerial incentives, Pay-performance sensitivity, Single-broad career pattern, Sponsored system
Voting trusts	Controlling coalition, Shareholder agreements, Shareholders' agreements, Voting trusts

The analysis was led to identify the set of latent variables that describe the structure of the research field. These factors are a combination of the original variables and provide not directly observable information on their characteristics (Greenacre and Blasius 2006). In order to identify the factors that better describe our data, we used the Benzecri correction formula (Abdi and Valentin 2007). At this stage, we selected the first factorial plan, because it summarizes 65.77% of overall inertia. The literature considers this score very satisfactory given the binary nature of the data (Greenacre and Blasius 2006). This factorial plan frames a two-dimensional space described by axes 1 and 2, which we interpreted according to the modalities with a test value of absolute and relative contributions exceeding the threshold of 2. The absolute contribution measures the extent to which the variables' modalities identify each factor. The relative contribution is a quality indicator for the contribution of each factor to the reproduction of the variable dispersion (Lebart *et al.* 1984). At the end of this pro-

cedure, we named the two axes on the bases of this interpretation.

Identification of most influential articles

To investigate the state of the art of CEM studies and to determine the direction of future research, we identified the most influential articles in our collection.

The literature suggests that authors who published most in one time period affect later studies, and argues that the development of an academic field is driven by papers with the strongest impact (Bergh *et al.* 2006; Furrer *et al.* 2008). On the basis of these premises, we ranked the collected articles according to the number of citations from the year of publication up to February 2015 to disentangle the time effect (Furrer *et al.* 2008).

Furthermore, to examine in depth and chronologically chart the development of the research field, we also carried out a qualitative analysis of these papers, focusing on the following basic elements: (i) type of

article; (ii) focus of the paper; (iii) type of CEM; (iv) theoretical framework; and (v) research setting. The identification of our classification scheme involved two raters who pre-tested two sub-samples of 10 articles, in order to recognize a set of items to be used in the categorization. At the end of this procedure, each rater independently reviewed and sorted the most influential papers according to the final set of items. Thereafter, the raters discussed and reconciled the disagreements, re-reading and recoding the articles. At this stage, a governance professor was involved to provide a clarifying interpretation (Pugliese *et al.* 2009).

With regard to the type of articles, papers were classified as conceptual or empirical. In particular, they were considered ‘conceptual’ when they lacked empirical metrics, and aimed to advance or refine the theory following deductive reasoning. Conversely, they were labeled ‘empirical’ if they were based on inductive logics and discussed the strength of data obtained from qualitative/quantitative research methods.

As for their focus, the most influential articles were distinguished in two groups in relation to their main research topic. The first group investigates the ‘ownership’, since scholars sought to identify the models of corporate ownership. The second group focuses on ‘CEMs’, because some researchers examined devices to enhance control over the company.

Concerning the type of CEM, we clustered the papers in five categories according to the classifications provided by prior studies (Institutional Shareholder Services 2007; Zattoni and Cuomo 2010). In particular, we used the following categorization: (i) CEMs for leveraging voting power (e.g. pyramidal structures); (ii) CEMs that can function as devices to lock-in control (e.g. priority shares, depository certificates, voting right and ownership ceilings, supermajority provisions, non-voting share, multiple control chain, multiple voting right, cross shareholding); (iii) CEMs represented by particular legal structures adopted by companies (e.g. partnerships limited by shares); (iv) CEMs related to privatization processes (e.g. golden shares); and (v) CEMs as coordination devices (e.g. shareholders agreements).

Regarding the theoretical framework, we sorted the papers according to the theories applied by each article. In particular, we categorized the papers as referring to: (i) economic theories (e.g. agency theory); and (ii) sociological and behavioral theories (e.g. stewardship theory, stakeholder theory, human resource theories, interest group theory, theory of managerial autonomy).

As for the research setting, we built our classification choice on the argument that the institutional context varies widely between nations and affects the effectiveness of corporate governance. On these bases, we sorted the papers according to the legal origin of the setting analyzed. In particular, we classified the articles with the following categories: (i) study of common law countries; (ii) study of French civil law countries; (iii) study of German civil law countries; and (iv) study of Scandinavian civil law countries (La Porta *et al.* 1998, 1999; Saggese 2013).

Qualitative analysis of papers

To get a deeper understanding of the research tendencies in each sub-period, in the last step of our methodology we provided a qualitative systematization of the literature on CEMs by drawing on our descriptive findings and keyword map. To this aim, we also reviewed and classified all the selected papers according to the type of article, type of journal, main topic (i.e. focus of the paper and type of CEM), theoretical framework, research setting and major results.

Findings

Figure 2 illustrates the historical development of publications in the research field. It reports the number of papers published each year between 1891 and 2014. The figure shows that the number of articles per year has increased over time, moving from 1 in 1891 to 17 in 2014. This wide spread is particularly notable from 1986 onwards. In fact, before this year, only 14 papers on CEMs were published altogether and, on average, the number of annual publications on this subject is lower than 1. Despite papers have been published irregularly between 1986 and 1999, the research interest around the topic has steadily increased. As illustrated by the figure, this is especially true for early 2000s. While in 1999 only five papers were published, in 2005 their number had tripled. In this period, the strong intensification of the debate on CEMs and OSOV rule reflects the growing interest around the European takeover regulation (Deminor Rating 2005). However, it is worth noting that the most marked boost of publications on CEMs was in 2007, since the attention to deviation from OSOV rule considerably increased following the publication of the *Report on the Proportionality Principle in the European Union* (Institutional Shareholder Services 2007). Thereafter, the direction of publications on

