S&P DOW JONES INDICES
McGRAW HILL FINANCIAL

생명공학(Biotechnology)업계의 벤치마킹: 지수가 역동적 업계를 추적하는 방법

CONTRIBUTORS

Mahavir Kaswa

Manager
Product Management

mahavir.kaswa@spdji.com

Philip Murphy, CFA

Vice President
North American Equities

philip.murphy@spdji.com

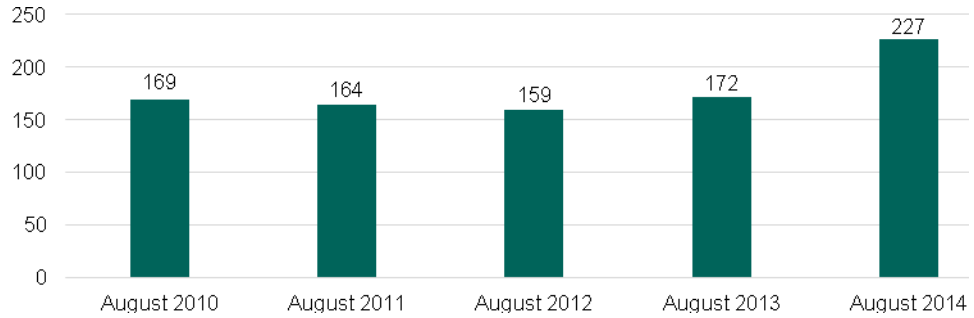
업계 개요

생명공학회사는 주로 생물학적 과정을 기반으로 의료 상품의 연구, 개발, 제조, 판매에 참여한다. 생명공학회사와 제약회사의 큰 주요 차이는 전자는 (박테리아나 이스트 같은) 살아있는 유기체로부터 유도한 약물을 생산하는 반면 후자는 화학 물질을 기반으로 약물을 생산한다는 것이다.

생명공학 업계는 미국 경제에서 역동적인 부문으로서 투자자에게 전반적인 주식 시장보다 잠재적으로 더 큰 보상(그리고 이와 더불어 더 큰 리스크)을 제공한다. 생명공학회사는 포괄적이고 비용이 높은 R&D 프로그램에 참여하며 종종 R&D 프로그램은 영업손실을 유발할 수 있다. 또한 이들 회사는 오랜 개발과 규제 승인 과정은 물론 의약품을 시장에 출시하는데 있어 상대적으로 낮은 성공률을 헤쳐나간다. 반면 성공할 경우 일반적으로 상당한 이익을 주주에게 제공한다. 이러한 업계 특징 때문에 생명공학회사에 대한 추정 평가는 일반적으로 매우 불확실하다. 따라서 업계에서 우수한 회사를 찾으려고 노력하기 보다는 업계 전체를 추적해야 할 필요성이 제기될 수 있다.

- 2014 년 8 월 현재 미국에는 227 개의 상장된 생명공학회사가 있다(그림 1 참고).
- 생명공학 업계는 2010 년 8 월 약 15%와 비교해 2014 년 8 월 현재 의료 부문 시가총액의 약 23%를 차지하고 있다(그림 2 참고).
- 생명공학회사의 평균 R&D 지출은 2008 년 1,090 만 달러인 반면 2013 년 한 해 동안 (2014 년 8 월 현재) 2,430 만 달러였다.

Exhibit 1: Number of Publicly Traded Biotechnology Firms

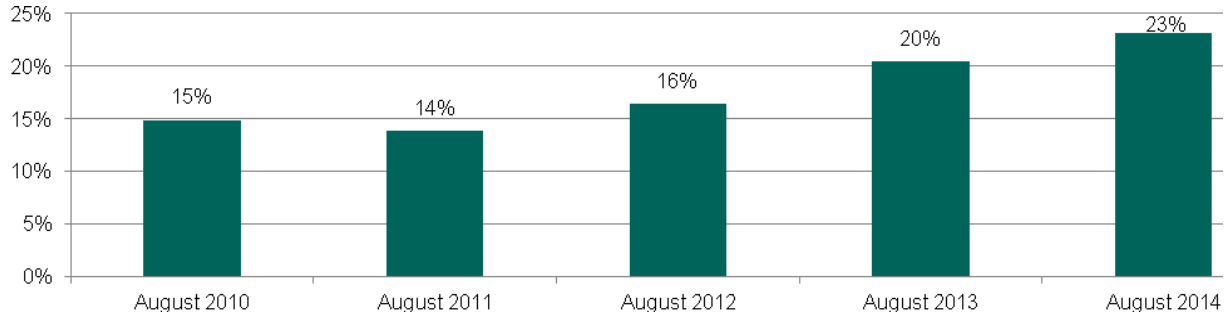


Source: S&P Dow Jones Indices LLC calculations using Bloomberg data. Data as of August 2014. Biotech industry and healthcare companies categorized using Global Industry Classification Standard (GICS®). Charts and tables provided for illustrative purposes.

RESEARCH

November 2014

Exhibit 2: Biotechnology as a Percentage of the Healthcare Sector by Total Market Capitalization



Source: S&P Dow Jones Indices LLC calculations using Bloomberg data. Data as of August 2014. Biotechnology industry and healthcare companies categorized using GICS. Charts and tables are provided for illustrative purposes.

S&P Biotechnology Select Industry Index

2006 년 1 월 27 일 출시한 S&P Biotechnology Select Industry Index 지수는 모든 시가총액의 S&P Total Market Index (TMI) 종목이자 GICS 바이오테크놀로지 서브인더스트리로 분류된 기업들을 추적한다.[1] 또한 최초 종목 심사 후 적격 생명공학회사의 수가 35 개가 되지 않는다면 GICS Life Sciences Tools & Services 서브인더스트리에서 지수 종목을 가져올 수도 있다. 이 지수는 분기마다 조정을 하고 일반적으로 가중치를 동일하게 부여하며 어떠한 주식도 가상의 5 억 달러 포트폴리오에 대해 하루 거래할 수 있는 것보다 큰 지수 가중치를 가질 수 없다는 제약이 따른다. 또한 지수 종목은 시가총액, 거래 유동성과 관련하여 구체적인 기준을 충족한다. 2014 년 8 월 29 일 현재 이 지수는 77 개 발행 주식을 포함하고 있다.

지수 종목의 펀더멘털

매출 증가

S&P Biotechnology Select Industry Index 에 포함된 기업들의 매출 중앙값(median)은 S&P TMI 그것과 비교해 상대적으로 작고 S&P 500® 기업들의 그것과 비교해 훨씬 작다. 그러나 매출 중앙값의 5 년 성장률은 S&P Biotechnology Select Industry Index 내에서 훨씬 더 높다. 또한 2013 년 현재 S&P Biotechnology Select Industry Index 기업의 매출 중앙값은 S&P TMI 의료 섹터 주식의 그것보다 높다(그림 3 과 4 참고).

