

MidWestOne Financial Group, Inc.
Form 424B5
March 20, 2017

Use these links to rapidly review the document

[TABLE OF CONTENTS](#)

[TABLE OF CONTENTS](#)

[TABLE OF CONTENTS](#)

Filed Pursuant to Rule 424(b)(5)
Registration Nos. 333-207659 and 333-212229

PROSPECTUS SUPPLEMENT
(To Prospectuses dated November 10, 2015 and July 22, 2016)

2,500,000 Shares

MidWestOne Financial Group, Inc.

Common Stock

MidWestOne Financial Group, Inc. ("MidWestOne" or the "Company") is offering 500,000 shares of its common stock, par value \$1.00 per share, pursuant to this prospectus supplement and the accompanying prospectus relating to the shares to be sold by it. John M. Morrison Revocable Trust #4 (the "selling shareholder" or the "Trust"), the selling shareholder identified in this prospectus supplement, is offering an additional 2,000,000 shares of our common stock, par value \$1.00 per share, pursuant to this prospectus supplement and the accompanying prospectus relating to the shares to be sold by it. We will not receive any of the proceeds from the sale of the shares of our common stock being sold by the selling shareholder. Our common stock is listed on The NASDAQ Global Select Market ("NASDAQ") under the symbol "MOFG." On March 16, 2017, the last reported sale price of our common stock on NASDAQ was \$36.75 per share.

None of the Securities and Exchange Commission ("SEC"), the Federal Deposit Insurance Corporation (the "FDIC"), the Board of Governors of the Federal Reserve System (the "Federal Reserve") or any state or other securities commission or any other federal regulatory agency has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus supplement or the accompanying prospectuses. Any representation to the contrary is a criminal offense.

The shares of common stock are not savings accounts, deposits or other obligations of any bank or non-bank subsidiary of the Company and are not insured or guaranteed by the FDIC or any other governmental agency or instrumentality.

Investing in our common stock involves risks. Potential purchasers of our common stock should consider the information set forth in the "RISK FACTORS" section beginning on page S-8 of this prospectus supplement, on page 1 of each of the accompanying prospectuses and in our Annual Report on Form 10-K for the year ended December 31, 2016, which is incorporated herein by reference.

Edgar Filing: MidWestOne Financial Group, Inc. - Form 424B5

| | Per Share | Total |
|------------------------------------|-----------|--------------|
| Price to public | \$34.25 | \$85,625,000 |
| Underwriting discount(1) | \$1.37 | \$3,425,000 |
| Proceeds, before expenses, to us | \$32.88 | \$16,440,000 |
| Proceeds to selling shareholder(1) | \$32.88 | \$65,760,000 |

(1) We have agreed to pay up to \$240,000 of the aggregate underwriting discount on the shares being sold by the selling shareholder, as well as certain expenses of the selling shareholder. See "UNDERWRITING."

We have granted the underwriter an option to purchase up to an additional 250,000 shares of our common stock from us within 30 days after the date of this prospectus supplement at the public offering price, less underwriting discounts and commissions.

The underwriter is offering the common stock as set forth under "UNDERWRITING." Delivery of the common stock in book-entry only form through The Depository Trust Company for the accounts of its participants is expected to be made on or about March 22, 2017.

The date of this prospectus supplement is March 17, 2017

TABLE OF CONTENTS

Prospectus Supplement

| | |
|--|-------------|
| <u>ABOUT THIS PROSPECTUS SUPPLEMENT</u> | |
| <u>WHERE YOU CAN FIND MORE INFORMATION</u> | <u>S-1</u> |
| <u>INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE</u> | <u>S-1</u> |
| <u>IMPORTANT CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS</u> | <u>S-2</u> |
| <u>PROSPECTUS SUPPLEMENT SUMMARY</u> | <u>S-3</u> |
| <u>RISK FACTORS</u> | <u>S-5</u> |
| <u>PRICE RANGE OF COMMON STOCK AND DIVIDENDS</u> | <u>S-8</u> |
| <u>USE OF PROCEEDS</u> | <u>S-11</u> |
| <u>CAPITALIZATION</u> | <u>S-12</u> |
| <u>DESCRIPTION OF CAPITAL STOCK</u> | <u>S-12</u> |
| <u>SELLING SHAREHOLDER</u> | <u>S-13</u> |
| <u>UNDERWRITING</u> | <u>S-13</u> |
| <u>LEGAL MATTERS</u> | <u>S-14</u> |
| <u>EXPERTS</u> | <u>S-18</u> |

November 10, 2015 Prospectus

| | |
|--|-----------|
| <u>ABOUT THIS PROSPECTUS</u> | |
| <u>RISK FACTORS</u> | <u>1</u> |
| <u>MIDWESTONE FINANCIAL GROUP, INC.</u> | <u>1</u> |
| <u>SUMMARY OF MERGER TRANSACTION</u> | <u>2</u> |
| <u>USE OF PROCEEDS</u> | <u>2</u> |
| <u>DESCRIPTION OF CAPITAL STOCK</u> | <u>3</u> |
| <u>PLAN OF DISTRIBUTION</u> | <u>3</u> |
| <u>SELLING SHAREHOLDER</u> | <u>6</u> |
| <u>SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS</u> | <u>9</u> |
| <u>WHERE YOU CAN FIND ADDITIONAL INFORMATION</u> | <u>10</u> |
| <u>DOCUMENTS INCORPORATED BY REFERENCE</u> | <u>11</u> |
| <u>LEGAL MATTERS</u> | <u>11</u> |
| <u>EXPERTS</u> | <u>12</u> |