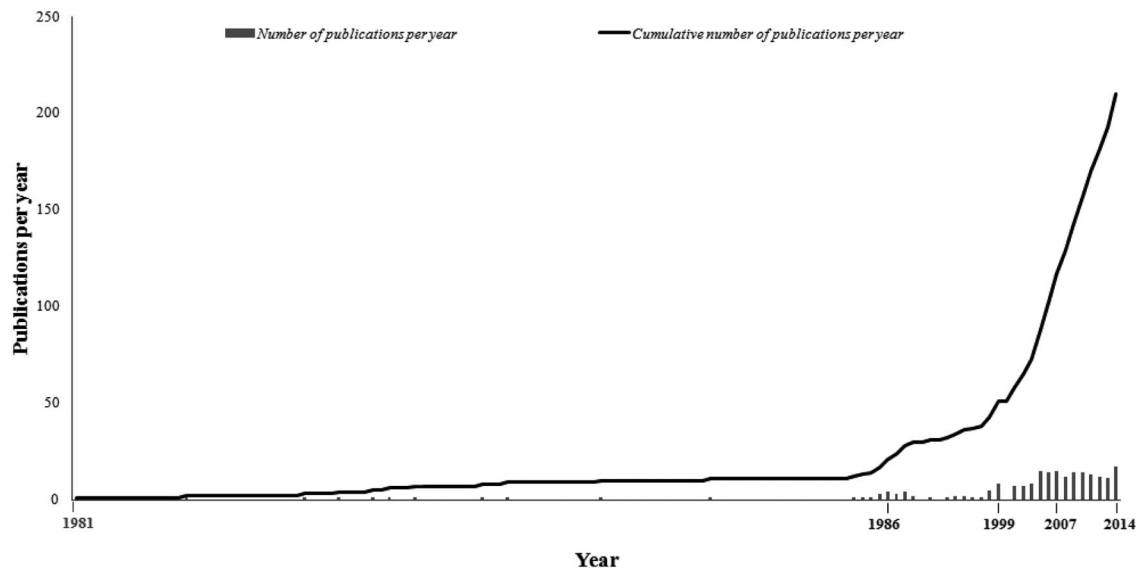


Figure 2. Historical development of research on CEMs

CEMs assumed a stable trend, increasing by an annual average of 13.5 articles in the last sub-period (2007–2014).

Table 2 reports the most contributing journals on the subject, and therefore it emphasizes the origin and the evolution of leading research areas that contribute to the development of the field (i.e. law, finance/economics and management). The papers in our collection were published in 104 journals, and none can be considered specialized in CEMs. The first four journals contribute to more than 33% of total publications (33.33%). The most prolific one is *Corporate Governance: An International Review*, a specialized journal (21 papers, 10.00%). The vast majority of studies published in this outlet investigate the characteristics of ownership structures and rights in connection with firms' accounting, disclosure and performance issues, especially in specific contexts. This publication is followed by three outlets more focused on finance: *Journal of Financial Economics* (18 papers, 8.57%), *Journal of Corporate Finance* (16 papers, 7.62%) and *Journal of Banking & Finance* (15 papers, 7.14%). Papers appearing in these outlets mainly investigate the use of specific CEMs, such as pyramidal groups, class of shares and voting trusts. Behind these top four publications, each journal publishes a low percentage of papers (below 2%). Overall, in the observation window before 1986, the most prolific outlets belong to the area of law (*Yale Law Journal*, *Columbia Law Review*). Afterwards, in the sub-period 1986–1998, most papers appear in

publications in the economics and finance domain (*Journal of Financial Economics*, *Journal of Banking & Finance*, *Review of Financial Studies*). However, CEMs have become especially prominent in finance research in the sub-period 1999–2006 (*Journal of Financial Economics*, *Journal of Corporate Finance*, *Journal of Banking & Finance*, *Journal of Business Finance & Accounting*, *European Economic Review*, *Journal of Finance*, *Asia-Pacific Journal of Financial Studies*, *Journal of Financial and Quantitative Analysis*) when they have also gained relevance in management and governance journals (*Corporate Governance: An International Review*, *Asia Pacific Journal of Management*, *Journal of Management and Governance*). The last sub-period (2007–2014) is comparable to the previous one: again, there is a prevalence of articles published in *Corporate Governance: An International Review*, followed by those in financial journals (*Journal of Financial Economics*, *Journal of Corporate Finance*, *Journal of Banking & Finance*). Therefore, the roots of CEM research were grounded in the law (sub-period I) and finance (sub-period II) literature. However, from the last two sub-periods (III and IV) onwards, the studies strengthened their focus on management and governance issues.

Intellectual structure of the field

Table 3 provides an overview of the allocation of the articles into the major keywords and on their relevance along the four sub-periods. It aims to identify

Table 2. Overview of journals with publications included per time period

Journal	Before 1986		1986–1998		1999–2006		2007–2014		Overall	
	N	%	N	%	N	%	N	%		%
<i>Corporate Governance: An International Review</i>	–	–	–	–	8	12.50	13	12.04	21	10.00
<i>Journal of Financial Economics</i>	1	7.14	4	16.67	10	15.63	3	2.78	18	8.57
<i>Journal of Corporate Finance</i>	–	–	–	–	3	4.69	13	12.04	16	7.62
<i>Journal of Banking & Finance</i>	–	–	3	12.50	2	3.13	10	9.26	15	7.14
<i>Asia Pacific Journal of Management</i>	–	–	–	–	1	1.56	3	2.78	4	1.90
<i>European Economic Review</i>	–	–	–	–	4	6.25	–	–	4	1.90
<i>Journal of Finance</i>	1	7.14	–	–	3	4.69	–	–	4	1.90
<i>Review of Financial Studies</i>	–	–	1	4.17	–	–	3	2.78	4	1.90
<i>Asia-Pacific Journal of Financial Studies</i>	–	–	–	–	1	1.56	2	1.85	3	1.43
<i>European Business Organization Law Review</i>	–	–	–	–	–	–	3	2.78	3	1.43
<i>Industrial and Corporate Change</i>	–	–	1	4.17	–	–	2	1.85	3	1.43
<i>Journal of Business Finance & Accounting</i>	–	–	–	–	1	1.56	2	1.85	3	1.43
<i>Journal of Management and Governance</i>	–	–	–	–	1	1.56	2	1.85	3	1.43
<i>Pacific-Basin Finance Journal</i>	–	–	–	–	1	1.56	2	1.85	3	1.43
<i>Yale Law Journal</i>	3	21.43	–	–	–	–	–	–	3	1.43
<i>Accounting and Finance</i>	–	–	–	–	–	–	2	1.85	2	0.95
<i>Applied Financial Economics</i>	–	–	–	–	–	–	2	1.85	2	0.95
<i>Asian Business & Management</i>	–	–	–	–	–	–	2	1.85	2	0.95
<i>Canadian Journal of Administrative Sciences</i>	–	–	1	4.17	–	–	1	0.93	2	0.95
<i>China Economic Review</i>	–	–	–	–	1	1.56	1	0.93	2	0.95
<i>Columbia Law Review</i>	2	14.29	–	–	–	–	–	–	2	0.95
<i>Family Business Review</i>	–	–	–	–	–	–	2	1.85	2	0.95
<i>Financial Management</i>	–	–	–	–	–	–	2	1.85	2	0.95
<i>International Journal of Business Governance and Ethics</i>	–	–	–	–	1	1.56	1	0.93	2	0.95
<i>Journal of Economic Behavior & Organization</i>	–	–	–	–	–	–	2	1.85	2	0.95
<i>Journal of Financial and Quantitative Analysis</i>	–	–	1	4.17	1	1.56	–	–	2	0.95
<i>Journal of Institutional and Theoretical Economics</i>	–	–	1	4.17	–	–	1	0.93	2	0.95
<i>Journal of the European Economic Association</i>	–	–	–	–	1	1.56	1	0.93	2	0.95
<i>Review of Finance</i>	–	–	–	–	–	–	2	1.85	2	0.95
Other ^a	7	50.00	12	50.00	25	39.06	31	28.70	75	35.71
Total	14		24		64		108		210	

