KEELEY FUNDS, INC.

KEELEY Small Cap Dividend Value Fund KEELEY Small-Mid Cap Value Fund KEELEY Mid Cap Dividend Value Fund (each, a "Fund" and collectively, the "Funds")

Supplement dated May 28, 2025, to the Funds' Prospectus and Summary Prospectuses dated January 28, 2025

On May 1, 2025, Keeley-Teton Advisors, LLC ("Keeley Teton") announced that it had agreed to transfer its investment management business to its affiliate, Gabelli Funds, LLC (the "Transaction"). The Transaction will not result in any change to the services provided under the investment advisory agreement. Except as indicated in the following paragraph, the personnel of Keeley Teton who perform such services will continue to perform the same services on behalf of Gabelli Funds, LLC, which will assume the investment advisory agreement. In addition, Gabelli Funds, LLC will assume Keeley Teton's obligations under the Operating Expenses Limitation Agreement.

Following the consummation of the Transaction, Thomas E. Browne, Jr. and Brian P. Leonard will continue to serve as portfolio managers of the Funds; however, the Investment Research Advisory Committee established by Keeley Teton will not remain in place, and Nicholas F. Galluccio, Scott R. Butler, Hendi Susanto, Macrae Sykes and Brian Sponheimer will no longer serve as portfolio managers of the Keeley Small-Mid Cap Value Fund.

There will be no change of actual control or management of the Funds' investment adviser. The Transaction will not constitute an "assignment" of the investment advisory agreement for purposes of the Investment Company Act of 1940, and therefore, a shareholder vote is not required. On May 13, 2025, the Board of Directors of Keeley Funds, Inc. approved the re-execution of the investment advisory agreement.

Accordingly, effective May 28, 2025, the following changes are hereby made to the Prospectus and Summary Prospectuses: all references to "Keeley-Teton Advisors, LLC" are replaced with "Gabelli Funds, LLC"; all references to the Investment Research Advisory Committee are removed; and Nicholas F. Galluccio, Scott R. Butler, Hendi Susanto, Macrae Sykes and Brian Sponheimer are removed as portfolio managers of the Keeley Small-Mid Cap Value Fund.

In addition, effective June 27, 2025, the Funds will be renamed as follows:

Current Name	New Name
Keeley Mid Cap Dividend Value Fund	Keeley Gabelli Mid Cap Dividend Fund
Keeley Small-Mid Cap Value Fund	Keeley Gabelli SMID Cap Value Fund
Keeley Small Cap Dividend Value Fund	Keeley Gabelli Small Cap Dividend Fund

Accordingly, effective on such date, all references in the Prospectus and Summary Prospectuses to each Fund's current name are hereby replaced with the new name indicated above.

SHAREHOLDERS SHOULD RETAIN THIS SUPPLEMENT FOR FUTURE REFERENCE



KEELEY Small-Mid Cap Value Fund

Summary Prospectus January 28, 2025

Class (A) Shares: KSMVX Class (I) Shares: KSMIX

Before you invest, you may want to review the KEELEY Small-Mid Cap Value Fund's (the "Fund") Prospectus and Statement of Additional Information, which contain more information about the Fund and its risks. You can find the Fund's Prospectus and other information about the Fund online at www.keeleyfunds.com. You can also get this information at no cost by calling 800-422-3554 or by sending an e-mail request to info@keeleyteton.com. The Fund's Prospectus and Statement of Additional Information, each dated January 28, 2025 (as each may be amended or supplemented), are incorporated by reference into this Summary Prospectus.

INVESTMENT OBJECTIVE

The KEELEY Small-Mid Cap Value Fund (the "Fund") seeks capital appreciation.

FEES AND EXPENSES OF THE FUND

The table below describes the fees and expenses that you may pay if you buy, hold and sell shares of the Fund. You may also incur usual and customary brokerage commissions and other charges when buying and selling shares that are not reflected in the fee table and expense example below. You may qualify for sales charge discounts if you and your family invest, or agree to invest in the future, at least \$50,000 in the Fund. More information about these and other discounts is available from your financial professional, in the section "How Shares Are Priced" on page 28 of the Fund's Prospectus and in the section "Purchases and Redemption of Shares" on page 22 of the Fund's Statement of Additional Information ("SAI").