July 22, 2016 Prospectus

| | |
|---|-----------|
| <u>ABOUT THIS PROSPECTUS</u> | |
| <u>RISK FACTORS</u> | <u>1</u> |
| <u>MIDWESTONE FINANCIAL GROUP, INC.</u> | <u>1</u> |
| <u>USE OF PROCEEDS</u> | <u>2</u> |
| <u>RATIO OF EARNINGS TO FIXED CHARGES AND PREFERRED STOCK DIVIDENDS</u> | <u>2</u> |
| <u>DESCRIPTION OF CAPITAL STOCK</u> | <u>2</u> |
| <u>DESCRIPTION OF DEBT SECURITIES</u> | <u>3</u> |
| <u>DESCRIPTION OF WARRANTS</u> | <u>7</u> |
| <u>DESCRIPTION OF SUBSCRIPTION RIGHTS</u> | <u>14</u> |
| <u>DESCRIPTION OF UNITS</u> | <u>15</u> |
| <u>DESCRIPTION OF DEPOSITARY SHARES</u> | <u>16</u> |
| <u>PLAN OF DISTRIBUTION</u> | <u>16</u> |
| <u>SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS</u> | <u>19</u> |
| <u>WHERE YOU CAN FIND ADDITIONAL INFORMATION</u> | <u>20</u> |
| <u>DOCUMENTS INCORPORATED BY REFERENCE</u> | <u>22</u> |
| <u>LEGAL MATTERS</u> | <u>22</u> |
| <u>EXPERTS</u> | <u>23</u> |

Table of Contents

ABOUT THIS PROSPECTUS SUPPLEMENT

This document is comprised of three parts. The first part is this prospectus supplement, which describes the specific terms of this common stock offering and certain other matters relating to us, our financial condition, and the selling shareholder, and it also adds to and updates information contained in the accompanying prospectuses and the documents incorporated by reference into this prospectus supplement and the accompanying prospectuses. The second part is the accompanying prospectus, dated November 10, 2015, included as part of our registration statement on Form S-3 (File No. 333-207659), which provides information with respect to shares offered by the selling shareholder (the "Secondary Registration Statement"). The third part is the accompanying prospectus, dated July 22, 2016, included as part of our registration statement on Form S-3 (File No. 333-212229), which provides more general information about the securities that we may offer from time to time, some of which may not apply to this offering (the "Primary Registration Statement"). You should read carefully both this prospectus supplement and the accompanying prospectuses in their entirety, together with additional information described under the heading "WHERE YOU CAN FIND MORE INFORMATION," before investing in our common stock.

Unless otherwise indicated or unless the context requires otherwise, all references in this prospectus supplement and the accompanying prospectuses to "MidWestOne," the "Company," "we," "us," "our" and "ours" or similar references mean MidWestOne Financial Group, Inc. and its subsidiaries.

We and the selling shareholder have not, and the underwriter has not, authorized anyone to provide you any information other than that contained or incorporated by reference in this prospectus supplement, the accompanying prospectuses or in any free writing prospectus prepared by or on behalf of us or to which we have referred you. Neither we, the selling shareholder, nor the underwriter takes any responsibility for, or can provide any assurance as to the reliability of, any other information that others may give you. If information in this prospectus supplement is inconsistent with the applicable accompanying prospectus, you should rely on this prospectus supplement. You should not assume that the information provided in this prospectus supplement, the accompanying prospectuses or the documents incorporated by reference in this prospectus supplement and in the accompanying prospectuses is accurate as of any date other than their respective dates. Our business, financial condition, liquidity, results of operations and prospects may have changed since those dates.

We, the selling shareholder and the underwriter are not offering to sell nor seeking offers to buy shares of our common stock in any jurisdiction where offers and sales are not permitted. The distribution of this prospectus supplement and the accompanying prospectuses and the offering of our common stock in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus supplement and the accompanying prospectuses must inform themselves about and observe any restrictions relating to the offering of our common stock and the distribution of this prospectus supplement and the accompanying prospectuses outside the United States. This prospectus supplement and the accompanying prospectuses do not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, any securities offered by this prospectus supplement and the accompanying prospectuses by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. You may read and copy any document that we file with the SEC at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information about the Public Reference Room. Our filings with the SEC are also available to the public through the SEC's website at www.sec.gov. Our annual, quarterly and current reports and

Table of Contents

amendments to those reports are also available over the Internet at our website at www.midwestonefinancial.com. All internet addresses provided in this prospectus supplement or in the accompanying prospectuses are for informational purposes only and are not intended to be hyperlinks. In addition, the information on, or accessible through, our website, or any other website described herein, is not a part of, and is not incorporated or deemed to be incorporated by reference in, this prospectus supplement or the accompanying prospectuses or other offering materials.

We also have filed two registration statements (File No. 333-207659 and File No. 333-212229) with the SEC relating to the common stock offered by this prospectus supplement and the accompanying prospectuses. This prospectus supplement and the accompanying prospectuses are part of those registration statements. You may obtain from the SEC copies of the registration statements and the related exhibits that we filed with the SEC when we registered the common stock. The registration statements may contain additional information that may be important to you.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC's rules allow us to incorporate by reference information into this prospectus supplement. This means that we can disclose important information to you by referring you to another document. Any information referred to in this way is considered part of this prospectus supplement from the date we file that document. Any reports filed by us with the SEC after the date of this prospectus supplement will automatically update and, where applicable, supersede any information contained in this prospectus supplement or the accompanying prospectuses or incorporated by reference herein or therein. We are incorporating by reference the documents listed below, which we have already filed with the SEC, and any future filings we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act, as amended (the "Exchange Act"), except as to any portion of any future report or document that is not deemed filed under such provisions, until this offering has been terminated:

our Annual Report on Form 10-K for the fiscal year ended December 31, 2016, filed with the SEC on March 2, 2017, including the portions of our Definitive Proxy Statement on Schedule 14A filed on March 10, 2017, and incorporated by reference into Part III of our Annual Report on Form 10-K;

our Current Reports on Form 8-K filed with the SEC on January 26, 2017 (except for information furnished under Item 2.02), February 1, 2017, and February 17, 2017; and

the description of our common stock contained in the Company's Registration Statement filed with the SEC on August 4, 1994, pursuant to Section 12 of the Exchange Act on Form 8-A (File No. 000-24630), and all amendments and reports filed by the Company for the purpose of updating such description, including the prospectus constituting part of our Amendment No. 1 to Registration Statement on Form S-3 (File No. 333-212229) filed with the SEC on July 19, 2016, under the heading "DESCRIPTION OF CAPITAL STOCK."

