

Are We Seeing the Bottom of the Crisis Yet?

– Analysis of Damages the Financial Crisis Has Caused to Pharmaceutical and Biotech Industry

By Jim J. Zhang, Ph.D.¹
JZMed, Inc.

ABSTRACT: It has been a few months passed since the current financial crisis was first identified. The crisis has exerted severe negative impacts on the global pharmaceutical and biotechnology industry. It has become major concerns to professionals in all related industries of what damages the crisis has caused to these two industries and how far we are still possibly away from the bottom of the crisis. As we have closely followed the development of these two industries, this article summarized the results of our latest studies and provides to readers answers to the above questions.

The financial crisis currently spreading around the world has exerted negative impacts on both pharmaceutical and biotechnology industry. However, the damages it has caused to these two industries are different. It appears that the biotech industry is hit harder than the pharma industry. A number of biotech companies have been significantly weakened as the investment shortage resulting from the financial crisis forced them to scale down all activities. A large number of R&D programs have been either cut or put on shelf. On the other hand, even though they are not directly affected financially by the crisis, many major pharma and biopharma companies have also been vigorously strengthening their capability and paying more attention to efficiency, cost-effectiveness and productivity as demonstrated by a series of latest mega-mergers. To both industries, a common consequence of the impact is that a larger number of professionals have lost their jobs or are under the threat of restructuring actions.

As the impacts of the crisis are presently spreading wider, professionals in all related industries have become more and more anxious. What damages the crisis has caused to these two industries and whether the crisis is close to the bottom have become two major and also the common concerns to all of them.

As part of our research, we have closely followed the development of the situation and studied the impacts of the crisis on both pharmaceutical and biotech industry. To help readers in the related industries gain a clear insight about the current situation, here we summarized our research results of what happened to these two industries in the past eight months. We believe that this is the first in-depth and most up-to-date analysis of the impacts the financial crisis has caused to global pharmaceutical and biotech industry.

¹ Jim J. Zhang, Ph.D. is president and managing director of JZMed, Inc., a market research company specializing in research on Chinese pharmaceutical outsourcing industry and providing consulting service for pharmaceutical outsourcing in China. This article is written partially based on the firm's latest research report "China Pharma Outsourcing Market By 2015." Jim can be reached at jz@jzmedi.com or 518-477-4831.

Are we seeing the bottom of the crisis yet?

Table 1 and Figure 1 summarized the number of the companies in the pharmaceutical and biotech industry that announced restructure in the past eight months. The results collected and presented here span evenly in 2008 and 2009: the last four months of 2008 (since last September at which time the crisis was initially identified) and the first four months of 2009 (i.e. up to now). According to our study, in these eight months there were a total of 119 companies in both biotech and pharma industries that announced restructure. The lowest monthly number of companies that announced restructure occurred at the beginning of the crisis (only one company). The highest occurred in January (about 30 companies). From these numbers, following preliminary conclusions can be drawn:

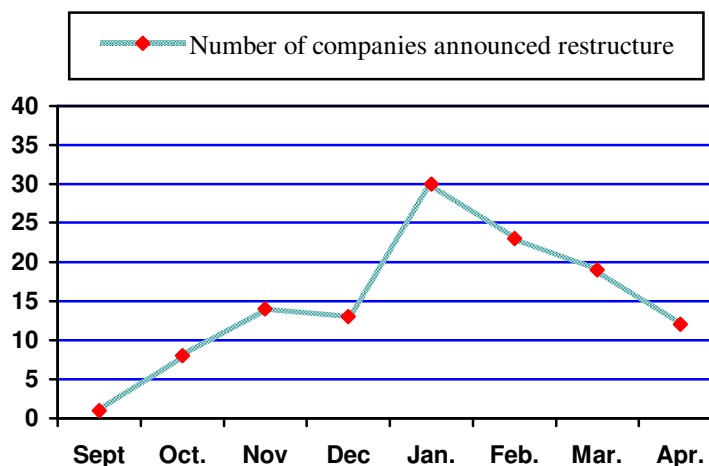
- The direct impact of the financial crisis on pharma and biotech industry started to be felt from last September and became more and more severe in the rest of 2008.
- The negative impact seemed to have reached peak in January. After that the panics displayed by the companies were gradually tempered. It is reflected by fewer and fewer companies that have announced restructuring actions since then.
- It appears that the most significant panics displayed by the whole industry about the impacts of the crisis are over now.

