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# **The Poliwogg Healthcare Innovation Index (PHIX)**

**Index Rules and Methodology**

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# **The Poliwogg Healthcare Innovation Index (PHIX)**

## **Official Rule Book**

### **I. General Description**

The Poliwogg Healthcare Innovation Index (Ticker: PHIX) is an index of mid to large cap biotechnology and pharmaceutical stocks listed on US stock exchanges that have one or more drugs in either Phase II or Phase III US FDA clinical trials. PHIX uses an equal weighting methodology.

### **II. The Index Committee**

The PHIX Index Committee (“The Committee”) will be composed of not less than three members. The Committee Chairman will have extensive experience with and expertise in US equity markets. The other members will have experience in healthcare, indexes and/or financial products.

The Committee will be responsible for overseeing the activities of the calculation agent and approving all changes to the index related to its quarterly reconstitution and quarterly rebalancings.

The Committee meets quarterly, either in person or via teleconference, to discuss index issues and organize the quarterly reconstitution and quarterly rebalancings.

The composition of the Committee may from time to time be changed to reflect changes in market conditions.

All members of the index committee and their advisors shall comply with the S-Network Global Indexes’ code of conduct and ethics with respect to the disclosure and use of material non-public information.

### **III. Index Value at Inception**

The Poliwogg Healthcare Innovation Index (Ticker: PHIX) had a value at inception of 1000, on its inception date of December 31, 2013. PHIX is calculated both on a Price Only and on a Total Return basis.

### **IV. Eligibility Criteria, Stock Selection and Weighting**

All stocks selected for inclusion in PHIX must be listed on a US stock exchange and principally engaged in one of the following healthcare sectors: a) biotechnology and b) pharmaceuticals. Constituents must have a market capitalization of no less than \$1 billion and no more than \$50 billion. Constituents must sustain an average daily trading volume in excess of \$1 million for the 90-day period preceding a reconstitution. Constituents must have one or more drugs in either Phase II or Phase III US Food and

Drug Administration (FDA) clinical trials which are not in a partnership. Constituents must also have drugs which meet one of the following criteria:

- I. Breakthrough, Fast Track or Orphan drug status
- II. Expected Catalyst within the next 24 months

If a stock's market capitalization falls by more than 50% after the snapshot date for additions and deletions pursuant to quarterly reconstitutions but before the effective date, the stock will be deleted from the index and a replacement stock will be chosen.

The number of stocks contained in the PHIX is fixed at 30. If more than 30 companies exhibit the above criteria the index selects the 30 companies with the highest ratio of peak forecasted sales for the drugs in clinical trials to full market capitalization. If fewer than 30 companies exhibit the above criteria the index selects the 30 companies with the highest ratio of peak forecasted sales for the drugs in clinical trials to full market capitalization.

The constituents of PHIX are equal weighted.

Share weights will be based on prices as of the close of trading on the 2<sup>nd</sup> Friday of the rebalancing month ("The Record Date").

## **V. Rules for Reconstitutions, Rebalances, and Index Changes**

The PHIX is calculated by S-Network Global Indexes, Inc. ("The Calculation Agent"). The Calculation Agent is also responsible for index maintenance and price dissemination. The Calculation Agent is responsible for the calculation of PHIX. The calculation, maintenance and dissemination rules are as follows:

**Index Changes.** The PHIX Index is rebalanced quarterly on the third Friday of the last month of each calendar quarter. Index changes take place at each rebalancing date (the third Friday of the last month of each calendar quarter), except in the event of certain corporate actions, such as mergers, acquisitions, and delistings. In such cases, the change is applied on the effective date of the action, unless otherwise determined by the Index Committee. Share increases and decreases are reflected on the rebalancing date. Whenever possible, changes will be announced at least two business days prior to their implementation.

**Index Reconstitutions.** The PHIX Index is reconstituted quarterly on the third Friday of the last month of each calendar quarter.

**Additions and Deletions.** Additions and Deletions to the Indexes are made 1) at the close of trading on the quarterly reconstitution date (third Friday of the last month of each calendar quarter) and 2) in the event of the deletion of a constituent stock due to a corporate action.

Deletions are made at any time, in the event a stock is liquidated, delisted, files for bankruptcy, is acquired, or merges with another stock. Upon deletion, the weight of the removed stock is reallocated proportionately to the remaining constituents. Additions are made only upon the effective date of the quarterly reconstitutions.