SHAREHOLDER FEES (FEES PAID DIRECTLY FROM YOUR INVESTMENT)	Class A (KSMVX)	Class I (KSMIX)
Maximum Sales Charge (Load) Imposed on Purchases (as a percentage of offering price)	4.50%	None
Maximum Deferred Sales Charge (Load)	None	None
Maximum Sales Charge (Load) Imposed on Reinvested Dividends (as a percentage of offering price)	None	None
Redemption Fee (as a percentage of the amount redeemed)	None	None
Exchange Fee	None	None
ANNUAL FUND OPERATING EXPENSES (EXPENSES THAT YOU PAY EACH YEAR AS A PERCENTAGE OF THE VALUE OF YOUR INVESTMENT)	Class A (KSMVX)	Class I (KSMIX)
Management Fees	1.00%	1.00%
Distribution (12b-1) Fees	0.25%	0.00%
Other Expenses	0.55%	0.55%
Acquired Fund Fees and Expenses ^(a)	0.12%	0.12%
Total Annual Fund Operating Expenses	1.92%	1.67%
Fee Waiver and/or Expense Reimbursement(b)	(0.41)%	(0.41)%

[&]quot;Acquired Fund Fees and Expenses" are indirect fees and expenses that the Fund incurs from investing in the shares of other investment companies. Please note that the amount of Total Annual Fund Operating Expenses After Fee Waiver and/or Expense

Summary Prospectus Page 1 of 8

Reimbursement shown in the above table may differ from the ratio of expenses to average net assets included in the "Financial Highlights" section of this Prospectus, which reflects the operating expenses of the Fund and does not include indirect expenses such as acquired fund fees and expenses.

The Adviser has contractually agreed to waive a portion of its management fee or reimburse the Fund to the extent that total ordinary operating expenses during the current fiscal year as a percentage of average net assets for the Fund exceed 1.39% for Class A Shares and 1.14% for Class I Shares. The waiver excludes expenses related to taxes, interest charges, dividend expenses incurred on securities that the Fund sells short, litigation expenses, other extraordinary expenses, any costs that the Fund incurs from investments in other investment companies, and brokerage commissions and other charges relating to the purchase and sale of the Fund's portfolio securities. Any reimbursements or fee waivers made by the Adviser to the Fund are subject to repayment by the Fund, to the extent that the Fund is able to make the repayment within its expense cap agreement. However, the repayment of previously waived expenses is limited to amounts that do not cause the aggregate operating expenses of the Fund to exceed the current expense cap or the expense cap in place at the time the waiver was generated. The Adviser will only be entitled to recoup such amounts for a period of three years following any such waiver or reimbursement. The waiver is in effect through February 28, 2026, and the Adviser cannot discontinue the agreement prior to its expiration.

Example. This Example is intended to help you compare the cost of investing in the Fund with the cost of investing in other mutual funds. The Example assumes that you invest \$10,000 in the Fund for the time periods indicated and then redeem all of your shares at the end of those periods. The Example also assumes that your investment has a 5% return each year and that the Fund's operating expenses are equal to the Total Annual Fund Operating Expenses After Fee Waiver and/or Expense Reimbursement in the first year and the Total Annual Fund Operating Expenses thereafter. This Example does not include the brokerage commissions that investors may pay to buy and sell Shares. Although your actual costs could be higher or lower, based on these assumptions, your costs would be:

KEELEY Small-Mid Cap Value Fund	1 Year	3 Years	5 Years	10 Years	
Class A	\$597	\$988	\$1,404	\$2,561	
Class I	\$128	\$486	\$ 869	\$1,942	

Portfolio Turnover. The Fund pays transaction costs, such as commissions, when it buys and sells securities (or "turns over" its portfolio). A higher portfolio turnover rate may indicate higher transaction costs and may result in higher taxes when Fund shares are held in a taxable account. These costs, which are not reflected in Annual Fund Operating Expenses or in the Example, affect the Fund's performance. During the most recent fiscal year, the Fund's portfolio turnover rate was 26% of the average value of its portfolio.

