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**MERGERS IN DECLINING INDUSTRIES:
PUZZLES FROM COMPETITION AND INDUSTRIAL POLICIES**

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**Mergers in declining industries:
puzzles from competition and industrial policies**

Abstract

Exit strategies referred to specific industry characteristics have been widely studied in the economic literature (Harrigan, 1980; Ghemawat et al., 1985, 1990; Lieberman, 1990; Reynolds, 1988; Fundenberg et al., 1989; Baptista et al., 2006). These studies show that exit dynamics – by setting new boundaries and changing the dynamic of sectorial competition – may reallocate activities towards more efficient outcomes. In declining industries particularly exit strategies play a crucial role in granting efficiency. When demand declines, efficiency rules call out for a shrink in production capacity. We focus on M&A as a strategy of orderly exiting from a declining industry. We argue that merger strategies in such a context could represent an efficient solution to the attrition game. However, mergers often give rise to competitive concerns. This raises the question of how to reconcile the enforcement of competition rules with the need of mergers as efficient devices for orderly exiting from declining industries. We suggest a two-step approach to merger scrutiny that, beginning from market definition from both a competition law and industrial policy perspective, attempts to solve the trade-off between fostering competition and recovering from decline, thereby reducing the possibility of committing Type I and II errors in assessing the competitive impact of mergers.

JEL Classification: G34, K21 L41, L52

Keywords: Declining Industries, Mergers

1. Introduction

The question as to whether antitrust policy is appropriate to appraise mergers in declining industries has long been debated in the past. The debate was triggered by a stream of literature highlighting in a public policy perspective the benefits of mergers as a quicker and less costly exit strategy from situations of overcapacity, compared to other solutions, such as bankruptcy, which could be particularly burdensome to society. Yet, competition law practice did not really take up the issue, though efficiency claims have gained greater importance since merger regulations have been revised both in the United States and in the European Union.¹ It seems that antitrust policy struggles to recognize the existence of beneficial effects that are specific to situations of crisis whereby mergers may provide a better solution to the attrition game that prevents the industry to spontaneously transit to a new steady-state equilibrium. This paper aims at revitalizing the debate nowadays that that fostering capacity reductions has become a pressing policy goal.

The paper is organized as follows. Section 2 reviews the special efficiency reasons that may apply to mergers as a more efficient way out from decline compared to any other market solution. Section 3 discusses the different notions of decline that have been developed in various policy fields and their applicability to the definition of relevant market, which constitutes the basis for antitrust merger appraisal. Due to the imperfect overlap between relevant market definition for the purposes of competition law and economic sector to which the notion of decline more properly refers to, it is shown that substantial errors may affect the assessment of mergers. Section 4 then discusses whether the traditional justifications for merger approval are sufficient to overcome those errors. Finally Section 5 proposes a revised approach to merger scrutiny for markets that are affected by decline. Section 6 summarises the main findings.

2. Entry and Exit in declining industries: a reasoned survey

Entry and exit referred to specific industries are phenomena that have been widely studied in the economic literature.² Several studies, when speaking about the dynamics of entry and exit, often refer to terms such as “turbulence” or “turnover” (Acs et al., 1990; Caves, 1998; Baptista et al., 2006) to emphasise the dramatic nature of the required reallocation of economic activities so as to adjust from decline. Dunne et al. (1988), Jovanovic et al. (1994) and Siegfried et al. (1994) show that entry and exit are related to industries characteristics and firms’ structure and are influenced by macroeconomic and

¹ For a review of merger reforms, see OECD (2012).

² See, for example, Haarigan (1980), Ghemawat et al. (1985, 1990), Lieberman (1990), Reynolds (1988), Fundenberg et al. (1989).

institutional factors. In particular, while entry rates are statistically more relevant in earlier stages of product life cycle, exit is a phenomenon mainly characterizing declining industries (Gort et al., 1982; Klepper et al., 1990; Klepper et al., 1995; Agarwal et al., 1996 and 2002). These studies show that entry and exit are deeply affected by demand and supply changes, the level of competition, products rates of substitution, products life cycles, technological shocks and regulatory reforms and that the issue of clarifying different types of orderly exit represents an important step in order to fully understand firms' strategic alternatives, especially in contexts characterized by decline.

