Pharmaceutical Mergers and the Impact on Drug Price and Access

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In recent years there has been increased consolidation in the pharmaceutical industry as there has been a record number of mergers taking place (Du Boff, 2001). There is an abundant amount of examples that exist, some recent mergers being those between Pharmacia and Upjohn, Nycomed and Amersham International, and Glaxo Wellcome and SmithKline Beecham (Po, 1998) (Stevens, 2000). Also the number of “mega-mergers,” defined by Du Boff (2001) as mergers with a purchase prices of over $1 billion dollars, have been increasing (Du Boff, 2001). For example, the merger creating the company GlaxoSmithKline was capitalized at $130 billion dollars(Stevens, 2000). The implication of this recent onset of pharmaceutical mergers, must be analyzed. The immense capital involved in these mergers translates into power making it imperative to examine the effect pharmaceutical mergers have on drug price and hence the access to these drugs.

Mergers are not a new phenomenon (Walsh, 2002) (Du Boff, 2001). The U.S. history is marked by waves of mergers beginning in the 1890s (Walsh, 2002) (Du Boff, 2001). These waves include three types of mergers. Horizontal mergers join companies which manufacture the same product and compete in the same market (Walsh, 2002) (Du Boff, 2001). Vertical mergers combine piggy-backing companies whose products compose different steps of one production line (Walsh, 2002) (Du Boff, 2001). And conglomerate mergers are between companies involved in completely different industries (Walsh, 2002) (Du Boff, 2001). All three types of mergers increase the total concentration in the economy by consolidating business and power into overarching, larger firms (Du Boff, 2001).

The existing merger wave began around 1994, and is considered the fifth wave (Walsh, 2002) (Du Boff, 2001). This wave is distinguished from previous waves because it includes cross-border mergers, leading to the globalization of the world economy (Du Boff, 2001). Because the pharmaceutical market is an international market, the emergence of global mergers poses more of a threat to competitiveness than previous mergers (Po, 1998). Historically, national mergers although on national level could be perceived as monopolistic, on the international level they were seen to increase competition (Po, 1998).

In theory, one of “the primary motivations behind these mergers has been efforts to achieve critical mass in areas of R&D [research and development], production, and marketing, in order to increase research productivity and lower unit manufacturing costs” (Graves, 1993). Pharmaceutical companies are under pressure to lower their costs from
their principle buyers (Balto, 1999). Pharmaceutical companies are confronted with both the threat of being dropped as a supplier by insurers and hospitals and new state and federal legislation that demand cost control on public health care programs making cost reductions essential to pharmaceutical companies (Balto, 1999). Pharmaceutical companies aim to achieve economies of scale or scope, cutting costs by becoming more efficient (Po, 1998) (Henderson, 2000). Because the drug development is a complex process, which requires the coordination of many components, the industry has the potential to benefit from an amplified scale and scope (Cockburn, 2001). It is estimated that by streamlining and increasing the production of drugs and eliminating overlaps between companies, companies could reduce costs of research and development (R&D) by 25% through mergers, with similar savings from manufacturing and marketing (Graves, 1993). These cost reduction however are only theoretical, and even if these savings are achieved the impact may not translate into production and drug cost reductions.

Henderson (2000) defines “returns to scale as present when the costs of doing any single activity can be spread out over a larger activity base, or when undertaking an activity on a larger scale permits the adoption of more effective techniques.” Production costs can be lowered if general expertise is applied to various diseases (Henderson, 2000). Cockburn (2001) uses the know-how in biostatistics or the know-how of regulatory authorities as examples of expertise with multiple applications. More capital may be available in larger firms Graves and Langowitz (1993) argue. Therefore, on the other hand, companies could be able to employ more specialized personnel and technology (Graves, 1993) (Cockburn, 2001) than smaller firms. The new revolution in biotechnology is also another stimulus to achieve economies of scale (Balto, 1999). Biotechnology is extremely expensive and risky but the price guarantees a more probable discovery of a novel “blockbuster” drug (Balto, 1999) and the necessary capital may only be available in large firms. Another benefit of size, is that it is extremely hard to get a drug all the way through the drug pipeline, thus a large scale research facility will have the capacity to work on enough leads to assure a more significant likelihood of success (Graves, 1993). And larger firms have more market power and thus their products can make it into the market faster and at higher rates (Graves, 1993).

