

Robust Event Studies for Derogation from Suspension of Concentrations in Greece during the Period 1995–2008

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Received: 2 October 2009 / Revised: 20 January 2010
Accepted: 8 February 2010 / Published online: 16 March 2010
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Abstract This paper examines the possible effect of the derogation from suspension of concentrations by the Hellenic Competition Commission (HCC) on the stock performance of the requested companies. For this reason, we examined 16 companies listed in the Athens Stock Exchange (A.S.E) that are involved to 13 requested derogations from suspension during the period 1995–2008 by applying and assessing the results of three different event study methodologies (market model, mean adjusted return model and market adjusted return model). From the empirical findings, we conclude that the argument of the requested companies concerning the subsequent negative effect on their stock performance if the derogation from suspension by the HCC is delayed or not granted does not hold. On the contrary, the average abnormal and cumulative returns of the requested companies are positive and statistical significant. In addition, the results of the three event study methodologies are robust.

Keywords derogations · concentrations · stock performance · abnormal returns · cumulative returns

JEL Classifications G34 · C13 · L1 · K20

1 Introduction

Within the last years there is a substantial body of literature investigating the extent of profitability of concentrations in the market. In these studies there is a wide diversification concerning one or more of the following aspects: a) the country under scrutiny, b) the “nature” of the concentration (i.e tender offer, merger and acquisition), c) the time

The views expressed in this paper are solely those of the authors and do not reflect by any means the Hellenic Competition Commission.

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frequency of the period of the data used and d) the methodology employed in the empirical investigation.

On the one hand, many of the studies explore the effect of the announcement of merger and acquisition (M&A) aiming at shareholder value both in the target and the bidder firms. On the other hand, other studies analyse the competitive effects of M&As' announcements, while many of the event studies may also be used to analyze the effect of antitrust enforcement agencies on the stock value of merging parties.¹

The main scope of this paper is twofold: on the one hand, we calculate the sign of the effect of merger announcement on merged firms' value and on the other hand, we examine whether requested derogations from suspension of concentrations that have been notified in General Directorate of Hellenic Competition Commission during the period 1995–2008 produced positive stock value of the firms that make the request.

Despite its crucial importance, this analysis has not yet been prepared for Greece. However, this study is prototype and important besides Greece since, to the best of authors' knowledge the effect of requested derogations from suspension of concentrations on firms' stock value, has not been analyzed. In addition, even though Greece is a small country, it constitutes a member of the European Union and a study focusing on Greek merger policy (at least a part of it) is always interesting for other member countries as well. Therefore, the application of event study methodology focusing on investigating the effect on requested derogations from suspension of concentrations tries to make the contribution in the paper more significant and novel. Besides, an understanding of the Greek experience will be useful for other European countries that pursue M&As'.

The remainder of the paper is organized as follows. Section 2 provides an analytical description of the legal framework prevailing in the Hellenic Competition Act, while Section 3 tries to encapsulate the substantial body of literature concerning the event study methodology. The next section describes the empirical tools employed in the research methodology of this paper. Using the results from the three alternative empirical models, in Section 5 the case of the derogation from suspension of concentrations is investigated with reference to basic elements of the event study methodology. Along to this analysis, there is a critical discussion over key relationships that may link the application and the robustness of the different methodological tools embodied in the paper. Finally, Section 6 depicts the main findings of our analysis presented together with a few policy propositions.

2 Legal perspective

2.1 Accomplishment of a concentration

According to the Greek Law (703/77),² a concentration of undertakings is materialized when two or more previously independent undertakings merge in any way or if one or more natural persons already controlling at least one undertaking, or one or more undertakings, directly or indirectly take control of the whole or parts of one or more undertakings.

For the application of this provision, it is accepted that control derives from rights, contracts or other means, which either individually or jointly with other ones, and taking

¹ For more details of the literature concerning event study methodology, see Section 3 below.

² See Article 4 para 2 of Law 703/77.

into consideration the relevant factual and legal conditions, offer the possibility of a decisive influence on the activities of an undertaking, and particularly by means of a) rights of property or usufruct on the whole or part of an undertaking's assets, b) rights or contracts offering the possibility of a decisive influence on the composition, meetings and decisions of an undertaking's bodies.³ These means are indicative and not exclusive. Control is taken by the natural person or persons, or undertakings that either are subjects of these rights or empowered by those agreements or without being holders of these rights or beneficiaries of said contracts, they are entitled to make use of the rights emanating therefrom.

The above mentioned definition of concentration is compatible with the article 3 of the ECMR 139/2004 definition.⁴ As it is inferred by the content of this article (3), the *principle of permanent changing of control* constitutes the base for conceptual approach of a merger. According to the expression of the above mentioned article, it is concluded that a concentration is unconditionally compatible with a complex of legal and economic factors that change the structure of an undertaking for a long period and consequently it is not about an interim (temporary) change. A merger could be realized mainly by two ways: a) either by the consolidation of two or more independent (in the past) undertakings b) or by the possession of control of another undertaking (this possession may concern either the totality of an undertaking or a part of it).⁵

Furthermore, concentration could become not only in the case of changing structure, but also in the case of a creation of a new structure (joint venture),⁶ under the necessary preconditions that the new structure is characterized a) by duration and b) by its ability to function as an autonomous economic entity.⁷

2.2 National law (Law 703/77) & usual practice of the Hellenic Competition Commission

One of the most interesting issues in the field of concentrations is that of a requested derogation from suspension from them, which in some cases is submitted to the Hellenic Competition Commission (HCC)⁸ by the interested parties. The scope of the specific request by the latter is to achieve an exemption from the obligations laid down in article 4e of Law 703/77, so as to avoid serious prejudice to one or more undertakings concerned by the concentration or to third parties.

One of the main arguments that the notifying undertakings allege is the probable negative influence on their stock performance, in the case there is a delay on the judgment of the Hellenic Competition Commission about the requested suspension of derogation or the derogation is not granted. The rest of the cases concern a variety of reasons: for instance, the delay of the restructuring programme for the business that would be bought, the viability of the business that would be bought, or the non effective function of the business that would be bought. Furthermore, there were cases where the economic crisis constituted the main argument for derogation, or the exertion of voting rights in the

³ See Article 4 para 3 of Law 703/77.

⁴ [OJ L24/1, 29.01.2004]. See article 3 of Regulation 139/2004.

⁵ See article 3 para 2 of Regulation 139/2004.

⁶ About the notion of joint venture, see indicatively Goyder (2003), 401, clarifying that “[t]he term ‘joint venture’ covers a wide range of activities, from the kind of market—sharing and price-fixing arrangements closely akin to a cartel at one extreme to an agreement at the other to merge completely the activities of the participants in a particular product or service whilst the parent companies cease to operate in that market themselves. While the former still require to be analysed under Article 81(1) and (3), the latter would more appropriately be treated as a concentration”.

⁷ See article 3 para 4 of Regulation 139/2004 and article 4 para 5 (1) of Law 703/77.

⁸ See article 4e para 3 of Law 703/77.

business that would be bought. Additionally, the validate participation in the general meeting of shareholders was the main argument for derogation, or the threat of bankruptcy. Regulation of debts constitutes as well one of the main arguments for derogation. The investment's non completion and a State loan were also arguments for derogation. Furthermore, the non effective function of the business that would be bought is also a quite usual argument (as well as the non effective function of the participating companies).