PRINCIPAL INVESTMENT STRATEGIES AND POLICIES

The Fund intends to pursue its investment objective by investing in equity securities of companies with small or mid-sized market capitalizations. Under normal market conditions, the Fund will invest no less than 80% of its net assets (plus the amount of any borrowings for investment purposes) in common stocks and other equity type securities (including preferred stock, convertible debt securities and warrants) of "small cap" or "mid cap" companies, which the Adviser currently defines as securities within the range of the Russell 2500® Value Index (the "Index") at the time of investment. The market cap range of the Index changes daily, and as a result, the capitalization of small and mid-cap companies in which the Fund invests will also change. As of December 31, 2024, the market capitalization range of the Index was approximately \$8.2 million to \$32.9 billion.

In making investment decisions for the Fund, the Adviser employs a "value" investment philosophy, which is based upon the belief that, at times, the market value of an asset may deviate from its underlying ("intrinsic") value, and that the market price and the intrinsic value should converge over the long-term. The Adviser focuses its attention on particular kinds of undervalued stocks and constructs the Fund's portfolio using a rigorous, "bottom-up" investment process that concentrates on individual companies (rather than on macroeconomic trends), particularly those undergoing major changes (for example, corporate restructuring), including:

- corporate spin-offs (tax-free distributions of a parent company's division to shareholders);
- financial restructuring, including acquisitions, recapitalizations and companies emerging from bankruptcy;
- savings and loan and insurance conversions from mutual to stock companies; and

 event driven, special situations that may create enhanced opportunities through industry and/or corporate dislocation (for example, overall industry change or restructuring, the presence of undervalued assets, or corporate or management change).

As part of this process, the Adviser conducts extensive research into, and analyses of, each candidate company's business fundamentals, seeking undervalued companies that meet certain criteria identified by the Adviser from time to time. Each stock is judged on its potential for above-average capital appreciation. The Adviser does not take into account current dividend or interest income when choosing securities for the Fund. The Adviser continuously monitors each holding in the Fund's portfolio and adjusts its view on the intrinsic value of such securities, as necessary, to reflect changes in a company's fundamentals.

It is the Adviser's intention for the Fund typically to hold securities for more than two years to allow the corporate restructuring process to yield results. The Adviser usually sells a stock when the market price meets or exceeds the Adviser's estimate of the stock's intrinsic value. However, the Adviser may sell securities for a number of reasons, including when a more attractive opportunity emerges, when a company's fundamentals deteriorate and impair the long-term quality of the company's business, when a company becomes over-weighted in the portfolio, when operating difficulties or other circumstances make selling desirable, or when the Adviser's investment thesis otherwise no longer holds for the security.

As long as an investment continues to meet the Fund's criteria set forth above, the Fund may choose to hold such securities even if the company's capitalization moves outside the Russell 2500® Value Index range. If less than 80% of the Fund's net assets (plus the amount of any borrowings for investment purposes) are invested in companies with a small or a mid-size market capitalization, the Fund will not invest in companies other than those with a small or a mid-size market capitalization until the 80% threshold is restored.

The Fund may be suitable for the more aggressive section of an investor's portfolio. The Fund is designed for people who want to grow their capital over the long-term and who are comfortable with possible frequent short-term changes in the value of their investment. An investment in the Fund should not be considered a complete investment program.

MAIN RISKS

Loss of money is a risk of investing in the Fund.

Equity Risk. The Fund is subject to the typical risks of equity investing, which include, but are not limited to: loss of money, company-specific risks, the effects of interest rate fluctuations, investor psychology and negative market or other general economic news. The value of your investment will increase or decrease, so your shares may be worth more or less money than your original investment.

