Who Manages Cartels? The Role of Sales and Marketing Managers within International Cartels: Evidence from the European Union 1990-2009

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Although the study of international cartels has a considerable lineage our understanding of their organization, operation and management remains limited. This study attends to this omission through examining the role of marketing and sales managers within international cartels using a content analysis of 56 major international price-fixing cartels over two decades (1990-2009). It is reported that marketing and sales managers are demonstrably involved in many international cartels (42.9% of all cartel cases), albeit often accompanied by more senior managers from other firm functions. Marketing and sales managers appear most frequently within worldwide and manufacturing industry cartels and where market allocation and customer-sharing practices occur. In light of these findings it is important to reassess both managerial attitudes towards inter-firm collaborations and enhance the position of antitrust concerns within business school syllabi.

Key words: Cartels; Competition law; Antitrust; Content Analysis; Business-Government Interface.

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1. Introduction

Are marketing and sales managers disproportionately involved in the instigation and organization of international cartels, and what role do marketing and sales managers play within these illegal business conspiracies? This study explores these questions through the examination of 56 major international price-fixing cartels investigated by the European Union[1] (hereafter EU) competition law agency (the Directorate General for Competition; hereafter DG Comp) over two decades (1990-2009). It is reported that marketing and sales managers are involved in a substantial proportion of international cartels (42.9%), but are rarely the most senior managers within these conspiracies. Cartels with a marketing involvement were predominantly worldwide cartels within manufacturing industries and involved customer-sharing and market allocation practices. These cartels are also observed to employ different organizational approaches to limit cartel detection including relatively infrequent numbers of meetings, the increased use of organizational 'punishments' for incumbent cartelists breaking cartel agreements and more levels of organizational hierarchy within cartels.

Cartels are illegal joint sales organizations used to replace price with non-price competition through raising prices and/or restricting output collectively with other firms. International cartels, involve two or more independent firms from more than one country colluding on certain terms of trade (such as pricing) in one or more markets. These actions have a highly detrimental impact on consumers with the median 'mark-up' (the amount in excess of the competitive price) commanded by international cartels of 25% (Connor and Lande 2005). These price rises occur across substantial areas of economic activity where between 1990 and 2003, companies involved in international cartels had sales of approximately US$436 billion (Connor 2004). Subsequently cartels have been viewed to

[1] The term European Community was formally replaced by the term European Union after the Maastricht Treaty (1993).

strike ‘*at the very heart of the principal virtue of economic activity’* acting as ‘*cancers on the open economy*’ (Monti 2001, cited by Stephan 2010). Unsurprisingly cartel behaviour constitutes an illegal agreement in most countries be this under criminal law as in the USA (antitrust law) or civil law, as in the European Union (competition law)[2]. Indeed cartels “…. *involving secret meetings amongst rivals is not only the archetypical violation of antitrust law, it is the archetypical inter-firm organization of crime*” (Faulkner *et al* 2003). Despite the illegality of these inter-firm business agreements, evidence indicates the use of cartels is growing (Connor 2008).

Examining the role of marketing and sales managers within cartels is important for three reasons. Initially, a growing number of authors have indicated that antitrust laws present a significant challenge to current marketing and sales practices (Ashton and Pressey 2008, 2011; Fontenot and Hyman 2004; Gundlach and Phillips 2002; LeClair 2000; LeClair *et al.* 1997; Palmer 2001; Pass *et al* 1994; Petty 2005; Shocker 2007; Sundie *et al* 2008;). Indeed, the fourth stage of ‘*marketing control*’ (where marketing managers deploy their ideas within marketplaces) (Keith 1960) is an opportunity for price-fixing, market sharing and cartel behaviour to develop (Tadajewski 2010). Such views as to the role of marketing and sales managers is tempered by past evidence reporting that administration and finance functions within the firm, and not marketing, are the senior managers and instigators of cartels (Simpson and Koper 1997). As marketing and sales managers are often unfairly portrayed and tied to the ‘*whipping post’* for a corporations’ perceived lack of morals (Watkins and Hill 2011), determining the role of marketing and sales managers within international cartels has wider importance for the marketing discipline and profession.

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[2] The terms antitrust law and competition law are broadly comparable. The use of the term ‘antitrust law’ is associated with the USA and the term ‘competition law’ is associated with Europe. Hereafter the term antitrust is employed for convenience. While the EU international cartels examined in this study are the focus of civil law, some EU member states can also prosecute individuals and firms involved in cartels under national criminal law.

Secondly, although international cartels have existed for a considerable period of time (e.g. Newman 1948; Elliott *et al.* 1937), our understanding of their organization, operations and management is limited (Baker and Faulkner 1993; Levenstein and Suslow 2006; Morgan 2009). The social organization of cartels is often viewed to be a 'black box' and unexplored (Baker and Faulkner 1993) and managerial involvement in cartels an underdeveloped field of academic enquiry. In particular the seniority of managers responsible for the instigation, organization and operation of cartels is unclear as "*complex structural relationships …. make it difficult, if not impossible, to disentangle delegated authority, managerial discretion, and ultimate responsibility*" (Clinard and Yeager 2006) for illegal corporate practices. Sonnenfeld and Lawrence (1978), for example, reported that most cartel offences are the actions of poorly controlled junior employees; resulting in the "*considerable time and money corporations spend developing positive public images ... wasted by the careless actions of just one or two lower level employees*". This perspective is refuted by other commentators; Faulkner *et al*. (2003) for example reports junior managers rarely participate in cartels in isolation, and at the very least interpret messages from senior managers to increase profits at any cost as a signal for instigating a cartel.

Lastly, while the interface between business and government has been extensively researched (see Hillman *et al*. 1999; Shaffer 1995; Vogel 1996), there is only limited assessment of the importance of antitrust law for businesses internationally (Clougherty 2005). Leading business and marketing journals with a stated editorial remit for publishing papers with an international scope or antitrust remit were examined (spanning each journal's inception up to August, 2012)[3]. While some management studies have examined aspects of

[3] The journals examined were: *British Journal of Management*, *Harvard Business Review*, *Journal of International Business Studies*, *Journal of Marketing*, *Journal of Public Policy and Marketing*, *Journal of International Marketing*, *Journal of Business Research*, *European Journal of Marketing*, *International Journal of Research in Marketing*, and *Journal of World Business*.

competition law (e.g. Arnold and Parker 2007, Burt and Sparks 2003), no studies could be identified that have examined international cartels in any context or depth.

Such an omission is important as international cartels are essentially an illegitimate form of inter-organizational cooperation, much like legitimate strategic alliances, coopetition, joint ventures or strategic account management cooperation of which we know a great deal (Piercy and Lane 2007). In light of the growing literature considering the corporate benefits of increasing inter-organizational cooperation (e.g. Lacoste 2012, Peng and Bourne 2009, Peng *et al* forthcoming, Ritala 2012, Wong and Tjosvold 2010), it is equally important to assess darker side of these arrangements and the legal, public interest and managerial implications when inter-firm collaborations become cartels. Indeed only the more thorough studies in this field acknowledge cartel concerns. For example Ritala (2012) while examining corporate benefits of inter-firm collaboration considers the illegal nature of firm collaboration as a limitation in the research design of 'coopetition' work; most studies in this field omit to consider the severe legal consequences of inter-firm collaborations.

To summarise, this study examines an overlooked aspect of cartels: are marketing and sales executives disproportionately involved in international cartels and what role do these managers play within these illegal business conspiracies? These questions are considered by examining international cartel investigations undertaken within the EU. Following this introduction, we briefly consider the relationship between sales and marketing functions and corporate crime. We then review the wider literatures considering cartel law, cartel formation and why managers become involved in these illegal business conspiracies. In section three, we outline the data employed and methodology. Section four presents the findings of the analysis. We conclude by providing implications for managers and policy makers in section five.

2. Literature Review

This brief overview of the literatures examining cartels summarises the key aspects of the law, theory and decision-making which underlie the role of marketing and sales executives within cartels. Initially, we consider the relationship between sales and marketing functions and corporate crime. Next, antitrust laws relating to cartel offences are outlined. We then examine theories that purport to explain how and why such cartels form and persist. This review considers both the economic, legal and sociological approaches adopted in the assessment of cartels.

2.1 Sales and Marketing Functions and Corporate Crime

Corporate crime is a broad term that has grown to capture a compendium of possible corporate practices, including bribery, accounting malpractices, corruption, breaches of antitrust law, industrial espionage, environmental damage/pollution and workplace health and safety transgressions (Friedrichs 2009; Clinard and Yeager 2006). Edwin Sutherland was the first scholar to coin the term ‘white-collar crime’ to denote corporate wrongdoings and ‘deviant’ business practices undertaken by organizations and their representatives to further the goals of the organization (Sutherland 1940). Surprisingly little research, however, in the intervening decades has attributed certain forms of corporate crime to specific firm functions or role-holders.