It should be noticed, however, that while orderly exit broadly refers to a generic reduction in production capacity, different specifications of the concept exist in the literature: exit as a choice between continuing to produce at full capacity or incrementally reduce capacity and complete shut down, Merger & Acquisitions (M&A), implementation of contracts that share liquidation proceeds with the managers (golden parachutes), debt financing and bankruptcy. The existence of several types of exit strategies reflects the crucial role that this concept plays in declining industries.

When an industry experiences decline the main competitive conduct turns out to concern disinvestment rather than investment. Indeed, an industry that faces a declining demand must reduce its productive capacity in order to maintain a sustainable asset. However, managers are not willing to reduce capacity or exit since human capital is specialised to the firm and they may be extracting more rents as incumbents in a declining industry than they could by starting a new firm. As argued by Ghemawat et al. (1990), disinvestment choice seems to be a public good that must be offered privately: each firm is willing to maintain its capacity level until the other firm gives up. This state of the industry determines the rise of an attrition game where the timing of disinvestment is the main strategic variable. This explains why the study of exit strategies in declining industries and of the incentives provided to firms, has been framed so far a quest for a solution to an attrition game which has to end up with a lower level of market output and eventually a reduced number of players.

From Harrigan (1980) until late 80s (Ghemawat and Nalebuff 1985, 1990; Whinston, 1988), this has been done by focusing on a very limited range of orderly exit strategies mainly based on the dichotomy incremental reduction of capacity versus complete shut down of the firm. Ghemawat and Nalebuff (1985), for example, set up a model where, under strict assumptions (firms bear equal costs and demand declines monotonically), exit is an all or nothing disinvestment strategy (e.g. either the firm continues to produce at full capacity or it shuts down). Under these assumptions, the outcome of the model is that since the smaller firm will operate as a profitable monopolist over a longer period as demand falls, the larger firm will exit (shut-down) first.

The set of strategies has widened beginning with Ghemawat and Nalebuff (1990) extending their

previous model to account also for the possibility of incremental disinvestment by the firm.³ They call for a first move capacity reduction of the larger firm that shrinks its capacity to the size of the smaller rival. Once such reduction is achieved, both firms will shrink capacity at the size of the third larger firm, and so on. The outcome of the game is that industry concentration reduces over time. Furthermore, introducing incomplete information, Fundenberg and Tirole (1986) show that in a duopoly the less efficient firm will exit (shut-down) first.

Following a similar approach Lieberman (1990), with regard to 30 chemical products, examines the timing of disinvestment (exit) in declining industries. He shows that larger firms, because of economies of scale and their greater efficiency, shake out small firms when prices fall during a declining period. On the contrary, if cost differences were to be absent, smaller firms would remain profitable for a longer period and large firms exit earlier or reduce capacity to the capacity level of the smaller rival.

In the analysis of exit strategies in declining industries until late 90s the set up of alternative strategies appears very limited. However, it appears evident that merger strategies in such a context could represent an efficient solution to the attrition game. In particular, the larger firm could merge with the smaller one and then reduce its overall capacity, with the possibility of achieving an efficient size and production level.

As argued by Filson et al. (2001), the analysis of other possible strategies, such as exit through M&As, has been ruled out in the past by economic literature with the only exception of Dutz (1989). In particular, Dutz (1989) sets up a Cournot type model with a linear demand and a capacity constraint in order to analyse welfare implications of horizontal mergers. Dutz (1989) also describes through a wide range of case studies the effects of mergers in declining industries.

