

PHLX Gold/Silver Sector Index Methodology

Index Description

The PHLX Gold/Silver Sector Index is designed to track the performance of a set of companies involved in the gold or silver mining industry.

Index Calculation

The PHLX Gold/Silver Sector Index is a modified market capitalization weighted index. The value of the Index equals the aggregate value of the Index share weights, also known as the Index Shares, of each of the Index Securities multiplied by each such security's Last Sale Price¹, and divided by the divisor of the Index. The divisor serves the purpose of scaling such aggregate index value to a lower order of magnitude which is more desirable for reporting purposes. The Index began on January 19, 1979 at a base value of 100.00.

The formula for index value is as follows:

$$\text{Aggregate Adjusted Market Value/Divisor}$$

The formula for the divisor is as follows:

$$(\text{Market Value after Adjustments/Market Value before Adjustments}) \times \text{Divisor before Adjustments}$$

Two versions of the Index are calculated – a price return index and a total return index.

- The price return index (Nasdaq: XAU) is ordinarily calculated without regard to cash dividends on Index Securities.
- The total return index (Nasdaq: XXAU) reinvests cash dividends on the ex-date. The total return index was synchronized to the value of the price return index at the close on June 30, 2011.

All Indexes reflect extraordinary cash distributions.

The Index is calculated during the trading day and is disseminated once per second from 09:30:01 to 17:16:00 Time (ET) in USD. The closing value of the Index may change up until 17:15:00 ET due to corrections to the Last Sale Price of the Index Securities. If trading in an Index Security is halted on its primary listing market, the most recent Last Sale Price for that security is used for all index computations until trading on such market resumes. Likewise, the most recent Last Sale Price is used if trading in a security is halted on its primary listing market before the market is open.

¹ For purposes of this document, Last Sale Price refers to the last regular way trade reported on such security's Index Market. The Index Market is the listing market for which prices are received and used by Nasdaq in the Index calculation and generally will represent the most liquid trading market of the Index Security. If a security does not trade on its Index Market on a given day or the Index Market has not opened for trading, the most recent last sale price from the Index Market (adjusted for corporate actions, if any) is used. For securities where Nasdaq is the Index Market, the Last Sale Price may be the Nasdaq Official Closing Price (NOCP) when Nasdaq is closed.

Eligibility

Index eligibility is limited to specific security types only. The security types eligible for the Index include common stocks, ordinary shares, ADRs, shares of beneficial interest or limited partnership interests.

Initial Security Eligibility Criteria

To be eligible for initial inclusion in the Index, a security must meet the following criteria:

- be listed on The Nasdaq Stock Market® (Nasdaq®), the New York Stock Exchange, or NYSE MKT;
- be classified as a company whose primary business is in the gold or silver mining industry under Industry Classification Benchmark (ICB)² codes 1777 or 1779;
- have a minimum market capitalization of at least \$100 million;
- have traded at least 1.5 million shares in each of the last six months;
- one security per issuer is permitted. If an issuer has multiple securities, the security with the highest dollar trading volume will be selected for possible inclusion into the Index.
- have listed options on a recognized options market in the U.S. or be eligible for listed-options trading on a recognized options market in the U.S.;
- may not be issued by an issuer currently in bankruptcy proceedings;
- the issuer of the security may not have entered into a definitive agreement or other arrangement which would likely result in the security no longer being Index eligible;
- the issuer of the security may not have annual financial statements with an audit opinion that is currently withdrawn; and
- have “seasoned” on a recognized market for at least 6 months; in the case of spin-offs, the operating history of the spin-off will be considered.

Continued Security Eligibility Criteria

To be eligible for continued inclusion in the Index, an Index Security must meet the following criteria:

- be listed on Nasdaq, the New York Stock Exchange, NYSE American, or the CBOE Exchange;
- the issuer of the security must be classified as a company whose primary business is gold or silver mining under ICB codes 1777 or 1779³;
- have a minimum market capitalization of at least \$60 million;
- may not be issued by an issuer currently in bankruptcy proceedings; and
- may not have annual financial statements with an audit opinion that is currently withdrawn.

For the purposes of Index eligibility criteria, if the security is a depositary receipt representing a security of a non-U.S. issuer, then references to the “issuer” are references to the issuer of the underlying security.

² Industry Classification Benchmark (ICB) is a product of FTSE International Limited and has been licensed for use.

³ Index Securities as of October 31, 2008, will be grandfathered for Index classification purposes unless there is a material changes in its business line.