Upon written or oral request, we will provide, without charge, to each person to whom a copy of this prospectus supplement and the accompanying prospectuses is delivered a copy of the documents incorporated by reference into this prospectus supplement and the accompanying prospectuses. You may request a copy of these filings, and any exhibits we have specifically incorporated by reference as

Table of Contents

an exhibit in this prospectus supplement and the accompanying prospectuses, at no cost by writing or telephoning us at the following address:

MidWestOne Financial Group, Inc.
Attention: Kenneth R. Urmie, Corporate Secretary
102 South Clinton Street
Iowa City, Iowa 52240
Telephone number: (319) 356-5800

IMPORTANT CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectuses, and the information incorporated by reference in this prospectus supplement and the accompanying prospectuses contain certain "forward-looking statements" within the meaning of such term in the Private Securities Litigation Reform Act of 1995. We and our representatives may, from time to time, make written or oral statements that are "forward-looking" and provide information other than historical information. These statements involve known and unknown risks, uncertainties and other factors that may cause actual results to be materially different from any results, levels of activity, performance or achievements expressed or implied by any forward-looking statement. These factors include, among other things, the factors listed below.

Forward-looking statements, which may be based upon beliefs, expectations and assumptions of our management and on information currently available to management, are generally identifiable by the use of words such as "believe," "expect," "anticipate," "should," "could," "would," "plans," "intend," "project," "estimate," "goals," "forecast," "may" or similar expressions. These forward-looking statements are subject to certain risks and uncertainties that could cause actual results to differ materially from those expressed in, or implied by, these statements. Readers are cautioned not to place undue reliance on any such forward-looking statements, which speak only as of the date made. Additionally, we undertake no obligation to update any statement in light of new information or future events, except as required under federal securities law.

Our ability to predict results or the actual effect of future plans or strategies is inherently uncertain. Factors that could have an impact on our ability to achieve operating results, analyst financial forecasts, growth plan goals and future prospects include, but are not limited to, the following:

credit quality deterioration or pronounced and sustained reduction in real estate market values could cause an increase in our allowance for credit losses and a reduction in net earnings;

our management's ability to reduce and effectively manage interest rate risk and the impact of interest rates in general on the volatility of our net interest income;

changes in the economic environment, competition, or other factors that may affect our ability to acquire loans or influence the anticipated growth rate of loans and deposits and the quality of the loan portfolio and loan and deposit pricing;

fluctuations in the value of our investment securities;

governmental monetary and fiscal policies;

legislative and regulatory changes, including changes in banking, securities and tax laws and regulations and their application by our regulators (particularly with respect to the Basel III regulatory capital reforms and changes in the scope and cost of FDIC insurance and other coverages);

the ability to attract and retain key executives and employees experienced in banking and financial services;

Table of Contents

the sufficiency of the allowance for loan losses to absorb the amount of actual losses inherent in our existing loan portfolio;

our ability to adapt successfully to technological changes to compete effectively in the marketplace;

credit risks and risks from concentrations (by geographic area and by industry) within our loan portfolio;

the effects of competition from other commercial banks, thrifts, mortgage banking firms, consumer finance companies, credit unions, securities brokerage firms, insurance companies, money market and other mutual funds, and other financial institutions operating in our markets or elsewhere or providing similar services;

the failure of assumptions underlying the establishment of allowances for loan losses and estimation of values of collateral and various financial assets and liabilities;

the risks of mergers and acquisitions, including, without limitation, the related time and costs of implementing such transactions, integrating operations as part of these transactions and possible failures to achieve expected gains, revenue growth and/or expense savings from such transactions;

volatility of rate-sensitive deposits;

operational risks, including data processing system failures or fraud;

asset/liability matching risks and liquidity risks;

the costs, effects and outcomes of existing or future litigation;

changes in general economic or industry conditions, nationally, internationally, or in the communities in which we conduct business;

changes in accounting policies and practices, as may be adopted by state and federal regulatory agencies and the Financial Accounting Standards Board;

war or terrorist activities may cause further deterioration in the economy or cause instability in credit markets;

cyber-attacks; and

other risks and uncertainties described herein or in our annual report on Form 10-K for the year ended December 31, 2016, and otherwise in our SEC reports and filings.

We qualify all of our forward-looking statements by the foregoing cautionary statements. Because of these risks and other uncertainties, our actual future results, performance or achievement, or industry results, may be materially different from the results indicated by these forward-looking statements. In addition, our past results of operations are not necessarily indicative of our future results.

Table of Contents

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights information contained elsewhere, or incorporated by reference, in this prospectus supplement or the accompanying prospectuses. As a result, it does not contain all of the information that may be important to you or that you should consider before making a decision to invest in our common stock. You should read this entire prospectus supplement and accompanying prospectuses, including the "RISK FACTORS" section included herein and therein and the documents incorporated by reference herein and therein, which are described under "INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE."

Company Overview

We are an Iowa corporation incorporated in 1983, a bank holding company under the Bank Holding Company Act of 1956, and a financial holding company under the Gramm-Leach-Bliley Act of 1999. We currently operate primarily through our bank subsidiary, MidWestOne Bank, an Iowa state non-member bank chartered in 1934 with its main office in Iowa City, Iowa (the "Bank"), as well as MidWestOne Insurance Services, Inc., our wholly-owned subsidiary that operates through three agencies located in central and east-central Iowa. As of December 31, 2016, we had total consolidated assets of \$3.08 billion, total deposits of \$2.48 billion and total shareholders' equity of \$305.5 million.

The Bank operates a total of 43 branch locations, including its specialized Home Mortgage Center. It operates 23 branches in 13 counties throughout central and east-central Iowa, and 18 offices in the Twin Cities metro area and western Wisconsin. Additionally, the Bank operates two Florida offices in Naples and Fort Myers. The Bank provides full-service retail banking in and around the communities in which their respective branch offices are located. Deposit products offered include checking and other demand deposit accounts, NOW accounts, savings accounts, money market accounts, certificates of deposit, individual retirement accounts and other time deposits. The Bank offers commercial and industrial, agricultural, real estate mortgage and consumer loans. Other products and services include debit cards, automated teller machines, online banking, mobile banking, and safe deposit boxes. The principal service consists of making loans to and accepting deposits from individuals, businesses, governmental units and institutional customers. The Bank also has a trust and investment department through which it offers a variety of trust and investment services, including administering estates, personal trusts, and conservatorships and providing property management, farm management, custodial, financial planning, investment management and retail brokerage services (the latter of which is provided through an agreement with a third-party registered broker-dealer).

Additional information about us is included in our filings with the SEC, which are incorporated by reference into this prospectus supplement. See "WHERE YOU CAN FIND MORE INFORMATION" and "INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE" in this prospectus supplement.