Sales and marketing personnel are frequently cited as possible candidates for antitrust breaches. In his popular polemic *Cheats at Work* (1982) Sociologist Gerald Mars speculates that crimes involving the cooperation of multiple actors (or ‘team crime’) could involve sales and marketing personnel, while Ashton and Pressey (2008) found that sales and marketing staff participated in approximately half of all antitrust infringements committed by UK firms between 1950 and 2005. Both sales and marketing personnel also frequently attract media interest for their wrongdoings across diverse activities such as the misrepresentation of research results and deceitful marketing practices by pharmaceutical producers (Meier 2007), tobacco companies allegedly defrauded smokers through the promotion of ‘light’ cigarettes, student loan companies employing aggressive marketing tactics, and investment bankers being charged with crimes related to the marketing of securities and subprime mortgages (Friedrichs 2009).

There is good reason to take the position that sales and marketing managers are key protagonists in international cartels. Sales and marketing personnel occupy a boundary spanning role both within and without the organization, typically with relationships across key organizational functions and also often with competitors such as through attendance at trade associations and exhibitions, placing them in a position to act as potential cartel ‘brokers’ (Ashton and Pressey 2008). In this role marketing and sales managers possess skills essential for operating a cartel, frequently being pricing specialists and knowledgeable of costs across markets, being expert in the assembly and use of market and competitor intelligence, and experienced in the development of relational bonds. The development and maintenance of horizontal relationships or collaborative groupings, conducive for cartel development (Faulkner *et al*. 2003; Stephan 2010), are also well documented within marketing and often advocated in other management contexts. Briefly marketing managers possess the necessary ‘cartel architecture’ (pricing data, market share figures, product data, competitor data) and ability to both marshal and ‘manage’ collaborative arrangements. Indeed, these are all areas in which modern marketing and sales practices have excelled.

Finally, the competitive culture of marketing and sales staff in some organizations might consider team-crime such as price-fixing as an acceptable option in lean times (Mars 1982). As the culture of the cartel is often not malevolent, at least between the participants, trust and interpersonal relationships are widely used to prolong cartel duration, some marketing and sales managers may desire to act reasonably with collaborators, even if such actions are outside the law. For example, where sales and marketing specialists have been employed to assist discussions, these managers can discover they have much in common with persons from other firms, identify with mutual interests and often desire to achieve 'fair' outcomes in cartel agreements (Faulkner *et al* 2009). Such influences are perhaps amplified if marketing and sales managers lack awareness of the illegality of cartels (Bush and Gelb 2005; LeClair 2000), succumb to narcissism and flattery when being asked to undertake actions that facilitate organizational survival (Schwartz 1987).

Clearly there is much circumstantial evidence to suggest that sales and marketing functions possess certain 'criminogenic' properties that make them predisposed to breach certain forms of antitrust law such as cartels. Further as marketing departments are also populated with employees that could be viewed to be expendable within the firm, marketing managers may be ideal 'buffer' between the cartel and more senior managers (Goffman 1970) making marketing managers are highly vulnerable to prosecution for cartel behaviours. We now provide a definition of cartels and examine the laws designed to curb them.

2.2 Cartels and the Law

A cartel refers to an agreement between two or more independent firms who collude to control the terms of business in a particular market (Dick 1996). Although some state-sponsored cartels are considered acceptable, such as OPEC in the export of oil or DeBeers in the diamond industry (see Gupta *et al* 2011), illegal private cartels between firms have been observed to operate across diverse global markets for metals, vitamins, chemicals, air transportation, textiles, graphite electrodes, synthetic rubber and semiconductors and many other markets. To combat profiteering by cartels and monopolies, antitrust laws, '*the Magna Carta of free enterprise*' (US Supreme Court 1972, cited in Baker 2003) were introduced in

1890. Today, antitrust laws aim to protect consumers (Stuyck 2005) by curbing the influence of powerful sellers to restrict competition and increase prices, to advance the provision of low-price, high-quality goods and services (Klein 1999), to encourage firms to compete and become rivals (Easterbrook 2008), ensure consumers pay the lowest possible price coupled with the highest quality, choice and suitability of goods and services and that the rules by which firms operate are fair, reasonable and enforceable (Stuyck 2005).

The EU has long placed the combating of anticompetitive behaviours to the fore of its mission. The EU was established under the Treaty of Rome (1957) to fulfil a vision of a Europe at peace and with a robust economy. These goals were to be met through providing a system of open competition across a unified and socially integrated market. Subsequently, antitrust law became a central element of economic regulation (Vickers 2005) imposed by a unified set of rules binding governments and firms across the entire EU to conduct business on the same basis. Indeed, today few countries or markets are not subject to antitrust laws. Prior to the 1940s only the USA had antitrust laws which were effectively enforced; by the 1960s over 20 countries had antitrust laws, with the number now exceeding 100 nations (Connor 2004; Djelic 2002) comprising in excess of 86% of world trade (Palim 1998).

The extent to which antitrust agencies pursue businesses and penalize offenders, however, differs by jurisdiction; with antitrust law authorities receiving different levels of funding internationally. While EU and US authorities are currently relatively well resourced and supported politically, in other nations, antitrust law is enforced with considerably less vigour (Stephan 2010). Historically, the degree of antitrust law enforcement has also varied within the USA and the EU as well. In the USA international cartels were rarely discovered or indicted until the mid-1990s (Connor 2008; Gallo *et al.* 2000). This trend was reversed through the tightening of existing laws, improved investigatory practices and the introduction of leniency notices. For example, in the USA in 2004 the maximum imposable sentence increased from three to ten years, '*no-jail*' sentencing recommendations once available to qualifying foreign nationals rescinded in 1999 and leniency programmes amended and extended in 1993 to enhance the scope of amnesty possible for corporate whistle blowers. Similarly, the application of anti-cartel laws in the EU has varied over time with cartel enforcement only beginning in earnest in the 1990s (Miller and Connor 2010). The EU now operates under the premise of 'categorical censure', the strong prohibition of cartels where firms have to self-assess their behaviour allowing the DG Comp to focus resources on the most serious antitrust offences.

The firm punishments for cartel activity have also grown in recent years, with fines for cartelisation rising in both the EU (Veljanovski 2011) and the USA (Connor 2008). This trend in firm punishment is mirrored by the costs for guilty managers. In the EU managers guilty of cartelisation face substantial future career challenges (Rosenboom 2012); in the USA, gaol time for guilty managers has risen from an average period of nine months in the 1990s to eighteen months in the 2000s[4]. Further, in the last decade Australia, Japan and the UK, among other countries, have all passed laws that allow for gaol time for executives involved in cartels. The proliferation and severity of antitrust laws is also matched by the success of competition agencies in enforcing antitrust laws; the US Department of Justice (DOJ), for example, has won 97% of all cartel cases prosecuted since 1990 and experienced few appeals to the courts for penalties imposed (Connor 2008). Similarly in the EU "… *for large enterprises 'antitrust risk' – the risk of violating some competition law provision – is substantially higher in the European Union than anywhere else*" (Hylton and Deng 2007).

There has also been increasing international cooperation between antitrust authorities and an increase in extraterritorial jurisdiction (Fox 1997, Tarullo 2000, Waller 1997). In the EU, Interpol has assisted US antitrust agencies identifying individual cartelists outside US

[4] A more detailed discussion of why cartelists are sent to prison is provided by Werden and Simon (1987).

borders. Similarly, the International Competition Network (ICN), initiated in 2004, comprises members from approximately 100 countries, holds annual meetings, shares information and pursues projects of mutual interest, including the investigation of international cartels. Subsequently, managers from France, Germany, Italy, Japan, Korea, Norway, Sweden, Switzerland and the UK, have all been gaoled under US antitrust law. Managers participating in cartels should therefore anticipate multiple antitrust investigations and penalties from antitrust agencies far beyond their own national borders. In short, not being a citizen of a particular country provides no immunity to its antitrust laws and while some antitrust laws have been applied with less rigour in recent years, this trend does not apply to the prosecution of cartels in the EU or the USA (Stucke 2012).

2.3 Theories of Cartel Formation, Organization and Participation

Why cartels develop has been considered repeatedly within law, economics and sociology. Economics has often emphasised why cartels form and what determines a more successful cartel, while legal and sociological literatures have relatively emphasised how cartels operate and the role of agents within such conspiracies. Due to the scarcity of data on this illegal activity many past studies have adopted a theoretical or discursive dimension with only a proportion of past work using empirical approaches, case studies and content analysis techniques. We examine three aspects of these literatures pertinent to our research questions: how are cartels formed, how are cartels organised and managed and why do managers participate in cartels?