According to article 4e para. 3 of Law 703/77, *the Hellenic Competition Commission may, upon request by the interested parties, permit an exemption from the obligations laid down in paragraphs 1 and 2, in order to avoid serious prejudice to one or more undertakings concerned by the act of concentration or to third parties. The decision permitting the exemption may set terms and obligations in order to secure conditions of effective competition and to prevent situations that could hinder the execution of an eventual prohibitive final decision. The permission of exemption may be requested or granted at any time, either before notification or after the transaction. The decision permitting the exemption may be revoked by the Hellenic Competition Commission if it is necessary.*⁹

As it has already been mentioned, the practice shows that one of the most usual arguments that the interested parties invoke is the probable negative influence of the requested derogation on the stock performance of the interest companies. At the present study we examine 53 requested derogations from suspension¹⁰ which were submitted to the HCC during the period 1995–2008. It is remarkable that in 26 of these 53 cases (49%) the reduction of the stock performance was one of the main arguments or the only argument for the achievement of derogation from suspension. Only in 3 of those 26 cases the HCC's decision was negative, which means that in the vast majority of these cases (23 to 26) derogation from suspension was achieved. More specifically, among those 26 cases 11 cases were found, where the possible reduction of the stock performance concerned the acquired business and only 2 cases were found, where the possible reduction of the stock performance concerned the acquiring company (buyer). On the rest of the cases, i.e. 13 out of 26, the possible reduction of the stock performance was either one of the main arguments or the only argument and concerned all the participating companies.

2.3 EC law & usual practice of the European Commission: ECMR's provision

Article 7 para 3 of Regulation 139/2004 provides an exemption from the general rule of suspension of the concentration's realization¹¹: the derogation is approved by a European Commission's decision, which is taken after a request by the participating (to the concentration) undertakings or even after a request by third interested parties,¹² intending to avoid harm to their interests. In cases where a derogation has been requested, the European Commission in order to decide whether the realization of the concentration should be permissible or not, is obliged to balance not only the interest of the merging parties and that of third interested parties, but also the possible harm to competition as a consequence of the immediate completion of the merger.¹³

⁹ Article 4d(12) of Law 703/77.

¹⁰ 48 companies listed in the Athens Stock Exchange are involved.

¹¹ See the example presented by Korah (2007), 396 (“Nevertheless, with the Commission's permission (Art. 7 (3)), a public bid may be implemented if it was notified before its announcement, and the acquirer did not exercise the voting rights otherwise than in order to maintain the full value of its investments (Art. 7(2))”.

¹² For instance, as third interested parties could be considered creditors, employees, etc.

¹³ About the issue of protecting third interesting parties, see ad hoc the analysis of Karydis (1997).

It is underlined that from 21.09.1990 to 20.09.2008 the European Commission has issued 100 decisions about derogation from suspension of concentrations.¹⁴ Consequently, practice shows that in reality derogation from suspension of concentrations does not actually constitute an exemption from the general rule of suspension of the concentration's realization, at least in the real meaning of the term "*exemption*". According to article 7 para 3 of Regulation 139/2004, derogation constitutes the European Commission's practice only in exceptional circumstances. Nevertheless, derogation has been issued for a variety of reasons that interested undertakings usually provide.¹⁵

There were cases where the European Commission offered derogation in cases of urgent interim measures to ensure the success of the operation,¹⁶ of lack of harmful effects on competition,¹⁷ of fulfilment of prior commitments,¹⁸ of the need to fulfil legal requirements,¹⁹ of the difficult economic situation of the target, or in case of the need to comply with certain conditions of a bid. It is remarkable that, to the best of the authors' knowledge, derogation has never been granted due to a possible deterioration of firm's stock performance. All in all, the authors have not detected any such case.

2.4 Derogation for deconcentration or dissolution

One example of derogation intending to Deconcentration could constitute "*In Philips/Lucent Technologies*" case; it is about the European Commission's decision COMP/M.1358.²⁰ Para 5 of the specific decision is characteristic: The commercial performance of PCC²¹ [a world-wide joint venture named "Philips Consumer Communications L.P."] was very disappointing for both parties (Royal Philips Electronics N.V. {'Philips'} & Lucent Technologies Inc. {'Lucent'}). Consequently, in less than a year, the parties involved decided that PCC was not able to maintain itself on the market. Philips claimed that there was a decrease in PCC's market shares. "*On 21 October 1998, the parties decided to disengage from the joint venture, by signing the Disengagement Agreement Term Sheet ("Agreement") of the same date*". According to para 7 of the same decision, *in view of the exceptional nature of the case and in order to enable the parties to disengage from the joint venture without delay, the Commission by decision of 27.11.1998 granted a derogation from the obligation to suspend the operation, pursuant to Article 7(4) of Council Regulation (EEC) N° 4064/89.*

One example of derogation intending to Dissolution could constitute BP/JV case; it is about the European Commission's decision COMP/M.1820²²; in para 1 and para 2 of this decision it is referred that *on 21.12.1999, the Commission received a notification of a proposed concentration pursuant to Article 4 of Council Regulation (EEC) No 4064/89²³ by which BP Amoco p.l.c. ("BPA") (United Kingdom) acquired within the meaning of Article 3(1)(b) of the Merger Regulation control of parts of the BP/Mobil Joint Venture.*²⁴

¹⁴ See article 7 para 4 of the precedent Regulation 4064/1989. See relatively <http://ec.europa.eu/comm/competition/mergers/statistics.pdf>.

¹⁵ The derogation issue is presented successfully by Blanco (2006), 16.07–16.09 and Levy (2002), 5.13.

¹⁶ Case COMP/JV.3 *BT/Airtel*, 1998, Case M1865 *France Telecom/Global One*, 2000.

¹⁷ See Case M497 *Matra Marconi Space/Satcoms*, 1994, para 1.

¹⁸ See Case M1419, *Groupe Cofinoga/BNP*, 1999, para 1.

¹⁹ See COMP/M.1667 [BBL/BT/ISP Belgium, 23.09.1999], IV/JV.2 [ENEL/FT/DT, 22.06.1998, para 8].

²⁰ 06.01.1999.

²¹ It is about a world-wide joint venture named "*Philips Consumer Communications L.P.*" ('PCC').

²² 02.02.2000.

²³ ("*the Merger Regulation*").

²⁴ ("*the JV*").

The JV would be dissolved. The vendor was Exxon Mobil Corporation (“ExxonMobil”) (USA). On 22.12.1999, ie the next day of the notification, the Commission decided, pursuant to Article 7(4) of the Merger Regulation, to grant a derogation from the obligation, imposed by Article 7(1) of the Merger Regulation, to suspend the implementation of a concentration until it had been declared compatible with the common market pursuant to a decision under Article 6(1) (b) or Article 8(2) or on the basis of a presumption according to Article 10(6). The specific case is combined with Mobil/JV case; it is about the European Commission’s decision COMP/M.1822.²⁵ In para 1 and para 2 of this decision it is referred that on 04.01.2000, the Commission received a notification of a proposed concentration pursuant to Article 4 of Council Regulation (EEC) No 4064/89 by which Exxon Mobil Corporation (“ExxonMobil”) (USA) acquired within the meaning of Article 3(1)(b) of the Merger Regulation control of parts of the BP/Mobil Joint Venture. The JV would be dissolved. The vendor was BP Amoco p.l.c. (“BPA”) (United Kingdom). On 22.12.1999, the Commission decided, pursuant to Article 7(4) of the Merger Regulation, to grant a derogation from the obligation, imposed by Article 7(1) of Council Regulation (EEC) No 4064/89, to suspend the implementation of a concentration until it had been declared compatible with the common market pursuant to a decision under Article 6(1) (b) or Article 8(2) or on the basis of a presumption according to Article 10(6)”. Both cases, i.e. COMP/M.1820 & COMP/M.1822, are combined with Exxon/Mobil case; it is about the European Commission’s decision COMP/M.1383.²⁶ In para 56 of this case it is referred that the Directive [i.e. Directive 98/30/EC of the European Parliament and of the Council²⁷ and national implementation measures (liberalisation)] allows for an important conditional derogation procedure whereby the Commission can accept, under certain conditions, that gas undertakings can refuse access if this would cause them serious economic and financial difficulties because of take-or-pay commitments accepted in one or more gas purchase contracts.

2.5 Derogation for the fulfilment of legal and practical requirements relevant with the market conditions

One example of derogation intending to the fulfilment of legal and practical requirements relevant with the market conditions could constitute OMNITEL case; it is about the European Commission’s decision IV/M.538.²⁸ In para 6 of this decision it is mentioned that by its decision of 22.12.1994, the Commission had granted to OPI (Omnitel Pronto Italia S. p.A.) a derogation from the obligation to suspend the concentration, imposed by Article 7 (1) of the Merger Regulation.