^aAcademy of Management Journal, Academy of Management Review, Accounting Review, American Economic Review, Asia-Pacific Journal of Accounting & Economics, Banking and Finance Review, California Law Review, Cambridge Journal of Economics, Catholic university Law Review, China–USA Business Review, Contemporary Accounting Research, Developing Economies, Economic and Business Review, Economic Notes, Economic Systems, Economics Letters, Economics of Transition, Emerging Markets Finance and Trade, Emerging Markets Review, Empirica, European Business Law Review, European Financial Management, European Journal of Finance, European Journal of Operational Research, Explorations in Economic History, Financial Analysts Journal, Frontiers in Finance and Economics, Frontiers of Business Research in China, George Washington Law Review, Global Economic Review, Integration & Dissemination, International Business Review, International Journal of Disclosure & Governance, International Journal of Financial Studies, International Journal of Human Resource Management, International Journal of Industrial Organization, International Journal of Managerial Finance, International Journal of Trade and Global Markets, International Review of Economics & Finance, International Review of Financial Analysis, International Review of Law and Economics, Israel Economic Review, Journal of Accounting & Economics, Journal of Applied Corporate Finance, Journal of Business Venturing, Journal of Comparative Economics, Journal of Economic Literature, Journal of Economic Perspectives, Journal of Economic Surveys, Journal of Economics, Journal of Empirical Finance, Journal of Financial Research, Journal of International Business Studies, Journal of Law Economics & Organization, Journal of Political Economy, Journal of Quantitative Analysis, Journal of Transnational Management, Michigan Law Review, Minnesota Law Review, Multinational Finance Journal, Oxford Economic Papers, New Series, Oxford Review of Economic Policy, Physica A–Statistical Mechanics and its Applications, Spanish Journal of Finance and Accounting, Tax Policy & Economy, Telecommunications Policy, Texas Law Review, American Economic Review, Journal of Business, Journal of Finance, Quarterly Journal of Economics, Review of Financial Studies, University of Chicago Law Review, University of Illinois Law Review, Virginia Law Review.

Table 3. Descriptives of keywords per time period

	Before 1986		1986–1998		1999–2006		2007–2014		Overall	
	N	%	N	%	N	%	N	%	N	%
No. of articles	14		24		64		108		210	
Ownership structure	4	28.57	11	45.83	49	76.56	70	64.81	134	63.81
Ownership rights	13	92.86	21	87.50	20	31.25	24	22.22	78	37.14
Context	7	50.00	9	37.50	23	35.94	30	27.78	69	32.86
Performance	2	14.29	2	8.33	18	28.13	42	38.89	64	30.48
Agency problem	4	28.57	8	33.33	17	26.56	30	27.78	59	28.10
Corporate strategy and corporate finance	–	–	2	8.33	22	34.38	33	30.56	57	27.14
Pyramidal groups	2	14.29	3	12.50	22	34.38	28	25.93	55	26.19
Class of share	5	35.71	19	79.17	4	6.25	19	17.59	47	22.38
Regulation	9	64.29	7	29.17	9	14.06	17	15.74	42	20.00
Private benefits of control	4	28.57	7	29.17	10	15.63	12	11.11	33	15.71
Investor expropriation	4	28.57	9	37.50	11	17.19	8	7.41	32	15.24
Entrenchment effects	3	21.43	4	16.67	7	10.94	9	8.33	23	10.95
Gov mechanisms	–	–	–	–	6	9.38	11	10.19	17	8.10
Voting trusts	10	71.43	–	–	1	1.56	4	3.70	15	7.14
Accounting and disclosure	–	–	–	–	2	3.13	10	9.26	12	5.71
Top management compensation and evaluation	–	–	1	4.17	3	4.69	7	6.48	11	5.24
Corporate governance (COGO) practices	–	–	1	4.17	3	4.69	3	2.78	7	3.33
Taxation	1	7.14	2	8.33	1	1.56	1	0.93	5	2.38
Golden share	–	–	–	–	–	–	1	0.93	1	0.48

the structure of the research field described by the map, and to emphasize its cross-functional and interdisciplinary nature (Furrer *et al.* 2008). Among the 19 keywords, ‘Ownership structure’ is the most frequent one (63.81%). However, as for the macro-keywords concerning specific CEMs, most papers are associated with ‘Pyramidal groups’ (26.19%) (Almeida and Wolfenzon 2006a,b), and a lower proportion of articles (22.38%) are allocated to the macro-keyword for CEMs functioning as devices to lock-in control (‘Class of share’) (Nicodano 1998; Ødegaard 2007). In contrast, ‘Voting trusts’ (Gianfrate 2007) and ‘Golden shares’ (Bel and Trillas 2005; Boubakri *et al.* 2009; Hanousek *et al.* 2007) fill the six from last and the last positions in the ranking (7.14% and 0.48%, respectively). Overall, the macro-keywords outline irregular trends through the four observation windows. However, it is worth noting that, while the keywords for the ownership issues show a decreasing relevance from the first to the forth sub-period (e.g. ‘Ownership rights’ 92.86% vs 22.22%), the importance of those related to specific CEMs increases (e.g. ‘Pyramidal groups’ 14.29% vs 25.93%).