Our Corporate Information

Our principal executive office is located at 102 South Clinton Street, Iowa City, Iowa 52240, and our telephone number is (319) 356-5800. Our website is www.midwestonefinancial.com. The information contained on or accessible from our website does not constitute a part of this prospectus supplement or the accompanying prospectuses and is not incorporated by reference herein or therein.

Table of Contents

The Offering

The following description contains basic information about our common stock and this offering. This description is not complete and does not contain all of the information that you should consider before making a decision to invest in our common stock. For a more complete understanding of our common stock, you should read the section of this prospectus supplement entitled "DESCRIPTION OF CAPITAL STOCK" and the sections in the accompanying prospectuses entitled "DESCRIPTION OF CAPITAL STOCK." To the extent the following information is inconsistent with the information in the accompanying prospectuses, you should rely on the information in this prospectus supplement.

| | |
|---|---|
| Issuer | MidWestOne Financial Group, Inc. |
| Common stock offered by us | 500,000 shares (or 750,000 shares if the underwriter exercises its option in full to purchase additional shares). |
| Common stock offered by the selling shareholder | 2,000,000 shares. |
| Underwriter's option to purchase additional shares | We have granted the underwriter an option to purchase up to an additional 250,000 shares from us within 30 days of the date of this prospectus supplement. |
| Common stock to be outstanding after this offering | 11,959,521 shares (or 12,209,521 shares if the underwriter exercises its option in full to purchase additional shares).(1) |
| Public offering price | \$34.25 per share of common stock. |
| Selling shareholder | The selling shareholder is John M. Morrison Revocable Trust #4. See "SELLING SHAREHOLDER." The Trust beneficially owns 2,245,193 shares of our common stock, accounting for approximately 19.6%, of our outstanding shares of common stock as of March 15, 2017. |
| Use of proceeds | We estimate that the net proceeds to us from the offering, after deducting estimated underwriting discounts and commissions but before payment of estimated offering expenses payable by us, will be approximately \$16.44 million (or approximately \$24.66 million if the underwriter exercises its option in full to purchase additional shares from us). We will not receive any proceeds from the sale of shares by the selling shareholder. We intend to use the net proceeds from this offering for general corporate purposes, including potential future acquisitions and to support continued organic growth. We currently have no definitive agreements regarding any future acquisitions. See "USE OF PROCEEDS." |
| Risk factors | Investing in our common stock involves certain risks. See page S-8 of this prospectus supplement, page 1 of the Primary Registration Statement and page 1 of the Secondary Registration Statement and the risk factors set forth in our Annual Report on Form 10-K for the year ended December 31, 2016, which is incorporated herein by reference. |

Table of Contents

NASDAQ Global Select Market symbol Our common stock currently trades on The NASDAQ Global Select Market under the symbol "MOFG."

- (1) The number of shares of our common stock to be outstanding after this offering is based on 11,459,521 shares of common stock outstanding as of March 15, 2017 and excludes as of such date 83,900 shares of our common stock issuable pursuant to our equity compensation plans, including awards outstanding thereunder.

Unless otherwise indicated, all information in this prospectus supplement assumes no exercise by the underwriter of its option to purchase up to an additional 250,000 shares of common stock in the aggregate from us in this offering.

Table of Contents

RISK FACTORS

Investing in our common stock involves a high degree of risk. You should carefully consider the following risk factors, as well as those contained on page 1 of the Primary Registration Statement and page 1 of the Secondary Registration Statement and in our Annual Report on Form 10-K for the year ended December 31, 2016 and all of the other information contained or incorporated by reference in this prospectus supplement and the accompanying prospectuses, before deciding to invest in our common stock. The realization of any of the matters referenced as risk factors could have a material adverse effect on our business, financial condition, liquidity, results of operations and prospects, and holders of our common stock could lose some or all of their investment.

Risks Related to Our Common Stock and This Offering

Sales of a significant number of shares of our common stock in the public markets, and other transactions that we may pursue, could depress the market price of our common stock.

Sales of a substantial number of shares of our common stock in the public markets and the perception that those sales may occur could adversely affect the market price of our common stock. The completion of this offering will significantly increase the number of shares of our common stock that may be sold in the public market because the shares of our common stock issued by us and sold by the selling shareholder will be freely tradable without restriction or further registration under the Securities Act of 1933, as amended (the "Securities Act"). In addition, future issuances of equity securities may dilute the interests of our existing shareholders, including you, and cause the market price of our common stock to decline. We may issue equity securities (including convertible securities, preferred securities, and options and warrants on our common or preferred stock) in the future for a number of reasons, including to finance our operations and business strategy (including mergers and acquisitions), to adjust our ratio of debt to equity, to address regulatory capital concerns, or to satisfy our obligations upon the exercise of outstanding options or warrants. We may issue equity securities in transactions that generate cash proceeds, such as this offering, transactions that free up regulatory capital but do not immediately generate or preserve substantial amounts of cash, and transactions that generate regulatory or balance sheet capital only and do not generate or preserve cash. We cannot predict the effect that these transactions would have on the market price of our common stock.

Our stock price is subject to fluctuations, and the value of your investment may decline.

The trading price of our common stock is subject to wide fluctuations. The stock market in general, and the market for commercial banks and other financial services companies in particular, has experienced significant price and volume fluctuations that sometimes have been unrelated or disproportionate to the operating performance of those companies. These broad market and industry factors may seriously harm the market price of our common stock, regardless of our operating performance, and the value of your investment may decline.

Our management will have broad discretion as to the use of the net proceeds to us from this offering, and we may not use the proceeds effectively.

We intend to use our net proceeds from this offering for general corporate purposes, including potential future acquisitions and to support organic growth. Our net proceeds and the funds made available to us may be applied in ways with which some investors in this offering may not agree. Moreover, our management may use these proceeds in ways that do not improve our results of operations or enhance the value of our common stock. You will not have the opportunity, as part of your investment decision, to assess whether these proceeds are being used appropriately. Management's failure to use such funds effectively could have an adverse effect on our business, results of operations and financial condition. See "USE OF PROCEEDS."

Table of Contents

We may be impacted by changes in taxation requirements.

We are subject to income tax in U.S. federal, state and local jurisdictions. We are also subject to the examination of our tax returns and other tax matters by the Internal Revenue Service and other tax authorities and governmental bodies. Fluctuations in tax rates, changes in tax legislation or regulation or adverse outcomes of any such examinations could have a material adverse effect on our results of operations, financial condition and cash flows.

State law and provisions in our amended and restated articles of incorporation, as amended, or second amended and restated bylaws could make it more difficult for another company to purchase us, even though such a purchase may increase shareholder value.

State law and our amended and restated articles of incorporation, as amended ("articles of incorporation"), and second amended and restated bylaws may have the effect of discouraging, delaying or preventing a change in control or an unsolicited acquisition proposal that a shareholder might consider favorable, including a proposal that might result in the payment of a premium over the market price for the shares held by shareholders. For example, our articles of incorporation divide the board of directors into three classes of directors serving staggered three year terms with approximately one third of the board of directors elected at each annual meeting of shareholders. This classification of directors makes it more difficult for shareholders to change the composition of the board of directors. As a result, at least two annual meetings of shareholders would be required for the shareholders to change a majority of the directors, whether or not a change in the board of directors would be beneficial and whether or not a majority of shareholders believe that such a change would be desirable.

The Iowa Business Corporations Act (the "IBCA") permits our board to consider other factors beyond shareholder value in evaluating any proposal to acquire the Company. Such factors include considering our employees, suppliers, creditors, customers and the communities in which we and our subsidiaries operate. This provision may allow our board to reject an acquisition proposal even though the proposal provides the best value to our shareholders. Consequently, a takeover attempt may prove difficult, and shareholders may not realize the highest possible price for their securities.

We are also subject to the provisions of the IBCA referred to as the "business combinations with interested shareholders" provision. This provision prevents a corporation from engaging in any business combination with an "interested shareholder" (as defined therein) for a period of three years following the time that the shareholder became an interested shareholder, unless certain exemption requirements are met.

Risks Related to Our Business

Our strategic growth plans contemplate additional organic growth and potential growth through additional acquisitions, which exposes us to additional risks.

Our strategic growth plans contemplate additional organic growth and potential growth through additional acquisitions. To the extent that we are unable to increase loans through organic loan growth, or to identify and consummate attractive acquisitions, we may be unable to successfully implement our growth strategy, which could materially and adversely affect our financial condition and earnings.

We routinely evaluate opportunities to acquire additional financial institutions or branches or to open new branches. As a result, we regularly engage in discussions or negotiations that, if they were to result in a transaction, could have a material effect on our operating results and financial condition, including short- and long-term liquidity. Our acquisition activities could require us to use a substantial

Table of Contents

amount of common stock, cash, other liquid assets, and/or incur debt. Moreover, these types of expansions involve various risks, including:

Management of Growth. We may be unable to successfully:

maintain loan quality in the context of significant loan growth;

identify and expand into suitable markets;

obtain regulatory and other approvals necessary to consummate acquisitions or other expansion activities;

retain customers of businesses that we acquire;

attract sufficient deposits and capital to fund anticipated loan growth;

maintain adequate common equity and regulatory capital;

avoid diversion or disruption of our management and existing operations as well as those of the acquired institution;

maintain adequate management personnel and systems to oversee such growth;

maintain adequate internal audit, loan review and compliance functions; and

implement additional policies, procedures and operating systems required to support such growth.

Operating Results. There is no assurance that existing branches or future branches will maintain or achieve deposit levels, loan balances or other operating results necessary to avoid losses or produce profits. Our growth may entail growth in overhead expenses as we add new branches and staff. There are considerable costs involved in opening branches, and new branches generally do not generate sufficient revenues to offset their costs until they have been in operation for at least a year or more. Accordingly, any new branches we establish can be expected to negatively impact our earnings for some period of time until they reach certain economies of scale. Our historical results may not be indicative of future results or results that may be achieved, particularly if we continue to expand.

Failure to successfully address these and other issues related to our expansion could have a material adverse effect on our financial condition and results of operations, and could adversely affect our ability to successfully implement our business strategy.

Our operations in Florida carry additional risks.

The Bank operates two branches in Florida, one in Fort Myers and one in Naples. Our success in these markets significantly depends upon the growth in population, income levels, deposits and housing in these markets. In addition, the economies of these markets are dependent on, among other things, tourism. Should tourism levels decline, the local economies of these markets would be negatively impacted, and our results of operations could be materially and adversely affected.

The west coast of Florida has been and will continue to be susceptible to major hurricanes, floods, tornadoes, tropical storms, and other natural disasters and adverse weather. These natural disasters can disrupt our operations, cause widespread property damage, and severely depress the local economies in the markets in which we operate. Man-made disasters, like the 2010 Deepwater Horizon oil spill in the Gulf of Mexico, can also depress sectors that are critical to the economy in these markets, such as tourism and fishing, and other economic activity in the area. Any economic decline as a result of a natural disaster, adverse weather, oil spill or other man-made disaster can reduce the demand for

Edgar Filing: MidWestOne Financial Group, Inc. - Form 424B5

loans and our other products and services. In addition, the rates of delinquencies, foreclosures, bankruptcies and losses on loan portfolios may increase substantially, as uninsured property losses or sustained job

S-10

Table of Contents

interruption or loss may materially impair the ability of borrowers to repay their loans. Moreover, the value of real estate or other collateral that secures the loans could be materially and adversely affected by a disaster. A disaster could, therefore, result in decreased revenue and loan losses and materially and adversely affect our results of operations.

PRICE RANGE OF COMMON STOCK AND DIVIDENDS

Our common stock trades on The NASDAQ Global Select Market under the symbol "MOFG." On March 16, 2017, the last reported sale price of our common stock on The NASDAQ Global Select Market was \$36.75 per share. The following table provides the range of high and low sale prices per share during the periods indicated, as reported on The NASDAQ Global Select Market, as well as cash dividends declared.

| | High | Low | Cash Dividends Declared |
|--|----------|----------|-------------------------------|
| 2017 | | | |
| First Quarter (through March 16, 2017) | \$ 38.56 | \$ 33.96 | \$ 0.165 |
| 2016 | | | |
| Fourth Quarter | \$ 39.20 | \$ 27.93 | \$ 0.160 |
| Third Quarter | 30.74 | 26.50 | 0.160 |
| Second Quarter | 30.50 | 25.49 | 0.160 |
| First Quarter | 30.04 | 24.71 | 0.160 |
| 2015 | | | |
| Fourth Quarter | \$ 32.52 | \$ 28.06 | \$ 0.150 |
| Third Quarter | 34.04 | 28.43 | 0.150 |
| Second Quarter | 33.88 | 28.33 | 0.150 |
| First Quarter | 29.82 | 27.74 | 0.150 |

As of March 15, 2017, we had 464 shareholders of record of our common stock.