“This was necessary for OPI to be in a position to meet the deadlines established by the licence and to operate in competition with Telecom Italia, which has already built its GSM network and has a significant presence in the market for analog mobile telephony in Italy. At this purpose OPI has already undertaken some activities which are preliminary to the start up of its cellular service (such as the award of contracts for the construction of the network, the funding agreements, construction and installation of sites)”.

²⁵ 02.02.2000.

²⁶ 29.09.1999.

²⁷ *The EC Gas Directive.*

²⁸ 27.03.1995.

2.6 Prevention of economic damages

One example of derogation intending to prevention of economic damages could be considered *ING/Barings Case*; it is about the European Commission's decision M573.²⁹ In para 7 of this decision it is mentioned that *the Commission granted a derogation, on the basis of Article 7(4), on 6 March 1995 whereby the suspensive effect of the Merger Regulation, on concentrations with a community dimension, was waived in relation to this operation. This was considered necessary given the need to effect a rapid completion of the operation in order to prevent serious damage to Barings and third parties.*

Relevant is also the *Siemens/Alstom Gas and Steam Turbines Case*; it is about the European Commission's decision M3148.³⁰ In para 7 of this decision it is mentioned that *"further to its request of 23 April 2003, Siemens was granted by the Commission on 30 April 2003, a derogation from Art. 7(1) for the acquisition of the SGT business, so that this transaction could be implemented immediately in order to avert serious harm to Alstom and the SGT business"*.

A quite old but classic example is *Kelt/American Express Case*; it is about the European Commission's decision No IV/M.116.³¹ In para 7 of this decision it is mentioned that *the Commission had examined the latest annual accounts of Kelt and Keltex and it was satisfied of the very serious nature of both undertakings financial position. Given the specific circumstances of the case the Commission was convinced of the need to swiftly effect the restructuring operation in order to prevent serious damage to one or more undertakings concerned by the concentration. For this reason the Commission had already granted, on being requested, a derogation in accordance with the terms of Article 7(4) of the Merger Regulation allowing the concentration to be put into effect"*.

2.7 Complying with conditions of a bid

An example of derogation caused by the necessity of complying with conditions of a bid could be considered the *E.ON/TXU Europe Group case*; it is about the European Commission's decision COMP/M.3007.³² In para 2 of this decision it is mentioned that *on the 18 October 2002 the Commission, based on a reasoned request from Powergen, adopted a decision pursuant to Article 7(4) of the Merger Regulation granting Powergen a derogation from the obligation imposed by Article 7(1) to suspend the implementation of a concentration until it has been declared compatible with the common market pursuant to Article 6(1)(b) or Article 8(2) or on the basis of a presumption according to Article 10(6) of the Merger Regulation. This decision enabled Powergen to make an unconditional offer for the United Kingdom assets of TXU Europe. Powergen's offer was successful and it completed the acquisition of TXU-E on the 21 of October 2002.*

Another example is also *Cinven Limited/Angel Street Holdings case*; it is about the European Commission's decision COMP/M.2777.³³ In para 2 of this decision it is mentioned that *the transaction had already been consummated. A request for derogation from the suspension obligation in Article 7(1) of the Merger Regulation was granted by the Commission on 15 March 2002. The purpose of the derogation was to facilitate a bid for*

²⁹ 11.04.1995.

³⁰ 10.07.2003.

³¹ 20.08.1991.

³² 18.12.2002.

³³ 08.05.2002.

the purchase of assets the sale of which had to be completed unconditionally on or before 20 March 2002. The acquisition by the buyer group was completed on that date. As the proposed acquisition was notifiable under the Merger Regulation, the requesting parties would, in the absence of such a derogation, have effectively been excluded from the auction.

3 Survey of the literature

Event studies are among the most successful tools of econometrics in policy analysis. By providing a methodology for measuring the impact of events on investor wealth, the analysis offers a fruitful way for evaluating the welfare implications of private and public actions (Wenston et al. 1998). Pioneer articles of this methodology, *inter alia*, are that of (Brown and Warner 1980, 1985). However, although event studies may be able to inform economists of the investors' policy regarding the behaviour of the firm in a specific policy measure, the results of these studies may not fully reflect the true impact of the pursued policies (Reynolds 2008). At the same time there is some concern whether event studies may be used so as to analyse anticompetitive practices. See for example, *inter alia*, the studies by McAfee and Williams (1988), Fridolfsson and Stennek (2000), Bhattacharya et al. (2000), Baker (2002).

One branch of event studies explores the effect of the announcement of M&A and suspension of derogation from concentrations focus on shareholder value both in the target firm and in the bidder. The main result of those studies is that the announcement of the event increases and decreases (or at least do not affect) the value of the acquired and acquiring firms correspondingly.^{34,35} Thus, the shareholders of the target firms earn positive gains, while the shareholders of the bidding firms '*do not gain*' from the announcement of the event.^{36,37}

Even though event studies are well developed, there is some concern regarding the effectiveness of the methodology for small stock exchanges with *thinly traded stocks* (*infrequent trading* or *lumped returns* phenomenon).³⁸ In such situations the analyst must decide whether event studies can be reliably conducted using daily, weekly or monthly returns data.³⁹

³⁴ At least in successful M&A.

³⁵ See, among others, Bradley (1980), Bradley et al. (1982), Bradley et al. (1983), Dodd (1980), Jarrell et al. (1988), Asquith (1983), Asquith et al. (1982) for a comprehensive literature review on the effect of the announcement of M&A on shareholder value. For a literature review of the topic see Baghat and Romano (2001) and Cichelo and Lamdin (2006).

³⁶ Therefore, the value of the victims increase and that of acquiring firms do not, at least, decrease after the public announcement of the M&A. See for example Travlos (1987), Schwert (1996), Mitchell and Lehn (1990), Houston and Ryngaert (1994), Rau and Vermaelen (1998), Andrade et al. (2001), Ang and Kohers (2001), Becher (2000), Fotis (2005).

³⁷ For a literature review in the banking sector see Sudarsanam (2003), Becher (2000).

³⁸ The infrequent trading phenomenon appears when some stocks do not trade daily in the stock exchange. In such a case, the estimated variance and co-variance of the stock performance will positively correlate with their trade frequency. For further reading on this issue see Scholes and Williams (1977) and Dimson (1979).

³⁹ See also Maynes and Rumsey (1993), Barthodly et al. (2007). For the use of parametric and non parametric test statistics on event study methodology see Maynes and Rumsey (1993), Serra (2002), Boehmer et al. (1991), Jackson et al. (2006), Salinger (1992) and Corrado (1989). Studies that have dealt with the infrequent trading phenomenon using U.S. data (from the CRSP tapes) are those of Heinkel and Kraus (1988), Campbell and Wasley (1993) and Cowan and Sergeant (1996).

Another branch of event study methodology analyses the competitive effects of M&As' announcements. Pioneer work of that kind of methodology is the article by Eckbo (Eckbo 1983).⁴⁰ By analysing the share price of both merging and non merging parties (competitors) around the announcement of the event, the analyst may inference about the competitive effects of the M&A in the relative product market wherein the M&A occurs. The main conclusions of that kind of methodology⁴¹ are shown in Table 1.

As it can be shown from Table 1, the specific methodology presents some limitations in terms of market analysis outcome. In case where the announcement of the M&A has the same effect on the stock value of both merging and non merging parties, the market analysis outcome cannot specify the effect of that M&A in the competitive conditions of relative product market. That is, an analyst may not be in position to infer whether the M&A deteriorates (improves) the level of effectiveness and competition in the product market in case where the event announcement increases (decreases) the cumulative abnormal return of both merging and non merging firms. In addition, Baker has shown that the specific methodology may be a useful tool in evaluating the competitive effects of M&As' only in the case where coordinated effects, instead of exclusionary effects, are the core theory behind the anticompetitive effect (**IMPROVED COLLUSIVE BEHAVIOUR EFFECT**) (Baker 2002).