2.3.1 Why do cartels form?

Two principal economic theories have considered why cartels form, the structure conduct performance paradigm (e.g. Bain 1951) and the 'bounds' approach (e.g. Sutton 1998). A further, predominantly theoretical literature has examined the incentives, monitoring and punishments for firms operating cartels (e.g. Harrington and Skrzypacz 2007), although this literature mostly falls outside the scope of this discussion.

The structure conduct performance paradigm emphasises the importance of market structure, particularly the size and number of market incumbents in determining the formation of cartels. It is proposed that the complexity of monitoring co-conspirators causes cartels to form in markets with few participants (Stigler 1964). While most cartels do form in relatively concentrated industries many exceptions exist (Levenstein and Suslow 2006) and cartel pricing behaviours are often observed to strongly deviate from such established economic explanations (De Roos 2006). Further, when markets are highly concentrated firms may not need to form a cartel and can tacitly follow the price movements of competitors effectively reducing price competition (Levenstein and Suslow 2006). Cartels therefore involving many members have also been associated with trade associations to facilitate the coordination of cartel actions and the use of threats to punish cartel 'cheaters'.

The alternative 'bounds' approach to cartel analysis (Sutton 1998) examines the conditions required for the successful development and operation of cartels. This literature indicates certain market conditions consistent with cartel development such as over-capacity, declining prices, steady and adverse economic conditions (Kenwood and Lougheed 1984; Neumann 2001), homogenous products, clearly defined markets, less powerful buyers and barriers to entry (Levenstein and Suslow 2006). These findings are also supported outside the field of economics. Criminologists often consider cartels as a corporate reaction to lagging performance resulting from factors such as an economic downturn (Faulkner *et al* 2003) with the recent growth in the number of international cartels variously attributed to globalization and a reduction in trade barriers (Connor 2008), declining prices due to increased competition and higher detection rates due to increased resources afforded to antitrust regulators (Clougherty 2010).

2.3.2 The Operation of Cartels

'Successful' cartels rely on an effective cartel administration which can identify other cartelists, organise contacts, set prices and output quotas, allocate customers and critically, 'police' incumbent firms to ensure they do not transgress on their collusive agreements, through a process of monitoring, and where appropriate, punishment. This administration is challenging to establish as cartels are inter-organizational networks of horizontal relationships, within which individuals report not only to managers within their own firm, but also to the structures of the cartel and competitors (Faulkner *et al* 2003). Balancing these competing demands of collaborators and the firm's own interests is a delicate matter, requiring both the development of trust between conspirators (Evenett *et al* 2001) whilst also achieving firm-specific goals (Faulkner *et al* 2003). When an individual firm's interests predominate, the cartel may falter, and when cartel interests come to the fore, firms may lose revenues due to lower than possible prices. Subsequently, price setting in a cartel may not actually reflect market forces, but rather the social structures and arrangements of the cartel (Faulkner *et al* 2003).

Participants in collusive illegal networks also seek to maximize concealment, avoid detection (Simmel 1950), implicate fewer individuals and ensure blame is not attributed to senior executives. This is attempted by limiting face-to-face meetings (Goffman 1970), destroying incriminating evidence, by using fragmented networks to reduce visibility, and employing 'buffers' and multiple levels of hierarchy to place organizational space between senior executives and 'expendable' middle and lower-level managers (Barker and Faulkner 1993; Goffman 1970). Through this process, senior managers may conceal their participation in corporate wrongdoings by delegation to lower ranking personnel and by separating high level decision-making from more frequent cartel monitoring roles. In such delegated organizations with multiple levels of hierarchy, it is thought lower ranked managers administer the cartel whilst the senior management involvement is restricted to interventions when cartel negotiations breakdown or where a firm's interest is poorly served (Faulkner *et al* 2003). This form of cartel organization also allows the firm to practice '*inverted entity liability*' where junior managers are prosecuted and metaphorically '*thrown under the bus'*, while the corporations and senior managers attempt to divert attention from its failings under law (Robson 2010). Research examining how cartel offenses are presented in the media also reflects this organizational practice; where firms' often attribute blame on middle managers and imply middle managers have a lower morality than senior staff (Siltaoja and Vehkaperä 2010).

2.3.3 Why do managers participate in cartels?

As the number of executives behind the management of cartels has risen from an average of thirteen in the 1990s to nineteen in the 2000s (Connor 2008) why managers partake in cartels and expose themselves and their firms to the risk of severe punishment, is a question of growing significance. While legal frameworks are useful for signalling whether an action is legally right or wrong, this is often not the only criteria employed in management decision-making (Piercy and Lane 2007). Legal regulation only codifies a lowest common denominator in decision-making; an ethical stance which might be challenged by the short-term demands from investors or even pressure from senior management. For example, lower ranked managers can be the victim of coercive senior managers when certain management philosophies, such as 'profit-making at all costs' approach, are associated with criminal actions (Simpson and Koper 1997). Subsequently, senior managers may focus on quick profits, maximum growth and high levels of managerial remuneration, creating organizational strains leading to criminal outcomes such as cartels. Financial and socioeconomic benefits may also be accrued by the employee for illegal corporate behaviours including bonuses, promotions and the goodwill of colleagues. Alternatively, not participating in cartel activity could lead to lack of promotion, demotion, ostracism or even dismissal (Baker and Faulkner 1993).

Psychology can also assist us in identifying why people follow certain social norms even when such actions are not in their best interests (Bicchieri and Xioa 2009). Individuals generally know that corruption, such as cartel participation, is illegal and may disapprove of such actions normatively. This said, if such corruption is perceived to be widespread, empirical expectations as to the feasibility of corrupt actions develop. Therefore, to be considered legitimate, legal enforcement needs to be based on both a broad consensus normatively (Fehr and Fischbacher 2004) and viewed not to be widespread or remote from business communities. Lastly, analogous to street crime, the best predictor of whether a person or firm indulges in cartel behaviour may be past cartel behaviour (Simpson and Koper 1997). Cartel behaviour therefore involves path dependence as certain industries suffer from repeated cartel activity following historical precedent while in other industries cartels are rarely observed.

2.4 Summary

Against the foregoing, despite the magnitude of international cartels and over a century of study we are left with few empirical studies, uncertainty in terms of who within the firm is responsible for cartel activity, and much fragmented, paradoxical and often contradictory explanations of the organization, operation and management of cartels. The remainder of this study seeks to shed light on these anticompetitive managerial practices. In addressing research question one, ‘Are marketing and sales managers employed within cartels?’ we are aware that marketing and sales managers possess skills particularly important for the development and maintenance of cartels. We therefore expect that marketing and sales managers are involved in cartels more extensively than other corporate roles or functions, although we are unclear to the degree of this involvement and the proportion of cartels in which marketing and sales managers play a role. Considering question research two, ‘What is the role of marketers and sales personnel within the cartel?’, while it is unknown if marketing and sales managers are instigating and organising cartels, it is expected these managers are involved in cartel operations at a lower level of management seniority.

3. Methodology and Case Selection

The methodology section is divided into three sections. Initially, the study data, the cartel investigations issued by the EU (DG COMP), are discussed. Secondly, the approaches used to code the data are outlined. Lastly, the methods of assessment and testing are forwarded.

3.1 The Data and Sampling Concerns

The data used are drawn from all investigations made under EU antitrust laws over the twenty year period 1990-2009 by DG COMP. The start period of 1990 is chosen as this time represents a structural break as the beginning of the current era of meaningful international cartel enforcement in the EU (and US) (Connor 2008; Connor 2004; Miller and Connor 2010) and as the number of cartel investigations in the EU prior to 1990 is negligible. The EU is an ideal context in which to examine international cartels having an established antitrust law authority, a highly regarded record on antitrust enforcement and anti-cartel stance (Miller and Connor 2010; Hoj 2007), and findings from its rulings are broadly comparable to other jurisdictions owing to the similarities between the EU and US antitrust systems. The EU is also a major economic area comprising 27 countries, over 500 million people, has a GDP of €12.638 or US$17.33 trillion (in 2011), and crucially, produces detailed cases of cartel investigations that are publicly available (www. ec.europa.eu) enabling the verification of this research.

The international cartel investigations undertaken by the DG Comp are drawn from the antitrust cases issued for the period 1990-2009 (*n*=433). Of the 74 cartels identified, 18 were domestic cartels occurring within a single member state and were not selected, leaving a final sample of 56 international cartels[5]. These cases are investigated following a reference under Articles 81 and 82 of EU antitrust law[6]. The DG Comp cases which report on issues other than international cartels are not considered in this assessment. These cases by definition are undertaken for reasons other than the assessment of international cartelization and can follow a reference outside antitrust law or to different antitrust laws. The cases not included relate to proposed joint ventures, restrictive practices such as supply restriction/refusal and predatory pricing, mergers, and domestic cartels (i.e. collusion within a single national market) and a number of miscellaneous cases (e.g. utilities regulation, ticket distribution for major sporting events), all falling outside the study objectives. It is readily acknowledged that many of these cases have links to sales and marketing practices and that future inquiry would be merited.