## **VI. Roles of Parties in the Quarterly Rebalances**

- i) The Calculation Agent will screen the constituents of the Poliwogg Biopharma Merger & Acquisition Index, from which PHIX constituents will be selected.
- ii) On the first Friday of the rebalancing month, the Calculation Agent shall provide the Committee, or its designee, with a list of constituents and their respective weights for the PHIX Index.
- iii) The Committee shall approve or reject the changes and notify the Calculation Agent of its decisions not later than the Wednesday following the first Friday of the rebalancing month.
- iv) The effective date of the rebalancing will be on the close of business on the third Friday of the last month of each calendar quarter. The Calculation Agent will post all final rebalancing data and information on their respective FTP servers prior to the open on the next business day following the rebalancing date.
- v) PHIX will post all rebalancing data on its website prior to the open on the next business day following the rebalancing date.

## **VII. Roles of Parties in the Quarterly Reconstitutions**

- i) The Calculation Agent will screen the PHIX universe to identify those stocks that meet all necessary eligibility criteria as of the last business day of the month proceeding the reconstitution month (the “snapshot date”).
- ii) On the first Friday of the last month of each calendar quarter, the Calculation Agent shall provide the Committee, or its designee, with a list of constituents for the PHIX.
- iii) The Committee shall approve or reject the changes and notify the calculation agent of its decisions not later than the Wednesday following the first Friday of the last month of each calendar quarter.
- iv) Not later than the Wednesday following the first Friday of the last month of the calendar quarter, the Index Committee or its designee will issue a press release announcing additions and deletions to PHIX. The press release will be posted on the PHIX web site.
- v) The effective date of the reconstitution will be on the close of business on the third Friday of the last month of the calendar quarter. The Calculation Agent will post all final rebalancing data and information on their respective FTP servers prior to the open on the next business day following the reconstitution date.
- vi) PHIX will post all reconstitution data on its website prior to the open on the next business day following the reconstitution date.

## **VIII. Calculation and Dissemination of Index Values**

The Calculation Agent will calculate closing values for both the price and total return Indexes based on closing prices as reported by the relevant exchanges.

The Calculation Agent will post the following files to its FTP server prior to 7:00PM EST each trading day:

Closing Index File (ICW) – Index constituents, closing prices, weights, share weights and related data as of the day’s close.

Adjusted Closing Index File (ICW\_Adjusted) – Index constituents, closing prices, weights, share weights and related data as of the next trading day’s open.

Corporate Action File (ICA) – Data related to upcoming corporate actions for the Indexes’ constituent stocks.

Index Values File (IDX) – Closing values for the price and total return indexes, including divisors.

Closing values for the Indexes will be transmitted to the NYSE prior to 7:00PM EST for redistribution to various vendors and providers of financial data via the NYSE Global Index Feed.

The Indexes will be calculated and disseminated in USD.

The Calculation Agent will calculate closing values for both the price and total return Indexes based on closing prices as reported by the relevant exchanges.

The Indexes will be calculated and disseminated in USD on an end-of-day basis.

**IX. Dissemination**

Index values are disseminated in US dollars via the NYSE Global Index feed using the following tickers:

Total Return Index	PHIXTR
Price Index	PHIX

Values for the price only index (PHIX) are distributed once daily prior to 7:00 PM Monday through Friday, excluding exchange holidays.

**X. Ongoing Maintenance**

- i) In addition to the scheduled quarterly reviews, PHIX is reviewed on an ongoing basis. Changes in index composition and related weight adjustments are necessary whenever there are extraordinary events such as liquidations, conversions, delistings, bankruptcies, mergers or takeovers involving index components. In these cases, each event will be taken into account on its effective date. Whenever possible, the changes in the index’s components

will be announced at least two business days prior to their implementation date.

- ii) **Changes of Eligible Securities.** In the event that a component no longer meets the eligibility requirements described in Section IV herein, it will be removed from the index on the effective date of the next reconstitution.
- iii) **Changes of Sector Classification.** Stocks are eligible for inclusion in the PHIX based on their inclusion in an applicable sector. Mergers, takeovers, and spin-offs, may cause a stock to lose its eligibility. In such a circumstance, the stock will be deleted from the index on the effective date of the next rebalancing. A stock's classification may also require an immediate change as the result of a special event such as a merger, takeover or spin-off.
- iv) **Mergers.** If two index constituents merge, their component positions will be replaced by the surviving stock immediately. If an index constituent merges with a non-component stock, its component position will be replaced by the new stock and reviewed on the date of the quarterly reconstitution for ongoing inclusion.
- v) **Takeovers.** If an index component is taken over by another component stock, the former will be removed from the index immediately upon completion of the takeover and the weight of the removed stock will be reallocated proportionately to the remaining constituents in the index.
- vi) **Share Offerings, Tenders and Purchases.** All Share Offerings, Tenders and Purchases that result in an increase or decrease of shares will be implemented at the quarterly reconstitution.
- vii) **Removal of Stocks Due to Delisting, Bankruptcy or Extreme Financial Distress.** If an index constituent is delisted by its primary market, or is in bankruptcy proceedings, it will be removed from the index.
  - \* If an index component is delisted by its primary market due to failure to meet financial or regulatory requirements, it will be removed from the index and its weight will be reallocated to the remaining constituents in the index.
  - \* If an index component enters bankruptcy proceedings, it will be removed from the index and will remain ineligible for re-inclusion until it has emerged from bankruptcy. However, the Committee may, following a review of the bankrupt company and the issues involved in the filing, decide to keep the stock in the index.
  - \* The Committee may, at its discretion, remove a stock it has determined to be in extreme financial distress from the PHIX, if the Committee deems the removal necessary to protect the integrity of the index and the interests of investors in products linked to the index.
- viii) **Pricing of Stocks in Extreme Financial Distress for Index Maintenance.**