Since Eckbo many academics have used event studies analysis so as to explore the competitive effects of M&As'. The main results of those studies are given in Table 2.

Event study methodology may also be used to analyze the effect of antitrust enforcement agencies on the stock value of merging parties. Wier⁴² by analyzing U.S. data and considering abnormal returns at the announcement and the completion date of the M&As', concludes that a negative decision by the enforcement agency decreases the stock value of the target firm, even though the same firm had faced positive gains during the announcement of the merger. The study by Frank & Harris⁴³ supports the main conclusion of the study by Wier, while Forbes, by exploring the stock price of 50 bidding firms in U.K from 1976 to 1990 concluded that '*if a 3 day 'event window' is used, there is rather more evidence of losses*' rather than gains. Also, Oxera⁴⁴ analyzed 250 M&As' announcements from 2000 to 2006 (Forbes 1994). The results of this study are given in Table 3.

In relation to the above, Arnold & Parker examined 50 mergers referred from the O.F.T. to C.C. during the period from 1989 to 2002 (Arnold and Parker 2007). On the one hand, their findings supported the majority of the results of Table 1. That is, the shareholders of the victims gain more than the shareholders of the bidding firms from the announcement of the M&A. On the other hand, their findings did not support the results of Wier & Frank & Harris. Arnold and Parkers' analysis concluded that the shareholders of the target firms did not *lose* by the announcement of the negative decision by the enforcement agency.^{45,46}

⁴⁰ See also Beverley (2007) and Kokkoris (2007) for a practical assessment of Eckbo work.

⁴¹ For an analytical review (both theoretical and practical) see also Wenston et al. (1998).

⁴² See Wier (1983) for U.S. data.

⁴³ See Franks and Harris (1993). The writers explore 80 M&As' from 1965 to 1990. Their results are statistically significant for target firms, but not for bidding firms.

⁴⁴ OXERA (2006) in Agenda.

⁴⁵ See Arnold and Parker (2007), 37–41.

⁴⁶ Event study methodology has also been used so as to explore the European M&A regulative system and the effects of the main events in an antitrust investigation under articles 81 & 82. For the former see Atkas et al. (2007), while for the latter see Langus and Motta (2007).

Table 1 Event studies and competitive effects of M&As'

M&A parties	Competitors	Market analysis outcome
+	+	Vague ^a
+	-	Increased efficiency of M&A parties, lower prices, increased competition, higher consumer welfare (Cost saving efficiencies effect)
-	+	Decreased efficiency of M&A parties, higher prices, decreased competition, lower consumer welfare (Improved collusive behaviour effect)
-	-	Vague ^b

Cox and Portes (1998) & Eckbo (1983)

^a Either reduced competition or no modification in competitive conditions of relative product market

^b Either increased competition or no modification in competitive conditions of relative product market

Table 2 Cost saving efficiencies vs collusive behavior effects of M&As': 1963–2007

Study	Period/Sample	Country	Outcome
Eckbo (1983)	1963–1978 (102)	USA	Cost saving efficiencies effect
Stillman (1983)	1964–1972 (11)	USA	Cost saving efficiencies effect
Cox and Portes (1998)	1996 (2)	United Kingdom	It depends on the M&A case ^a
Duso et al. (2003)	1990–2001 (164)	European Union	Improved collusive behaviour effect
Duso et al. (2006a; b)	1990–2002 (167)	European Union	Vague ^b
Beverley (2007)	2004–2007 (4)	United Kingdom	It depends on the M&A case ^c
Kokkoris (2007)	2003, 2006–2007 (3)	United Kingdom	Improved collusive behaviour effect ^d

The number in the parenthesis is the sample of M&A (events)

Authors' elaboration

^a In the 1st event (SBC–PacTel) the majority of the results exhibit the effect of collusive behaviour as an effect of the M&A announcement. In the 2nd event (BT–MCI) the no statistically efficiencies

^b The same sign(+) for both merging and non merging firms except for the event window -2 +2 where it appears the cost saving efficiencies effect

^c Only in one case study (Baggeridge/Wienerberger) out of four the results exhibit the effect of cost saving efficiencies

^d In one case study (ITV/BSkyB) around the period of acquisition by BSKyB of 17.9% of ITV, the results are inconclusive in terms of the competitive effects of the M&A

Table 3 The competitive effects of 250 M&As' in the U.K. during the period from 2000 to 2006

	M&As' parties	
	Bidding firm	Target
Announcement		
Second phase referral	-3% to 1% ^a	-8% to -12% ^a
Clearance without referral ^b	+/-1% ^a	+/-1% ^a

Oxera (2006)

^a On average

^b Presents the 85% of the M&As' cases

4 Empirical methodology

In this study for some requested derogations the merged firms in their vast majority were foreign companies not listed in the A.S.E, while for others historical data were missing. Also, for some merged firms the estimation of coefficient β of Eq. 1 below is not statistical significant at least at $\alpha=0,10$. As a result, the sample consists of 16 companies listed in the Athens Stock Exchange (ASE), which are involved in 13 requested derogations during the period 1995–2008.⁴⁷ For the sample companies the *infrequent trading phenomenon* does not appear. In addition, in this paper AR means Abnormal Returns, CAR means Cumulative Abnormal Returns, AAR means Average Abnormal Returns and CAAR means Cumulative Average Abnormal Returns.

We define an event window from 20 days prior to the announcement of the event to 20 days after the announcement of the event.⁴⁸ The announcement day or day 0 refers to the submission of the request derogation from suspension of concentration. We use market model (MM), mean adjusted return model (MEARM) and market adjusted return model (MAARM) so as to calculate firms’ abnormal returns around the announcement of the event.⁴⁹

4.1 The MM

Under the assumptions of *efficient markets hypothesis* and *rational expectations*, the market model forecasts that firm j ’s stock return at time τ ($R_{j\tau}$) is proportional to a market return. That is,

$$R_{j\tau} = \alpha + \beta R_{m\tau} + \varepsilon_{j\tau} \tag{1}$$

where

$R_{m\tau}$: the return on the market index for the day τ in the event window.

We estimate the market model over 200 trading days, starting 21 days prior to the announcement day.⁵⁰ We use the estimated values for the model’s parameters (the Greek parameters α & β of Eq. 1 to predict what firm j ’s stock return would have been, had the derogation from suspension of concentration not been announced ($\widehat{R}_{j\tau}$). Therefore,

$$\widehat{R}_{j\tau} = \widehat{\alpha} + \widehat{\beta} R_{m\tau} + \varepsilon_{j\tau} \tag{2}$$

For firm j , we then calculate the abnormal return around the derogation from suspension of concentrations’ announcement day τ ($AR_{j\tau}$), which is simply the difference between the return⁵¹ of firm j on day τ and Eq. 2 above. In other words,

$$AR_{j\tau} = R_{j\tau} - \widehat{R}_{j\tau} = R_{j\tau} - \left(\widehat{\alpha} + \widehat{\beta} R_{m\tau} \right) \tag{3}$$

⁴⁷ The data are available from the authors upon request.

⁴⁸ Day 0 is the date the announcement is made for a particular firm and will be different calendar dates among sample firms.

⁴⁹ For the calculation of standard deviation we assume normal abnormal returns. See Eqs. 5–8 in Brown and Warner (1985), Eqs. 1–3 in Corrado (1989), Eq. 6 in Serra (2002), Eqs. 6–9 in Maynes and Rumsey (1993).

⁵⁰ We have chosen a clean period from 21 to 221 trading days prior to the event period.