Component Replacement Criteria

In the event that an Index Security no longer meets the Continued Security Eligibility Criteria, it will be replaced with a security that is not currently in the Index that meets all of the Initial Security Eligibility Criteria and additional criteria which follows. Securities eligible for inclusion will be ranked ascending by market value, current price and percentage price change over the previous six months. The security with the highest overall ranking will be added to the Index⁴ provided that the Index then meets the following criteria:

- no single Index Security is greater than 25% of the weight of the Index and the top 3 Index Securities are not greater than 55% of the weight of the Index;
- no more than 15% of the weight of the Index is composed of non-U.S. component securities that are not subject to comprehensive surveillance agreements;

In the event that the highest-ranking security does not permit the Index to meet the above criteria, the next highest-ranking security will be selected and the Index criteria will again be applied to determine eligibility. The process will continue until a qualifying replacement security is selected.

Continued Index Eligibility Criteria

In addition to the security eligibility criteria, the Index as a whole must meet the following criteria on a continual basis unless otherwise noted:

- no single Index Security is greater than 30% of the weight of the Index and the top 3 Index Securities are not greater than 60% of the weight of the Index (measured semi-annually the first trading day in January and July);
- no more than 18% of the weight of the Index is composed of non-U.S. Index Securities that are not subject to comprehensive surveillance agreements;
- the total number of Index Securities has not increased or decreased by 33 1/3% of the Index and in no event will be less than nine;
- Index Securities representing at least 95% of the weight of the Index has a market capitalization of \$75 million;
- Index Securities representing at least 92% of the weight of the Index and at least 82% of the total number of Index Securities meet the security options eligibility rules;
- Index Securities must have trading volume of at least 600,000 shares for each of the last 6 months except that for each of the lowest weighted Index Securities that in the aggregate account for no more than 5% of the weight of the Index, trading volume must be at least 500,000 shares for each of the last six months; and
- the lesser of the 5 highest weighted Index Securities or the highest weighted Index Securities that in the aggregate represent at least 30% of the total number of Index Securities each have had an average monthly trading volume of at least 1,250,000 shares over the past 6 months.

In the event the Index does not meet the criteria, the Index composition will be adjusted to ensure that the Index meets the criteria. Index Securities that contribute to the Index not meeting the eligibility criteria may be removed. Index Securities may be added and/or replaced according to the component replacement rules to ensure compliance with the Index Continued Eligibility Criteria. Ordinarily, a security will be removed from the Index at

⁴ If multiple securities have the same rank, the security with the largest market capitalization will rank higher.

its Last Sale Price. If, however, at the time of its removal the Index Security is halted from trading on its primary listing market and an official closing price cannot readily be determined, the Index Security may, in Nasdaq's discretion, be removed at a zero price. The zero price will be applied to the Index Security after the close of the market but prior to the time the official closing value of the Index is disseminated, which is ordinarily 17:16:00 ET.

Index Maintenance

Changes in the price and/or Index Shares driven by corporate events such as stock dividends, stock splits and certain spin-offs and rights issuances are adjusted on the ex-date. If the change in total shares outstanding arising from other corporate actions is greater than or equal to 10.0%, the change is made as soon as practicable. Otherwise, if the change in total shares outstanding is less than 10.0%, then all such changes are accumulated through the end of February, May, August and November and made effective at one time on a quarterly basis after the close of trading on the third Friday in March, June, September and December, respectively. The Index Shares are adjusted by the same percentage amount by which the total shares outstanding have changed.

A special cash dividend announced by the listing exchange, will result in an adjustment to the Last Sale Price of an Index Security prior to market open on the ex-date for the special amount distributed. A special dividend may also be referred to as extra, extraordinary, non-recurring, one-time, unusual, etc.

Ordinarily, whenever there is a change in Index Shares, a change in an Index Security or a change to the price of an Index Security due to spin-offs, rights issuances or special cash dividends, the divisor is adjusted to ensure that there is no discontinuity in the value of the Index which might otherwise be caused by any such change. All changes are announced in advance and are reflected in the Index prior to market open on the Index effective date.

Index Rebalancing

The Index employs a modified market capitalization weighting methodology. At each quarter, the Index is rebalanced such that the maximum weight of any Index Security does not exceed 8% and no more than 5 securities are at that cap. The excess weight of any capped security is distributed proportionally across the remaining Index Securities. If after redistribution, any of the 5 highest ranked Index Securities are weighted below 8%, these securities are not capped. Next, any remaining Index Securities in excess of 4% are capped at 4% and the excess weight is redistributed proportionally across the remaining Index Securities. The process is repeated, if necessary, to derive the final weights.

The modified market capitalization weighting methodology is applied to the capitalization of each Index Security, using the Last Sale Price of the security at the close of trading on the last trading day in February, May, August and November. Index Shares are then calculated multiplying the weight of the security derived above by the new market value of the Index and dividing the modified market capitalization for each Index Security by its corresponding Last Sale Price. The changes are effective after trading on the third Friday in March, June, September and December.

Nasdaq may, from time to time, exercise reasonable discretion as it deems appropriate in order to ensure Index integrity.

September 2018