Pivotal information on the structure of the academic field can be learned through the map of CEMs studies (Figure 3). The MCA projects each keyword on the two-dimensional space described by the factors on the axes mentioned previously. The size of the points is proportional to the absolute contribution

of each keyword. This contribution is measured by the ratio of the modality coordinates (weighted by the frequency) to the factor variance (eigenvalue), and estimates the variable modalities’ contribution in the identification of a specific factor. Overall, the position of keywords on the map represents the content of all 210 papers. The distance between the points reflects the proportion of articles that jointly discuss the topics related to the keywords: the more their proximity, the larger the fraction of papers that treat them together and vice versa. For example, the contiguity of ‘Ownership structures’ and ‘Context’ is due to the large number of papers that explore the ownership structures of corporations in different countries.

The middle of the map is the center of the research field. Thus, the closeness between the keywords and the center reflects the fraction of papers on CEMs that focuses on the subject that is described by such keywords.

The content of papers is described by the two dimensions that emerged from the MCA. They can be interpreted as follows. The vertical dimension identifies the antecedents of OSOV rule and splits the keywords that emphasize the CEM devices (at the bottom) (Almeida and Wolfenzon 2006a; Azofra and Santamaría 2011; Bena and Ortiz-Molina 2013; Doidge 2004; Gianfrate 2007; Gompers *et al.* 2010; Intrisano 2012; Langlois 2013) from those concerning the corporate ownership attributes (at the top)

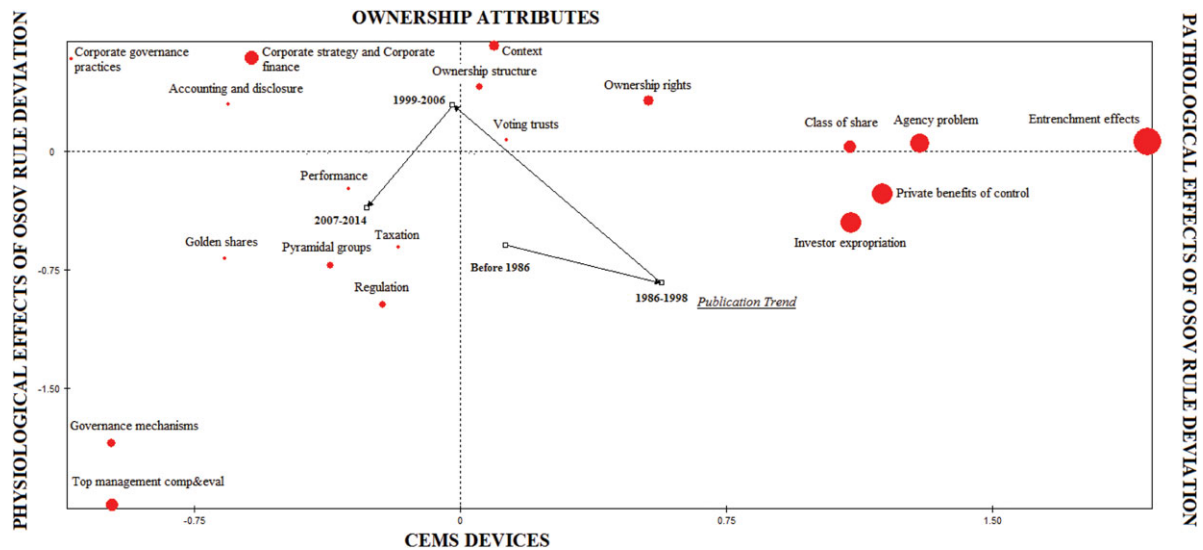


Figure 3. The intellectual structure of the field

(Demirag and Serter 2003; Du and Dai 2005; Harvey *et al.* 2004; Kang *et al.* 2006). The horizontal axis describes the consequences of OSOV rule and separates keywords concerning the ‘pathological’ (e.g. entrenchment effect, extraction of private benefits of control, investor expropriation) (on the right) (Bae *et al.* 2002; Buysschaert *et al.* 2004; Y.L. Cheung *et al.* 2006; Claessens *et al.* 2002; Cronqvist and Nilsson 2003; Friedman *et al.* 2003; Johnson *et al.* 2000; Morck *et al.* 2005) and the ‘physiological’ (e.g. governance mechanisms and corporate governance practices resulting from a proper CEM regulation) (on the left) (Enriques and Volpin 2007; Faccio and Lang 2002; Jung *et al.* 2009; Liu and Magnan 2011; Morck 2005) effects of deviation from proportionality principle.

The combination of the two dimensions provides further information on the relationship between keywords, as well as between the CEMs’ related issues. For example, papers in the bottom-right quadrant explore the use of CEMs in connection with the inefficient allocation of ownership rights (Almeida and Wolfenzon 2006a; Chapelle and Szafarz 2005; Jog and Riding 1986; Nicodano 1998; Sacristán-Navarro and Gómez-Ansón 2007). Articles in the bottom left-hand part of the map investigate how the moderating forces (e.g. regulation, taxation, governance mechanisms) of OSOV rule deviation affect the use of CEMs (Adams and Ferreira 2008; Bel and Trillas 2005; Di Carlo 2014; Cuomo *et al.* 2012; Hoi and Robin 2010; Jung *et al.* 2009; Masulis *et al.* 2011; Venezze 2014; Yang *et al.* 2014). Finally, the studies at the top of the

graph explore the ownership structures in connection with both the ‘physiological’ and the ‘pathological’ consequences of OSOV rule deviation (Bianco and Casavola 1999; Chang 2003; Fan and Wong 2002; La Porta *et al.* 1999; Robinson *et al.* 1996; Yurtoglu 2000).

Besides the overview of main research fields and sub-fields on CEMs, Figure 3 also shows the research pattern that emerges by running the MCA with sub-periods as illustrative variables. The broken line depicts the direction of the relationship between keywords over time. The depicted trend shows that the research agenda has moved following an irregular pattern: from the studies on CEMs devices in wider terms (before 1986) to the ‘pathological’ consequences of OSOV rule deviation (1986–1998). Departing from this line of inquiry, the following academic interest was devoted to the research on ownership attributes (1999–2006). Finally, the literature efforts moved to a more focused and rigorous search on the devices responsible for separating ownership from control, and to the ‘physiological’ effects of this diversion (2007–2014).