The organizations behind these cartels comprise some of the most powerful multinational corporations in the world including Akzo Nobel, Archer Daniels Midland, Aventis, BASF, The Bayer Group, Bioproducts Inc., Bridgestone, British Steel, Chinook, Del Monte, The Dow Chemical Company, The ExxonMobil Group, Fuji, Hoffmann-La Roche, ICI, Kawasaki Steel Corporation, Maxell, Mitsubishi, Nippon Steel Corporation, The Pilkington Group, The

[5] Four cases were excluded from the sample and analysis for the following reasons: no English language version (Alloy Surcharge (2006), Sodium Gluconate II (2004), E.ON - GdF Collusion (2009)), no final report (Aluminium Fluoride Producers (2008).

[6] Article 81 prohibits agreements between two or more firms which restrict competition, while Article 82 ensures dominant firms do not abuse their position. Articles 81 and 82 are effectively the European legal equivalent of the US Sherman Act. Previously these cartel cases were considered under Article 85 and since the Treaty of Lisbon (2009) Articles 81 and 82 were renumbered Articles 101 and 102.

Shell Group, Sony, Total and others. The adverse impact of these cartels, normally incurred through higher prices, has been experienced by their customers including major organizations such as Continental, Goodyear and Poly-One as well as EU consumers.

The data suffers from a number of sampling difficulties making inference challenging. Initially, the sample selection reflects the legal regime in which the cartels are considered and those cases selected by prosecutors to pursue. The cases investigated are therefore open to influences relating to the resources, politics and bureaucracy of the DG Comp. Secondly, common to all crime statistics (see Simpson and Koper 1997) we know only what is officially prohibited by the EU, investigated and then punished. We therefore only consider cases where a fine has been levied for cartel behaviour. These cartels are a biased sample, and, we speculate, represent a sample of all cartels existing within the European economy; as the firms most determined to undertake cartel activity will possibly be the best prepared to avoid detection and will not be included in our sample. Similarly, some firms considered in our sample may be guilty of ignorance and clumsy use of words to describe what was viewed to be innocent behaviours (Robson 2010). Such shortcomings are equally applicable to all empirical studies of cartels, if rarely acknowledged.

It is also noted that the cartels studied are not necessarily 'European style' cartels; many of the cartels examined were conducted on a worldwide basis and involve companies from outside the EU. Approximately one-third of the cartels examined involving marketing and sales executives comprised an American or Japanese company in addition to the presence of a European company, and approximately one-third had a global reach. Further, the anti-competitive behaviours examined correspond directly to illegal practices in other major jurisdictions such as the US where price fixing (or horizontal price fixing) can be prosecuted as a criminal federal offense under section 1 of the Sherman Antitrust Act ('Monopolies and combinations in restraint of trade'). Similarly, exchanging information between competitors (although not *per se* illegal) can also constitute an anti-competitive agreement under section 1 of the Sherman Antitrust Act if it facilitates collusion and is seen to restrain trade. Hence the findings of this study should have generalizability beyond a European audience.

3.2 Methods for Assessing Cartel Judgements

The form of content analysis employed in this study was observational or manifest in form, rather than involving the latent interpretation of the meaning of textual statements (see Kondracki *et al* 2002)[7]. Within this manifest approach to content analysis – also adopted within legal (e.g. Ghosal and Gallo 2001; Gallo *et al*. 2000; Posner 1970; Wood and Anderson 1993), economics (e.g. Weir 1992, 1993; Davies *et al* 1999), finance (e.g. Wisniewski and Lambe, forthcoming) and marketing studies (e.g. Pass *et al* 1994, Ashton and Pressey 2008, 2011) – the frequency of values and terms common to reports and of pertinence to the research questions are counted. For the sample we therefore examine the case contents, quantified the cartel characteristics, determine the frequency of behaviours and record changes over time. While we acknowledge this approach is distinct from methods commonly adopted within marketing, methods diversity in marketing can be viewed as a positive attribute (Davis *et al* forthcoming).

The process of classifying cases was conducted independently by two academic judges[8]. During coding, data were captured from the reports considering the characteristics of the

[7] The form of content analysis used in this work, while a common approach in many academic disciplines, is distinct from that practiced in some academic fields, such as accounting, education or media studies. In these disciplines interpretation and assessment of social reality is central to content analysis (see Bos and Tarnai 1999 for a review of distinct latent approaches to content analysis employed in these disciplines).

[8] While inter-coder reliability is essential for forms of content analysis involving the latent coding of textual meanings, (rather than the manifest contents of text as considered in this work). it is unclear what level of inter-coder reliability is required for content analyses to be considered reliable (Krippendorff 1980) or if even inter-coder reliability actually ensures reliability (Lombard *et al* 2002). Despite the iterative, manifest and observational process to this analysis, cases of disagreement from both academic judges were recorded and when these occurred lead to reassessment of the primary data until an appropriate determination was made by a process of discussion. The two judges achieved consensus in excess of 90% of cases, although over a wide range of codes. This process of coding was also preceded by a 'pilot' exercise where both coders discussed the outcomes of five cases before proceeding to the wider coding exercise.

cartels, the link between marketing and sales managers and cartelization and the nature of anticompetitive agreements. The *key characteristics* of the cartels reflect explanations of why cartels form and the type of cartel (hardcore, private export, state export cartel). State export cartels concern organizations where governments assist firms in developing common marketing and sales arrangements for exports; private export cartels involve firms developing common marketing and sales arrangements to engender exports; and hard core cartels involving restraints of trade through collaboration with other firms in home markets (see Evenett *et al* 2001). Further characteristics collected include the number of firms involved in each cartel, the nationality of participating firms, the duration of the cartel, the level of fine, the industry affected by the cartel, the prevailing economic conditions leading to the cartel formation, forms of punishment established with the cartel agreement and the involvement of trade associations. The nature of anticompetitive agreements between colluding firms (such as agreements to fix prices, raise prices, rig bids for contracts agreements or to limit marketing efforts) were also recorded. We also record whether leniency was employed in a case and also whether the investigation was undertaken just by the DG Comp or jointly with the US antitrust authorities.

The organization of the cartel is considered through the collection of a number of variables. Initially, the number and frequency of cartel meetings was noted. Secondly, whether these meetings were bilateral (where cartelists met in pairs) or multilateral (where cartelists met in groups of more than two), or a mixture of both was recorded. Bilateral modes of cartel governance may afford participants greater levels of secrecy and avoid detection as they make less of an 'evidential imprint' whereas multilaterally organized cartels are relatively more observable and detectable. This different is also reflected in the quantity and depth of evidence from multilaterally rather than bilaterally organized cartels. The presence or otherwise of managerial ‘buffers’ are also recorded together with the number of levels of organizational hierarchy within the cartel.

In recording the presence of managers from different firm functions a more complex form of coding is employed. Although some of the managers involved in the cartels we studied may have successfully avoided detection and prosecution, the detailed investigations provided by DG Comp, generally pinpoint the specific role of the key individuals involved in a cartel and in so doing provide an account of the ‘centre’ or locus of control for a cartel. For each case we review what managerial posts and titles are being discussed. The level of manager is indicated using a classification approach from Baker and Faulkner (1993) and Faulkner *et al* (2003) where top executives have titles such as president, executive vice president, vice president and general manager, while middle and junior managers have titles such as manager, sales manager, marketing manager and marketing secretary. Developing these approaches, five levels of hierarchy are recorded. Once this classification is undertaken, we determine the most senior level of management identified in each cartel, the scope of managerial involvement across different managerial hierarchies and critically whether and where marketing and sales managers are present in the cartel organization. These definitions are displayed in Table 1.

3.3 The Testing Framework

After data coding a two part testing method is adopted. Initially, the descriptive statistics arising from the coding of the cartel judgements are provided. This assessment details cartel characteristics together with the organization and managerial involvement in cartels. Secondly, both parametric and non-parametric tests (T and Mann-Whitney tests) are employed to test if statistically significant differences exist between the cartels with and without the involvement of marketing and sales managers. The relative simplicity of this assessment is influenced by both the limited number of observations (56) and the presence of both nominal and cardinal data forms.