Dividends

We may pay dividends on our common stock as and when declared by our board of directors out of any funds legally available for the payment of such dividends, subject to any and all preferences and rights of any preferred stock or a series thereof and subject to the payment of interest on our junior subordinated debentures. The amount of dividend payable will depend upon our earnings and financial condition and other factors, including applicable governmental regulations and policies.

Our ability to pay dividends to our shareholders may be affected by both general corporate law considerations and policies of the Federal Reserve applicable to bank holding companies. As an Iowa corporation, we are subject to the limitations of Iowa law, which allows us to pay dividends unless, after such dividend, (i) we would not be able to pay our debts as they become due in the usual course of business or (ii) our total assets would be less than the sum of our total liabilities plus any amount that would be needed if we were to be dissolved at the time of the dividend payment, to satisfy the preferential rights upon dissolution of shareholders whose rights are superior to the rights of the shareholders receiving the distribution.

Table of Contents

As a general matter, the Federal Reserve has indicated that the board of directors of a bank holding company should eliminate, defer or significantly reduce dividends to shareholders if: (i) the company's net income available to shareholders for the past four quarters, net of dividends previously paid during that period, is not sufficient to fully fund the dividends; (ii) the prospective rate of earnings retention is inconsistent with the company's capital needs and overall current and prospective financial condition; or (iii) the company will not meet, or is in danger of not meeting, its minimum regulatory capital adequacy ratios. The Federal Reserve also possesses enforcement powers over bank holding companies and their non-bank subsidiaries to prevent or remedy actions that represent unsafe or unsound practices or violations of applicable statutes and regulations. Among these powers is the ability to proscribe the payment of dividends by banks and bank holding companies. In addition, under the Basel III regulatory capital reforms, institutions that seek the freedom to pay dividends will have to maintain 2.5% in Common Equity Tier 1 Capital attributable to the capital conservation buffer to be phased in over three years beginning in 2016.

The primary source of funds for the Company is dividends from the Bank. Under the Iowa Banking Act, Iowa-chartered banks, such as the Bank, generally may pay dividends only out of undivided profits. In addition, the Iowa Division of Banking may restrict the declaration or payment of a dividend by an Iowa-chartered bank, such as the Bank. The payment of dividends by any FDIC-insured institution is affected by the requirement to maintain adequate capital pursuant to applicable capital adequacy guidelines and regulations, and a FDIC-insured institution generally is prohibited from paying any dividends if, following payment thereof, the institution would be undercapitalized. The Bank exceeded its capital requirements under applicable guidelines as of December 31, 2016.

Notwithstanding the availability of funds for dividends, however, the FDIC and the respective state banking regulator may prohibit the payment of dividends by the Bank if either or both determine such payment would constitute an unsafe or unsound practice.

USE OF PROCEEDS

We estimate that the net proceeds to us from the offering, after deducting estimated underwriting discounts and commissions but before deducting estimated offering expenses, will be approximately \$16.44 million, or approximately \$24.66 million if the underwriter exercises its option to purchase additional shares from us in full. We intend to use the net proceeds from this offering for general corporate purposes, including potential future acquisitions and to support organic growth. We currently have no definitive agreements regarding any future acquisitions.

We will not receive any proceeds from the sale of the shares by the selling shareholder.

CAPITALIZATION

You should read this information together with the consolidated historical financial statements and the related notes thereto incorporated by reference into this prospectus supplement and the accompanying prospectuses.

The following table sets forth our cash and cash equivalents and capitalization, including regulatory capital ratios, on a consolidated basis, as of December 31, 2016, on an actual basis and on an as adjusted basis for this offering after deducting the underwriting discount and offering expenses payable by us, including the payment of certain offering expenses of the selling shareholder as well as the payment of \$240,000 to the selling shareholder as reimbursement of a portion of the underwriting discounts and commissions with respect to the shares being sold by the selling shareholder, and after

Table of Contents

taking into account the reimbursement of up to \$120,000 of our expenses by the underwriter (and assuming no exercise of the underwriter's option):

| (Dollars in thousands, except per share amounts) | As of December 31, 2016 | |
|---|-------------------------|----------------|
| | Actual | As Adjusted |
| Cash and cash equivalents | | |
| Cash and due from banks | \$ 41,464 | \$ 57,409 |
| Interest-bearing deposits in banks | 1,764 | 1,764 |
| Total cash and cash equivalents | 43,228 | 59,173 |
| Debt: | | |
| Federal Home Loan Bank borrowings | 115,000 | 115,000 |
| Junior subordinated notes issued to capital trusts | 23,692 | 23,692 |
| Long-term debt | 17,500 | 17,500 |
| Total debt | 156,192 | 156,192 |
| Shareholders' equity: | | |
| Common stock, par value \$1.00 per share, 15,000,000 shares authorized; issued and outstanding 11,436,360 shares actual ⁽¹⁾ , 11,936,360 shares as adjusted ⁽²⁾ | 11,713 | 12,213 |
| Other shareholders' equity | 293,743 | 309,188 |
| Total shareholders' equity | 305,456 | 321,401 |
| Capital Ratios: | | |
| Common equity Tier 1 ratio | 9.75% | 10.41% |
| Leverage ratio | 8.75% | 9.24% |
| Tier 1 capital to risk-weighted assets | 10.73% | 11.39% |
| Total capital to risk-weighted assets | 11.65% | 12.31% |

(1) Of this number, 84,500 shares issuable under outstanding equity awards are excluded.

(2) Our amended and restated articles of incorporation, as amended authorize us to issue up to 500,000 shares of our preferred stock, of which no shares were issued or outstanding as of December 31, 2016.