As argued by Lambrecht et al. (2005), mergers can be broadly classified into two main categories. The first category looks at synergies and growth opportunities, while the second to efficiency through layoffs, consolidation and disinvestment. With specific regard to declining industries, this literature is oriented to investigate more on the second type of mergers. Particularly, to analyse financing and disinvestment decisions the main studies follow the line of research that implies the set up of real-options models (Mello et al., 1992; Leland, 1994; Mauer et al., 1994; Morellec, 2001). Morellec et al. (2005) develop a real options model that investigates the abnormal returns around merger announcements and internalises imperfect information and competition on the bidding firms. In a different perspective, Leland (2005) investigates on the pure financial determinants that influence the incentive to merge.

Bernile et al. (2006), implementing a similar continuous-time real options framework, show that mergers by increasing the combined value of the merging firms, alter the value of entry in the market.

³ Reynolds (1988) obtains a similar result assuming that all plants are of equal size.

Thus, merger appears to be a better-off strategy both in expanding and in declining industries. On one hand, when the industry is in expansion potential entry reduces the value of the incumbent, thus increasing their incentive to merge. On the other hand, in a declining industry scenario, since entry is unprofitable, the incentive to merge is given by the post-merger possibility to collude. Bernile et al. (2006) show that only in intermediate states of the economic life of an industry in order to deter entry firms are better off by not merging. The authors through a real options model give a clear description of the determinants of mergers, and of the policy implications for antitrust authorities. It seems that an accurate analysis of the potential x-efficiency⁴ gains that may accrue from the merger becomes crucial in times of extreme demand shocks, since in these periods the collusive incentive to merge is very high.

Under a different perspective, Jovanovic et al. (2001) study the incentive to merge in a growth model incorporating technological change. In particular, they show a positive relation between mergers and stock prices. The interesting outcome that the authors achieve is that exit and entry, on one hand, and mergers on the other hand, are substitute means of reallocation.

Besides M&As, alternative strategies can be obtained by modifying the incentive schemes on the basis of a golden parachute or of a financial leverage. Following these alternatives, Lambrecht et al. (2005) show that if M&A are absent, managers abandon business too late, but debt and golden parachutes can mitigate this inefficiency. In particular, a golden parachute is regarded as a contract according to which the firm pays the manager a share of the proceeds if and when they shut down the firm and liquidate its capital stock. However, Lambrecht et al. (2005) argue that such a device would certainly speed up the shut down but would not be enough to ensure a first best solution. As a matter of fact, investors would not agree on a golden parachute generous enough to ensure an optimal shut down strategy.

Debt financing also can play a role in determining firm value and managers incentive to closure. In particular, Lambrecht et al. (2005) show that increasing debt financing determines a naturally speed up of the shut down timing. Thus, increasing debt forces manager to close firms earlier since debt service reduces managerial rents. In other words, increasing debt pushes managers to spontaneously accelerate the disinvestment process at the first best closure point.

The economic literature that shows that M&A can be an optimal exit strategy from declining industries raises puzzles as to the correct enforcement of competition law. These puzzles derive from the different perspective through which competition and industrial policies work. Within merger control, a first puzzle arises because the notion of relevant market may not coincide with that of economic sector; a second puzzle derives from the fact that the scope to evaluate efficiency gains from mergers is too narrow. We will deal with these two sources of errors separately in the following

⁴ The concept of x-efficiency was first introduced by Harvey Leibenstein (1966). X-efficiency refers to the effectiveness with which a given set of inputs is used to produce outputs.

sections.

3. Notions of decline and the interplay with relevant market definition

Many fields of law make use of the concept of “declining industry”. In competition law different notions of decline have been applied in enforcing art. 101 of the TFUE and state aid rules. In the Trans-Atlantic Conference Agreement decision⁵, the Commission defined the market for maritime transport as a declining one, as it was characterised by ample reserve capacity. In that same decision the Commission further considered as going across a situation of crisis industries experiencing a contraction in demand and the consequent overcapacity on the supply side. In state aid, a specific legal framework applies to aids in sectors that suffer “from serious long-term structural overcapacity or persistent decline in demand”. In particular, a strong presumption of sectoral decline may arise from a negative average annual growth rate of apparent consumption in the EEA over the last five years.⁶