Table 1: Definitions of the level of management within cartel organizations

Level	Managerial Level	Terms used to identify the level of management
Level 1: *Leader*	Most senior firm management	*Chief Executive Officer, Managing Director, Chairman* or *President*
Level 2: *Senior Marketing*	Senior marketing and sales staff	*Sales, Export and/or Marketing Director, Global or World Marketing, Head of Marketing* and *Vice President for Sales and Marketing*
Level 2: *Senior Managers*	Senior staff other than marketing and sales	*Executive, Senior Management, Director, Vice President* and *Financial Controller*
Level 3: *Senior Middle Marketing*	Senior middle management for marketing and sales	*Senior Marketing Manager, Marketing Executive, European, National and Regional Sales Manager* or *Director*
Level 3: *Senior Middle Managers*	Senior middle management other than marketing and sales	*Regional and Division(al) manager*
Level 4: *Middle Marketing*	Middle managers for marketing and sales	'Manager' in *Marketing and Sales, International Sales, Sales, Sales Team, Export, Market Analysis* and/or *Marketing Manager* and *Local Marketing Director*
Level 4: *Middle Managers*	Middle managers other than marketing and sales	*Business, District, Product, Project, Account, Key Account, General* and *Production Managers*
Level 5: *Junior Marketing and Sales*	Junior marketing and sales roles	*Sales person, Sales Representative, Sales Staff* and *Assistant Marketing Manager*

4. Findings and Discussion

In this section we initially consider the descriptive statistics of the cartel characteristics, addressing research question one. Secondly, we examine the link between marketing and sales managers and characteristics of cartels using a non-parametric analysis to address research question two.

4.1 Descriptive Statistics

The discussion of descriptive statistics is divided into two sections. Initially, the sample characteristics and aggregate features of the cartels are outlined. The descriptive statistics consider the size of international cartels, fines and the scope of these cartels and are reported in Table 2. Secondly, descriptive statistics on the organization of cartels and the presence of different managers in these cartels is provided in Table 3.

4.1.1 Sample characteristics and aggregate features of international cartels

In total, seven cartel characteristics are considered in Table 2 including sample features, cartel characteristics, industry, origin of cartel firms, affected areas, anti-competitive behaviours, economic factors and market conditions. To appraise the progression of the sample characteristics over time these statistics are all viewed over four equal time periods between 1990 and 2009. The distribution of cases studied over time is not evenly spread with sixteen international cartels prosecuted by the EU antitrust authorities between 1990 and 1999 and 42 cartels prosecuted in the following decade (2000-2009). The form of cartel also changes over time. Since 1990, state export and private export cartels have declined as a proportion of all cartels and hard core cartels have become the principal form of cartel investigated in the second half of the sample period.

A range of cartel characteristics are considered including the average fine size, and the average fine for each year within the cartel, the average duration of the cartel, the size of the market and the number of firms participating in the cartel. Overall in excess €6.5 billion in fines have been awarded after leniency rules have been applied and any revisions of fines made in the case of appeals. The level of fines has also steadily risen throughout the sample period, reaching an average of €356.77m per cartel in the period 2005-2009. The average duration of cartels over the sample period is 9 years and the average number of firms involved in each cartel is 8.2; neither variable displays an upward or downward trend.

The vast majority of cartel cases originate from the chemical and manufacturing industries, a limited number of distribution cases have existed and the level of cases in services and food industries is very low. The number of international cartels in chemical and manufacturing industries has also grown over the sample period. The origin of international cartels and areas affected by these conspiracies is also reported in Table 2. While the typical cartel involves either multiple European firms or European firms in collaboration with other international firms headquartered outside the EU, three cartels involved firms which were all headquartered outside the EU. The areas affected by cartel activity are predominantly within the EU, although ten cartels also had a worldwide coverage. Limited numbers of EU-originated cartels have specifically influenced Asia, the Americas and Africa.

The anti-competitive behaviours observed in these cartels are variable and some cartels have multiple anti-competitive behaviours. A majority of cartels have engaged in price-fixing and market sharing. Price-fixing has varied from the publishing of a single price list, to providing "*minimum*" or "*target*" prices (e.g. Speciality Graphite cartel 2002) to more sophisticated approaches where price lists can be discounted to maximum agreed discounts for some or all customers. For example, in the PVC cartel (1994) price lists were published, even though "*It is widely acknowledged that these posted levels will not be achieved in a slack market . . . but the announcement does have a psychological effect upon the buyer*." Market sharing involves the explicit division of the market in certain proportions for different cartel members. Such approaches also varied in deployment from retaining historical market shares (e.g. Vitamins cartel 2001) to dividing up markets geographically or by distinct product areas, or both (e.g. Needles cartel 2004).

Table 2 Sample and Cartel case characteristics

	Time period	1990-1994	1995-1999	2000-2004	2005-2009	*Total*
Sample features	Publicly available antitrust cases from DG Comp.	103	126	112	77	433
	International Cartel cases examined	11	3	21	21	56
	Total International cartel cases examined by DG Comp	11	5	21	21	58
Cartel characteristics	Average fine size (€M)	33.07	248.9	248.9	356.8	216.7
	Average firm fine for each year in the cartel (€M)	0.38	43.88	43.88	11.52	8.69
	Average Duration of Cartel (years)	12.00	5.00	5.00	9.62	9.35
	Market size €M	1433.3	416.1	416.1	4234.5	4898.4
	Average number of firms in the cartel	14.45	5.00	5.00	7.86	8.20
Cartel type	Hard Core Cartel	3	1	18	19	41
	Private Export Cartel	4	2	2	2	10
	State Export Cartel	4	0	1	0	5
Industry	Chemicals	3	1	12	9	25
	Distribution	6	1	2	0	9
	Food	0	0	0	1	1
	Manufacturing	2	1	6	11	20
	Services	0	0	1	0	1
Origin of cartel	2 European firms	1	1	2	0	4
	More than 2 European firms	4	1	7	9	21
	European and International Firms	5	1	10	11	27
	Other (non EU firms)	1	0	2	0	3
Affected Areas	EEA affected	11	3	14	20	48
	Worldwide	0	0	7	3	10
	Asia	1	1	2	1	5
	Africa	3	0	0	0	3
	Americas	1	0	0	0	1
Anticompetitive Behaviours	Market Sharing	8	1	9	12	30
	Allocating customers	0	0	9	10	19
	Exchanging confidential information	1	0	2	15	18
	Bid Rigging	0	0	0	4	4
	Other anticompetitive commercial agreements	1	1	3	3	8
	Price fixing	6	1	19	19	45
Economic factors	Buyer Power	0	0	0	2	2
	New Entrant	0	0	2	1	3
	Increased market concentration	1	0	3	5	9
	Overcapacity	5	1	3	3	12
Market conditions	Stable	6	0	4	4	14
	Decline	2	3	11	8	24
	Growth	1	0	6	5	12
	Not stated	1	0	0	0	1

A substantial number of cases have also engaged in exchanging confidential customer information and allocating customers. This process was linked in many cases to the facilitation of other anti-competitive acts. For example, in the Carbonless Paper cartel (2001) "*... producers exchanged individual, confidential information in order to facilitate the reaching of the agreements on price increases and sales quotas and to monitor adherence to the agreements*". A minority of cartels involved bid rigging and other anti-competitive commercial activities. Bid rigging was particularly important in certain business-to-business markets with large customers, where, for example in the Industrial Bags cartel (2005) each customer had its own account manager within the cartel who would decide on prices and the 'winning' bidding firm. Other anti-competitive commercial agreements include a range of activities from supply cessation to certain customers (e.g. BASF Accinauto cartel 1995 [motor industry paint]) to limits on technology transfer (e.g. Graphite Electrodes cartel 2001). Overall, cartels are engaging in a wide scope of anti-competitive behaviours.

The last two sections of Table 2 consider the stated economic reasons for engaging in cartel behaviour and the prevailing economic conditions when cartels are initiated. It is important to note that this information was unavailable for six cases. From this sample we observe overcapacity in markets and increasing market concentration are the most frequently reported external economic triggers for cartel formation, with buyer power and new entrants important in a smaller number of cases. In 24 cartel cases the importance of declining market conditions is reported, double the number of cartels where market growth predominated; in 14 cases market conditions were stable.

Table 3 provides descriptive statistics on the organization and management of the cartel cases. These statistics consider a range of issues from reporting concerns such as US investigatory involvement and use of leniency programmes, to the frequency of meetings and forms of managerial involvement in cartels. Overall the majority of cartels involved leniency deals and over a quarter were also investigated by the US authorities. When considering the causes of cartel investigations, corporate whistle blowers are clearly essential, with relatively few cartels investigated due to customer complaints or being uncovered through investigation.