Ranking and overview of the most influential articles

Table 4 provides an overview of the content and the characteristics of the ten most influential articles on CEMs in order to identify the studies that play a pivotal role in bridging different research approaches on these devices. Most articles have contributed to

Table 4. Ranking and overview of the most influential articles

Rank	Paper	No. of citations	No. of citations per year	Period ^a	Type of article	Paper focus	Type of CEM	Theoretical framework	Research setting
1.	La Porta <i>et al.</i> , JF, 1999	9435	589.69	III	Empirical	Ownership	CEMs for leveraging voting power CEMs as devices to lock-in control	Economic	Common law countries French civil law countries German civil law countries Scandinavian civil law countries
2.	Grossman and Hart, JPE, 1986	7170	247.24	II	Conceptual	Ownership	–	Economic	–
3.	Claessens <i>et al.</i> , JFE, 2000	3350	223.34	III	Empirical	Ownership	CEMs for leveraging voting power CEMs as devices to lock-in control CEMs related to privatization processes	Economic	Common law countries French civil law countries German civil law countries
4.	Faccio and Lang, JFE, 2002	2788	214.47	III	Empirical	Ownership	CEMs for leveraging voting power CEMs as devices to lock-in control	Economic	German civil law countries French civil law countries Scandinavian civil law countries
5.	Claessens <i>et al.</i> , JF, 2002	2030	156.16	III	Empirical	Ownership	CEMs for leveraging voting power CEMs as devices to lock-in control	Economic	Common law countries Common law countries French civil law countries
6.	Fan and Wong, JAE, 2002	1472	113.24	III	Empirical	Ownership	CEMs for leveraging voting power CEMs as devices to lock-in control	Economic	German civil law countries Common law countries French civil law countries German civil law countries
7.	Almeida and Wolfenzon, JF, 2006	588	65.34	III	Conceptual	CEMs	CEMs for leveraging voting power	Economic	–
8.	Cheung <i>et al.</i> , JFE, 2006	503	55.90	III	Empirical	CEMs	CEMs for leveraging voting power	Economic	Common law countries
9.	Maury and Pajuste, JBF, 2005	509	50.91	III	Empirical	Ownership	–	Economic	Scandinavian civil law countries
10.	Gompers <i>et al.</i> , RFS, 2010	252	50.42	IV	Empirical	CEMs	CEMs as devices to lock-in control	Economic	Common law countries

^aI: Before 1986; II: 1986–1998; III: 1999–2006; IV: 2007–2014.

the debate on the mechanisms for leveraging voting power and to lock-in control. They interpret CEMs through the lenses of the economic theories. The majority of studies explore the use of CEMs in civil law countries (French, German and Scandinavian) and employ empirical methodologies. The only two exceptions to this rule are the theoretical models authored by Grossman and Hart (1986) and Almeida and Wolfenzon (2006a). Overall, most articles were published during the second and third sub-periods (1986–1998 and 1999–2006). Nevertheless, the paper authored by Gompers *et al.* (2010) is an exception, as it appeared in 2010. On average, the first most influential paper (i.e. La Porta *et al.* 1999) was cited twice as many times as the second one in the ranking (i.e. Grossman and Hart 1986). This witnesses the pivotal role played by the article by La Porta *et al.* (1999) and by the so-called ‘law and finance’ research stream for the CEMs domain. Assuming that the most influential papers have performed a seminal role in the development of the academic field in the following period (Bergh *et al.* 2006; Furrer *et al.* 2008), it is not surprising that, directly or indirectly, later debate on CEMs mainly developed around context and regulatory framework arguments. Indeed, we report that the following most cited articles focus on the use of CEMs in specific settings and emphasize the determinants and effects of these devices (Claessens *et al.* 2002, 2000; Faccio and Lang 2002; Fan and Wong 2002).

Evolutionary interaction of topics, theories and major results

Table 5 provides a qualitative systematization of the literature on CEMs for a better understanding of the general evolution of debate in terms of type of article, type of journal, main topic (i.e. focus of the paper and type of CEM), theoretical framework, research setting and major results.

Sub-period I (before 1986). Early literature on CEMs dates back to the end of the 19th century (1891) and was nurtured by the interests of the US law community around legal principles and mode of operation of disproportionate ownership devices. Therefore, most papers are highly context specific and focus on common law countries. Despite both conceptual and empirical researches giving an initial impulse to the field, most articles are theoretical. Two lines of inquiry can be distinguished during this sub-period. The first stream focuses mainly on coordination de-

vices (i.e. voting trusts) following educational and country-specific approach (Baldwin 1891; Bergman 1928; Coleman 1939; Finkelstein 1926; Harriman 1904; M. Smith 1922; Wormser *et al.* 1918). This debate is hosted by scholarly outlets in the law domain and interprets disproportionate devices through the lenses of legal theories on stockholders’ rights. The second research stream examines the ownership structures and the use of disproportionate ownership devices through agency theory. Researches in this tradition are hosted by economics and finance journals, and provide initial evidence on the separation between ownership and control (Deangelo and Deangelo 1985; Larner 1966; Lease *et al.* 1984; H. Levy 1983; Means 1931).

Sub-period II (1986–1998). Besides conceptual papers, empirical studies gain relevance in this sub-period. Most papers appear in publications in the economics and finance domain and examine the use of differential classes of shares (i.e. dual class of shares, restricted voting shares, non-voting shares) also in connection to the market efficiency (Ang and Megginson 1989; Bergström and Rydqvist 1990; Jog and Riding 1986; Rydqvist 1992; B.F. Smith and Amoako-Adu 1995). While theoretical research develops analytical models to investigate the optimality of the OSOV rule (Grossman and Hart 1988, 1986), empirical articles provide evidence on the effects of disproportionate ownership, especially in terms of controlling shareholder entrenchment (C.S. Cheung and Gaa 1989; Harris and Raviv 1988; Partch 1987). Illustrative of studies in this sub-period is that the majority of papers refer to agency theory as the most commonly used framework for exploring disproportionate ownership devices. Moreover, papers still examine common law countries (e.g. North America and Canadian settings) (Gordon 1988; Jog and Riding 1986; Robinson *et al.* 1996; B.F. Smith and Amoako-Adu 1995), albeit the sub-period is characterized by greater openness to settings with civil law traditions, especially in Europe (e.g. Sweden, Italy) (Bergström and Rydqvist 1990; Nicodano 1998; Zingales 1994).