DESCRIPTION OF CAPITAL STOCK

Our articles of incorporation authorize the issuance of capital stock consisting of 15,000,000 shares of common stock, par value \$1.00 per share, and 500,000 shares of preferred stock, no par value per share (16,000 of which are designated as Fixed Rate Cumulative Perpetual Preferred Stock, Series A, but no such shares are currently outstanding). See "DESCRIPTION OF CAPITAL STOCK" on page 3 of the Primary Registration Statement, "DESCRIPTION OF CAPITAL STOCK" on page 3 of the Secondary Registration Statement, and the information incorporated by reference in this prospectus supplement and the accompanying prospectuses for additional information regarding our common stock.

SELLING SHAREHOLDER

Edgar Filing: MidWestOne Financial Group, Inc. - Form 424B5

On May 1, 2015, we issued 2,723,083 shares of common stock to the Trust as merger consideration in connection with the Company's merger with Central Bancshares, Inc. Pursuant to the Secondary Registration Statement, we registered all of the Trust's shares.

S-13

Table of Contents

The following table sets forth:

the name of the selling shareholder;

the number and percent of shares of our common stock that the selling shareholder beneficially owned prior to the offering for resale of the shares under this prospectus supplement;

the number of shares of our common stock that are being offered for resale for the account of the selling shareholder under this prospectus supplement; and

the number and percent of shares of our common stock to be beneficially owned by the selling shareholder after the offering if all of the shares offered by the selling shareholder and by us under this prospectus supplement are sold.

We have determined beneficial ownership in accordance with SEC rules. The percentage of shares beneficially owned prior to the offering is based on 11,459,521 shares of our common stock issued and outstanding as of March 15, 2017. The number and percent of shares beneficially owned by the selling shareholder after the offering assume no exercise by the underwriter of its option to purchase additional shares from the Company.

| Selling shareholder | Shares of Common Stock Owned Prior to the Offering | | Shares of Common Stock that may be Sold in the Offering | Shares of Common Stock Owned Following the Offering | |
|--|--|-------|---|---|------|
| | Number | % | Number | Number | % |
| John M. Morrison Revocable Trust #4 3093 Fort Charles Drive Naples, Florida 34102(1) | 2,245,193 | 19.6% | 2,000,000 | 245,193 | 2.1% |

- (1) John M. Morrison, a director of the Company, is the trustee of the John M. Morrison Revocable Trust #4 and has voting and investment power over the shares beneficially owned by the John M. Morrison Revocable Trust #4. Mr. Morrison also directly owns 500 shares of our common stock, and Mr. Morrison and his spouse share investment direction and voting power over 185,700 shares in a private charitable foundation over which Mr. Morrison and his spouse share investment direction and voting power.

UNDERWRITING

We and the selling shareholder are offering shares of our common shares described in this prospectus supplement in an underwritten offering. Subject to the terms and conditions set forth in the underwriting agreement between us, the selling shareholder and Keefe, Bruyette & Woods, Inc., as underwriter, we and the selling shareholder have agreed to sell to the underwriter, and the underwriter has agreed to purchase from us and the selling shareholder, 2,500,000 shares of our common stock.

The underwriter's obligation to purchase the shares included in this offering depends on the satisfaction of the conditions contained in the underwriting agreement, including:

the representations and warranties made by us and the selling shareholder to the underwriter are true;

there is no material adverse change in the financial markets; and

we and the selling shareholder deliver customary closing documents and legal opinions to the underwriter.

Edgar Filing: MidWestOne Financial Group, Inc. - Form 424B5

The underwriter proposes to offer the shares from time to time for sale in one or more transactions on The NASDAQ Global Select Market, in the over-the-counter market, through

S-14

Table of Contents

negotiated transactions or otherwise at market prices prevailing at the time of sale, at prices related to prevailing market prices or at negotiated prices, subject to receipt and acceptance by the underwriter and subject to its right to reject any order in whole or in part.

Subject to the conditions contained in the underwriting agreement, the underwriter is committed to purchase and pay for all shares offered by this prospectus supplement, if any such shares are purchased. The shares are being offered by the underwriter, subject to prior sale, when, as and if delivered to and accepted by them, subject to approval of certain legal matters by counsel for the underwriter and other conditions. The underwriter reserves the right to withdraw, cancel or modify this offering and to reject orders in whole or in part.

Discounts and Expenses

Common shares sold by the underwriter to the public will initially be offered at the public offering price set forth on the cover of this prospectus supplement and to certain selected dealers at this price, less a concession not in excess of \$0.822 per share. The underwriter may allow, and any selected dealers may reallocate, a concession not in excess of \$0.822 per share to certain brokers and dealers.

If all of the common shares are not sold at the public offering price, the underwriter may change the offering price and the other selling terms.

The following table shows the price per share and total public offering price, underwriting discount and proceeds before expenses to us and to the selling shareholder. We have agreed to pay up to \$240,000 of the aggregate underwriting discount on the shares being sold by the selling shareholder as well as the fees of its counsel. The information assumes either no exercise or full exercise by the underwriter of its over-allotment option to purchase additional common shares from us:

| | Per Share | No Exercise | Full Exercise |
|----------------------------------|-----------|---------------|---------------|
| Public offering price | \$ 34.25 | \$ 85,625,000 | \$ 94,187,500 |
| Underwriting discount | 1.37 | 3,425,000 | 3,767,500 |
| Proceeds to us (before expenses) | 32.88 | 16,440,000 | 24,660,000 |
| Proceeds to selling shareholder | 32.88 | 65,760,000 | 65,760,000 |

We estimate that our share of the total offering expenses, including registration and filing fees, printing fees, legal and accounting expenses, the underwriting discount on the shares being sold by the selling shareholder and the fees of counsel to the selling shareholder, but excluding underwriting discounts on the shares being sold by us, will be approximately \$495,000. Additionally, the underwriter has agreed to reimburse us for up to \$120,000 of our expenses relating to the offering of the shares being sold hereunder by us and the selling shareholder.

Option to Purchase Additional Shares

We have granted the underwriter an option to buy up to 250,000 additional common shares, at the public offering price less underwriting discounts. The underwriter may exercise this option, in whole or from time to time in part, solely for the purpose of covering over-allotments, if any, made in connection with this offering. The underwriter will have 30 days from the date of this prospectus supplement to exercise this option.