However, although the number of companies that announced the restructuring actions has been gradually decreasing since January, mergers between major companies, small biotech companies, as well as acquisitions of small companies by big ones are actually increasing. This is also confirmed by the latest literature data in which the number of mergers and acquisitions and the combined values of these activities in the first quarter of 2009 all far exceeded those in the whole year of 2008.²

Table 1. No. of companies announced restructure in the last eight months

Month observed	No. of companies taking restructure
Sept.	1
Oct.	8
Nov.	14
Dec.	13
Jan. 2009	30
Feb.	23
Mar.	19
Apr.	12
Total	119

Figure 1. Graphic display of no. of companies announced restructure in the last eight months



Preliminary analysis of damages the crisis has caused to pharma and biotech industries

It seems that those small biotech companies, in particular those still in early stages of discovery and development, hit hardest by the financial crisis. Due to the nature of their business, R&D-oriented small biotech companies are most sensitive to the change of financial and funding environment. This is well reflected by the following numbers:

- Much higher percentages of biotech companies announced restructure than major pharma or biopharma companies. For example, there were 33 biotech companies (or 89% out of 37 in total) announced restructuring actions in 2008, whereas only 4 (or 11%) major companies announced restructure during the same time period (please see Table 2).
- More small biotech companies announced big cuts of workforce. For example, in the last four months of 2008, 6 (or 16%) biotech companies announced more than 50% reduction of their workforce and 10 companies (or 27%) cut more than one third (None of those major ones would cut that much!).
- The high percentages of workforce reduction by small biotech companies still continued in the first four months of 2009. For example, 9 (or 11%) of them announced more than 50% reduction of their workforce and 21 companies (or 26%) cut more than one third during that time period.

Table 2. Analysis of damages by the financial crisis

Items observed		Last four months of 2008 (Sept. –Dec.)	First four months of 2009 (Jan. – Apr.)	Total no. of companies (%)
Type of company	Major	4	16	20 (17%)
	Small biotech	33	66	99 (83%)
	Total no. of companies (%)	37 (31%)	82 (69%)	119 (100%)
Number of companies announcing workforce reduction of >50%		6 (16%)	9 (11%)	15 (13%)
Number of companies announcing workforce reduction of > 1/3		10 (27%)	21 (26%)	31 (26%)
Number of companies having filed bankruptcy protection		4 (11%)	3 (4%)	7 (6%)

As the crisis dragged along, more and more companies, both small biotech and major pharma, were feeling the impact. For example, in the first four months of 2009, the total number of small biotech companies that announced restructure was doubled compared with the last four months of 2008 (33 in 2008 vs. 66 in 2009). The number of major companies that announced restructure was even quadrupled during the same time period (4 in 2008 vs. 16 in 2009).

Also as the crisis was going deeper, more and more job positions in both industries were eliminated or planned to eliminate. However, major companies began to cut much more than the small biotech. For example, in the last four months of 2008, the total workforce loss was only about 6,500, but it jumped to more than 42,000 in the first four months of 2009, increased by 543% (Table 3). The main contributions were from the announcements by big companies including Astra-Zeneca (6,000 announced in early January), Pfizer (10,000, announced in early January), Roche (1,500, announced in early March), Hospira (1,400 announced in late March), Cardinal Health (1,300 announced in early April), Johnson & Johnson (900 announced in early April), etc.

Table 3. Workforce loss during the last eight months

Items observed		Last four months of 2008 (Sept. –Dec.)	First four months of 2009 (Jan. – Apr.)	Total no. of positions lost (%)
Type of company	Major	5,190	37,974	43,164 (89%)
	Small biotech	1355	4096	5451 (11%)
Total number of positions lost (%)		6,545 (14%)	42,070 (86%)	48,615 (100%)

R&D program reprioritizations by small biotech companies: In addition to the workforce reduction, almost all these affected biotech companies also took actions to reprioritize their R&D programs. Most of them completely cut early stage programs including those still in discovery and preclinical research. Some even planned to close their R&D facilities or put their programs on idle. Their focus now is only on those programs in development stages. However, the degree of their focuses on the development programs still varies, totally depending on how much cash reserves each has on hand. Most companies also cut early stage clinical research such as phase I trial and focus on middle stage such as phase II. As for phase III trial, because it is the most expensive research, some companies just suspend it and seek co-development with a big pharma or biopharma company. In addition, seven companies filed bankruptcy protection. A similar number of companies are seeking alternative business strategies including liquidating.

Acquisitions of drug candidates by major pharma and biopharma companies: To many large pharma and biopharma companies, the current financial crisis did not affect them financially as severe as to the small R&D-oriented biotech firms. In stark contrast to cutting programs by small biotech companies, these major companies are planning to

acquire more drug candidates that are in advanced development stages from biotech companies. Three reasons can explain this phenomenon: 1) These major companies still have strong cash reserves; 2) Those small-sized but financially troubled biotech companies are now forced to give up their ownership; 3) These interesting drug candidates now become much cheaper than before as these cash-short biotech firms now have lost their bargaining power. Consequently, the drug pipelines of these major companies will have become significantly enriched in the near future. A typical example is the latest acquisitions by BMS of two late stage cancer drug candidates, XL184 and XL281, from Exelixis which announced to reduce 10% of its workforce one month prior to the acquisitions.

What can be learned from the crisis?

Although the crisis like this one is rarely encountered to all of us, it provides a great opportunity to all professionals in these two industries to seriously think about how they could do differently and better in the future so as to prevent them from being entangled in a situation like what they are currently experiencing. Our studies revealed that following lessons may be learned from this crisis:

- a. The present financial crisis hit hardest those small, cash-poor biotech companies. Majority of them are still in discovery or early development stages. The financial crisis will have created a dilemma situation to these companies in the near future. On the one hand, the nature of drug discovery and development requires them to have an abundant cash reserve. In the past it was generally easily realized through rounds of fund raising. On the other hand, the financial crisis has directly resulted in the funding shortage in the foreseeable future. Many VCs or investment institutions either lost a big chunk of their investment elsewhere, which made them less flexible for other investments, or become more skittish to invest in R&D-oriented drug discovery companies. Many of them have realized the high risk of drug discovery business. They are now more inclining to investing in those less risky sectors such as the developers of molecular diagnostics and biomarkers as it takes much less time and money to commercialize a product in these areas. They are even interested in outsourcing service providers as these companies generally have strong revenue performance. This situation is a strong reminder to those R&D-oriented biotech companies as, from now on, they have to more diligently plan their budgets and use fund more wisely.
- b. As was demonstrated by those major companies who are currently aggressively acquiring/licensing drug candidates from the small biotech companies, cash is king in both pharmaceutical and biotech industry in any time. To all companies, to get drug discovered faster, developed quicker, manufactured cheaper and marketed wider will be the common ultimate goals. To this end, large companies should pursue more cost-effective and productive operation models, whereas the small and startup biotech companies should pursue virtual or semi-virtual operation models so that they could avoid building fixed facilities and save as much cost as possible at the beginning of their operation.

- c. As the numbers in the above tables indicated, after the financial crisis, the pharmaceutical and biotech industry will look totally different. Mega mergers between major pharma/biopharma companies will create fewer but bigger companies. They will become more capable in R&D and stronger in product pipelines. The wide-spread restructuring actions taken by many small biotech companies and the subsequent mergers and acquisitions between them will also dramatically change the landscape of the entire biotech industry. There will be much fewer biotech companies, fewer R&D programs, fewer drug candidates in early discovery and/or development stages, and fewer technically experienced researchers in the field. In not a long distance, major pharma companies will very likely again have found it hard to find ideal drug candidates to acquire/license. A cycle of drug candidate shortage may occur again by then. Therefore, while putting more efforts on development at present time, major pharma/biopharma companies should also pay attentions to cultivating those early discovery programs as it will take time for these programs to become fruitful.