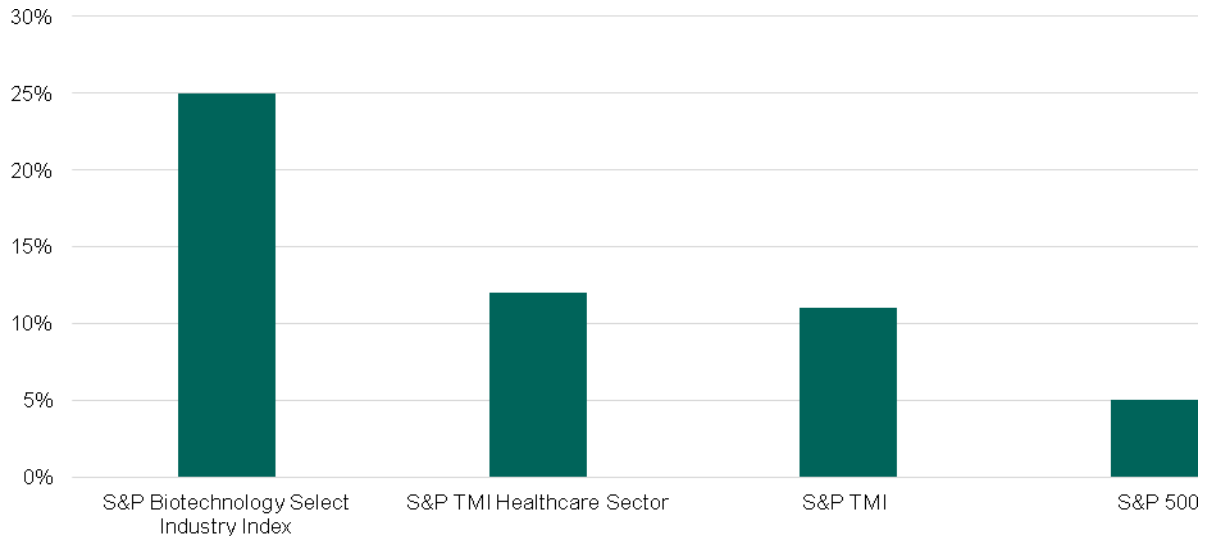
Exhibit 3: Median Revenue of Index Constituents

Year	S&P Biotechnology Select Industry Index (USD millions)	S&P TMI Healthcare Sector (USD millions)	S&P TMI (USD millions)	S&P 500 (USD millions)
2013	35.54	35.46	406.92	8,639.80
2008	11.70	20.30	237. 71	6,929.34

Source: S&P Dow Jones Indices LLC, Bloomberg. Data as of August 2014. Charts and tables are provided for illustrative purposes. Past performance is no guarantee of future results.

[1]The S&P Total Market Index (TMI) includes large-, mid-, small- and micro-cap U.S. stocks.

Exhibit 4: Median Revenue Growth of Index Constituents–Five-Year CAGR



Source: S&P Down Jones Indices LLC, Bloomberg. Data as of August 2014. CAGR: Compound Annual Growth Rate. Charts and tables are provided for illustrative purposes. Past performance is no guarantee of future results.

연구와 개발

생명공학회사는 연구와 개발에 광범위한 노력을 기울인다. 2013 년 S&P Biotechnology Select Industry Index 종목의 R&D 지출 중앙값은 S&P TMI 의료 섹터 주식의 약 4.5 배였다. 회사 규모로 볼 때 생명공학회사들에게 있어 R&D 주력은 크게 두드러진다. 이러한 지출을 매출 대비 퍼센티지로 보면 S&P Biotechnology Select Industry Index 종목에 대해 2013 년 연말 중앙값은 일반적인 S&P TMI 의료 주식의 10%와 비교해 약 81%였다.

Exhibit 5: Median 2013 R&D Expenditure-to-Sales Ratio for Index Constituents

Source: S&P Down Jones Indices LLC, Bloomberg. Data for full year 2013 as of August 2014. Charts and tables are provided for illustrative purposes.

시가총액 범위

S&P Biotechnology Select Industry Index 종목은 시가총액에 있어 광범위하다. 2014 년 8 월 현재 가장 높은 시가총액은 약 1,652 억 900 만 달러이며 지수에서 가장 낮은 시가총액은 약 2 억 1,800 만 달러였다. 그러나 이 지수는 시가총액에 가중치를 주기보다는 동일하게 가중치를 주기 때문에 지수의 시장 가치는 시가총액 가중치 지수보다 훨씬 더 균등하게 배분된다. 2014 년 8 월 현재 가장 큰 지수 종목은 약 5 억 6,600 만 달러의 시장 가치를 갖고 있는 반면 가장 작은 종목은 약 7,300 만 달러였다.

Exhibit 6: Market Cap Size Range for the S&P Biotechnology Select Industry Index

Market Cap	Total Market Capitalization of Index Constituents (USD Millions)	Index Market Capitalization (USD Millions)
Mean	8,751.63	137.88
Median	1,161.88	132.42
Largest	165,208.67	565.53
Smallest	217.55	72.95

Source: S&P Dow Jones Indices LLC. Data as of late August 2014. Charts and tables are provided for illustrative purposes.

지수 실적

생명공학 업계 자체와 마찬가지로 S&P Biotechnology Select Industry Index 는 다른 시장 부문과 비교해 생명공학회사의 과거 뛰어난 실적을 반영한다. 그러나 절대적 실적에서는 변동성이 더 높다(그림 7 참고).

Exhibit 7: Risk/Return Characteristics Over Various Time Periods

Time Period	S&P Biotechnology Select Industry	S&P TMI Healthcare Sector	S&P TMI	S&P 500
YTD				
Total Return (%)	24.20	15.69	9.22	9.89
1-Year				
Total Return (%)	35.91	31.72	24.67	25.25
3-Year				
Annualized Total Return (%)	36.97	27.37	20.59	20.61
Volatility (Annualized Std. Dev. %)	26.95	10.95	12.20	11.60
Sharpe Ratio	0.378	0.658	0.462	0.485
5-Year				
Annualized Total Return (%)	24.68	20.63	17.22	16.88
Volatility (%)	25.51	12.28	13.77	13.19
Sharpe Ratio	0.287	0.460	0.353	0.361
Since Index Inception (January 2006)				
Annualized Total Return (%)	15.27	10.91	7.75	7.63
Volatility (%)	24.63	14.05	16.16	15.57
Sharpe Ratio	0.188	0.208	0.135	0.137

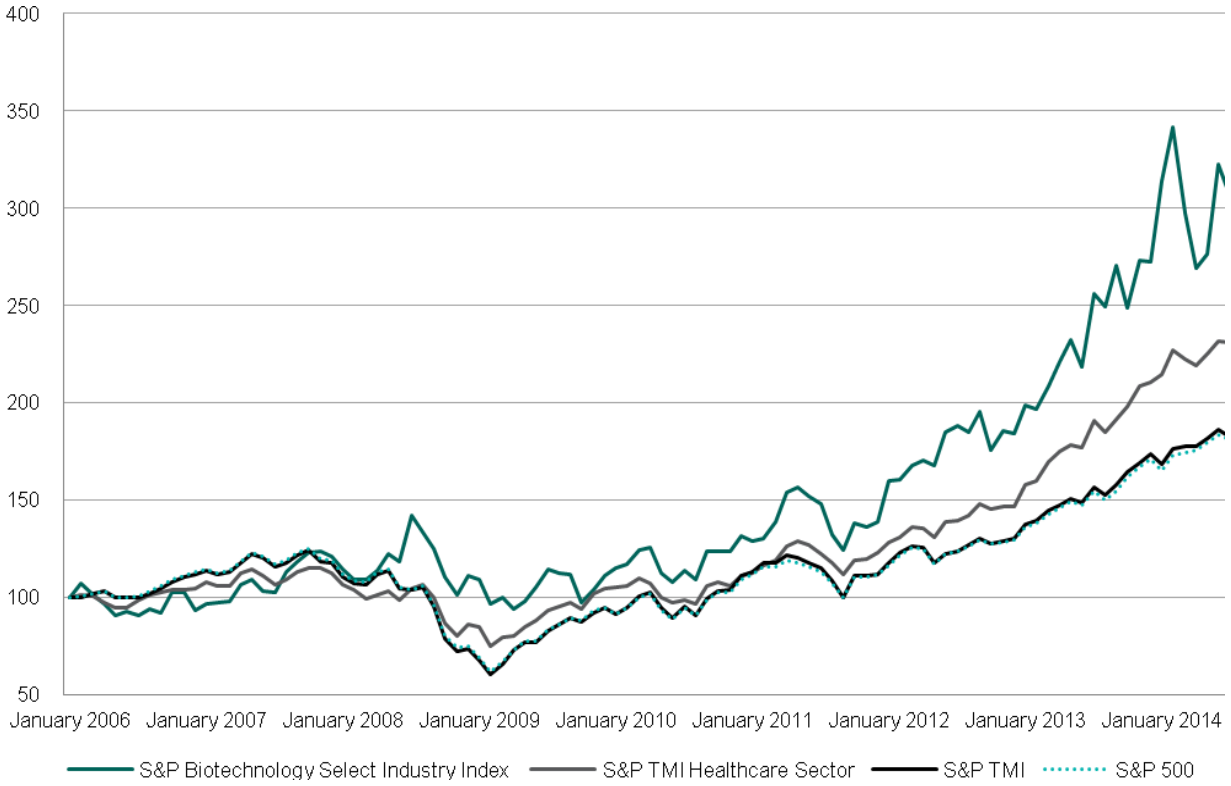
Source: S&P Down Jones Indices LLC, Bloomberg. Data based on monthly total return index performance through August 2014. Charts and tables are provided for illustrative purposes. Past performance is no guarantee of future results.