Small and Mid-Capitalization Company Risk. Investing in securities of small- and mid-cap companies presents more risks than investing in securities of more established or large-cap companies. Smaller companies often have more limited resources and greater variation in operating results, leading to greater price volatility. Trading volumes may be lower, making such securities less liquid. Small- and mid-cap companies may have a shorter history of operations or less diversified product lines — making them more susceptible to market pressures. During some periods, stocks of small and mid-sized companies, as an asset class, have underperformed the stocks of larger companies.

"Value Style" Investing Risk. Investing in undervalued companies, including companies undergoing restructuring or emerging from bankruptcy, presents special risks, since these companies must overcome the investing public's negative perceptions, which may have resulted from any number of catalysts or events, including but not limited to, declarations of bankruptcy or corporate restructurings. Often, such companies are subject to specific plans imposed by their lenders that they must meet in a fairly short time frame. Generally, companies going through corporate restructuring are more likely than others to remain

Summary Prospectus Page 3 of 8

undervalued. "Value style" investing may fall out of favor with investors and underperform other investment styles. Moreover, there can be no guarantee that the company's market price will appreciate toward its intrinsic value, as estimated by the Adviser.

Market Sector Concentration Risk. In pursuing its investment strategy, the Fund, at times, may concentrate its investments in the securities of issuers in a particular industry or sector. By concentrating its investments in an industry or sector, the Fund may face more risks than if it were diversified broadly over numerous industries or sectors. Such industry-based risks may include, but are not limited to, general economic conditions or cyclical market patterns that could negatively affect supply and demand in a particular industry; competition for resources; adverse labor relations; political events; obsolescence of technologies; and increased competition. In addition, at times, an industry or sector may be out of favor and underperform other industries or the market as a whole.

Financial Services Risk. Financial services companies can be significantly affected by changing economic conditions, demand for consumer loans, refinancing activity and intense competition, including price competition. Profitability can be largely dependent on the availability and cost of capital and the rate of consumer debt defaults, and can fluctuate significantly when interest rates change; unstable and/or rising interest rates may have a disproportionate effect on companies in the financial services sector. Financial services companies are subject to extensive government regulation, which can change frequently and may adversely affect the scope of their activities, the prices they can charge and the amount of capital they must maintain, or may affect them in other ways that are unforeseeable. In the past, financial services companies in general experienced considerable financial distress, which led to the implementation of government programs designed to ease that distress.

Industrials Risk. Industrials companies are engaged in the manufacture and distribution of capital goods, such as those used in defense, construction and engineering, companies that manufacture and distribute electrical equipment and industrial machinery and those that provide commercial and transportation services and supplies. Industrials companies may be adversely affected by changes in government regulation, world events and economic conditions. In addition, companies in the industrials sector may be adversely affected by environmental damages, product liability claims and exchange rates.

Management Risk. If a portfolio manager is incorrect in the assessment of the growth prospects of the securities the Fund holds, then the value of the Fund's shares may decline.

Geopolitical Risk. Occurrence of global events, such as war, terrorist attacks, natural disasters, country instability, infectious disease epidemics, pandemics and other public health issues, market instability, debt crises and downgrades, embargoes, tariffs, sanctions and other trade barriers and other governmental trade or market control programs, the potential exit of a country from its respective union and related geopolitical events, may result in market volatility and may have long-lasting impacts on both the U.S. and global financial markets.

Infectious Illness Risk. A widespread outbreak of an infectious illness may result in travel restrictions, disruption of healthcare services, prolonged quarantines, cancellations, supply chain disruptions, business closures, lower consumer demand, layoffs, ratings downgrades, defaults and other significant economic, social and political impacts. Such events may adversely affect the Fund, its investments, and the value of your investment in the Fund.