Returns to scope arise, according to Henderson (2000), when activities are more effective if united under one organization instead of done disjointedly. For example, a firm may be able to take knowledge learnt from one research project and apply it to a completely different project within the firm with no extra cost. For example, larger firms may be able to use general knowledge about clinical trials to increase the efficiency of clinical trials for a variety of drugs, thus reducing the costs of the operation because large scale clinical trials are both costly and complex (Henderson, 2000). Also, medical knowledge can be relevant to multiple studies, therefore increasing proficiency of the company (Henderson, 2000).

On the contrary, there are also various reasons that prohibit pharmaceutical companies from being classified by returns to scope or scale (Henderson, 2000). These economies of scale rely on allocating a fixed cost over a range of projects, and thus this can only be accomplished if the cost actually remains unchanged (Henderson, 2000). In terms of pharmaceutical companies, although there is some specialist skills can be applied to multiple disease conditions, in general the costs are not fixed (Henderson,
For the most part the compounds and diseases are too diverse that the expertise and clinical trials required is highly particular and the merger would result in no real overlap (Henderson, 2000). Thus mergers require a approximately the same amount of expertise input and specialized technology (Henderson, 2000) and would not render more efficiency. Also recently outsourcing specialized resources is becoming more common, these outsourced skills can be accessed by any firm, regardless of their firm size (Henderson, 2000).

A study by Cockburn and Henderson (2001) examined 10 different universities over a 20 year span and concluded some data supporting the presence of scale and scope economies in pharmaceutical research. However, ultimately their research showed that these economies of scale were “exhausted as firms approached the size of the three largest firms in the data set, and that economies of scope were exhausted once the firm had more than six to seven major research programs, that beyond that level there were ‘diseconomies of scope’ (Cockburn ).

Since the thresholds to achieve economies of scope or scale have been surpassed by even medium-sized pharmaceutical companies, Henderson (2000) examines other incentives that might be driving the current mergers. She claims “that it is unlikely that the “mega-mergers” that we are seeing in the industry today reflect the desire to obtain economies of scale or scope research” (Henderson 2000) and asks, what then is driving them? Henderson (2000) hypothesizes that mergers are stimulated by the need to ‘counteract for serious market failures in the market for the discovery of and development of new drugs” (Henderson, 2000).

Henderson (2000) argues that drug companies enter mergers to fill their pipelines. As a result, the firms can downsize those parts of the less productive parts of their organization which they no longer rely on for profit (Henderson, 2000). Henderson (2000) credits mergers as an effective way to reduce excess capacity, defined when actual production is less than optimal production (Investopedia), which decreases profitability. Many recent mergers can be interpreted as “moves away from away from weakness, rather than moves toward strength” (Henderson, 2000). Or as Balto (1999) describes mergers are strategies to “tap into the best products and services of competitors. This merger strategy presents a danger because mergers begin to consolidate research to profitable areas, covering only a small segment of the afflicting global diseases (Po, 1998). This being true, consolidation in the pharmaceutical industry has the potential to increase the research gap. Currently, a huge research gap exist, because only ten percent of the world’s spending on R&D is devoted to conditions that cause 90% of the disease burden, sometimes referred to as the “10/90 gap” (Kapczynski). Mergers potentially enhance this gap. As Ernst & Young's Nolan comments in the Argus-Press article (Sakson, 1995) “But with fewer players, work on drugs for difficult or obscure diseases that don't afflict large numbers of people may decline. It will accelerate the trend to disease-specific, highly targeted research, and the serendipitous discoveries like penicillin will be less likely to occur.” Merged companies are unlikely to invest in drugs targeting diseases afflicting populations in developing countries even though these drugs are needed the most, and thus will remain neglected diseases. Thus, mergers tend to further isolate neglected diseases and hinder drug development for these neglected diseases.