Outside the scope of competition law, other definitions of “declining industry” are acknowledged by the Commission. Examples are given by industrial and regional policies. In the first case, the definition of “declining industry” is considered in the context of long-term structural changes. It reflects a process of reallocation of resources – from manufacturing to services in developed countries – and does not necessarily concern industries experiencing ample reserve capacity in a situation of crisis within the meaning explained above. For instance, it may refer to a situation in which the relative share of manufacturing industry to total employment and total value added has decreased and that of services increased in the past, due to manufacturing higher productivity growth compared to that of services. Or else to a decrease in the share of manufacturing because of a reorganisation of the activity leading to operations previously done in-house being now awarded to outside contractors (transport, logistics, information technology, etc.), thus enabling the firms to focus on core activities.⁷

Regarding structural policy, in the period 2000-2006, “Objective 2” supports the economic and social conversion of areas facing structural difficulties (General Regulation 1260/1999, article 1).⁸

⁵ Commission Decision No 1999/243/EC of 16 September 1998 relating to a proceeding pursuant to Articles 85 and 86 of the EC Treaty (Case No IV/35.134 - Trans-Atlantic Conference Agreement), OJ L 095, 9 April 1999, pages 1 - 112.

⁶ Communication from the Commission – Multi-sectorial framework on regional aid for large investment projects, OJ C 70, 19 March 2002, pages 8 – 20, available at: [http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52002XC0319\(03\):EN:HTML](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52002XC0319(03):EN:HTML).

⁷ Communication from the Commission - Fostering structural change: an industrial policy for an enlarged Europe (COM/2004/0274 final) available at: http://eur-lex.europa.eu/LexUriServ/site/en/com/2004/com2004_0274en01.pdf.

⁸ Council Regulation (EC) No 1260/1999 of 21 June 1999 on Community support for pre-accession measures for agriculture and rural development in the applicant countries of Central and Eastern Europe in the pre-accession period, OJ L 161, 26 June 1999, pages 87 – 93, available at: http://ec.europa.eu/regional_policy/sources/docoffic/official/regulation/content/it/02_pdf/00_1_sf_1_it.pdf.

Furthermore, article 4 details that "Objective 2" shall support in particular areas undergoing socio-economic change in the industrial and service sectors. Article 4 sets the criteria for determining which areas could receive support. Regarding areas undergoing socio-economic change, one criterion is "an observable fall in industrial employment". Other criteria are the unemployment rate and the share of industrial employment in total employment. The areas referred above are in particular those that are confronted with sectors/industries in decline. These sectors/industries provide over time less employment (for example due to increased competition from China, changing relative cost or changing technologies and tastes), forcing their restructuring and the development of new alternative employment opportunities.

The examples above reveal the different perspective through which industrial (and/or regional) and competition policy operate. In focusing on factors explaining decline under industrial and regional policies industries are viewed dynamically and from a supply-side perspective, mainly having regard to the production processes implemented and their trajectories. This fact adds complexity to the analysis of mergers as a device to exit from markets facing decline, as a different notion of industry (market) applies to the field of merger appraisal, if not in the overall application of competition law. This may depend on the specific policy objective pursued by competition law and, specifically, by merger control.

The purpose of merger regulation is to prevent "the creation or strengthening of a dominant position as a result of which effective competition would be significantly impeded in the common market or in a substantial part of it".⁹ This entails focusing on a notion of industry (relevant market) that highlights the competitive constraints exerted by market participants so as to be able to appraise whether such constraints would be lessened or eliminated as a result of the merger. Since consumer's attitude to substitute products is the main competitive constraint, for the purpose of merger appraisal relevant markets are mainly defined according to demand-side substitutability, although to a limited extent supply-side substitution may also be invoked.¹⁰

As the notion of industry or economic sector and relevant market may not coincide, it may be crucial to clarify to which of the two settings decline has to be referred to. Indeed, it could be the case that a relevant market is deemed as declining while the economic sector it belongs to it is not, and vice versa. Table 1 illustrates all possible combinations.

⁹ Council Regulation (EC) No 139/2004 of 20 January 2004 on the control of concentrations between undertakings, OJ L 24, 29 January 2004, pages 1 – 22, available at: http://europa.eu.int/eur-lex/pri/en/oj/dat/2004/l_024/l_02420040129en00010022.pdf.

¹⁰ Supply-side substitution, i.e. the possibility for firm to switch to a different production as a result of more profitable market conditions, may be relevant to the definition of antitrust market so long as it represents a competitive constraint as effective as demand-side substitutability. See, Commission Notice on the definition of relevant market for the purposes of Community competition law, OJ C372, 9 December 1997, pages 5 – 13 available at: http://ec.europa.eu/comm/competition/antitrust/relevma_en.html.

Pairs (D, D) and (ND, ND) indicate the non-controversial cases: both the economic sector and the relevant market are either declining (D, D) or non-declining (ND, ND), so that indicators of decline may indifferently be referred to the either of the two contexts.

Pair (ND, D) identifies a situation where although the relevant market is not declining, the economic sector suffers negative growth. For example, it could be the case of a sector demand shifting among alternative relevant markets within the same economic sector (i.e. demand for a given product is crowded out by another differentiated product, notwithstanding the overall decline in the economic sector).

Table 1- Interplay between the notions of “economic sector” and “relevant market” for the purpose of defining a declining industry pattern

		Economic sector	
		Declining (D)	Non-Declining (ND)
Relevant Market	Declining (D)	The distinction between sector and market is irrelevant	The decline in a given relevant market is not applicable to the sector
	Non-Declining (ND)	A relevant market may not decline (or even grow) within a declining sector	Not Applicable

Pair (D, ND) signals a situation where the economic sector is not declining, while some of the relevant markets within the sector are experiencing a declining demand. For instance, this is the case of the Commission’s merger decisions concerning the pharmaceutical sector.

Table 1 above suggests that a preliminary step for the analysis of mergers in contexts characterized by decline is that of identifying the appropriate scope of the economic activities to be analysed, both in terms of geographical extension and product characteristics. The assessment of decline should cover a wider economic context than “relevant market” as generally acknowledged by antitrust law enforcers. This has implications as to the correct assessment of the welfare effects of a merger. Indeed, when the relevant market is declining while the sector is not, if firms could shift within a given sector from one relevant market to another (i.e. when the cross elasticity of supplying two different products is high enough to encourage a shift in production so as to meet the change in demand), then restricting the appraisal of decline to the relevant market may generate substantial errors. From an economic point of view, it seems necessary to take into account firms’ ability to react to the change and, as consequence,

to refer to the effective economic context in which firms operate (which might be broader than the relevant market).

The mistakes that may occur by setting improperly the boundaries of the industry and that could affect the appraisal of mergers are of the two classical types: liability although the action is lawful (type I error), or non-liability though the action is unlawful (type II error).¹¹ In the context of our study we indicate as Type I error the decision to block a merger wrongly disregarding the efficiencies it may bring about to the economic sector, and as Type II error the decision to mistakenly clear a merger because of efficiencies that do not accrue to the economic sector.

Table 2 – Type I and II errors caused by the interplay of relevant market and economic sector

		Economic sector	
		Declining (D)	Non-Declining (ND)
Relevant Market	Declining (D)	Not Applicable	Type II Error
	Non-Declining (ND)	Type I Error	Not Applicable

Table 2 specifies the circumstances in which the two types of error arise. Type I error occurs if the economic sector is declining but the relevant market displays the opposite pattern. Conversely, if it is the relevant market to be deemed as declining while the economic sector is not, then Type II error occurs. Clearly, no such possibility of committing mistakes arises if the two concepts overlap.