\* When a stock is suspended from trading due to financial distress and subsequently delisted by its primary market prior to resumption of trading, the Calculation Agent will use the best-available alternate pricing source to determine the value at which the stock should be removed from the index.

\* If the stock's primary market price is no longer available due to its suspension or delisting, a current price from another exchange, such as a regional or electronic marketplace, may be used. In the absence of those prices in the case of U.S. securities, OTC Bulletin Board, OTC Equity (non-OTCBB stocks), and Pink Sheet traded prices could be applied in that order.

\* If neither a traded price nor a bid/asked range is available, the Committee will evaluate the status of the suspended stock. The Committee may consult with managers of portfolios linked to indexes in which the stock is a constituent in determining the value of the stock. If the Committee concludes that the security has become worthless or is likely to remain too illiquid to be traded, it will be removed from the index at .01 local currency of the stock.

## XI. Calculation and Adjustments

### i) Input Data Sources

\* Real-time stock prices are provided by Reuters. The latest trading price is used for index calculation.

\* The number of shares is determined separately for each class of stock. This information is obtained from regulatory filings and a variety of data vendors. The data also may be sourced from the constituent stocks themselves.

\* Corporate actions are sourced from public news services, regulatory filings and data vendors. The constituent stocks themselves may be used as an additional source.

### ii) Index Formula. The index is calculated using a Laspeyres formula. This formula is used for the calculation of the return index and the price index. The only difference is that the divisor $D_t$ is different for the two indexes (return index and price index).

The index is computed as follows:

$$= \frac{\sum_{i=1}^n (p_{it} * q_{it})}{(C_t \sum_{i=1}^n (p_{i0} * q_{i0}))} * Base Index Value = \frac{M_t}{B_t} * Base Index Value$$

The above mentioned formula can be simplified as:  $Index_t = \frac{M_t}{D_t}$

Where:

$$D_t = \frac{B_t}{base index value} = \text{divisor at time (t)}$$



$n$	=	the number of stocks in the index
$p_{i0}$	=	the closing price of stock $i$ at the base date
$q_{i0}$	=	the number of shares of stock $i$ at the base date
$p_{it}$	=	the price of stock $i$ at time ( $t$ )
$q_{it}$	=	the number of shares of stock $i$ at time ( $t$ )
$C_t$	=	the adjustment factor for the base date market capitalization
$t$	=	the time the index is computed
$M_t$	=	market capitalization of the index at time ( $t$ )
$B_t$	=	adjusted base date market capitalization of the index at time

Dividend payments are not taken into account in the price indexes, whereas dividend payments are reinvested in the index constituents of the total return index on a proportional basis. The adjustment protects the indexes from the effects of changes in index composition and the impact of corporate actions.

- iii) Divisor Adjustments. Corporate actions affect the share capital of component stocks and therefore trigger increases or decreases in the index. To avoid distortion, the divisor of the index is adjusted accordingly.
- iv) Changes in the index's market capitalization due to changes in the composition (additions, deletions or replacements), weighting (following quarterly reviews, corporate actions (mergers, or special cash or stock distributions of other stocks) result in a divisor change to maintain the index's continuity. By adjusting the divisor, the index value retains its continuity before and after the event. For rights offerings, the Calculation Agent will price the rights during the subscription period, not before or after. Alternatively, the Calculation Agent may start pricing the rights after the ex-date and before the subscription period, under the condition that the rights are priced daily.