Exhibit 8: Maximum Drawdown

Time Period	S&P Biotechnology Select Industry Index	S&P TMI Healthcare Sector	S&P TMI	S&P 500
Since January 2006 (%)	-33.85	-35.23	-51.34	-50.95
Drawdown Date	April 20, 2009	Feb. 27, 2009	Feb. 27, 2009	Feb. 27, 2009

Source: S&D Dow Jones Indices LLC. Data as of late August 2014. Charts and tables are provided for illustrative purposes. Past performance is no guarantee of future results.

Exhibit 9: Historical Index Performance



Source: S&P Down Jones Indices LLC, Bloomberg. Index levels rebased to 100 as of January 2006. Index performance based on monthly total returns in USD from February 2006 to August 2014. Charts and tables are provided for illustrative purposes. Past performance is no guarantee of future results. These charts and tables may reflect hypothetical historical performance. Please see the Performance Disclosures at the end of this document for more information regarding the inherent limitations associated with back-tested performance. Index returns do not reflect charges or fees payable for investing in securities. It is not possible to invest directly in an index.

결론

미국 생명공학 업계는 상장회사의 수, 전반적인 의료 부문에서 상대적인 시가총액에 있어 지난 3-5 년간 성장해 왔다. 예전부터 생명공학 업계의 특징은 높은 잠재적 리스크와 함께 높은 잠재적 보상이다. 일반적으로 생명공학회사들은 일반적으로 제품 출시에 앞서 10-15 년의 작업을 포함하는 오랜 개발과 규제 과정을 갖는다.

S&P Biotechnology Select Industry Index 는 유동성을 심사하고 모든 시가총액 규모에서 미국 생명공학회사들을 추적하도록 설계되어 있다. 2006 년 1 월 시작한 이후 이 지수는 보다 광범위한 의료 부문은 물론 일반적인 주식 시장보다 실적이 좋았다. 그러나 이러한 절대적 실적은 더 높은 변동성과 함께 한다. 수정된 동일 가중치 방식은 시가총액 가중치 방식에 비해 낮은 시가총액 주식으로 기울어지는 지수 가중치를 갖는다. 작은 회사는 큰 회사보다 리스크가 높지만 상당히 긍정적인 부분도 있었다.

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The S&P Total Market Index (TMI) was launched on March 27, 2006. All information presented prior to the launch date is back-tested. Back-tested performance is not actual performance, but is hypothetical. The back-test calculations are based on the same methodology that was in effect on the launch date. Complete index methodology details are available at www.spdji.com.

The S&P TMI Healthcare Sector Index was launched on Dec. 31, 2004. All information presented prior to the launch date is back-tested. Back-tested performance is not actual performance, but is hypothetical. The back-test calculations are based on the same methodology that was in effect on the launch date. Complete index methodology details are available at www.spdji.com.

The S&P Biotechnology Select Industry Index was launched on Jan. 27, 2006. All information presented prior to the launch date is back-tested. Back-tested performance is not actual performance, but is hypothetical. The back-test calculations are based on the same methodology that was in effect on the launch date. Complete index methodology details are available at www.spdji.com.

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