PERFORMANCE

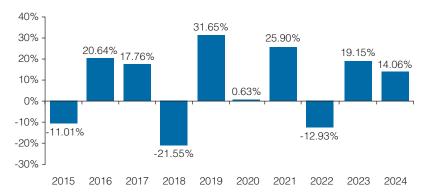
The following performance information indicates some of the risks of investing in the Fund. The bar chart below shows how the Fund's total return has varied from year to year. The table compares the Fund's performance with that of the Russell 2500® Value Index, an unmanaged index that measures the performance of the small to mid-cap value segment of the U.S. equity universe and includes those Russell 2500® Index companies with lower price-to-book ratios and lower forecasted growth values. The Russell 2500® Index is an unmanaged index that measures the performance of the 2,500 smallest companies by

Summary Prospectus Page 4 of 8

market capitalization of the Russell 3000® Index. While the information shown in the bar chart and the table gives you some idea of the risks involved in investing in the Fund, please remember that past performance (before and after taxes) does not guarantee future results. Updated performance information is available at www.keeleyfunds.com or toll-free at 1-800-422-3554.

KSMVX* - Year-by-year total return as of 12/31 each year (%)

AVERAGE ANNUAL TOTAL RETURN



* The information in the bar chart represents the performance of the Fund's Class A Shares. Performance information for the Fund's Class I Shares is not shown and the performance of that class will be different from the Fund's Class A Shares because the expenses of each class are different.

BEST QUARTER		WORST QUARTER		
Q4 2020	29.65%	Q1 2020	(40.56)%	

The bar chart and best and worst quarters shown above do not reflect the maximum 4.50% sales load. If these items reflected the sales load, returns would be less than those shown.

AS OF 12/31/24 FOR THE KEELEY SMALL-MID CAP VALUE FUND(1)	1 Year	5 Years	10 Years
Return before taxes			
Class A	8.95%	7.43%	6.95%
Class I	14.33%	8.71%	7.71%
Return after taxes on distributions ⁽²⁾			
Class A	5.80%	4.19%	4.06%
Return after taxes on distributions and sale of fund shares ⁽²⁾			
Class A	7.56%	5.36%	4.95%
Russell 2500® Value Index (reflects no deduction for fees, expenses and taxes) ⁽³⁾	10.98%	8 44%	7 81%

This performance table reflects the payment of the 4.50% sales load on the purchase of Class A Shares.

Summary Prospectus Page 5 of 8

After-tax returns are calculated using the historical highest individual federal marginal income tax rates and do not reflect the impact of state and local taxes. Your actual after-tax returns will depend on your tax situation and may differ from those shown. After-tax returns shown are not relevant to investors who hold their Fund shares through tax-deferred arrangements, such as 401(k) plans or individual retirement accounts. After-tax returns are shown for only Class A Shares and after-tax returns for Class I Shares will vary.

⁽³⁾ The Russell 2500™ Value Index is an unmanaged index that measures the performance of the small to mid-cap value segment of the U.S. equity universe and includes those Russell 2500® Index companies with lower price-to-book ratios and lower forecasted growth values. The Russell 2500® Index is an unmanaged index that measures the performance of the 2,500 smallest companies by market capitalization of the Russell 3000® Index.

MANAGEMENT

Investment Adviser — The investment adviser for the Fund is Keeley-Teton Advisors, LLC, 141 West Jackson Blvd., Suite 2150, Chicago, IL 60604. The Adviser supervises, administers and continuously reviews the Fund's investment program, following policies set by the Fund's Board of Directors.

Portfolio Managers — The Adviser has established an Investment Research Advisory Committee (the "Committee") to be comprised of select individuals from the Adviser. The Committee is ultimately responsible for the day-to-day management of the Fund's portfolio and work with the team leaders in developing and executing the Fund's investment program. The members of the Committee are as follows: Thomas Browne, Jr., Brian Leonard, Michael Maloney, Brian Keeley, Hendi Susanto, Wayne Plewniak, Mark N. Odegard, Nicholas Galluccio, James Dinsmore, William F. Fiedler, Macrae Sykes, Brian Sponheimer, Joseph Gabelli, Sarah Donnelly, Ashish Sinha, Marc Gabelli, Edward S. Borland and Robert M. Goldsborough.