The effect of these mergers can be seen in the production of antibiotics. Many pharmaceutical companies are reducing their antibacterial research and development
programs, and in extreme cases completely stopping antibiotic production (Nelson, 2003). The reason for this change is essentially because it costs the same to develop an antibiotic as it does other to produce another drug, however antibiotics do not bring in as much profit because they are only temporary drugs (Nelson, 2003). In some cases, antibiotics are even more costly to produce, because it is sometimes necessary to have them approved for several indications which requires more clinical trials (Henderson, 2000). Currently there is almost no development of new antibiotics (Nelson, 2003). In 2003 there were 400 drugs in the pipeline likely to be approved and only 5 of them were antibiotics (Nelson, 2003). There are fewer than 20 pharmaceutical companies that still produce antibiotics (Peterson, 2001).

However even if pharmaceutical companies do effectively reduce costs by a more streamlined company, then one presumed benefit of a merger is that the savings can be devoted to R&D (Po, 1998). Graves and Langowitz claim that these mergers represent a “trend toward giantism” (Adams, 1986) (Peters 1987) which Adams and Brock refers to as the “bigness complex” and may have emerged from Joseph Schumpeter’s affirmation that ‘monopoly firms’ will lead to a greater innovative output. Graves and Langowitz argue that Schumpeter’s assertion has now been distorted to mean “bigger is better” and that firms have employed this claim to support mergers to increase their size with the anticipation of greater innovative output.

While this general inherent conjecture that research output of pharmaceutical companies should be a function of the firms spending is easy to accept, there is increasing evidence across industries showing that larger firms are actually proportionately less innovative than smaller ones (Graves, 1993). In the study conducted by Graves and Langowitz (1993), they showed that “greater levels of R&D spending, associated with larger firms, despite the potential for 25% savings R&D, is counterproductive in terms of innovative output.” Graves and Langowitz (1993) claim “beyond a threshold further bigness adds little or nothing and it carries the danger of diminishing the effectiveness of inventive and innovative performance.” These results confirm the findings of Acs and Audretsch (1988) that increasing size leads to weakened innovative productivity. In the Graves and Langowitz (1993) report, their results are compared to a study by Tufts Center on drug development (Getz et al., 2009). The center found that merged companies “initially limit R&D growth to accommodate integration challenges, uncertainty and instability but after 4 years post-transaction rapidly increase R&D spending across considerable consolidated portfolios of late stage development projects” (Getz et al., 2009) (Graves, 1993).

Grave and Langowitz hypothesize some reason why large firms may be less innovative. The decline in innovation could be attributed to the fact that in large firms creative individuals may not be as encouraged or stimulated as individuals in smaller firm, due to the impersonal environment (Graves, 1993). Also in large firms the most capable researchers may be promoted to supervisory and administrative positions leaving the basic innovations to less competent employers (Graves, 1993). Another factor may be that the disposition of large organizations tends to lie on the conservative side, which could possible make it hard for creative and novel ideas to be considered (Graves and Langowitz). Graves and Langowitz (1993) theorize that smaller firms may be more cost conscious, therefore it could be that the same project conducted by a larger firm would result in more monetary waste (Graves, 1993). In summary Graves and Langowitz
(1993) propose that innovative productivity declines with increasing firm size and therefore any savings achieved from an economy of scale or scope would lead to no reduction in drug price and no increase in product output.