⁵¹ Which, without the inclusion of dividends, is given by $R_{j\tau} = \left(\frac{p_{jt} - p_{j,t-1}}{p_{j,t-1}} \right) * 100$

For each day in the event window the AR are averaged across firms to produce average AR for that day ($AAR_{j\tau}$). Thus,

$$AAR_{j\tau} = \frac{\sum_j AR_{j\tau}}{N} \quad (4)$$

where

N : the number of the sample firms

Then, we cumulate $AAR_{j\tau}$ for each day over the event window to deduce $CAAR_{j\tau}$. Therefore,

$$CAAR_{j\tau} = \sum_{\tau=-m}^{+n} AAR_{j\tau} \quad (5)$$

where

$m = n = 20$ days prior and after the announcement day correspondingly.

Lastly, the $CAR_{j\tau}$ over the event window is defined to be:

$$CAR_{j\tau} = \sum_{\tau=-m}^{+n} AR_{j\tau} \quad (6)$$

where

$m = n =$ as Eq. 5 above.

4.2 The MEARM

Under the MEARM, Eq. 2 above becomes

$$\widehat{R}_{j\tau} = \frac{\sum_{\tau=-m}^{+n} R_{j\tau}}{200} = \overline{\overline{R}} \quad (7)$$

where

$m = n = 20$ days prior and after the announcement day correspondingly.

In other words, the predicted return of a firm for each day in the event window ($\widehat{R}_{j\tau}$) is simply the mean daily return for the clean period for the firm ($\overline{\overline{R}}$).

Consequently, the abnormal return around the derogation from suspension of concentrations' announcement day τ ($AR_{j\tau}$) is calculated as

$$AR_{j\tau} = R_{j\tau} - \overline{\overline{R}} = R_{j\tau} - \frac{\sum_{\tau=-m}^{+n} R_{j\tau}}{200} \quad (8)$$

After we have calculated Eq. 8 for each sample firm and day of the event window, we use Eqs. 4 to 6 to estimate $AAR_{j\tau}$, $CAAR_{j\tau}$ and $CAR_{j\tau}$ respectively.

4.3 The MAARM

Following MAARM, the predicted return for a firm for a day in the event window is simply the return on the market index for that day. That is, for day τ of the event window, the predicted return of firm j is given below as

$$\widehat{R}_{j\tau} = R_{m\tau} \quad (9)$$

where

$R_{m\tau}$: the return on the market index for the day τ in the event window.

Therefore, the abnormal return around the derogation from suspension of concentrations' announcement day τ ($AR_{j\tau}$) is calculated as

$$AR_{j\tau} = R_{j\tau} - R_{m\tau} \quad (10)$$

Lastly, we follow the same procedure as in MM & MAERM so as to calculate $AAR_{j\tau}$, $CAAR_{j\tau}$ and $CAR_{j\tau}$.

5 Empirical results

In this section we summarize the results from the analysis of the total sample of 16 companies that have involved in 13 requested derogations from suspension of concentrations during the period 1995–2008. More specifically, in the subsequent section we draw conclusions regarding the application of the market model method, while in the next sections we report the results from the other two methodologies (mean and market adjusted returns respectively).

5.1 Results from MM method⁵²

According to the empirical results below (see Table 4), it is evident that during the period $(-7 +12)$ the average abnormal returns (AAR_{Total}) are positive and in most cases statistical significant. In the period $(0 +20)$, the cumulative average abnormal returns ($CAAR_{Total}$) are statistical significant with their highest price (24.65%) on the twentieth day from the announcement of the event (suspension from derogation).

The analysis gives similar results, as expected by the theory, if the sample is restricted to the acquired acquiring firms. More specifically, the cumulative average abnormal returns ($CAAR_{Acquired}$) of the acquired firms are positive and statistical significant during the period $(+2 +20)$ from the announcement of the event. On the contrary, the cumulative average abnormal returns of the acquiring firms ($CAAR_{acquiring}$), even though are positive (3.49 at day +20), are not statistical significant.⁵³ Finally, the average abnormal return of the acquiring firms ($AAR_{acquiring}$) alternate in sign and is not statistical significant during the period $(+3 +20)$.

The stocks of the total sample during the period $(-1 +1)$ shows a positive and statistical significant cumulative average abnormal return ($CAAR_{Total}$) equal to 1.71% (see Table 5 below) The positive and statistical significant CAAR is also evident in the two sub-samples (9.85% and 47.23% in the acquiring and acquired firms respectively). Furthermore, the cumulative average abnormal return during the sub-period $(-5 +5)$ is positive and statistical significant for the total sample (11.28%) and for the acquired firms as well (37.07%). It is crucial to be stated that the above results do not change even when the event period is $(-10 +10)$ and $(-1 +20)$ days around the announcement of the event correspondingly.

5.2 Results from MEARM

According to the empirical results of Table 6 below, it is evident that during the event period the AAR_{Total} for the total sample alternates in sign. More specifically, AAR_{Total} is

⁵² The econometric results of the market method are provided upon request.

⁵³ This finding is also consistent with other empirical studies. See for example footnote 36 above.

Table 4 AR, AAR and CAAR during the period (−20+20) around the announcement of the event: MM (Market Model)

Period	AR _{Total} >0	AR _{Total} <0	AAR _{Total} (%)	CAAR _{Total} (%)	AAR _{acquiring} (%)	CAAR _{acquiring} (%)	AAR _{acquired} (%)	CAAR _{acquired} (%)
−20	8	8	−0.25	−0.25	−0.58	−0.58	1.19	1.19
−19	9	7	0.03	−0.21	−0.46	−1.04	1.51	2.70
−18	7	9	−0.12	−0.34	0.14	−0.90	−0.90	1.79
−17	7	9	−0.35	−0.68	−1.08	−1.98	1.85	3.64
−16	9	7	−0.58	−1.26	−1.17	−3.15	1.19	4.83
−15	8	8	0.04	−1.23	−0.91	−4.06	2.87	7.70
−14	8	8	−0.44	−1.67	−1.00	−5.06	1.25	8.95
−13	9	7	0.36	−1.30	0.51	−4.56	−0.07	8.88
−12	9	7	1.38 ^c	0.07	0.86	−3.70	2.93	11.81
−11	9	7	1.12	1.20	0.34	−3.35	3.47	15.28
−10	6	10	−0.46	0.73	−0.12	−3.48	−1.49	13.79
−9	8	8	−0.75	−0.02	−0.34	−3.82	−1.98	11.81
−8	8	8	−1.24 ^c	−1.26	−1.87 ^b	−5.69	0.65	12.46
−7	9	7	1.30 ^c	0.03	0.65	−5.04	3.22	15.67
−6	11	5	2.13 ^b	2.16	2.13 ^b	−2.91	2.14	17.81
−5	8	8	0.66	2.82	0.11	−2.80	2.31	20.12
−4	12	4	1.85 ^b	4.67	2.18 ^b	−0.62	0.85	20.97
−3	7	9	0.01	4.69	−0.30	−0.92	0.96	21.93
−2	7	9	0.25	4.93	−0.81	−1.73	3.43	25.36 ^c
−1	9	7	0.68	5.62	0.55	−1.18	1.08	26.44 ^c
0	12	4	2.77^a	8.39^c	0.06	−1.13	10.93^a	37.38^b
+1	5	11	1.71 ^b	10.10 ^b	−1.01	−2.13	9.85 ^a	47.23 ^a
+2	10	6	1.92 ^b	12.02 ^b	1.88 ^b	−0.26	2.04	49.27 ^a
+3	9	7	0.84	12.86 ^b	0.38	0.12	2.22	51.49 ^a
+4	6	10	0.24	13.10 ^b	−0.15	−0.03	1.42	52.91 ^a
+5	10	6	0.34	13.44 ^b	−0.20	−0.23	1.96	54.88 ^a
+6	10	6	1.86 ^b	15.30 ^a	0.99	0.76	4.49	59.37 ^a
+7	7	9	1.25 ^c	16.55 ^a	−1.41	−0.65	9.22 ^a	68.59 ^a
+8	7	9	0.49	17.04 ^a	0.22	−0.43	1.28	69.88 ^a
+9	11	5	2.01 ^b	19.05 ^a	0.37	−0.06	6.94 ^a	76.81 ^a
+10	9	7	0.98	20.03 ^a	0.09	0.03	3.67	80.49 ^a
+11	10	6	1.35 ^c	21.38 ^a	0.87	0.90	2.77	83.26 ^a
+12	8	8	0.60	21.98 ^a	−0.17	0.73	2.90	86.16 ^a
+13	6	10	−0.25	21.73 ^a	−0.69	0.04	1.05	87.21 ^a
+14	10	6	0.67	22.40 ^a	0.33	0.37	1.72	88.94 ^a
+15	9	7	0.30	22.70 ^a	0.37	0.74	0.07	89.00 ^a
+16	7	9	0.94	23.64 ^a	0.95	1.69	0.93	89.93 ^a
+17	7	9	−0.15	23.49 ^a	−0.72	0.97	1.55	91.49 ^a
+18	8	8	0.53	24.02 ^a	0.93	1.90	−0.66	90.83 ^a
+19	9	7	0.03	24.05 ^a	0.51	2.41	−1.41	89.42 ^a
+20	8	8	0.59	24.65 ^a	1.08	3.49	−0.88	88.54 ^a