Sub-period III (1999–2006). The majority of articles are empirical and appear in finance journals. However, management and governance outlets also gain relevance in this sub-period. Despite some papers still focusing on the US context, European and East Asian settings gain importance in the debate, especially those with French and German civil law traditions. Most articles investigate the use of multiple CEMs, as also confirmed by the example of our

Table 5. *The evolution of the research on CEMs*

	Sub-period I (before 1986)	Sub-period II (1986–1998)	Sub-period III (1999–2006)	Sub-period IV (2007–2014)
Type of article	Both conceptual and empirical papers with a prevalence of the former.	Beside conceptual papers, empirical studies gain relevance.	The majority of articles are empirical.	Articles are overwhelmingly empirical.
Type of journal	Early outlets are in the law (e.g. <i>Yale Law Journal</i> , <i>Columbia Law Review</i>) and economics (e.g. <i>Quarterly Journal of Economics</i>) domains. Later journals belong to the finance domain (e.g. <i>Journal of Finance</i> , <i>Journal of Financial Economics</i>).	Publications refer to the economics and finance domain (e.g. <i>Journal of Financial Economics</i> , <i>Journal of Banking & Finance</i> , <i>Review of Financial Studies</i>).	Finance journals are leading outlets. Management and governance journals gain relevance (e.g. <i>Corporate Governance: an International Review</i> , <i>Asia Pacific Journal of Management</i> , <i>Journal of Management and Governance</i>).	Finance and governance outlets prevail. Asian journals gain importance (e.g. <i>Asia Pacific Journal of Management</i> , <i>Asia-Pacific Journal of Financial Studies</i> , <i>Pacific-Basin Finance Journal</i>).
Main Topic	Coordination devices (i.e. voting trusts).	Differential class of shares (i.e. dual class of shares, restricted voting shares, non-voting shares).	Use of multiple CEMs with a focus on the mechanisms for leveraging voting power (i.e. pyramidal structures).	Use of multiple CEMs with a focus on devices for leveraging voting power, to lock-in control and related to privatization processes.
Theoretical framework	At the beginning legal theories on stockholders rights are the most common conceptual lenses. Later, the agency framework starts to be applied.	Agency theory becomes the most commonly used framework.	Agency approach is the most common theoretical lens to interpret the use of disproportionate ownership devices.	Agency is still the most common theory. Scholars start to adopt a multi-theoretical approach. There is greater openness to socio-cognitive frameworks.
Research setting	Common law countries, especially in the US context.	Common law countries (e.g. North America and Canadian settings) still prevail. There is a greater openness to civil law countries especially in Europe (e.g. Sweden, Italy).	European and East Asian settings gain importance. Some papers still focus on the US context.	Most articles examine multiple contexts together. However, European and East Asian settings are taking the lead in the field.
Major results	Papers describe legal principles and mode of operation of disproportionate ownership devices. Furthermore, they provide early evidence on the separation between ownership and control.	Theoretical research develops analytical models to examine the optimality of OSOV rule. Empirical articles provide evidence on the deviation from this rule in terms of entrenchment of large shareholders.	Papers explain the effects of context on the separation between ownership and control. In addition, articles identify the tools used to extract private benefits of control in the presence of CEMs (e.g. tunneling).	Papers identify existing deviations from OSOV rule to test their effects on performance. In addition, articles emphasize the importance of a proper regulation able to limit the distortions due to CEMs.

third most influential paper (Claessens *et al.* 2000). However, scholarly research mainly examines the mechanisms for leveraging voting power, especially focusing on pyramidal structures. Economic theories still prevail over socio-cognitive frameworks, and the agency approach proves itself to be the most common theoretical lens for interpreting the use of disproportionate ownership devices. Two lines of research emerge in this sub-period. Most papers explain the effects of context on the separation of ownership and control, strengthening the notion that investor protection matters for CEMs (Bel and Trillas 2005; Holmen and Knopf 2004; Watanabe 2002). At the same time, a second stream of research identifies the tools used to extract private benefits of control in the presence of CEMs in terms of tunneling and its own shapes: expropriation of cash-flows, assets and equity; self-dealing activities; self-dealing transactions; and collusion with management (Almeida and Wolfenzon 2006a; Burkart *et al.* 1997; Y.L. Cheung *et al.* 2006; Friedman *et al.* 2003).

Sub-period IV (2007–2014). In this sub-period, empirical studies become the most common type of research, and both finance and governance journals prevail. Beside European and US outlets, Asian journals also gain importance in this sub-period (e.g. *Asia Pacific Journal of Management*, *Asia-Pacific Journal of Financial Studies*, *Pacific-Basin Finance Journal*). Concerning the research topic, most papers still examine the use of multiple CEMs (Bortolotti and Faccio 2008). However, apart from the mechanisms for leveraging voting power, scholars also investigate the use of devices to lock-in control (Carvalho da Silva and Subrahmanyam 2007; Gompers *et al.* 2010; Jog *et al.* 2010) and CEMs related to privatization processes (Borisova *et al.* 2012; Zhang 2014). Despite agency still being the most common theory, scholars start to adopt a multi-theoretical approach for exploring CEMs. Indeed, this sub-period is characterized by greater openness to socio-cognitive frameworks. Most articles examine multiple contexts together. However, European and East Asian settings are taking the lead in the field (Borisova *et al.* 2012; Liu and Magnan 2011; Masulis *et al.* 2011; Pindado *et al.* 2014). Papers identify existing deviations from the proportionality principle across listed companies and examine the relationship between CEMs and performance, drawing mixed conclusions on the influence of these devices (Azofra and Santamaría 2011; Bennedsen and Nielsen 2010; Luo and Liu 2014; Zattoni and Cuomo 2010). Besides this line of inquiry,

articles also emphasize the importance of a proper regulation able to limit the distortion of using CEMs (Cuomo *et al.* 2012; Liu and Magnan 2011).

