CALAMOS GLOBAL TOTAL RETURN FUND Form N-CSRS June 21, 2018

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM N-CSR

CERTIFIED SHAREHOLDER REPORT OF REGISTERED

MANAGEMENT INVESTMENT COMPANIES

INVESTMENT COMPANY ACT FILE NUMBER: 811-21547

EXACT NAME OF REGISTRANT AS SPECIFIED IN CHARTER: Calamos Global Total Return Fund

ADDRESS OF PRINCIPAL EXECUTIVE OFFICES:

2020 Calamos Court

Naperville, Illinois 60563-2787

John P. Calamos, Sr., Founder, Chairman and

Global Chief Investment Officer

NAME AND ADDRESS OF AGENT FOR SERVICE: Calamos Advisors LLC

2020 Calamos Court

Naperville, Illinois 60563-2787

REGISTRANT'S TELEPHONE NUMBER, INCLUDING AREA CODE: (630) 245-7200

DATE OF FISCAL YEAR END: October 31, 2018

DATE OF REPORTING PERIOD: November 1, 2017 through April 30, 2018

Item 1. Report to Shareholders

TIMELY INFORMATION INSIDE

Global Total Return Fund (CGO)

SEMIANNUAL REPORT APRIL 30, 2018

GO PAPERLESS SIGN UP FOR E-DELIVERY

Visit www.calamos.com/FundInvestor/GoPaperless to enroll. You can view shareholder communications, including fund prospectuses, annual reports and other shareholder materials online long before the printed publications arrive by traditional mail.

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Experience and Foresight

About Calamos Investments

For over 40 years, we have helped investors like you manage and build wealth to meet their long-term individual objectives by working to capitalize on the opportunities of the evolving global marketplace. We launched our first mutual fund in 1985 and our first closed-end fund in 2002. Today, we manage six closed-end funds. Three are total-return oriented offerings, which seek current income, with increased emphasis on capital gains potential. Three are enhanced fixed income offerings, which pursue high current income from income and capital gains. Calamos Global Total Return Fund (CGO) falls into the former category. Please see page 5 for a more detailed overview of our closed-end offerings.

We are dedicated to helping our clients build and protect wealth. We understand when you entrust us with your assets, you also entrust us with your achievements, goals and aspirations. We believe we best honor this trust by making investment decisions guided by integrity, by discipline, and by our conscientious research.

We believe an active, risk-conscious approach is essential for wealth creation. In the 1970s, we pioneered strategies that seek to participate in equity market upside and mitigate some of the potential risks of equity market volatility. Our investment process seeks to manage risk at multiple levels and draws upon our experience investing

through multiple market cycles.

We have a global perspective. We believe globalization offers tremendous opportunities for countries and companies all over the world. In our view, this creates significant opportunities for investors. In our U.S., global and international portfolios, we are seeking to capitalize on the potential growth of the global economy.

We believe there are opportunities in all markets. Our history traces back to the 1970s, a period of significant volatility and economic concerns. We have invested through multiple market cycles, each with its own challenges. Out of this experience comes our belief that the flipside of volatility is opportunity.

Letter to Shareholders

John P. calamos, sr.

Founder, Chairman and Global Chief Investment Officer

CALAMOS GLOBAL TOTAL RETURN FUND SEMIANNUAL REPORT 1

Dear Fellow Shareholder:

Welcome to your semiannual report for the six-month period ended April 30, 2018. In this report, you will find commentary from the Calamos portfolio management team, as well as a listing of portfolio holdings, financial statements and highlights, and detailed information about the performance and positioning of this Calamos Fund. I encourage you to review this information carefully.

Calamos Global Total Return Fund (CGO) is an income-oriented total-return fund. This means we are focused not only on delivering a competitive stream of distributions, but also on total return. We utilize dynamic asset allocation to pursue high current income with a less rate-sensitive approach, while also maintaining a focus on capital gains.