4. Are the traditional justifications for mergers approvals sufficient to overcome type I and II errors?

Broadly speaking, the beneficial effects of a merger arise from changes in the economic cost of production, demand, output and equilibrium that the merger provides, as compared to the market equilibrium prevailing absent the merger. The magnitude of these effects depends upon structural characteristics of the market and on the extent to which the merger eliminates rent-seeking behaviours

¹¹ For a general discussion on public enforcement, see Polinsky and Shavell (2000).

that are harmful to society. There is interplay between strategic considerations and structural conditions such as barriers to entry, the number of firms, product homogeneity, etc. A horizontal merger by definition increases market power as a result of the reduction in the number of market players (so-called unilateral effect). Moreover, a merger creates more favourable conditions for tacit collusion to occur, as the reduction in the number of players increases the risk that firms may coordinate strategically their behaviour (so-called coordinated effect) at the detriment of consumers. However, a merger may also increase social welfare if it provides better means of production as a result of which production costs are lower and/or consumers benefit from new quality-enhanced products, or else if firms cease to dissipate rents.

This suggests as a general rule, and regardless of the development stage to which the economic sector belongs to, that several points need to be considered to strike a balance between positive and negative effects deriving from a merger. To this extent, two related concepts have been developed to justify the clearance of mergers on the grounds of the positive effects they may bring about: the doctrine known as Failing Firm Defence (FFD) and the broader concept of Standard Efficiency Defence (SED). We argue that both arguments may not be sufficient to avoid committing type I and II errors if the industry under examination is experiencing decline.

According to the US 1992 Guidelines “a merger is not likely to create or enhance market power or facilitate its exercise if the following circumstances are met: 1) the allegedly failing firm would be unable to meet its financial obligations in the near future; 2) it would be unable to reorganize successfully [...]; 3) it has made unsuccessful good-faith effort to elicit reasonable alternative offers of acquisition of the assets of the failing firm that would both keep its tangible and intangible assets in the relevant market and pose a less severe danger to competition than does the proposed merger; 4) absent the acquisition, the assets of the failing firm would exit the relevant market”.¹²

The FFD doctrine acknowledges that under the conditions stated above, clearing a merger could be efficient (welfare improving), as the advantages of avoiding the administrative costs of bankruptcy and keeping on the market assets that would otherwise be taken out of production offset the social cost of any monopoly pricing that may flow from the merger itself.

However, FFD doctrine is not 1:1 related to declining industries. To illustrate this, consider Table 3 below describing the interplay between firm failure and economic sector decline.

A firm could be failing or not failing, but this does not entail that so does the economic sectors it belongs to. A firm could be failing because of managerial inefficiency that has led to a loss in

¹² U.S. Department of Justice and the Federal Trade Commission, issued April 2, 1992 and revised April 8, 1997 available at: <http://www.ftc.gov/bc/docs/horizmer.htm>. Similar criteria are set by the European Commission in the 2004 Merger Guidelines, see Commission Communication, Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings, Official Journal (2004) C 31/5, par. 90.

competitiveness, without the sector it belongs to suffering negative demand shift and overcapacity.

Table 3 – Interplay between firm failure and economic sector decline

		Economic sector	
		Declining (D)	Non-Declining (ND)
Firm	Failing (F)	The distinction is irrelevant since the effect of decline is pervasive	Welfare improvements invoked by FFD could be negligible for the economic sector
	Not Failing (NF)	Even if FFD is not applicable, a merger may produce welfare improvements in terms of SEC	Not Applicable

By the same token, a sector could be declining because of a structural shock that has led to overcapacity, but this doesn't entail that any firm belonging to that sector may be deemed as failing. Only if both the firm and the economic sector are failing then the failing firm doctrine and the concept of industry decline coincide. When the firm is not failing, while the sector is, then even if FFD is not applicable, a merger may nonetheless produce welfare improvements in terms of the resulting Sustainable Equilibrium Configuration (SEC), if the number of existing firms after the merger restores the appropriate balance between minimum efficient scale and total demand. On the other hand, when a firm is failing according to the criteria set by FFD, whereas the sector is not, the overall welfare improvements generated by a merger could be negligible and thus not relevant for merger appraisal.