Table 3: Descriptive statistics of cartel governance and investigation

Cartel Characteristics	**Frequency**	**Per cent**	**Levels of Hierarchy in the Cartel**	**Frequency**	**Per cent**
Frequency of meeting			1 Level of Hierarchy	20	35.7
Annually or less frequently	33	58.9	2 Levels of Hierarchy	22	39.3
Biannually and less than annually	7	12.5	3 Levels of Hierarchy	7	12.5
Monthly and less than biannually	3	5.4	4 Levels of Hierarchy	3	5.4
Daily and less than monthly	2	3.6	>4 Levels of Hierarchy	1	1.8
Not stated	11	19.6	**Instigation of cartel investigation**	**Frequency**	**Per cent**
Existence of 'Buffers'	28	50	Corporate whistle-blower	21	64
Trade Association presence	29	51.8	Customer complaint	3	9
Bilateral meetings	9	16.1	Identified by another antitrust authority	2	6
Multilateral meetings	27	48.2	Information disclosed by a 3rd party	1	3
Both bilateral and multilateral meetings	20	35.7	Uncovered during a separate investigation	1	3
Punishments explicit within the cartel agreement	29	51.8	Leniency	36	64.3
			US Investigation	15	26.8

The form of cartel organization is also examined with the type and frequency of cartel meetings, the existence of buffers, relationships with trade associations, and levels of hierarchy in the cartel recorded. Half of all cartels use 'buffers' within the cartel organization to insulate senior management from legal prosecution. Only 35.7% of cases had only one level of managerial hierarchy in the cartel and 19.7% of cartels had three or more levels of hierarchy. A representative example of how buffers are used is provided by the Copper Plumbing Tubes cartel (2006), where "*The cartel was organised on three main bases: a) high-level meetings dealing with strategy and pricing for a number of countries; b) meetings covering only one or a few national territories often for the implementation of decisions that had been taken at the higher level; c) discussions on a bilateral level*". The majority (51.8%) of cartel cases are also associated with trade associations as a way of co-ordinating the entire cartel (e.g. Cement cartel 1994, Electrical and Mechanical Carbon cartel 2003, Elevators and Escalators cartel 2007) or as a convenient venue where cartelists can meet without raising suspicions (e.g. Synthetic Rubber cartel [Butadiene Rubber] 2006). Most cartels (58.7%) meet relatively infrequently (annually or less frequently), and these groups were often afforded names by their participants often represented with some symbolism and affectionate masculine terms such as "*Top Guy*", (Graphite Electrodes cartel 2001), "*the club*" (Industrial Thread cartel 2005) or "*the Rugby Club*" or "*Rugby XV*" (Acrylic glass - Methacrylate's cartel 2006).

These meetings where predominantly multilateral in form (83.9%) involving at least three firms discussing cartel concerns. Although we identify no particular trend relating to cartel governance across the time period studied, the Vitamins cartel (2001) exemplifies the use of bilateral modes of governance. In this cartel, 13 firms fixed prices globally between 1989-1999. This cartel initially operated multilaterally with regular meetings held between the heads of firms and senior marketing managers. This approach altered when the US Department of Justice (hereafter DOJ) announced an investigation into the US vitamins industry in 1997. As noted in the DG Comp investigation "*The participants in the* [cartel] *meetings had already become aware of the interest of the antitrust authorities in their secret arrangements and sought to minimize the number and frequency of their contacts. The last* *meeting was held in Basel in November 1997, when it was decided that in future meetings would only occur on a bilateral basis"* (Vitamins cartel 2001).

Secrecy in the organization of these meetings was also paramount in many cases. For example, in the Calcium Carbide and Magnesium cartel (2009) it was reported by a participant of the cartel meetings that "*If, for instance, someone communicated meetings by e-mail he was immediately criticised by the others*", that "*Travel records of the participants often falsely referred to visits of suppliers or customers*" and "*Documents concerning the meetings were kept to a minimum and no official memoranda of the meetings were produced*." Similarly, in the Rubber Chemical cartel (2005) communication referring to the price increase in 1996 was communicated by an email instructing "*CONFIDENTIAL - Please destroy after reading!*" We also observe other activities used to conceal the cartel beyond destruction of evidence including using encryption software to communicate between cartel members, limiting contact to telephone communications, and avoiding meetings at corporate offices. Meetings were typically held in public settings such as hotels, restaurants, and airports or else on the fringes of industry trade meetings, conferences and associations.

Forms of punishment imposed on firms that breached agreed cartel agreements are observed in 41 (73%) cartels. Often these punishments involved compensation through which firms received payments if a co-cartelist increased their allocated market share. Enforcement of these punishments varied from "*a gentleman's agreement*" (Zinc Phosphate cartel 2001), the use of self-control and mutual co-operation following "*the rules for 'orderly marketing' including transparent statistics, no cheating, and 'no field man's excuses"* (MCAA Chemicals cartel [Monochloroacetic Acid] 2005), to the threat of a price war (Industrial Thread cartel 2005).

Table 4 reports the analysis of both the function of managers involved in cartels, from marketing or sales or another firm function, and also the position of these managers within the firms' managerial hierarchy. Within panel A, the aggregate distribution of marketing and sales managers within the cartel is recorded and it is observed that a substantial proportion of cartels (42.9%) involve the participation of marketing and sales managers. In Panel B the distribution of managers involved in the cartel from marketing and sales and other management functions are recorded for the different levels of firm hierarchy. It is observed 48.2% cartels involved management at the highest level within the firm (level 1). Over half of cartels (51.8%) with involvement of marketing and sales managers involve the highest firm level of marketing and sales managers. There are also a substantial proportion of cartels (24 cartels, 42.9%) where the most senior marketing and sales manager is the fourth tier of management in the firm. In Panel C, we record the highest managerial position within the cartel for 'marketing and sales managers' and 'other managers'. It can be seen that the distribution of 'other managers' involved in the cartel, by position within the firms managerial hierarchy, is skewed towards the higher levels of firm hierarchy, with overall 75% of cartels involving the top two levels of managerial hierarchy. The distribution of marketing and sales managers in a cartel is far less skewed towards the higher levels of firm hierarchy with 65.5% of cases involving marketing and sales managers of level 3 or below in their firms' managerial hierarchy.

This evidence generally contradicts the view that cartels are mostly led by more junior employees (Sonnenfeld and Lawrence 1978) and indicates that senior management are central to the formation of cartels supporting the views of Faulkner *et al*. (2003). Further the sales and marketing managers are relatively junior in comparison to other managers within the firm participating in cartel maintenance; an outcome consistent with Simpson and Koper (1997).

Table 4: The distribution of cartel management by position

<table>
<tr><td rowspan="3">Panel A</td><td></td><td colspan="2">Frequency</td><td colspan="2">%</td></tr>
<tr><td>Cartels with involvement of marketing and sales managers</td><td colspan="2">24</td><td colspan="2">42.9</td></tr>
<tr><td>Cartels with no marketing managers sales present</td><td colspan="2">32</td><td colspan="2">57.1</td></tr>
<tr><td rowspan="7">Panel B</td><td>Managerial Presence within cartel</td><td colspan="2">Other Managers</td><td colspan="2">Marketing and Sales Managers</td></tr>
<tr><td></td><td>Frequency</td><td>%</td><td>Frequency</td><td>%</td></tr>
<tr><td>Level 1: Leader</td><td>27</td><td>48.2</td><td>-</td><td>-</td></tr>
<tr><td>Level 2: Senior Management</td><td>9</td><td>16.1</td><td>29</td><td>51.8</td></tr>
<tr><td>Level 3: Senior Middle Management</td><td>13</td><td>23.2</td><td>9</td><td>16.1</td></tr>
<tr><td>Level 4: Middle Management</td><td>7</td><td>12.5</td><td>24</td><td>42.9</td></tr>
<tr><td>Level 5: Junior Marketing and Sales</td><td colspan="2">N/A</td><td>7</td><td>12.5</td></tr>
<tr><td rowspan="7">Panel C</td><td>Highest overall managerial level within cartel</td><td colspan="2">Other Managers</td><td colspan="2">Marketing and Sales Managers</td></tr>
<tr><td></td><td>Frequency</td><td>%</td><td>Frequency</td><td>%</td></tr>
<tr><td>Level 1: Leader</td><td>27</td><td>46.6</td><td>-</td><td>-</td></tr>
<tr><td>Level 2: Senior Management</td><td>17</td><td>29.3</td><td>9</td><td>37.5</td></tr>
<tr><td>Level 3: Senior Middle Management</td><td>4</td><td>6.9</td><td>10</td><td>41.7</td></tr>
<tr><td>Level 4: Middle Management</td><td>2</td><td>3.4</td><td>5</td><td>20.8</td></tr>
<tr><td>Level 5: Junior Marketing and Sales</td><td>8</td><td>13.8</td><td>0</td><td>0.0</td></tr>
</table>

4.2 Parametric and Non-parametric analysis

The parametric and non-parametric results reported in Tables 5 and 6 consider whether the involvement of marketing and sales managers in cartels is associated with specific types of cartel characteristics or forms of anti-competitive behaviour. From this assessment it is apparent that relatively few of these factors are statistically significant at the 10% level. From the parametric assessment reported in Table 5, the number of levels of hierarchy and the frequency of meetings are significant factors, indicating that marketing and sales managers are involved within cartels of greater organizational complexity and which hold relatively fewer meetings than cartels without an identified marketing and sales manager involvement. All other factors including the levels of fines, market size and the duration of cartels appear unaffected by the involvement of marketing and sales managers.