Distribution

During the period, the Fund provided a compelling monthly distribution of \$0.1000 per share. We believe the Fund's current annualized distribution rate, which was 8.68%* on a market price basis as of April 30, 2018, was very competitive, given the low interest rates in many segments of the bond market. In our view, the Fund's distributions illustrate the benefits of a multi-asset class approach and flexible allocation strategy.

We understand that many closed-end fund investors seek steady, predictable distributions instead of distributions that fluctuate. Therefore, this Fund has a managed distribution policy. As part of this policy, we aim to keep distributions consistent from month to month, and at a level that we believe can be sustained over the long term. In setting the Fund's distribution rate, the investment management team and the Fund's Board of Trustees consider the interest rate, market and economic environment. We also factor in our assessment of individual securities and asset classes.

*Current Annualized Distribution Rate is the Fund's most recent distribution, expressed as an annualized percentage of the Fund's current market price per share. The Fund's 4/30/18 distribution was \$0.1000 per share. Based on our current estimates, we anticipate that approximately \$0.1000 is paid from ordinary income or capital gains and that approximately \$0.0000 represents a return of capital. Estimates are calculated on a tax basis rather than on a generally accepted accounting principles (GAAP) basis, but should not be used for tax reporting purposes. Distributions are subject to re-characterization for tax purposes after the end of the fiscal year. This information is not legal or tax advice. Consult a professional regarding your specific legal or tax matters. Under the Fund's managed distribution policy, distributions paid to common shareholders may include net investment income, net realized short-term capital gains and return of capital. When the net investment income and net realized short-term capital gains are not sufficient, a portion of the distribution will be a return of capital. In addition, a limited number of distributions per calendar year may include net realized long-term capital gains. The distribution rate may vary.

Letter to Shareholders

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In our October 2017 annual report, I discussed the favorable trends that were supporting continued global growth and investment potential across asset classes. However, I noted our investment teams would not be surprised if the market environment changed, with a pause in the equity markets or even a correction. I also discussed that short-term volatility can create opportunities for long-term managers, such as ourselves. During the semiannual reporting period, these views were borne out.

Market Review

The semiannual period was characterized by two distinct environments, and in particular, the return of volatility to the markets in January. Through the final months of 2017, U.S. and global stock markets advanced briskly as investors focused on positive global economic growth trends, low inflation, deregulation and anticipation of tax reform. However, the climate changed in 2018. Although economic fundamentals remained compelling around the world, market participants became distracted by the potential for more Federal Reserve hikes and rising inflation. After many years of subdued volatility and record-low interest rates, the stock market became increasingly turbulent as the period progressed. Fixed income asset classes also encountered headwinds. Convertible securities, in contrast, demonstrated resilience in the choppy markets, illustrating the potential benefits of their unique structural characteristics.

Outlook

We believe positive economic conditions and corporate fundamentals can support a continuation of the bull market in stocks, as well as opportunities across asset classes. Global economic data is positive on the whole. GDP growth has continued at a good pace in the U.S., and tax reform and deregulation can provide further catalysts from here. The U.S. consumer has benefitted from job growth, wage gains and rising housing values. Corporate fundamentals—including earnings, sales and revenue growth—are very strong. Inflation has increased but is coming off historically low levels and remains contained. As economic growth continues, we expect the Fed to maintain its course of raising short-term interest rates gradually. This slow pace, combined with conditions in the broader global bond markets, may help keep longer-term U.S. rates from rising unchecked.

Although economic conditions are favorable, managing volatility will be key to succeeding in this environment. Evolving trade policies, uncertainties around North Korea and Russia, and U.S. mid-term elections will likely contribute to short-term market disruptions over coming months. An extended trade war could be an economic headwind, but we do not see this as the probable outcome. We are hopeful that moves by the U.S. over recent months can set the stage for negotiations that lead to freer and fairer trade over the long term.

Letter to Shareholders

CALAMOS GLOBAL TOTAL RETURN FUND SEMIANNUAL REPORT 3

Thoughts for Investors

The stock market's gyrations, rising interest rates and signs of inflation have unsettled many investors. However, if we look back over longer periods, the environment we are seeing today is actually more normal than those of the past few years, when volatility, interest rates and inflation were exceptionally low.