Certain members of the Committee are portfolio managers, as described herein, and the remainder operate as analysts in support of the portfolio management team. Team members collaborate to oversee the assets of the Fund utilizing the resources of the broad organization. While certain portfolio managers and analysts have a sector and geographic focus, each is a generalist, charged with generating ideas for any portfolio and any industry. Once an investment idea is generated, it faces the scrutiny of the research team, and must qualify under the Adviser's strict investment criteria before it may be implemented for the Fund. This team approach reinforces the Adviser's discipline, as each team member participates in the analysis and evaluation of every analyst's ideas. Team members collaborate to manage the assets of the Fund. The composition of the Committee and any respective team may change from time to time.

The Small-Mid Cap Value Fund is overseen by members of the Global Value and Restructuring Team which consists of several lead portfolio managers and the firm's global analysts.

Nicholas F. Galluccio, Scott R. Butler, Hendi Susanto, Macrae Sykes, Brian Sponheimer, Thomas E. Browne, Jr. and Brian P. Leonard are Portfolio Managers for the Fund and responsible for its day-to-day management. Mr. Galluccio and Mr. Butler have managed the Fund since 2019.

Messrs Browne and Leonard have managed the Fund since 2020. Messrs. Susanto, Sykes and Sponheimer have managed the Fund since 2022. The SAI provides additional information about the compensation paid to Messrs. Galluccio, Butler, Susanto, Sykes, Sponheimer, Browne and Leonard, other accounts that they manage, and their respective ownership of securities in the Fund.

For important information about the purchase and sale of Fund shares, tax information and financial intermediary compensation, please turn to "Purchase and Sale of Fund Shares, Taxes and Financial Intermediary Compensation" on page 19.

PURCHASE AND SALE OF FUND SHARES, TAXES AND FINANCIAL INTERMEDIARY COMPENSATION

PURCHASE AND SALE OF FUND SHARES

You can buy or sell Fund shares directly from G.distributors, LLC, the Funds' distributor (the "Distributor"), or from selected broker/dealers, financial institutions and other service providers. Please contact the Distributor at 1-800-422-3554 if you need additional assistance when completing your application. There is neither a minimum holding requirement nor a minimum amount requested to redeem your shares.

You can purchase or redeem shares of the Fund on any day the New York Stock Exchange ("NYSE") is open for trading (a "Business Day"). You may purchase or redeem shares of the Fund by written request via mail (The Keeley Funds, P.O. Box 219204, Kansas City, MO 64121-9204), personal or overnight delivery (The Keeley Funds, 801 Pennsylvania Avenue, Suite 219204, Kansas City, MO, 64105-1307), Internet, bank

Summary Prospectus Page 6 of 8

wire, or Automated Clearing House ("ACH") system. You may also purchase or redeem shares of a Fund by telephone, if you have an existing account with banking instructions on file by calling the Distributor at 800-GABELLI. (800-422-3554).

The minimum initial investment for the investor class of shares, termed the "Class A" Shares, of the Funds is \$2,500, and the minimum for additional investments in Class A Shares of the Funds is \$50. These amounts are subject to change at any time. The Distributor may waive these minimums to establish certain Class A Share accounts. The minimum initial investment for the institutional investor class of shares, termed the "Class I" Shares, of the Funds is \$1 million, and the minimum for additional investments in Class I Shares of the Funds is \$10,000. These amounts are subject to change at any time. The Distributor may waive these minimums to establish certain Class I Share accounts.

TAX INFORMATION

The Funds' distributions, if any, generally are taxable to you as ordinary income, capital gain or some combination of both, unless you are investing through a tax-advantaged arrangement, such as a 401(k) plan or an IRA, in which case your distributions generally will be taxed as ordinary income when withdrawn from the tax-advantaged account.

PAYMENTS TO BROKER-DEALERS AND OTHER FINANCIAL INTERMEDIARIES

If you purchase Fund shares through a broker-dealer or other financial intermediary (such as a bank), the Funds and their Distributor and/or Adviser may pay the intermediary for services provided to the Funds and their shareholders. These payments may create a conflict of interest by influencing the broker-dealer or other intermediary and your salesperson to recommend a Fund over another investment. Read the Funds' Prospectus and SAI, ask your salesperson or visit your financial intermediary's website for more information.

Summary Prospectus Page 7 of 8



800-422-3554

Summary Prospectus Page 8 of 8