Table 5: Parametric assessment of marketing involvement and cartel characteristics

	Average Values			
	With Marketing Involvement	**Without Marketing Involvement**	**T Test**	**Significance**
Fine €m	271.46	161.98	1.447	0.154
Duration Years	9.67	8.81	0.389	0.699
Number of Firms	9.25	7.41	0.928	0.358
Levels of Hierarchy	2.29	1.53	2.529	0.014*
Meeting Frequency	1.67	2.47	-1.891	0.064*
Market Size €m	5753.35	1807.82	1.139	0.260

For the non-parametric assessment reported in Table 6, it is observed that only a limited number of factors differ significantly when cartels involve or do not involve marketing and sales managers. These significant factors include the use of punishments in cartels, whether a cartel is worldwide in scope, if a cartel is involved in manufacturing or distribution, if the cartel is a state export cartel and if the cartel involved ‘allocating customers’ or ‘price fixing’. These findings indicate that cartels with an involvement by marketing and sales managers use organizational ‘buffers’ more frequently, are more likely to worldwide in scope, are more likely to involve manufacturing and less likely to occur in distribution industries, are less frequent in state export cartels and involve more ‘allocating customers’ and less ‘price fixing’ activities. All other factors, including factors relating to the origin of cartels and market conditions are statistically insignificant.

Table 6: Non-Parametric assessment of marketing involvement and cartel Characteristics

		With Marketing Involvement	Without Marketing Involvement	Z statistic	Significance
Cartel Organization and investigation	Trade association	34.48	65.52	-1.30	0.19
	Buffers	46.43	53.57	-0.54	0.59
	Punishments	58.62	41.38	-2.45	0.01*
	Bilateral	55.56	44.44	-0.83	0.40
	Multilateral	40.43	59.57	-0.83	0.40
	US involvement in investigation	53.33	46.67	-0.95	0.34
	Leniency	50.00	50.00	-1.44	0.15
Area Affected by Cartel	Worldwide	70.00	30.00	-1.90	0.06*
	Asia	40.00	60.00	-0.13	0.89
	Africa	0.00	100.00	-1.53	0.13
	Americas	0.00	100.00	-0.87	0.39
Industry Involved	Chemicals	44.00	56.00	-0.15	0.88
	Distribution	0.00	100.00	-2.81	0.00*
	Food	100.00	0.00	-1.15	0.25
	Manufacturing	60.00	40.00	-1.91	0.06*
	Services	0.00	100.00	-0.87	0.39
Origin of Cartel	Two European firms	50.00	50.00	-0.30	0.77
	More than two European firms	47.62	52.38	-0.55	0.58
	European and international firms	44.44	55.56	-0.23	0.82
	Other	0.00	100.00	-1.53	0.13
Type of Cartel	Hard Core	48.78	51.22	-1.468	0.14
	Private export	40.00	60.00	-.200	0.84
	State export Cartel	0.00	100.00	-2.011	0.04*
Anticompetitive Behaviour	Market sharing	40.00	60.00	-0.46	0.65
	Allocating customers	63.16	36.84	-2.18	0.03*
	Information exchange	33.33	66.67	-0.98	0.33
	Bid rigging	75.00	25.00	-1.34	0.18
	Other agreements	62.50	37.50	-1.20	0.23
	Price fixing	48.89	51.11	-1.83	0.07*
Market Conditions	Buyer power	50.00	50.00	-0.21	0.84
	New entrant	33.33	66.67	-0.34	0.73
	Increased concentration	55.56	44.44	-0.83	0.40
	Excess capacity	33.33	66.67	-0.75	0.46
	Market Conditions Stable	42.86	57.14	0.00	1.00
	Market Conditions Declining	41.67	58.33	-0.15	0.88
	Market Conditions Growing	50.00	50.00	-0.56	0.58
	Market Conditions Not Stated	0.00	100.00	-0.87	0.39

*** Denotes statistical significance at the 10% level.**

Based on the results in Tables 5 and 6, what can we infer about the characteristics of cartels where sales and marketing managers are present? Two findings would seem worthy of highlighting: cartels with an involvement by marketing and sales managers (i.) adopt organizational 'buffers' more frequently and generally are involved in cartels of a greater organizational complexity, and (ii.) involve less instances of 'price fixing' activities. This first point seems to suggest that marketers and sales staff are frequently employed as 'buffers' (Goffman 1970) and metaphorically '*thrown under the bus'* in order to protect more senior management figures from their involvement in cartel behaviours (Robson 2010). Further, the greater organizational complexity of cartels with a marketing and sales manager involvement may also reflect the noted ability of this firm function in the development of collaborative arrangements. The second finding emphasises that sales and marketing personnel may actually have limited control over pricing decisions, while certain functions (such as finance) may enjoy greater influence and control over organizational price-setting and may even favour short-term pricing considerations ('profit at all costs') over longer-term pricing factors (Brennan *et al*. 2007); circumstances which may favour cartel creation in certain market conditions. Hence managers in functions beyond sales and marketing may have the greater capacity (or at least equal) to be architects of inter-firm collusion in price-fixing.

5. Conclusions and Policy Implications

This study assesses the participation of marketing and sales managers in the formation, organization and maintenance of international cartels, and provides salient characteristics of these anti-competitive agreements. We address this issue through an empirical examination of international cartels investigated and prosecuted by the EU DG COMP between 1990 and 2009.

The empirical assessment of EU antitrust cases provides a number of key findings. First, a substantial proportion (42.9%) of international cartels investigated by the European DG COMP between 1990 and 2009 involve marketing and sales managers. Marketing and sales manager involvement is observed more frequently in worldwide cartels, cartels within manufacturing industries, where punishments are employed to police the cartel, and when ‘allocating customers’ occurs. Further, cartels involving these managers have had fewer meetings and involve more levels of organizational hierarchy. Marketing and sales manager involvement is also observed less frequently in cartels which involve distributional industries, are state export cartels and involve price-fixing.

These results raise several policy issues, not least of which is how can such illegal activity and the exposure of marketing and sales management to severe legal risks can be reduced. Clearly being cognisant of government antitrust policies and laws is an essential business task; yet only a first task in addressing the involvement of marketing and sales managers in cartels. Cartels are not always publically viewed to be comparable with offences leading to personal harm (Robson 2010) and in many nations antitrust laws have been viewed with suspicion and an ‘*unfair, unjust and immoral*’ attack on firms, stigmatising otherwise ‘*ordinary honest business people*’ (Stephan 2010). This position reflects the relatively recent political shift in favour of antitrust laws and rejection of past interpretations of cartel activity. Indeed, within our sample of cartels there are cases which have existed with government knowledge, if not active encouragement. For example, within the Cement cartel (1994) a '*Common Price and Marketing Arrangement*` existed between the British producers until 1987, where prices and terms of sale were jointly determined by member firms and reported to the British authorities. The UK Restrictive Practices Court ruled on two occasions that this arrangement was not contrary to the public interest.

It is advocated that through greater education within management professions such normative and empirical perceptions of this corporate crime may be challenged. Comprehension of the harm cartels can inflict within markets and to consumers certainly requires wider discussion, particularly within business school syllabi (Foer 2003) serving as a public interest balance to the increased importance attributed to inter-firm organisation and collusion as a profit maximising activity. Developing such a discussion in sales and marketing is a challenge as some marketers eschew policy matters on the premise that this is an issue for company lawyers and as legal considerations are rarely an important aspect of marketing planning and strategy (LeClair 2000). Few marketing scholars or practitioners receive training on government antitrust policies and laws across multiple markets in order to ensure marketing activities are lawful (Czinkota 2000). As Tadajewski (2010) notes "*If marketing education does not engage with these* [antitrust] *issues – which arguably it does not at present – it can be speculated that we have not heard the last of collusive interfirm relationships.*" As it is increasingly recognised business schools should advance theories beyond just those for maximising corporate profits (Ferlie *et al* 2010), we echo these sentiments. Antitrust agencies are pursuing individuals as well as companies within cartel investigations and the potential for managers to be subject to '*inverted entity liability'*, and the associated negative personal consequences are significant. For example, in the Candle Waxes cartel (2008) one firm explicitly attempted to attribute blame to the marketing managers involved, fortunately a position rejected by the DG Comp.