In this more typical environment, we believe there are many opportunities for active and risk-aware approaches. Our investment professionals remain vigilant to avoiding unintended risks in the Fund. They are also working together to turn short-term volatility into opportunities for the shareholders in the Fund. Our ability to respond to changing market conditions will be especially important given the many crosscurrents we see.

In Closing

More than 40 years of experience supports my belief that investors are best served by maintaining a long-term approach. Fast moving markets can increase the temptation to make short-term moves. But as I've noted in the past, there's no way to predict with certainty the daily twists and turns. Far too often, trying to time the ups and downs leaves investors capturing the downside and missing the upside. Instead, *I encourage you to work with your financial advisor to create a well-diversified asset allocation that meets your financial goals*. By blending an array of funds—including stocks, convertibles, alternative and fixed income strategies—investors may be better positioned to achieve their long-term goals.

I am confident that the Fund is well equipped to navigate the course ahead. Since our earliest days as an asset manager, we have sought to provide innovative strategies for managing risk and enhancing returns. While others may be discouraged by these more choppy markets, we welcome the return of more normal levels of volatility and the opportunities it will bring for our active approach.

I hope that you find this report informative, and I invite you to visit our website www.calamos.com for additional resources. All of us at Calamos Investments thank you for your continued trust. It is truly an honor to help you achieve your financial goals.

Sincerely,

John P. Calamos, Sr.

Founder, Chairman and Global Chief Investment Officer

Letter to Shareholders

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Before investing, carefully consider a fund's investment objectives, risks, charges and expenses. Please see the prospectus containing this and other information or call 800.582.6959. Please read the prospectus carefully. Performance data represents past performance, which is no guarantee of future results. Current performance may be lower or higher than the performance quoted. Opinions are as of the publication date, subject to change and may not come to pass. Information is for informational purposes only and shouldn't be considered investment advice.

¹The MSCI All Country World Index is a measure of global stock market performance, which returned 3.83% for the six-month period ending April 30, 2018. The MSCI World Index is a market-capitalization weighted index composed of companies representative of the market structure of developed market countries in North America, Europe and the Asia/Pacific region. For the six-month period ended, the index returned 3.68%. The S&P 500 Index is an unmanaged index generally considered representative of the U.S. stock market. For the six-month period, the index returned 3.82%. The MSCI Emerging Markets Index is a free float-adjusted market capitalization index considered broadly representative of emerging market equity performance. The index represents companies within the constituent emerging markets that are available to investors worldwide, and it returned 4.93% for the six-month period ended April 30, 2018.

²The Bloomberg Barclays U.S. Aggregate Bond Index is considered generally representative of the investment-grade bond market. For the six-month period ending April 30, 2018, the index returned -1.87%.

³The Credit Suisse U.S. High Yield Index is an unmanaged index of high yield debt securities, which returned -0.16% for the six-month period ending April 30, 2018.

⁴The ICE BofAML All U.S. Convertibles ex-Mandatory Index represents the U.S. convertible securities market excluding mandatory convertibles. The index returned 2.34% for the six-month period ending April 30, 2018. The ICE BofAML Global 300 Convertible Index is a global convertible index composed of companies representative of the market structure of countries in North America, Europe and the Asia/Pacific region. The index returned 3.95% for the six-month period ended April 30, 2018.

Sources: Lipper, Inc.

Unmanaged index returns assume reinvestment of any and all distributions and, unlike fund returns, do not reflect fees, expenses or sales charges. Investors cannot invest directly in an index. Investments in overseas markets pose special risks, including currency fluctuation and political risks. These risks are generally intensified for investments in emerging markets. Countries, regions, and sectors mentioned are presented to illustrate countries, regions, and sectors in which a fund may invest. Fund holdings are subject to change daily. The Funds are actively managed.