\* Formulae for Divisor Adjustment. The following formulae will be used for divisor adjustments. (Note: No divisor adjustments are necessary for stock splits, since market capitalization does not change and the share number and share price are adjusted prior to the opening of trading on the split's ex-date.)

$$D_{t+1} = D_t * \left( \frac{\sum(p_{it} * q_{it}) + \Delta MC_{t+1}}{\sum(p_{it} * q_{it})} \right)$$

Where:

$D_t$	=	divisor at time ( $t$ )
$D_{t+1}$	=	divisor at time ( $t+1$ )
$p_{it}$	=	stock price of stock $i$ at time ( $t$ )

- $q_{it}$  = number of shares of stock  $i$  at time  $(t)$
- $\Delta MC_{t+1}$  = add new components' market capitalization and adjusted market capitalization (calculated with adjusted closing prices and shares effective at time  $t+1$  and/or minus market capitalization of stocks to be deleted (calculated with closing prices and shares at time  $t$ ))

Note: If the current trading price of an issue is unavailable, the previous trading session's closing price is used. However, if the issue is affected by any corporate action that requires an adjustment, then the adjusted price is used.

\* Adjustments for Corporate Actions. An index divisor may decrease (▼) or increase (▲) or keep constant (■) when corporate actions occur for a component stock. Assuming shareholders receive "B" new shares for every "A" share held for the following corporate actions:

- ▼ A) CASH DIVIDEND (applied for return index only)  
adjusted price = closing price - dividend announced by the stock
- ▼ B) SPECIAL CASH DIVIDEND (applied for price and return index)  
adjusted price = closing price - dividend announced by the stock
- C) SPLIT AND REVERSE SPLIT  
adjusted price = closing price \* A / B new number of shares = old number of shares \* B / A
- D) RIGHTS OFFERING  
adjusted price = (closing price \* A + subscription price \* B) / (A + B) new number of shares = old number of shares \* (A + B) / A
- E) STOCK DIVIDEND  
adjusted price = closing price \* A / (A + B) new number of shares = old number of shares \* (A + B) / A
- ▼ F) STOCK DIVIDEND OF A DIFFERENT STOCK SECURITY  
adjusted price = (closing price \* A - price of the different stock security \* B) / A
- ▲ G) COMBINATION STOCK DISTRIBUTION (DIVIDEND OR SPLIT) AND RIGHTS OFFERING  
Shareholders receive B new shares from the distribution and C new shares from the rights offering for every A shares held:

\* If rights are applicable after stock distribution (one action applicable to other).  
adjusted price = [closing price \* A + subscription price \* C \* (1 + B / A)] / [(A + B) \* (1 + C / A)]  
new number of shares = old number of shares \* [(A + B) \* (1 + C / A)] / A

\* If stock distribution is applicable after rights (one action applicable to other).  $\text{adjusted price} = [\text{closing price} * A + \text{subscription price} * C] / [(A + C) * (1 + B / A)]$   $\text{new number of shares} = \text{old number of shares} * [(A + C) * (1 + B / A)]$

▲ H) STOCK DISTRIBUTION AND RIGHTS (NEITHER ACTION IS APPLICABLE TO THE OTHER)  $\text{adjusted price} = [\text{closing price} * A + \text{subscription price} * C] / [A + B + C]$   $\text{new number of shares} = \text{old number of shares} * [A + B + C]$

- v) Computational Precision. Index values are rounded to two decimal places and divisors are rounded to integers. Any values derived by the index calculation engine from a corporate action used for the divisor adjustments and index computations are rounded to seven decimal places.

## **XII. Data Correction Policy**

To maintain a high standard of data integrity, a series of procedures have been implemented to ensure accuracy, timeliness and consistency. Input prices are monitored using a variety of computerized range-check warning systems for both ticker-plant and real-time index systems. Fault tolerant methods are employed in the collection of market and corporate action data. Various verification and audit tasks are performed to ensure the quality of the real-time data feeds and related market data. While every effort is taken to ensure the accuracy of the information used for the index calculation, an index error may occur due to incorrect or missing data, including trading prices, exchange rates, shares outstanding and corporate actions, due to operational errors or other reasons.

- i) Index-Related Data and Divisor Corrections. Incorrect pricing and corporate action data for individual issues in the database will be corrected upon detection. In addition, an incorrect divisor of an index, if discovered within five days of its occurrence, will always be fixed on the day it is discovered to prevent an error from being carried forward.
- ii) If a divisor error is discovered more than five days after occurrence, the adjustment will depend upon how significant the error is, how far back the error occurred and the feasibility of performing the adjustment.

## **XIII. Appendix Review Schedule**

Constituent Changes

Frequency: Quarterly

Effective date: The third Friday of the last month of each calendar quarter

Advance notice: Approximately 2 weeks

Quarterly Rebalance

Frequency: Quarterly

Effective date: The close of trading on the 3rd Friday of that month

Advance notice: At least 1 week

News Notification\*

Frequency: As needed

Effective date: As announced

Advance notice: At least two business days whenever possible

- \* Includes events such as delistings, mergers, bankruptcies and other extraordinary events.
- \* Based on available news.