Discussion

In recent decades, interest in CEMs has grown significantly. Scholars and practitioners have discussed extensively the determinants of these devices, and their effects in terms of company outcomes and investor protection. On the bases of these premises, in order to provide insights into the intellectual structure and evolutionary pattern of the research field, we analyzed 210 papers published in peer-reviewed scientific journals.

Our research revealed that the effort of scholars in exploring CEMs was asymmetrical. Following the leading research trends, most articles focused on pyramidal structures (Almeida and Wolfenzon 2006a, 2006b), voting trusts (Gianfrate 2007), golden shares (Bel and Trillas 2005; Boubakri *et al.* 2009; Hanousek *et al.* 2007), cross ownership (Bebchuk *et al.* 2000; Chapelle and Szafarz 2005), non-voting shares and dual-class shares (Nicodano 1998; Ødegaard 2007). In contrast, considerably less attention was paid to the remaining CEMs (i.e. depository certificates, voting right and ownership ceilings, supermajority provisions or partnership limited by shares). We interpret this result as the effect of the limited diffusion of these CEMs (Institutional Shareholder Services 2007), which led to a distortion in the subsequent research efforts.

In addition, our keyword map highlights that the research developed along two main poles: antecedents and consequences of OSOV rule issues. Papers focusing on the antecedents of this principle can be divided into two groups, as they can deal with corporate ownership attributes or specific CEMs (Azofra and Santamaría 2011; Bena and Ortiz-Molina 2013; Doidge 2004; Gianfrate 2007; Gompers *et al.* 2010; Intrisano 2012; Langlois 2013). In contrast, articles discussing the consequences of OSOV rule explore the ‘physiological’ and ‘pathological’ effects of diversion from this principle (Almeida and Wolfenzon 2006b; Enriques and Volpin 2007; Friedman *et al.* 2003; Johnson *et al.* 2000; Jung *et al.* 2009; Kim *et al.* 2007; Morck 2005).

The most notable insights into the intellectual structure of the research can also be learned by looking at the evolutionary pattern of the studies. Our bibliometric analysis suggests that, despite the term

CEM being recent, early literature dates back to the end of the 19th century (1891) when the US Law Schools (e.g. Harvard, Yale) started to discuss the foundation and main characteristics of single disproportionate ownership devices (i.e. voting trusts) (Baldwin 1891; Finkelstein 1926; Harriman 1904; M. Smith 1922; Wormser *et al.* 1918). However, our literature systematization shows that the debate quickly shifted from the law to the finance domain when the Wall Street crash (1929) questioned the neutrality of ownership structures for financial crisis. In fact, from the 1930s onwards, studies started to explore CEMs as characteristic features of ownership structures and were prompted by the seminal work of Berle and Means (1932) on the separation between ownership and management in the US. Nevertheless, until 1986 the research field was far from a body of knowledge accumulating from year to year. In fact, as suggested by the publication trend in our first observation window (before 1986), articles on CEMs were published irregularly. We interpret this finding as the effect of the introduction of fiscal restrictive regulation on intercompany dividends (1935), which led to the disappearance in the US of some CEMs (e.g. pyramids) (Morck and Yeung 2005).

It is worth noting that major changes in the field in this sub-period were prompted by the seminal paper of Jensen and Meckling (1976). Indeed, the authors introduced the microeconomic approach of agency theory to the studies on disproportionate ownership by developing the theory of ownership structure. This circumstance can be interpreted as a turning point for the research. On the one hand, it led to the dominance of finance journals as leading outlets on CEMs, but on the other hand, it emphasized the issue of self-interested agents and the risk of their opportunistic behavior. Thereby, as suggested by our analyses, in the following years (in both the 1980s and 1990s), agency theory became the most common framework for interpreting the use of CEMs, and research attention shifted from the US to Europe. These phenomena reflect the wide spread of disproportionate ownership mechanisms in Europe as solutions to company growth in the absence of well-developed financial markets and restrictive regulations (Saggese 2013). In these circumstances, literature highlights that the separation between ownership and control produces majority–minority shareholder conflicts that are explained through second-type agency theory (Buzza-cchi and Colombo 1996; Leech 1987). Interestingly, from 1986 to 1998, both our literature systematization and our keyword map show increasing attention to

the entrenchment of controlling blockholders. In fact, while theoretical studies developed analytical models on the optimality of the proportionality principle, the research agenda moved from the CEM devices to the ‘pathological’ effects of OSOV rule deviation (C.S. Cheung and Gaa 1989; B.F. Smith and Amoako-Adu 1995).

This shift opened the door to the most prolific period of the research on CEMs. The analysis of the most influential articles in our collection dates the beginning of this phase as far back as 1999, when La Porta *et al.* (1999) published their breakthrough article on corporate ownership around the world. Following the ‘law and finance’ approach, this work provided evidence on the ownership structures of corporations with dominant shareholders, and highlighted that the regulatory framework strongly affects the use of devices to breach the OSOV rule. On the basis of these premises, we report that two lines of inquiry developed and were hosted especially by management and governance journals. One group investigated the tools used to extract private benefits of control in the presence of CEMs (Y.L. Cheung *et al.* 2006; Friedman *et al.* 2003; Johnson *et al.* 2000). Another group examined the effects of context on the separation between ownership and control, strengthening the notion that investor protection matters for CEMs. In particular, papers in this tradition emphasized the factors that hinder the deviation from the proportionality principle and the use of CEMs in terms of legal reforms and regulation in force (Bel and Trillas 2005; Holmen and Knopf 2004; Watanabe 2002).

The paper ranking and the publication trend traced by the MCA are also consistent with these tendencies. In fact, the articles’ content suggests that papers appeared in the third sub-period (1999–2006) after La Porta *et al.* (1999) emphasized governance and ownership issues that emerge in settings with limited protection of minority investors (Claessens *et al.* 2000; Fan and Wong 2002). Thereby, as illustrated by the keyword map, scholarly interest was pushed towards the forces (e.g. Regulation, Taxation, Governance mechanisms) that moderate the OSOV rule deviation (Cuomo *et al.* 2012; Faccio *et al.* 2010; Hong 2013; Jung *et al.* 2009; Masulis *et al.* 2011; Mengoli *et al.* 2009). In the early 2000s, in particular, the interest around these topics was also witnessed by the attention of practitioners and policy-makers aiming to systematize disproportionate ownership devices (Deminor Rating 2005), and to harmonize commercial and financial market regulations (Institutional Shareholder Services 2007; OECD Steering Group

on Corporate Governance 2007). This study suggests that these efforts strongly fueled the ongoing debate on the topic. On the one hand, from 2007 onwards, the number of publications has grown significantly (Adams and Ferreira 2008; Burkart and Lee 2008). On the other hand, the proportion of articles focusing on CEMs has increased over time, as shown by the analysis of the most contributing papers. Thereby, moving from the premise that these works accelerate and influence the development of the field (Berry and Parasuraman 1993), even more publications on CEMs are expected in the near future.