The information contained herein is based on internal research derived from various sources and does not purport to be statements of all material facts relating to the securities mentioned. The information contained herein, while not guaranteed as to accuracy or completeness, has been obtained from sources we believe to be reliable. There are certain risks involved with investing in convertible securities in addition to market risk, such as call risk, dividend risk, liquidity risk and default risk, that should be carefully considered prior to investing. This information is being provided for informational purposes only and should not be considered investment advice or an offer to buy or sell any security in the portfolio. Investments in alternative strategies may not be suitable for all investors.

This report is intended for informational purposes only and should not be considered investment advice.

The Calamos Closed-End Funds: An Overview

CALAMOS GLOBAL TOTAL RETURN FUND SEMIANNUAL REPORT 5

In our closed-end funds, we draw upon decades of investment experience, including a long history of opportunistically blending asset classes in an attempt to capture upside potential while seeking to manage downside risk. We launched our first closed-end fund in 2002.

Closed-end funds are long-term investments. Most focus on providing monthly distributions, but there are important differences among individual closed-end funds. Calamos closed-end funds can be grouped into multiple categories that seek to produce income while offering exposure to various asset classes and sectors.

Portfolios Positioned to Pursue High Current Income from Income and Capital Gains OBJECTIVE: U.S. ENHANCED FIXED INCOME Portfolios Positioned to Seek Current Income, with Increased Emphasis on Capital Gains Potential

Calamos Convertible Opportunities and Income

OBJECTIVE: GLOBAL TOTAL RETURN

Fund

Calamos Global Total Return Fund

Invests in high yield and convertible securities,

primarily in U.S. markets

Invests in equities and higher-yielding convertible securities and corporate bonds, in both U.S. and non-U.S. markets

Calamos Convertible and High Income Fund

OBJECTIVE: U.S. TOTAL RETURN

Calamos Strategic Total Return Fund

(Ticker: CHY)

(Ticker: CHI)

(Ticker: CSQ)

Invests in high yield and convertible securities, primarily in U.S. markets

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OBJECTIVE: GLOBAL ENHANCED FIXED INCOME

Invests in equities and higher-yielding convertible securities and corporate bonds, primarily in U.S. markets

Calamos Global Dynamic Income Fund

Calamos Dynamic Convertible and Income Fund

v

(Ticker: CCD)

(Ticker: CGO)

(Ticker: CHW)

Invests in convertibles and other fixed income securities

Invests in global fixed income securities, alternative investments and equities

Our Managed Distribution Policy

Closed-end fund investors often seek a steady stream of income. Recognizing this important need, Calamos closed-end funds adhere to a managed distribution policy in which we aim to provide consistent monthly distributions through the disbursement of the following:

- •Net investment income
- •Net realized short-term capital gains

- •Net realized long-term capital gains
- •And, if necessary, return of capital

We set distributions at levels that we believe are sustainable for the long term. Our team focuses on delivering an attractive monthly distribution, while maintaining a long-term emphasis on risk management. The level of the funds' distributions can be greatly influenced by market conditions, including the interest rate environment, the individual performance of securities held by the funds, our view of retaining leverage, fund tax considerations, and regulatory requirements.

You should not draw any conclusions about the Fund's investment performance from the amount of this distribution or from the terms of the Fund's plan. The Fund's Board of Trustees may amend or terminate the managed distribution policy at any time without prior notice to the Fund's shareholders.

For more information about any Calamos closed-end funds, we encourage you to contact your financial advisor or Calamos Investments at 800.582.6959 (Monday through Friday from 8:00 a.m. to 6:00 p.m., Central Time). You can also visit us at www.calamos.com.

Investment Team Discussion

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TOTAL RETURN* AS OF 4/30/18

Common Shares – Inception 10/27/05

6 Months 1 Year Since Inception**
On Market Price 3.34% 24.03% 8.46%

On NAV 1.73% 13.68% 8.36%

%

SECTOR WEIGHTINGS

Information Technology	18.4
Financials	16.9
Consumer Discretionary	13.8
Industrials	9.6
Health Care	9.3
Energy	7.8
Consumer Staples	6.9
Telecommunication Services	3.9
Materials	3.7
Real Estate	2.0
Utilities	1.1
Other	0.9

Sector Weightings are based on managed assets and may vary over time. Sector Weightings exclude any government/sovereign bonds or options on broad market indexes the Fund may hold.