Another concern is that recent pharmaceutical mergers have the potential to be anticompetitive (Balto, 1999). Although pharmaceutical mergers are regulated by antitrust laws, a number of recent pharmaceutical and health care products have had foreseen anticompetitive effects (Balto, 1999). From 1995-1999, the Federal Trade Commission brought 11 enforcement actions against pharmaceutical and health care product mergers, there is no other industry with this number of enforcement actions (Balto, 1999).

Antitrust action, already is becoming less efficient in governing merger activity with the current wave of mergers. With the increase of international mergers antitrust laws are becoming harder to enforce (Du Boff, 2001). Firms, in order to compete with the both the national and international expansion of their rivals, are pressured to become larger. Du Boff (2001) asserts that “the basic problem in dealing with giant multinationals on any grounds, however, is that the economic and political force of capital is becoming global, while regulatory authority remains national.” Also companies are generally able to make convincing cases for mergers in terms of national interests (Po, 1998), therefore national governments will not oppose these mergers even if the merger allows for a monopolization of the product on a global scale (Po, 1998). This leads Du Boff (2001) that “the only way to curtail anticompetitive activity is through cooperative enforcement among nations.” Du Boff (2001) points out that there have been some recent examples of international efforts, however none exists within pharmaceutical companies. Du Boff (2001) explains “these examples are the U.S. Justice Department and the European Union's Competition Commission (EUCC) cooperating in the U.S. antitrust action against Microsoft, and in the review of the AOL-Time Warner merger. The EUCC also blocked WorldCom's planned $116 billion combination with Sprint in June 2000, shortly after it forced Sweden's two big truck manufacturers, Volvo and Scania, to drop their merger plans.” Du Boff (2001) points out that these initiatives are only the beginning steps because multinational mergers are continuing and anticompetitive activity poses a real threat (Du Boff, 2001). With no effective national or global antitrust actions inhibiting the aggressive merger activity taking place, monopoly firms can inflate their drug prices to whatever price they want (Du Boff, 2001). In the pharmaceutical industry, companies undergoing mergers are now so big and powerful that governments do not want to intervene and when they do it is unclear how they can (Po, 1998).

The main question is in the end, how is patient is affected by the recent merger activity’s impact on the price and access of drugs. The issue is very complex with no simple answer. Po (1998) states that “in principle, an improvement on efficiency should trickle down in the form of cheaper drugs.” However from the past activity and can be seen that this result is not actualized (Po, 1998).

The Argus-Pressc quotes Peter Arno, health economist at Montefiore Medical Center in New York City and critic of the drug companies (Sakson, 1995). Arno is pessimistic of drug mergers, saying "Less consumer choice, less innovative research and development, and higher prices" (Sakson, 1995). Arno argues for "government price
controls and a mandate that 15% to 20% of sales be funneled into research, not shareholder pockets” (Sankson, 1995).

It is imperative however, that more research be done to find definitive answers to these questions. Merger activity is projected to continue growing (Pennelay, 2009). Drug development costs keep increasing and pharmaceutical companies are faced with up to “nearly $80 billion in lost value for drugs with expiring patents during the next few years” (Pennelay, 2009). These companies have to find ways to replace the blockbuster drugs in order to maintain their remarkable high levels of profitability and to compensate pharmaceutical companies will continue to turn to merger.

Initially these mergers appear rational. However at a closer look, it is not at all obvious that mergers can generate a higher level of investment into R&D and even if they can that it will necessarily lead to an increased rate of innovations. The pursuit for short term gains may encourage more mergers than is optimal for the industry (Henderson, 2000). As a result, over-concentration may interfere with innovative activity and lead to monopolistic power (Po, 1998). The current merger activity is not sufficiently regulated giving governments little power to intervene (Po, 1998). As quoted by Po (1998) “a drug-specific monopolistic industry may be beneficial to some countries but in the end may be reluctant to act in the interest of the world as a single community in search of more effective medicines.” Pharmaceutical mergers can stand as an enormous barrier to the access of drugs and their ramifications must be considered before we allow them to continue.
References:
