Corporate Rating Methodology – Pharma Sector

1. Corporate Rating Framework

EthiFinance Ratings uses a common framework to analyse the creditworthiness of Corporates. Under the umbrella of this framework, EthiFinance Ratings is publishing a sector specific methodology for the pharmaceutical industry that is based on the corporate framework but at the same time addresses the peculiarities of the sector. This methodology describes the risk assessments and specific factors associated with the pharmaceutical industry. All existing ratings remain unchanged.

This report serves the reader as a general guidance in understanding how both qualitative and quantitative risk factors combine and affect the final Rating result.

EthiFinance Ratings takes a stepped approach to rating a pharmaceutical company: First it will determine the company's business risk profile, then it will analyse its financial & economic risk profile and combine these two areas to produce a stand-alone Company Rating.

The company's business risk profile is assessed using the following analytic factors:

- Industry Risk
- Competitive positioning
    - Quality of the portfolio and pipeline
    - Product, therapeutic and geographic diversification
    - Scale and market share
- Healthcare system: Regulation and Demand structure (number of buyers)
- Management and shareholder quality and company's stated financial policy

The company's financial & economic risk profile is assessed using the following analytic factors:

- Profitability
- Research & Development opex
- Leverage and Coverage
- Solvency and Liquidity

In both profiles, a score between 1 and 10 is given to each of the subfactors where 1 is the highest score and 10 is the lowest score in terms of credit quality.

This framework will provide for each profile the factors and subfactors that are analyzed, the reason why these factors are deemed to be meaningful indicators in the rating process and a series of scorecards that are the building blocks of the final rating.

The individual score of each analytical factor and subfactor is given a weight and the final numeric score is the result of the weighted average of the individual scores. Therefore, the higher the weight assigned to a factor the more important it is in determining the final rating outcome.

In the case of the quantitative analysis, a set of meaningful ratios are indicated for each analyzed area. EthiFinance Ratings provides a scale that assigns the different values of the ratios to each of the rating categories.

Finally, this methodology will map the numeric score resulting from the rating process into the Rating Scale used by EthiFinance Ratings. In addition, the issued rating (solicited or unsolicited) is accompanied by an outlook (over the next year) that can be under observation, positive, stable, or negative depending on the perspective of both the sector and the performance of the company.

2. Scope of Rated Universe

This methodology applies to companies that produce and commercialize pharmaceutical products that require, in the majority of cases, a medical prescription. Companies that produce healthcare products are not included in this universe of firms. This methodology applies to non-solicited and solicited ratings.

Pharmaceutical companies covered by this analytical framework fall mainly under three categories:

- **Patented Pharmaceuticals** with propriety drugs that result from a process that includes R&D, clinical tests, application for authorization to the Drug Administration and final commercialization. These drugs are under patent protection during a period that may vary in length.
- **Biotech Pharmaceuticals.** Companies produce medicines that are derived from living organisms. Drugs are based on biology and harness cellular and biomolecular processes. They include vaccines, blood and blood components, allergenics, somatic cells, gene therapy, tissues and recombinant therapeutic proteins.
- **Generic Pharmaceutical** companies which offer the same therapeutic principle once branded drugs are no longer under patent.

Companies may offer a mixed business model, offering both drugs under patent and generics and may also offer a portfolio of healthcare products that are sold over the counter.

3. Business Risk Profile

Factors that are taken into consideration when calculating the business profile score are:

- Industry Risk
- Competitive Positioning
  - Quality of the portfolio and pipeline
  - Product, therapeutic and geographic diversification
  - Scale and market share
- Healthcare system: Regulation and Demand structure (number of buyers)
- Management and shareholder quality and the company's stated financial policy

3.1. Industry Risk

In determining the business risk profile, the industry in which a company operates is a significant factor since the strengths and weaknesses of the sector are common in differing degrees to the companies that have to operate in it. The operating conditions in which a company conducts its business are strongly influenced by the sector and therefore have a strong bearing on a company's capacity to generate cash flows in order to service its debt. The sector score provides a reference point for the total rating of a company however it does not act as a ceiling for all companies belonging to the sector.

EthiFinance Ratings rates the pharmaceutical industry's risk as low and therefore it will score the companies that operate in the sector in the range of 2 to 5.

To rate these three subsectors, we use the following table:

Subsector Scores				
	Degree of necessity (25%)	Substitution risk (25%)	Price elasticity (25%)	Barriers to entry (25%)
Biotech	2/3	2/3	2	2
Patented	2/3	2/3	2	2
Generics	4/5	4/5	3/4	4

3.2. Competitive Positioning

3.2.1. Quality of the portfolio and pipeline

The following criteria are applicable to biotech and patented drugs pharmaceuticals:

- Number of projects under development in phase 3 (40%)
- Percentage of portfolio with patents expiring in next 3 years (30%)
- Size of potential market (30%)

In case of Pharmaceuticals operating in the generic drugs segment, this factor is not applicable so that the weight of this variable is redistributed among the rest of the qualitative variables (see 3.7 Business Risk Profile Factors and their score weightings).

Quality of the portfolio and pipeline	
Score	**Description**
1-2	The Pharmaceutical has a very high number of projects in the phase three stage of development. The percentage of its portfolio affected by patent expiry in the next three years is very low (≤ 10%). The size of the potential market is extremely large.
3-4	The Pharmaceutical has a fairly high number of projects in the phase three stage of development. The percentage of its portfolio affected by patent expiry in the next three years is low (≤ 15%). The size of the potential market is fairly large.
5-6	The Pharmaceutical has a modest number of projects in the phase three stage of development. The percentage of its portfolio affected by patent expiry in the next three years is fairly high (≤ 25%). The size of the potential market is medium to low.
7-8	The Pharmaceutical has very few projects in the phase three stage of development. The percentage of its portfolio affected by patent expiry in the next three years is very high (>40%). The size of the potential market is small.
9-10	The Pharmaceutical has no projects in the phase three stage of development. The majority of its portfolio is affected by patent expiry in the next three years (> 70%). The size of the potential market is extremely small.

3.2.2. Product, therapeutic and geographic diversification

Diversification in Pharmaceuticals not only relates to product (40%) and geography (30%) but also to diversity in medical areas of treatment (30%). The following table describes how these factors are translated into scores.

Product, therapeutic and geographic diversification	
Score	**Description**
1-2	The pharmaceutical company is a global player. Its top five products represent less than 20% over sales. It is present in at least 6 treatment areas.
3-4	The pharmaceutical company lacks significant presence either in Europe or USA, but it has strong presence in 4 to 5 large countries. Its top five products represent less than 50% over sales. It is present in at least 3 treatment areas.
5-6	The pharmaceutical company is a regional player with a presence in 2 to 3 countries. Its top three products represent more than 70% over sales. It is present in at least 2 treatment areas.
7-8	The pharmaceutical company is present only in one country. The company offers two different products. Its products belong to the same treatment area (different products).
9-10	The pharmaceutical company is present only in one country and only marginally. It has one product. The company operates in one treatment area with one product.

3.3. Scale & Market Share

We use the following table to assess these factors:

Scale/ Market Share	Very Large >20Bn Sales	Large>10 Bn Sales	Mid-Size > 5 Bn Sales	Small > 1 Bn. Sales	Sales < 1 Bn
>20% Share	1 / 2	2 / 3	3 / 4	4 / 5	5
>10% Share	2	3 / 4	5 / 6	6	6
<10% Share	2 / 3	3 / 4	4 / 5	5 / 6	7 / 8
<5% Share	-	-	-	-	9 / 10

3.4. Health & Care System: Buyer Structure and Regulation

The following factors are applicable:

- Structure of health care system (50%)

- Price regulation (50%)

Health Care System: Buyer Structure and Regulation	
Score	**Description**
1-2	Health care system is structured around many buyers. Price regulation is minimal.
3-4	Health care system is structured around a fair amount of buyers. Price regulation is supportive.
5-6	Health care system is structured around few buyers with significant presence of public sector buyer. Price regulation tends to serve public deficit control.
7-8	Health care system is structured around very few buyers with a dominating presence of public sector buyer. Price regulation´s main objective is to control public deficit.
9-10	Health care system is structured around the sole presence of public sector buyer. Price regulation´s only objective is to control public deficit.

3.5. Management & Shareholder Quality and Company's Financial Policy

To assess the quality of management, an analyst must try to answer the following questions: Does Management have a successful track record (30%)? Has it identified winning strategies for the company and has successfully implemented them? Has it reacted in a timely fashion to crisis and, thanks to decisions adopted, has mitigated the effects of the downturn?

Stated Financial Policy (30%) is an indicator of Management's and shareholders' tolerance to financial risk. At times, the company will state its targeted leverage and will adopt financial enhancing measures.

Major Shareholders will often display readiness to support their subsidiaries either with credit lines, guarantee lines or even capital injections (40%).

Management, Financial Policy and Shareholder Support	
Score	**Description**
1-2	Management is world class with an impressive track record in implementing successful strategies and reacting almost immediately to crisis. Management displays a risk adverse policy. Shareholders have exceptionally deep financial resources and are totally committed to supporting the company by any meansnecessary.

3-4	Management is formed by highly regarded professionals with a good track record in implementing good strategies, reacting adequately to crisis. Financial Policy is fairly conservative. Shareholders have deep financial resources and are willing to support the company.
5-6	Management has an adequate professional level with a fair track record in implementing fairly good strategies, usually reacting adequately to crisis. Financial policy displays a certain degree of willingness to take on risks. Shareholders have some means to support the company under certain circumstances.
7-8	Management is unprofessional with a poor track record in implementing strategies that not always are adequate. Financial Policy displays a high tolerance to risk. Shareholders have limited resources and may not be willing to lend support to the company.
9-10	Management is extremely unprofessional with a very poor track record in decision making, having chosen misguided strategies. Financial Policies display a disregard to risk. Shareholders neither are willing nor have the capacity to support the company.

3.6. Business Risk Profile Factors & their Score Weights

Business Risk Profile		
	Biotech & Patented	**Generic**
Industry Risk	10%	10%
Degree of necessity	2.5%	2.5%
Substitution risk	2.5%	2.5%
Price elasticity	2.5%	2.5%
Barriers to entry	2.5%	2.5%
Competitive Positioning	25%	25%
Portfolio & Pipeline	10%	0%
Number projects phase 3	4%	0%
Patents expiring 3 years	3%	0%
Size potential market	3%	0%
Diversification	10%	15%
Geography	4%	6%
Product	3%	5%
Areas of treatment	3%	4%
Scale & Market Share	5%	10%
Healthcare System	10%	10%
Structure	5%	5%

Price regulation	5%	5%
Management, Financial Policy & Shareholder	10%	10%
Track record	3%	3%
Financial Policy	3%	3%
Shareholder	4%	4%

4. Financial & Economic Risk Profile

The strength of a company's balance sheet, its economic performance, and its ability to generate cash flow in order to repay its debt are crucial aspects that must be assessed to determine the Financial & Economic Risk Profile (FERP) of an issuer.

EthiFinance Ratings rates FERP using a quantitative approach through the use of a series of meaningful financial ratios and through a comprehensive analysis of the company's main financial accounts.

EthiFinance Ratings scores the following areas

- Profitability
- Research and Development opex
- Cash flow and Leverage
- Solvency and Liquidity

As mentioned, these areas will be analyzed by combining ratio and financial account analysis. Thus, Profitability will be rated according to the corresponding ratios and an in-depth analysis of the P&L account. Similarly, Cash Flow will be rated according to the selected ratios and an in-depth analysis of the Cash Flow statement account. Finally, Solvency and Liquidity will be rated by applying the selected ratios and an in- depth analysis of the Balance Sheet account.

4.1. Profitability

Profitability has been selected as a meaningful indicator because it portrays how efficient the company's operations are especially when compared to its peers. A profitable company will have a higher cushion when facing a period of falling margins and will usually be amongst the first to initiate sector recovery. Higher margins also allow a company to lead the market in terms of marketing and I&D costs and also the ability to attract talent through higher wages.

4.2. Research & Development Opex

One of the most important drivers of the Pharmaceutical Industry is R&D, especially for the companies that produce patented drugs. The success of these drug companies is principally dependent on the discovery and development of new medicines which in turn is strongly correlated with the amount of R&D expenditure.

4.3. Cash Flow & Leverage

Cash flow debt coverage is at the core of any Rating assessment since it measures the ability of the company to repay its debt in a timely fashion.

Cash flow interest coverage is used in financially more stressful periods in which a company is not expected to repay debt but must at least meet interest payments with a fair amount of leeway. When this ratio becomes weak signals a much greater problem vs. a weak cash flow debt coverage.

Net financial debt vs Ebitda shows the ability of the company to pay back its debt with its generated EBITDA.

4.4. Solvency & Liquidity

Solvency is a key measure of the strength of a company's Balance Sheet in terms of withstanding prolonged periods of low margins and even losses. Strong capitalization indicates that the value of a company's assets is comfortably greater than its liabilities. In times of cash flow stress, well-capitalized companies will usually hold valuable assets that can be monetized. High capitalizations may be pointing to hidden reserves in the form of fixed assets reported at below market values that in moments of stress can be sold in order to reduce indebtedness.

While solvency indicates the medium-term viability of a company, liquidity measures its ability, in the short term, to honor its financial obligations. Often a solvent company can survive liquidity shocks, but a company's liquidity will rapidly deteriorate if it has a low solvency.

The following table converts Ebitda margins to indicative scores:

Conversion ranges of ratio values into scores										
Ebitda Mg	(2,1]	(3,2]	(4,3]	(5,4]	(6,5]	(7,6]	(8,7]	(9,8]	(10,9]	10
Patent and Biotech Pharma	≥ 45%	≥ 35%	≥ 25%	≥ 20%	≥ 15%	≥ 5%	≥ 3.5%	≥ 1.5%	≥ 0%	<0%
Generic Pharma	≥ 35%	≥ 25%	≥ 20%	≥ 15%	≥ 10%	≥ 5%	≥ 0%	≥ 2.5%	≥-5%	<-5%

The following converts the rest of the financial ratios to indicative scores:

Conversion ranges of ratio values into scores					
Score	R&D/Sales	NFD/EBITDA*	FFO/NFD*	EBITDA/Interest	Equity/Total Financial Debt
(2,1]	≥ 25%	Net Cash(**)	Net Cash (**)	≥ 30x	≥ 300%
(3,2]	≥ 20%	≤ 0.5x	≥ 150%	≥ 20x	≥ 250%
(4,3]	≥ 15%	≤ 1.5x	≥ 65%	≥ 13x	≥ 120%
(5,4]	≥ 10%	≤ 3.0x	≥ 25%	≥ 6.5x	≥ 90%
(6,5]	≥ 8%	≤ 4.0x	≥ 20%	≥ 5.0x	≥ 70%
(7,6]	≥ 6%	≤ 6.0x	≥ 10%	≥ 3.5x	≥ 50%
(8,7]	≥ 4%	≤ 8.0x	≥ 0%	≥ 2.5x	≥ 30%
(9,8]	≥ 1%	≤ 9.0x	≥ -30% (***)	≥ -3.0x (****)	≥10%
(10,9]	≥ 0%	≤ 12.0x	≥ -40% (***)	≥ -6.0x (****)	≥5%

10	<0	> 12.0x or Negative EBITDA	< -40% (***)	< -6.0x (****)	<5%

(*) False positive: In case of negative EBITDA or negative FFO and negative net financial debt, the score assigned to the factor is 5.

(**) Net Cash: (Short Term Debt + Long Term Debt - Cash & Equivalents - Short Term Financial Investments) < 0 (***) Negative values due to negative FFO

(****) Negative values due to negative EBITDA

Each of the ratios mentioned above will be calculated as the average value of the last two years and the projected next two years. As mentioned before, valuation given to the four Financial Risk Profile areas can be modified by EthiFinance Ratings if a further analysis of the annual accounts warrants such a modification. These potential changes must be approved by the Rating Committee.

4.5. Financial & Economic Factor and their Score Weightings

Financial and Economic Risk Profile			
Areas Rated	Weight		Ratios used
	Patent & Biotech	Generic	
Profitability	10%	15%	Ebitda Mg (%)
R&D	10%	0%	R&D costs/Sales
Cash flow and Leverage	5%	10%	NFD/Ebitda (x)
	5%	5%	FFO/NFD (%)
	5%	5%	Ebitda / interests (x)
Solvency and Liquidity	10%	10%	Equity / Total Financial Debt (%)

Total rating is derived from the weighted average of the scores assigned to the factors in both the Business Risk Profile and the Financial & Economic Risk profile.

5. Conversion into EthiFinance Ratings Scale

Final numeric ratings are then translated into EthiFinance Ratings rating grid as shown in the following table:

Numeric Rating	EthiFinance Ratings
1	AAA
2	AA+
	AA
	AA-
3	A+
	A
	A-
4	BBB+
	BBB
	BBB-
5	BB+
	BB
	BB-
6	B+
	B
	B-
7	CCC+
	CCC
	CCC-
8	CC
9	C
10	D

Definitions of these ratings are included in the Long-Term Corporate's Rating scale.

Appendixes

Financial Indicators

- **EBITDA Margin:** (Operating income - depreciations and amortizations- provisions - impairments and profit/losses on disposal of non-current assets)/ Operating income
- **R&D/ Sales:** Research & Development Expenditure / Operating income
- **NFD/EBITDA:** (Short Term Debt + Long Term Debt - Cash & Equivalents - Short Term Financial Investments) / (Operating Income - Depreciations & Amortizations - Provisions - Impairments & Profit/Losses on Disposal of Non-current Assets)
- **FFO /NFD:** (Operating Cash Flow – Working Capital Variations) / Short Term Debt + Long Term Debt - Cash & Equivalents - Short Term Financial Investments)
- **EBITDA/Interest:** (Operating Income - Depreciations & Amortizations - Provisions - Impairments & Profit/Losses on Disposal of Non-current Assets) / Financial cost (absolute value).
- **Equity/Total Financial Debt:** Equity / (Short Term Debt + Long Term Debt).

This document updates the previous version while preserving its original methodological criteria; therefore, all existing ratings remain unchanged. In this version, the format has been updated and includes a higher level of detail.