Global Total Return Fund (CGO)

INVESTMENT TEAM DISCUSSION

Please discuss the Fund's strategy and role within an asset allocation framework.

Calamos Global Total Return Fund (CGO) is a global total-return-oriented offering that seeks to provide an attractive monthly distribution. We invest in a diversified portfolio of global equities, convertible securities and high yield securities. The allocation to each asset class is dynamic and reflects our view of the economic landscape as well as the potential of individual securities. By combining these asset classes, we believe that we are well positioned to generate capital gains and income. This broader range of security types also provides us with increased opportunities to manage

^{*} Total return measures net investment income and net realized gain or loss from Fund investments, and change in net unrealized appreciation and depreciation, assuming reinvestment of income and net realized gains distributions.

^{**}Annualized since inception.

the risk/reward characteristics of the portfolio over full market cycles. Through this approach, we seek to offer investors an attractive monthly distribution and equity participation.

We believe having a relatively high level of exposure to convertible and equity assets is optimal for the portfolio and reflects our cautiously optimistic view of the global stock markets, albeit on a selective and risk-managed basis. We continue to find new opportunities in the convertible market as issuance of these securities has expanded globally over the course of the six months. We believe that maintaining a high exposure to the equity markets via stocks and convertibles was beneficial to the overall performance of the Fund as these markets offered positive returns for the period.

We invest in both U.S. and non-U.S. companies, favoring companies with geographically diversified revenue streams and global business strategies. We emphasize companies we believe offer reliable debt servicing, respectable balance sheets and sustainable prospects for growth.

How did the Fund perform over the reporting period?

The Fund returned 1.73% on a net asset value (NAV) basis for the six-month period ended April 30, 2018. On a market price basis, the Fund increased 3.34%. In comparison, the broad global equity market, as measured by the MSCI World Index, was up 3.68% for the same period.

At the end of the reporting period, the Fund's shares traded at a 5.98% premium to net asset value.

Investment Team Discussion

CALAMOS GLOBAL TOTAL RETURN FUND SEMIANNUAL REPORT 7

SINCE INCEPTION MARKET PRICE AND NAV HISTORY THROUGH 4/30/18

Performance data quoted represents past performance, which is no guarantee of future results. Current performance may be lower or higher than the performance quoted. The principal value of an investment will fluctuate so that your shares, when sold, may be worth more or less than their original cost. Returns at NAV reflect the deduction of the Fund's management fee, debt leverage costs and all other applicable fees and expenses. You can obtain performance data current to the most recent month end by visiting www.calamos.com.

How do NAV and market price return differ?

Closed-end funds trade on exchanges, where the price of shares may be driven by factors other than the value of the underlying securities. The price of a share in the market is called market value. Market price may be influenced by factors unrelated to the performance of the fund's holdings, such as general market sentiment or future expectation. A fund's NAV return measures the actual return of the individual securities in the portfolio, less fund expenses. It also measures how a manager was able to capitalize on market opportunities. Because we believe closed-end funds are best utilized long term within asset allocations, we believe that NAV return is the better measure of a fund's performance. However, when managing the fund, we strongly consider actions and policies that we believe will optimize its overall price performance and returns based on market value.

Please discuss the Fund's distributions during the six-month period.

We employ a managed distribution policy* within this Fund with the goal of providing shareholders a consistent distribution stream. In each month of the period, the Fund distributed \$0.1000 per share, resulting in a current annualized distribution rate of 8.68% of market price as of April 30, 2018.

We believe that both the Fund's distribution rate and level remained attractive and competitive, as low interest rates limited yield opportunities in much of the marketplace. For example, as of April 30, 2018, the dividend yield of S&P 500 Index stocks averaged approximately 2.11%.† Yields also were still relatively low within the U.S. government bond market, with the 10-year U.S. Treasury and 30-year U.S. Treasury yielding 2.95% and 3.11%, respectively.‡