On the basis of these premises, using a well-known metaphor in management literature (Furrer *et al.* 2008; Hoskisson *et al.* 1999), our findings suggest that CEM studies evolved like a swinging pendulum. Indeed, the research efforts started at the end of the 19th century (1891), discussing the legal foundation and main characteristics of single disproportionate ownership devices (Baldwin 1891; Finkelstein 1926; Harriman 1904; M. Smith 1922; Wormser *et al.* 1918). Later, prompted by agency theory, the research agenda moved towards the pathological effects of OSOV rule deviation, especially following a finance approach (Ballantine 1942; C.S. Cheung and Gaa 1989; Giles 1953). However, from the end of the 1990s onwards, the debate swung back to the regulatory framework arguments fueled by the ‘law and finance’ theorists, although with a different aim (La Porta *et al.* 1998, 1999). As a result, there was a general shift of the research agenda towards the ‘physiological’ effects of OSOV rule deviation and CEMs. In this sense, it is worth noting a recent increase in scholarly interest around the solutions to remove the distortions of disproportionate ownership devices in different contexts (Cuomo *et al.* 2012; Hong 2013; Jog *et al.* 2010; Jung *et al.* 2009).

Implications and directions for future research

This paper has several scholarly implications, as it identifies over-explored areas of study and offers new insights into existing gaps on which future research efforts should focus. First, it suggests that some specific CEMs are often overlooked, and too much emphasis has been placed on the use of only a few devices. In fact, most articles have contributed to the debate on the mechanisms for leveraging voting power and locking-in control. In contrast, very few studies have analyzed the remaining CEMs. Despite their

limited diffusion, these devices are still relevant, and many questions remain unanswered regarding how they work. This gap not only encourages scholars to expand their investigation towards other disproportionate ownership mechanisms, but also reveals the need to assess the antecedents of their spread in different settings. Second, our results suggest further exploration of the effects of legal reforms on the use of CEMs. According to scholars, market forces and legal regulations are gradually driving the convergence of national governance models towards the Anglo-American one (Cuomo *et al.* 2012; Gordon and Roe 2004). Nevertheless, the impact of legal reforms on this phenomenon and their influence on CEMs are not fully understood (Cuomo *et al.* 2012). This is especially true in Europe, as the harmonization of commercial law is still in progress. Future studies are encouraged to explore the interplay of forces that foster and contrast the spread of CEMs in this setting. Third, our results highlight that the majority of papers have interpreted CEMs as a means to expropriate investors’ wealth (Gianfrate 2007; Morck *et al.* 2005; Riyanto and Toolsema 2008). Nevertheless, in many countries these devices have supported business growth and continuity through capital widening without hampering firm control (Saggese 2013). The literature has been strongly concerned with identifying proper solutions to remove the distortions of CEMs in different contexts (Cuomo *et al.* 2012; Hong 2013; Jog *et al.* 2010; Jung *et al.* 2009). In this respect, it is suggested that whether a CEM can be beneficial or harmful for a company depends on the setting in which it is adopted, as well as on the current and prospective shareholder structure (Institutional Shareholder Services 2007). Future research designs, on the one hand, should develop a better understanding of conditions, forces and dynamics that shape both the opportunistic and beneficial use of CEMs. On the other hand, they should explore whether the gain in private benefits for controlling shareholders is larger or smaller than the growth and financial opportunities exploited by these devices.

Our findings also have practical implications. The paper could be a good starting point for future policy-making interventions designed for each device and able to satisfy better the investors’ protection needs. Control enhancing mechanisms are still perceived as tools for extracting private benefits and expropriating minorities (OECD Steering Group on Corporate Governance 2007). However, the identity of controlling and non-controlling investors, and the alignment of their interests, may overcome the risks of opportunistic use of these devices. A regulation able to exploit

this feature properly, to encourage the debate among shareholders and to foster good governance practices may remove the distortions of disproportionate ownership. Thus, this study invites institutions and policy-makers to improve the existing regulations further, since an effective and strengthened legal protection could restore the investors' trust, while emphasizing the benefits of adopting CEMs. Since there may be important differences across devices, the intervention should be designed around the characteristics and the riskiness of every single mechanism. We contend that this choice should encourage the use of the CEMs that support business growth and continuity, while limiting the mechanisms that have a distorting effect on company governance. Moreover, our research echoes a movement towards better corporate transparency in firms that use CEMs as an additional tool to improve the investors' trust and to attract their financial resources. Therefore, it emphasizes the desirability of company disclosure, reinforces the view that transparency is well appreciated by market participants (Bushman and Smith 2001), and suggests additional intervention strategies to policy-makers.

When drawing these conclusions, it is important to note certain limitations that suggest additional directions for future research. In fact, following standard practice in bibliometric studies, this paper focuses on international and peer-reviewed articles in English, because they are considered 'certified knowledge' (Fernandez-Alles and Ramos-Rodríguez 2009). As a consequence, different types of publications on the topic have not been included in our analysis (e.g. Deminor Rating 2005; Institutional Shareholder Services 2007; OECD Steering Group on Corporate Governance 2007; Saggese 2013). Therefore, future research could assess how academic books and consultancy reports have contributed to the development of the field.

Notwithstanding this caveat, our analysis breaks new ground in identifying the main unexplored issues on this topic and the evolutionary pattern of the studies in the field. Thereby, it highlights that the debate on CEMs still provides a very promising and challenging research agenda. Scholars are encouraged to open the black box of CEM research to understand better the interactions of forces that jointly shape the use of these devices, and to expand our results by exploring the intellectual framework of ownership structure research and its connection to CEMs.

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