Elaboration of historical data, ASE

^a Denotes statistical significance at $\alpha=0.01$ ^b Denotes statistical significance at $\alpha=0.05$ ^c Denotes statistical significance at $\alpha=0.10$

Table 5 AAR and CAAR over selected event periods: MM (Market Model)

Event period	AAR _{Total} (%)	CAAR _{Total} (%)	AAR _{acquiring} (%)	CAAR _{acquiring} (%)	AAR _{acquired} (%)	CAAR _{acquired} (%)
-1 +1	1.71 ^c	10.10 ^a	-1.01	-2.14	9.85 ^c	47.23 ^a
-5 +5	0.34	11.28 ^a	-0.20	2.68	1.96	37.07 ^a
-10 +10	0.98	18.84 ^a	0.09	3.38	3.67	65.22 ^a
-1 +20	0.59	19.71 ^a	1.08	5.22	-0.88	34.44 ^b

Elaboration of historical data, ASE

^a Denotes statistical significance at $\alpha=0.01$

^b Denotes statistical significance at $\alpha=0.05$

^c Denotes statistical significance at $\alpha=0.10$

positive but not statistical significant mainly in the period (+8 +16), whereas in the period around the announcement day (-3 +7) the relevant variable is negative. In the period (+11 +20), the CAAR_{Total} is positive but not statistical significant with their highest price (6.26%) on the seventeenth day from the announcement of the suspension from derogation.

When the sample is restricted to the acquired firms useful conclusions are drawn. To begin with, the CAAR_{acquired} are negative but not statistical significant during the period (+1 +7) from the announcement of the event. However, for the period (+11 +20), the cumulative average abnormal returns are positive and statistical significant (except the last day of the event window which is 4.88). This finding is in alignment with the previous described methodology (see Section 4) revealing that the merger or the acquisition generates wealth for the acquired firms.

On the contrary, the (CAAR_{acquiring}) of the acquiring firms is negative for the period (-2 +12) and becomes insignificant positive for the rest of the days of the event window. Therefore, acquiring firms do not gain (or gain less than the acquired firms) from the announcement of the event and this finding is consistent with other empirical studies (Arnold and Parker 2007). Finally, the average abnormal return of the acquiring firms (AAR_{acquiring}) alternate in sign and is not statistical significant especially for the period around the announcement of the event (-1 +10).

Also, the stocks for the whole sample during the 3 days around the event (-1 +1) show a significantly negative cumulative average abnormal return (CAAR_{Total}) equal to -1.85% (see Table 7), but this result does not hold if we extend the event period from 3 to 11 and 21 days around the announcement of the event. The CAAR_{Total} is negative but not statistical significant. The CAAR_{Total} becomes positive for the event periods (-20 +20) and (+1 +20), but continues to be insignificant.

If we focus on the two sub-samples (acquiring and acquired firms), different findings emerge. More specifically, the cumulative average abnormal return for the acquiring firms is negative but not statistical significant, whereas the relevant variable for the other sub-sample (CAAR_{acquired}) comes with a significant negative sign during 3 and 11 days around the announcement of the event, but becomes insignificant for larger event periods around the occurrence of the event.⁵⁴ Therefore, it seems that even though acquired firms do not

⁵⁴ According to the results of Table 7, for the event periods (-1 +10), (-1 +20) & (-20 +20). For the last event period (41 days around the announcement of the event), the CAAR for the acquired firms is insignificant positive.

Table 6 AAR and CAAR during the period (−20 +20) around the announcement of the event: MEARM (Mean Adjusted Return Method)

Period	AAR _{Total} (%)	CAAR _{Total} (%)	AAR _{acquiring} (%)	CAAR _{acquiring} (%)	AAR _{acquired} (%)	CAAR _{acquired} (%)
−20	−0.59	−0.59	−1.28	−1.28	1.49 ^c	1.49
−19	−0.59	−1.17	−0.64	−1.92	−0.43	1.07
−18	0.29	−0.88	0.42	−1.51	−0.08	0.99
−17	−1.37 ^c	−2.25	−1.67 ^c	−3.17	−0.47	0.52
−16	0.60	−1.65	0.37	−2.80	1.27	1.79
−15	0.24	−1.41	−0.25	−3.05	1.73 ^c	3.52
−14	−0.44	−1.85	−0.91	−3.96	0.95	4.47
−13	0.40	−1.45	0.04	−3.92	1.49 ^c	5.96
−12	1.96 ^b	0.51	1.62	−2.30	2.97 ^a	8.93 ^c
−11	1.12	1.63	0.37	−1.93	3.38 ^a	12.31 ^b
−10	−0.42	1.21	0.01	−1.92	−1.69 ^c	10.62 ^c
−9	−1.59 ^c	−0.38	−0.88	−2.80	−3.72 ^a	6.90
−8	−1.06	−1.44	−1.31	−4.12	−0.29 ^a	6.61
−7	0.71	−0.72	−0.17	−4.29	3.36 ^c	9.97 ^c
−6	2.02 ^b	1.30	2.15 ^b	−2.14	1.65 ^a	11.61 ^b
−5	0.89	2.19	0.89	−1.25	0.90	0.90
−4	1.02	3.21	1.70 ^c	0.45	−1.02	−1.02
−3	−0.88	2.34	−0.06	0.40	−3.34 ^b	−3.34
−2	−0.46	1.88	−1.68 ^c	−1.28	3.20 ^a	3.20
−1	−0.57	1.30	−0.41	−1.69	−1.07	−1.07
0	−0.70	0.61	−0.73	−2.41	−0.62	−0.62
+1	−0.58	0.02	0.08	−2.34	−2.56 ^a	−2.56
+2	−0.65	−0.63	0.00	−2.33	−2.62 ^a	−2.62
+3	−0.81	−1.44	−0.29	−2.63	−2.37 ^b	−2.37
+4	−0.74	−2.18	−0.21	−2.83	−2.33 ^b	−2.33
+5	−0.24	−2.42	0.31	−2.52	−1.88 ^b	−1.88
+6	−0.38	−2.80	−0.34	−2.86	−0.49	−2.38
+7	−1.16	−3.96	−1.14	−4.00	−1.25	−3.63
+8	1.14	−2.82	0.19	−3.80	3.98 ^a	0.35
+9	0.20	−2.62	0.48	−3.33	−0.65	−0.30
+10	2.19 ^b	−0.44	1.22	−2.11	5.09 ^a	4.79
+11	2.81 ^a	2.38	1.59 ^c	−0.52	6.49 ^a	11.28 ^b
+12	0.99	3.36	0.33	−0.19	2.95 ^a	14.24 ^b
+13	0.55	3.91	0.21	0.02	1.56 ^c	15.80 ^b
+14	0.52	4.43	0.14	0.16	1.67 ^c	17.46 ^a
+15	0.05	4.48	1.24	1.40	−3.54 ^a	13.92 ^b
+16	1.73 ^c	6.21	0.84	2.24	4.41 ^a	18.33 ^a
+17	0.04	6.26	0.90	3.14	−2.52 ^a	15.82 ^b
+18	−0.89	5.36	−0.07	3.07	−3.36 ^a	12.46 ^b
+19	−0.68	4.68	0.04	3.11	−2.85 ^a	9.61 ^c
+20	−0.02	4.66	1.48 ^c	4.59	−4.51 ^a	4.88

^a Denotes statistical significance at $\alpha=0.01$ ^b Denotes statistical significance at $\alpha=0.05$ ^c Denotes statistical significance at $\alpha=0.10$

Elaboration of historical data, ASE

Table 7 AAR and CAAR over selected event periods: MEARM (Mean Adjusted Return Method)

Event period	AAR _{Total} (%)	CAAR _{Total} (%)	AAR _{acquiring} (%)	CAAR _{acquiring} (%)	AAR _{acquired} (%)	CAAR _{acquired} (%)
-1 +1	-0.58 ^a	-1.85 ^a	0.08	-1.05	-2.56 ^c	-4.24 ^c
-5 +5	-0.24	-2.42	0.31	-2.52	-1.88	-13.71 ^c
-10 +10	2.19 ^b	-2.07	1.22	-0.18	5.09 ^c	-7.74
-1 +20	-0.02	4.06	1.48	7.01	-4.51 ^a	-4.79

Elaboration of historical data, ASE

^a Denotes statistical significance at $\alpha=0.01$

^b Denotes statistical significance at $\alpha=0.05$

^c Denotes statistical significance at $\alpha=0.10$

gain from the announcement of the event, at least, do not loose from it when the analysis covers large event periods.

5.3 Results from MAARM

The aforementioned results do not change dramatically, if we apply the market adjusted return model (MAARM). From Table 8, it is evident that during the event period (-20 +20) the average abnormal returns (AAR_{Total}) of the total sample show significant variations and alternate in sign. However, they remain negative but not statistical significant in the period (-1 +6). The cumulative average abnormal returns (CAAR_{Total}) in the period (+9 +20) remain positive and statistical significant with their highest price (15.62%) on the sixteenth day from the announcement of the suspension from derogation.

The analysis gives similar results if the sample is restricted to the acquiring firms. More specifically, the cumulative average abnormal returns (CAAR_{acquiring}) are positive and statistical significant during the period (+10 +20) from the announcement of the event. On the contrary, the average abnormal returns of the acquiring firms (AAR_{acquiring}) alternate in sign within the same time window. Finally, the average abnormal returns of the acquired firms (AAR_{acquired}) are negative but not statistical significant during the time period (-1 +5) except for the announcement day (-3.94%) (Table 8).

The stocks for the whole sample (see Table 9) during the 3 days event period (-1 +1) reveal a negative and statistical significant cumulative average abnormal return (-1.40%). The same sign of the CAAR of the total sample holds for the event period (-5 +5), but it is not statistical significant. The CAAR becomes positive for large event periods [(-10 +10), (-1 +20) & (-20 +20)].⁵⁵

If the sample is restricted to the acquiring firms the CAAR is positive for all the event periods of Table 9 and becomes statistical significant for the event periods (-10 +10), (-1 +20) and (-20 +20—see Table 9). Lastly, as it concerns the acquired firms, the results are the same with those under MEARM. The CAAR_{acquired} is negative (-8.15%) and statistical significant, but becomes insignificant for larger event periods. That is, it seems that even though acquired firms do not gain from the announcement of the event, at least, do not loose from it when the analysis covers large event periods.

⁵⁵ For the event periods (-10 +10) & (-20 +20—see Table 8) the CAAR for the total sample is statistical significant at $\alpha=0,10$ and $\alpha=0,05$ respectively.

Table 8 AAR and CAAR during the period (−20 +20) around the announcement of the event: MAARM (Market Adjusted Return Method)

Period	AAR _{Total} (%)	CAAR _{Total} (%)	AAR _{acquiring} (%)	CAAR _{acquiring} (%)	AAR _{acquired} (%)	CAAR _{acquired} (%)
−20	−0.76	−0.76	−0.74	−0.74	−0.81	−0.81
−19	0.18	−0.58	0.39	−0.35	−0.45	−1.26
−18	−0.86	−1.44	−0.93	−1.28	−0.64	−1.91
−17	−0.78	−2.22	−0.52	−1.80	−1.55	−3.45
−16	1.05	−1.16	0.83	−0.97	1.71	−1.74
−15	−0.41	−1.58	−1.03	−2.00	1.43	−0.31
−14	0.52	−1.06	−0.12	−2.11	2.42	2.10
−13	1.82 ^c	0.76	1.54 ^b	−0.57	2.67	4.77
−12	1.23	1.99	0.64	0.06	3.00	7.77
−11	0.23	2.22	0.05	0.12	0.74	8.52
−10	−1.87 ^c	0.35	−0.95	−0.83	−4.63 ^c	3.89
−9	−0.46	−0.11	−0.73	−1.56	0.35	4.24
−8	1.60 ^c	1.49	0.68	−0.88	4.37 ^c	8.61
−7	2.34 ^b	3.83	2.36 ^b	1.47	2.28	10.89
−6	1.62 ^c	5.45	1.55 ^b	3.02	1.85	12.74
−5	1.16	6.61	1.92 ^b	4.94	−1.13	0.90
−4	−0.80	5.81	−0.31	4.64	−2.29	−1.02
−3	0.63	6.43	−0.57	4.06	4.22 ^c	−3.34
−2	0.45	6.88	0.15	4.21	1.35	3.20
−1	−0.75	6.13	−0.04	4.17	−2.88	−1.07
0	−0.40	5.73	0.79	4.95	−3.94^c	−0.62
+1	−0.25	5.48	0.11	5.06	−1.33	−2.56
+2	−0.33	5.15	−0.13	4.93	−0.93	−2.62
+3	0.87	6.02	1.16	6.09	−0.02	−2.37
+4	−0.09	5.93	0.40	6.49	−1.56	−2.33
+5	−0.61	5.32	−0.13	6.36	−2.03	−1.88
+6	−0.64	4.67	−1.22	5.14	1.07	−0.81
+7	2.43 ^b	7.11	0.91	6.06	7.00 ^b	6.19
+8	1.78 ^c	8.88	1.48 ^c	7.53	2.67	8.85
+9	1.31	10.19 ^c	0.61	8.14	3.40	12.25
+10	1.49	11.68 ^c	0.73	8.87 ^c	3.78	16.03
+11	2.14	13.82 ^b	1.69 ^c	10.56 ^c	3.47	19.50
+12	0.08	13.90 ^b	−0.38	10.18 ^c	1.47	20.97
+13	−0.23	13.66 ^b	−0.04	10.14 ^c	−0.82	20.15
+14	−0.46	13.20 ^b	1.19	11.33 ^b	−5.42 ^b	14.73
+15	1.36	14.56 ^b	0.60	11.93 ^b	3.65	18.38
+16	1.06	15.62 ^b	1.94 ^b	13.86 ^b	−1.58	16.80
+17	−0.24	15.38 ^b	0.74	14.60 ^b	−3.17	13.64
+18	−2.53 ^a	12.85 ^b	−1.66 ^c	12.94 ^b	−5.12 ^b	8.52
+19	0.99	13.84 ^b	2.21 ^b	15.15 ^b	−2.68	5.83
+20	−1.93 ^c	11.91 ^b	−1.33 ^c	13.82 ^b	−4.60 ^c	1.23

Elaboration of historical data, ASE

^a Denotes statistical significance at $\alpha=0.01$ ^b Denotes statistical significance at $\alpha=0.05$ ^c Denotes statistical significance at $\alpha=0.10$

Table 9 AAR and CAAR over selected event periods: MAARM (Market Adjusted Return Method)

Event period	AAR _{Total} (%)	CAAR _{Total} (%)	AAR _{acquiring} (%)	CAAR _{acquiring} (%)	AAR _{acquired} (%)	CAAR _{acquired} (%)
-1 +1	-0.25	-1.40 ^b	0.11	0.85	-1.33	-8.15 ^a
-5 +5	-0.61	-0.13	-0.13	3.34	-2.03	-10.54
-10 +10	1.49	9.46 ^b	0.73	8.75 ^a	3.78	11.60
-1 +20	-1.93	6.18	-1.33	8.86 ^b	-4.60	-2.76

Elaboration of historical data, ASE

^a Denotes statistical significance at $\alpha=0.05$

^b Denotes statistical significance at $\alpha=0.10$

6 Robustness of empirical analysis: Model comparisons

Table 10 below depicts the CAAR of the total sample and the two sub-samples (acquiring and acquired firms) under the estimations of the three different methods. The comparisons of the results show that both acquired and acquiring firms gain from the occurrence of the event under the MM method and they do not loose, especially the acquired firms and for large event periods around the announcement of the event under the MEARM & MAARM.