Lastly, the object of antitrust laws is to deter anti-competitive behaviours such as cartel formation (Evenett *et al* 2001) and where necessary punish. Deterrence is regarded as the dominant legal-economic theory rationalizing antitrust laws and the basis of anti-cartel sanctions and penalties (Connor 2004). As doubts exist over the veracity of monetary sanctions as an effective deterrent (Connor 2008; Connor 2004, Veljanovski 2011), we believe determining who within the firm is perpetuating these offences is a sensible step to deter future offences. As marketers and sales personnel are important within the formation or organization of cartels antitrust authorities should shift their attentions towards focused education of this profession; an activity in which marketing and sales academics should also participate.

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Annex A1

International Cartel Cases Linked to Marketing

Year	Case
2009	Marine Hoses
2008	Banana Suppliers, Paraffin/Candle Waxes
2007	Flat Glass, Professional Videotape Producers
2006	Synthetic/Butadiene Rubber, Copper Fittings, Methacrylates/Acrylic Glass, Hydrogen Peroxide
2005	Rubber Chemicals, Industrial Bags, Monochloroacetic Acid
2004	Choline Chloride, Needles, Copper Plumbing Tubes
2003	Industrial Copper Tubes, Organic Peroxide, Sorbates
2002	Speciality Graphite, Methyglucamine, Plasterboard, Fine Art Auction Houses, Methionine
2001	Zinc Phosphate, Citric Acid, Vitamins, Graphite Electrodes
2000	Amino Acids
1999	Seamless Steel Tubes
1994	Marine Containers, Cartonboard, PVC, Cement

Annex A2

International Cartel Cases Not Linked to Marketing

Year	Case
2009	Heat Stabilisers, Power Transformers, Calcium Carbide and Magnesium
2008	Car Glass
2007	Elevators and Escalators, Gas Insulated Switchgear, Chloroprene Rubber, Hard Haberdashery/Fasteners
2005	Industrial Thread
2003	Electrical and Mechanical Carbon
2002	Food Flavour Enhancers
2001	Carbonless Paper, SAS and Maersk
2000	Far East Trade Tariff and Surcharges Agreement
1999	Europe Asia Trades Agreement, P&I Clubs
1996	Ferry Operators
1995	BASF Accinauto
1994	Transatlantic Shipping, Far Eastern Freight Conference
1992	CEWAL, MEWAC, French-West African Ship-owners' Committees
1990	Solvay/ICI, ANSAC

Annex A3 Cartel Descriptions (Marketing and Sales Cases)

Case	Industry/product overview	Geographic scope of cartel
2009		
Marine Hoses	Offshore crude oil transportation purchased for use by petroleum companies, buoy manufacturers, port terminals, oil industry and governments, either for new projects or for replacement purposes.	Worldwide
2008		
Banana Suppliers	Un-ripened (green) bananas and ripened (yellow) bananas purchased by retailers.	Austria, Belgium, Denmark, Finland, Germany, Luxembourg, The Netherlands and Sweden.
Paraffin/Candle Waxes	Candle waxes are used for the production of a variety of products such as candles, chemicals, tyres and automotive products as well as in the rubber, packaging, adhesive and chewing gum industries.	Europe
2007		
Flat Glass	Flat glass is used for windows in the construction industry.	Europe
Professional Videotape Producers	Professional videotape for TV stations/broadcasters and production houses.	Europe
2006		
Synthetic/ Butadiene Rubber	Synthetic (butadiene) rubber is employed in automobile tyre production.	Europe
Copper Fittings	Copper tubes used in the transportation of water, air, gas, etc. for plumbing, heating, sanitation and other purposes.	Europe
Methacrylates/ Acrylic Glass	Chiefly used in the car industry for the production of headlamps, tail-lights and glass for dashboards. Other major end uses include household appliances, optical media (DVDs, lenses), electronics, mobile phone displays, cosmetics packaging, toys, pens and Furniture.	Europe
Hydrogen Peroxide	Hydrogen peroxide is used as a bleaching agent in the pulp and paper manufacturing industries, for the bleaching of textiles, for disinfection and for other environmental applications such as sewage treatment.	Europe

2005 Rubber Chemicals	Rubber chemicals are synthetic or organic chemicals that act as productivity and quality enhancers in the manufacture of rubber. They are used by the rubber industry to make a wide range of rubber parts for use in many different applications and industries. The automotive industry is the largest user of rubber parts, mainly in tyres but also in hoses, seals, and belts.	Worldwide
Industrial Bags	Industrial bags are used for packaging basic commodities, and more generally raw materials, fertilisers, polymers, building materials, agricultural and horticultural products and animal feed.	Germany, Belgium, Netherlands, Luxembourg, France, Spain
Monochloroacetic Acid	Monochloroacetic acid is a toxic and corrosive organic acid which involves reacting acetic acid with chlorine. It is used in the manufacture of detergents, adhesives, drilling ‘muds’ for deep wells, textile auxiliaries and thickeners used in foods, pharmaceuticals and cosmetics.	Europe
2004 Choline Chloride	Choline chloride is mainly used in the animal feed industry as a traditional feed additive (especially for poultry and swine) to increase growth, reduce mortality rates, increase feed efficiency, increase egg production, and improve meat quality.	Europe
Needles	Needles for application in hand sewing needles, craft needles, knitting needles and crochet hooks.	UK, Germany
Copper Plumbing Tubes	Copper plumbing tubes are used for water, oil, gas and heating installations in the construction industry.	Europe
2003 Industrial Copper Tubes	The most important of the latter in terms of volume is air-conditioning and refrigeration (ACR) industry, the other industrial applications being fittings, refrigeration, gas heater, filter dryer and telecommunication tubes	Europe
Organic Peroxide	Organic peroxide is employed in the production of polymers such as polyethylene, polyvinylchloride (PVC), polyacrylates, low density polyethylene and polystyrene.	Europe
Sorbates	Sorbates are chemical preservatives capable of retarding or preventing growth of micro-organisms (such as yeast, bacteria, moulds or fungi), used primarily in food and beverages, pharmaceutical products, cosmetics, pet food and animal feed.	Europe

2002		
Speciality Graphite	Speciality graphite (such as isostatic graphite) is employed in applications including electrodes for electrical discharge machining, continuous casting dies, hot press moulds, and are used by the automobile, electronics and semiconductor industries.	Worldwide
Methyglucamine	Methylglucamine is used as an intermediate chemical product for the synthesis of x-ray media, pharmaceuticals and colourings, primarily by hospitals.	Worldwide
Plasterboard	Plasterboard is a manufactured product used as a prefabricated construction material typically used by the building industry as an internal lining for walls, to form internal partitions inside buildings, as a roof lining and as a ceiling material for residential, commercial and administrative premises.	UK, France, Germany, Belgium, The Netherlands, Luxembourg Worldwide
Fine Art Auction Houses	The sale on commission by auction of fine art objects, antiques, furniture, collectibles and memorabilia.	Germany, France, Japan
Methionine	Methionine is one of the most important amino acids and is one of the components of animal feed.	
2001		
Zinc Phosphate	Zinc phosphate is used as an anti-corrosion mineral pigment in protective coating systems. Paint manufacturers use it for the production of anti-corrosive industrial paints such as automotive, aeronautic or marine paints.	Europe
Citric Acid	Citric acid is used primarily in the food and beverage industry as the most widely adopted preservative.	Worldwide
Vitamins	Vitamins are used for both animal nutrition and for human usage, chiefly in the production of pharmaceuticals and food.	Worldwide
Graphite Electrodes	Graphite electrodes are ceramic-moulded columns of graphite used primarily in the production of steel in electric arc furnaces, also referred to as ‘mini-mills’.	Worldwide
2000		
Amino Acids (lysine)	Lysine is an essential amino acid added to livestock feed.	Worldwide

1999 Seamless Steel Tubes	The steel pipe and tube sector comprises a great variety of pipes and tubes, which are manufactured by different processes for a series of uses including oil and gas drilling and extraction.	Europe
1994 Marine Containers	The market for the inland carriage of sea-borne containers to or from Germany through a Belgian, Dutch or German port.	Germany, Belgium, The Netherlands
Carton board	Carton board is a stiff material produced from wood fibres and used primarily for the manufacture of folding cartons for packaging food and non-food consumer goods. It is also used to produce card for graphic purposes.	Europe
PVC	PVC (Polyvinyl Chloride) is used in heavy industry and construction as well as varied consumer applications.	Europe
Cement	The market for grey and white cement, binding materials for use in the construction industry.	Europe