As to competition law practice, where the firms involved in a merger are not truly failing such that FFD cannot apply, the more comprehensive principle of Standard Efficiency Defence (SED) should be invoked.¹³ According to Williamson (1968), when a merger generates a positive net balance between positive and negative effects, it should be approved, independently of any consideration about the decline in the relevant market or in the sector. This constitutes the so-called Standard Efficiency Defence.

At the outset FFD and SED appear to be two different justifications to clear a merger that would otherwise be prohibited because of its adverse effect on competition. In the case of FFD, the

¹³ On the role of efficiency claims in merger appraisal, see Council Regulation no. 139/2004 of 20 January 2004, recital 29. See also the EU 2004 Merger Guidelines (*ibidem*, footnote 12).

justification is derived from the principle that clearing a merger when the firms involved are truly failing represents, to some extent, the pursue of a lesser harmful state of the world. As to SED, the idea is that mergers may increase sectorial efficiency and thus be welfare-improving.

However, it is worth to notice the different aims the two concepts seek to pursue. From a theoretical point of view, FFD can be thought of as a concept that looks at mergers as a remedy to the damages to social welfare that may be caused by bankruptcy. In particular, given the strict conditions that the firm is truly failing, that there is no less anticompetitive alternative available and that the assets of the failing firm would be lost if not acquired, FFD offers a way out that seeks to minimise the social welfare loss. The aim here is wide and concerns welfare seen as including both consumers and producers surplus (profit). In other words, FFD carries per se the interest of protecting besides consumers (no less anticompetitive alternatives available) also the value of the firm, in terms of capital assets and human capital.

Compared to FFD, the objective of SED is considerably different and to some extent more limited. SED in allowing mergers that increase efficiency (pro-consumer), states a principle that sets a unique priority to consumer welfare. This perspective emerges also from the fact that Merger Guidelines do not take into account increases in producer efficiency. The main reasons for such an approach is due to the core interest of the legislator of pursuing consumer's protection. As a result, with SED the welfare benchmark is more limited compared to that acknowledged in FFD. Thus we are left with a puzzle: with SED the positive effects of mergers as way out from decline can be ascertained in a greater number of situations compared to FFD; however, with SED the effectiveness of such a defensive argument is reduced by the more restrictive welfare benchmark applied.

Apart from the arguments above, another point to be considered in the assessment of mergers is that in most cases the pattern of decline in the industry is such that the number of firms "sustainable" in equilibrium is lower than that observed. This is the attrition game described by the literature (see Section 2) to which mergers may give a solution providing an efficient way out from decline, especially when the source of decline is, inter alia, an unsustainable number of firms. Examples of mergers with a rationalising role in declining industries are common. For example, a wave of consolidating mergers arose in the US arms industry after the US Defence budget had fallen as a consequence of the end of the cold war. Similar merger waves with a rationalising effect affected the oil industry in the early 80s and the banking industry in the 70s. In each of these examples, though with different intensity, mergers did represent the main exit strategy in order to regain sectorial efficiency.¹⁴

This suggests that in assessing the welfare impact of merger in declining industries, it is important to determine which should be the appropriate counterfactual, i.e. the appropriate 'default point' that

¹⁴ For a more recent merger wave, see Nishiwaki (2010) concerning the Japanese cement industry.

would emerge in the case of a ‘business as usual’ scenario. In other words, it is necessary to define a scenario in which decline actually occurs, thus having an impact on consumer welfare and on the exit rate of firms. Then it is necessary to build an alternative scenario describing the situation that would occur were the merger to be cleared. The long-term comparison between the two scenarios provides a measure of the potential benefits of the merger.

5. A possible way out from the puzzles

The assessment of a merger in a declining industry should take into account the specific characteristics of the industry. As previously said, it should be ascertained that the industry suffers from overcapacity and decline in demand and that these patterns are permanent. To this end, reference should be made to the previous practice of the Commission in the field of competition, which could be integrated with the definition of “declining industries” offered by other Community policies.

As a second step, the position of the parties should be identified. In particular, in a declining industry, it is not sufficient to limit the investigation to the market shares of the merging entities, being required also to investigate on the degree of use of their plants capacity and their medium/long-term options as to exit from the market. Indeed, it could be the case that the merger allows the merging entities to rationalize the use of their plants by keeping only those that are newer, rather than shutting down indistinctively those of one firm. It could also be the case that the merger increases the utilisation rate of factories, allows the achievement of lower production costs and be part of a restructuring of the industry to react to the crisis. Furthermore, the merger could preserve industry-specific assets whose value would otherwise be lost as their productivity outside the industry where the investment was originally made would be substantially lower.

Third, since mergers may constitute an efficient and viable exit strategy from decline, there should be scope for clearance to be invoked relying on the capability of the merged entity to pursue a shrink of output, thereby solving the attrition game and pushing the market to a new sustainable equilibrium configuration. In other words, in assessing merger that take place in declining industries antitrust enforcers should ground the analysis more on Productive Efficiency Defence (PED), balancing the negative effects concerning the enhancement of market power, with the positive effects that are linked to efficiency gains in production obtained through a reduction of the overall output. This entails building up a counterfactual given by the pre-merger scenario under the post-decline configuration.

The approach outlined above implies that in carrying out merger analysis in declining industries, antitrust enforcers must focus, as a first step, on establishing whether the economic sector(s) affected by the merger can truly be deemed as declining, i.e. on whether fall in demand and excess of capacity

are permanent.

Having ascertained that the economic sector is declining, the second step of the assessment entails analysing relevant markets. Going back to table 2 and 3 above, if the relevant market under examination is also declining and the merger may give the optimal solution to the attrition game, thereby allowing for the disinvestment and reduction of output that are necessary to achieve the new sustainable equilibrium configuration, then PED argument should be used to clear the merger even if the conditions to apply FFD are not met.

In the case of a non-declining relevant market, there is a risk of committing Type I errors, since efficiency arguments pertaining to exit from decline may be mistakenly neglected. It appears necessary in this case to look more carefully at the pattern of decline in the economic sector, including the timing of decline. Indeed, it could be the case that even if at time t no decline occurs in the relevant market, nonetheless the market will be captured by decline at time $t+1$. In this case the merger could still be cleared, perhaps imposing short-time commitments that hold until decline carries its effects out to the relevant market.

As to type II errors, these occur when the economic sector is not experiencing decline. In such a situation, if the relevant market displays a falling demand and/or a party to the merger is failing, clearing the merger on the grounds that it would provide an optimal exit strategy to decline could be harmful to society, as the welfare improvements invoked by PED or FFD may be negligible for the economic sector. In these situations the market test should be extended to related markets so as to account for possible more efficient switches to contiguous markets within the economic sector.

6. Concluding remarks

It is apparent – the more so in these days of recession – that the cost of firms shutting down goes beyond the foregone profitability of the divested assets, involving also the cost of supporting unemployed workers as well as other social costs. Another piece of evidence documented by a convincing body of literature is that in sunset industries facing overcapacity strategic considerations often prevent firms from voluntarily disinvesting in order to adjust to a new steady-state equilibrium, as the gains from reducing supply are partly captured by their competitors. This literature shows that mergers may efficiently solve the attrition game and thus be a less painful means of restructuring markets compared to exit. We believe that this issue should have greater merits in antitrust policy so as to secure that the outcome of merger scrutiny is welfare improving. The approach we propose attempts to reduce the risk of mistakenly block/clear a merger by factoring into

the analysis an explicit assessment of decline, meant as the existence of long-term structural overcapacity, low demand and low innovation rates in the markets concerned, as well as discussing the objectives pursued by the firms through the merger (e.g. to increase the utilisation rates of plants, to have better access to finance, etc.). Standard assessment over dominant should then account for the results of this analysis and include as a mitigating circumstance eventually balancing out the strengthening of dominant position the “special” production efficiency that is given by orderly and efficiently achieving the required shrink in capacity.

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