In particularly, under the MEARM, the results reveal that for large event periods around the announcement of the event (21, 22 and 41 days of event period), all the samples under analysis seem not to loose or gain from the occurrence of it. The same picture holds for the acquired firms under the MAARM, while the acquiring firms seem to statistically gain from the announcement of the event for large event periods. Therefore, as it concerns the large periods around the announcement of the event, the results are robust. Under all the methods, the event study methodology reveals that the merging parties gain or at least do not loose from the announcement of the event. On the other hand, the results are not robust for short event periods around the occurrence of the event. When the event period under scrutiny becomes 3 days around the event, the sign of the CAAR alternate in sign between the MM method and the MAARM & MEARM. The major characteristic of that specific event period is that, under all methods, the result of the CAAR of the acquiring firms is not statistical significant.

Another important implication of the analysis is the absence of a systematic relationship (negative or positive) between the cumulative abnormal return (CAR) and the number of days in the issuance of the decision regarding the derogation from suspension (Fig. 1).⁵⁶ In this figure, the number of days is expressed as a function of cumulative abnormal stock return of scrutinized companies. Under MEARM the dependent variable of the regression is given by Eq. 6 above, where average return ($AR_{j,t}$) is given by Eq. 8. Under MAARM the dependent variable of the regression is also given by Eq. 6 above, but the average return ($AR_{j,t}$) is given by Eq. 10. Lastly, under MM method, the dependent variable and the average return $AR_{j,t}$ are given by Eqs. 6 and 3 respectively.

According to the regression analysis, the magnitude of the slope coefficient—under the three methodologies—range from -0.50 (MM) to -0.03 (MEARM) and is not significant even at $\alpha=0.10$ level of significance. This means that the cumulative abnormal stock return is independent from the number of days needed for the issuance of the decision by HCC.

⁵⁶ For correlation analysis on this subject see Fotis et al. (2009a, b). For an event study methodology on this subject see Fotis et al. (2009c).

Table 10 Cumulative average abnormal returns (CAAR) under the three different methods

Market model (MM)					
Sample	[-20 +20]	[-1 +20]	[-1 +1]	[-5 +5]	[-10 +10]
Total	+ ^a	+ ^a	+ ^a	+ ^a	+ ^a
Acquiring	+	+	-	+	+
Acquired	+ ^a	+ ^b	+ ^a	+ ^a	+ ^a
Mean adjusted return method (MEARM)					
Sample	[-20 +20]	[-1 +20]	[-1 +1]	[-5 +5]	[-10 +10]
Total	+	+	- ^a	-	-
Acquiring	+	+	-	-	-
Acquired	+	-	- ^c	- ^c	-
Market adjusted return method (MAARM)					
Sample	[-20 +20]	[-1 +20]	[-1 +1]	[-5 +5]	[-10 +10]
Total	+ ^b	+	- ^c	-	+ ^c
Acquiring	+ ^b	+ ^c	+	+	+ ^b
Acquired	+	-	- ^b	-	-

Authors' estimations

^a Denotes statistical significance at $\alpha=0.01$

^b Denotes statistical significance at $\alpha=0.05$

^c Denotes statistical significance at $\alpha=0.10$

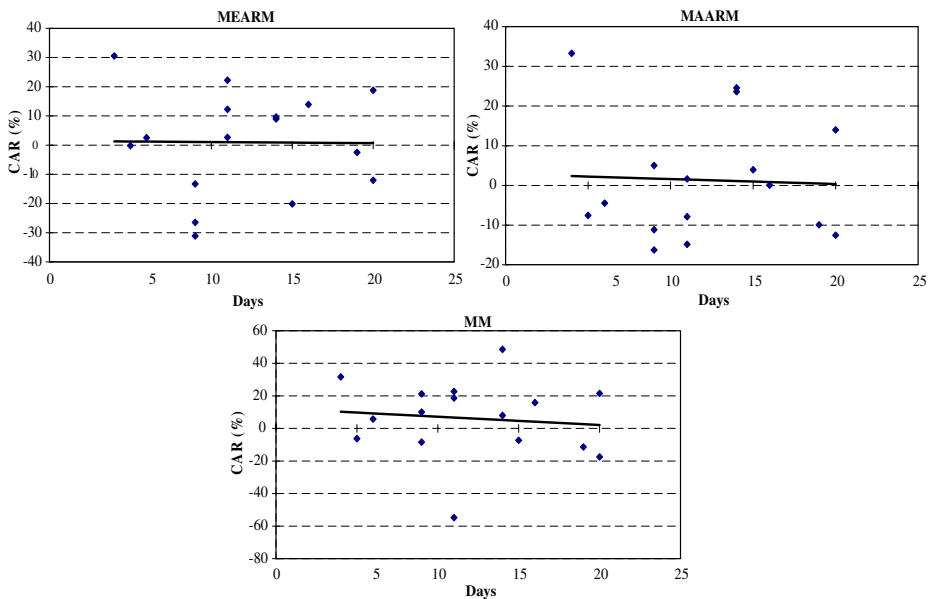


Fig. 1 Time period that precedes the issuance of the decision by the HCC as a function of the cumulative abnormal returns (CAR). MEARM = Mean adjusted return method, MAARM = Market adjusted return method, MM = Market method. Source: Authors' estimations

Therefore, the “treatment” of the applications regarding the derogation from suspension by the HCC as extremely urgent is not confirmed by the statistical analysis.

7 Concluding remarks

In this paper, we have attempted to investigate the possible effect of the derogation from suspension by the Hellenic Competition Commission on the stock performance of the requested companies. For this purpose, we examined 16 companies listed in the Athens Stock Exchange that involved in 13 requested derogations from suspensions during the period 1995–2008.

From the empirical findings, we conclude that the firms (both acquired and acquiring) in the requested derogations gain or at least do not lose from the announcement of the event. More specifically, under MM and MAAM, the majority of the merging firms gain, while under MEARM, the majority of the requested firms do not lose from the requested derogation from suspension of concentrations by the Hellenic Competition Commission. When the small event period analysis (3 days around the announcement of the event) is concerned, the CAAR of acquiring firms is statistically significant. This means that the requested firms do not lose from the announcement of the event.

Furthermore, the regression analysis reveals that there is no systematic relationship between the CAR of the requested firms and the number of days concerning the issuance of the decision by the HCC. That is, the number of days during the period from the notification of the request until the issuance of the decision by the HCC is not a negative function of the CAR of the requested firms.

According to the aforementioned results, we conclude that Directorate General of the Hellenic Competition Commission must be sceptical in the future when merging firms use the argument of stock reduction in order to request derogation from suspension of concentrations. Also, the results of this paper must be a pilot for the Hellenic Competition Commission for a different future policy regarding M&A's.

Acknowledgments The authors wish to thank Professor Yiannis Katsoulakos from the Athens University of Economics and Business (AUEB) for his fruitful discussion concerning the preparation of the paper.

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