Indemnification and Contribution

We and the selling shareholder have agreed to indemnify the underwriter, its affiliates and persons who control the underwriter against certain liabilities, including liabilities under the Securities Act, and to contribute to payments that the underwriter and its affiliates may be required to make in respect of these liabilities.

Table of Contents

Lock-Up Agreements

We have agreed that for a period of 90 days from the date of this prospectus supplement, we will not, without the prior written consent of Keefe, Bruyette & Woods, Inc., sell, offer to sell or otherwise dispose of or hedge any of our common shares or any securities convertible into or exercisable or exchangeable for our common shares. Our directors and certain of our officers have agreed that for a period of 60 days from the date of this prospectus supplement, neither our executive officers nor directors will, without the prior written consent of Keefe, Bruyette & Woods, Inc., sell, offer to sell or otherwise dispose of or hedge any of our common shares or any securities convertible into or exercisable or exchangeable for our common shares. These lock-up agreements contain exceptions, including for certain gifts, estate planning transactions, lending transactions, and exercises of currently outstanding stock options. Keefe, Bruyette & Woods, Inc. in its sole discretion, may release the securities subject to these lock-up agreements at any time without notice.

Price Stabilization and Short Positions

In connection with this offering, the underwriter may engage in activities that stabilize, maintain or otherwise affect the price of our common stock, including:

stabilizing transactions;

short sales; and

purchases to cover positions created by short sales.

Stabilizing transactions consist of bids or purchases made for the purpose of preventing or retarding a decline in the market price of our common stock while this offering is in progress. These transactions may also include making short sales of our common stock, which involve the sale by the underwriter of a greater number of shares of common stock than they are required to purchase in this offering, and purchases of shares of common stock to cover positions created by short sales. The underwriter may close out any short position by purchasing shares in the open market, and must close out any "naked short" position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriter is concerned that there may be downward pressure on the price of the common stock in the open market that could adversely affect investors who purchased in this offering.

As a result of these activities, the price of our common stock may be higher than the price that otherwise might exist in the open market. If these activities are commenced, the underwriter may discontinue them at any time. The underwriter may carry out these transactions on The NASDAQ Global Select Market, in the over-the-counter market or otherwise.

Passive Market Making

In connection with this offering, the underwriter and selected dealers, if any, who are qualified market makers on The NASDAQ Global Select Market, may engage in passive market making transactions in our common shares on The NASDAQ Global Select Market in accordance with Rule 103 of Regulation M under the Exchange Act. Rule 103 permits passive market making activity by the participants in our offering of common shares. Passive market making may occur before the pricing of our offering, or before the commencement of offers or sales of our common shares. Each passive market maker must comply with applicable volume and price limitations and must be identified as a passive market maker. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for the security. If all independent bids are lowered below the bid of the passive market maker, however, the bid must then be lowered when purchase limits are exceeded. Net purchases by a passive market maker on each day are limited to a specified percentage of the passive market maker's average daily trading volume in the common shares during a specified period and must

Table of Contents

be discontinued when that limit is reached. Passive market making may cause the price of our common shares to be higher than the price that otherwise would exist in the open market in the absence of those transactions. The underwriter and other dealers are not required to engage in passive market making and may end passive market making activities at any time.

Our Relationship with the Underwriter

The underwriter and its affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment advisory, investment research, principal investment, hedging, financing, loan referrals, valuation and brokerage activities. From time to time, the underwriter and/or its affiliates has directly and indirectly engaged, and may in the future engage, in various financial advisory, investment banking and commercial banking services with us and our affiliates, for which it received or paid, or may receive or pay, customary compensation, fees and expense reimbursement. In the ordinary course of its various business activities, the underwriter and/or its affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for its own account and for the accounts of its customers, and those investment and securities activities may involve securities and/or instruments of ours. The underwriter and/or its affiliates may also make investment recommendations and/or publish or express independent research views in respect of those securities or instruments and may at any time hold, or recommend to clients that they acquire, long and/or short positions in those securities and instruments.

Electronic Distribution

A prospectus and prospectus supplement in electronic format may be made available by e-mail or on the websites or through online services maintained by the underwriter or its affiliates. In those cases, prospective investors may view offering terms online and may be allowed to place orders online. The underwriter may agree with us to allocate a specific number of shares for sale to online brokerage account holders. Any such allocation for online distributions will be made by the underwriter on the same basis as other allocations. Other than this prospectus supplement and accompanying prospectus in electronic format, the information on the underwriter's website and any other information contained on any other website maintained by the underwriter is not part of this prospectus supplement or the accompanying prospectus, has not been approved and/or endorsed by the underwriter or us and should not be relied upon by investors.

Other Considerations

It is expected that delivery of the shares will be made against payment therefor on or about the date specified on the cover page of this prospectus supplement. Under Rule 15c6-1 promulgated under the Exchange Act, trades in the secondary market generally are required to settle in three business days, unless the parties to any such trade expressly agree otherwise.

Listing

Our common shares are listed on The NASDAQ Global Select Market under the symbol "MOFG."

Table of Contents

LEGAL MATTERS

The validity of the shares of common stock being offered by this prospectus supplement and the accompanying prospectuses will be passed upon by our counsel, Barack Ferrazzano Kirschbaum & Nagelberg LLP, Chicago, Illinois, and certain legal matters in connection with the offering of shares by the selling shareholder will be passed upon by counsel for the selling shareholder, Fredrikson & Byron, P.A., Minneapolis, Minnesota. Nelson Mullins Riley & Scarborough, LLP, Atlanta, Georgia, will act as counsel to the underwriter.

EXPERTS

The consolidated financial statements of MidWestOne Financial Group, Inc. as of and for the three years ended December 31, 2016, and management's assessment of the effectiveness of internal control over financial reporting as of December 31, 2016, have been incorporated by reference in this prospectus supplement in reliance upon the reports of RSM US LLP, an independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing.

S-18

Table of Contents

PROSPECTUS

MIDWESTONEFINANCIAL GROUP, INC.

2,723,083 Shares of Common Stock

This prospectus relates to the offer and sale from time to time by the shareholder named in this prospectus (the "Selling Shareholder") of 2,723,083 shares of our common stock, \$1.00 par value per share. In this prospectus, the 2,723,083 shares of our common stock offered by the Selling Shareholder pursuant to this prospectus are referred to as the "Offered Shares." The Offered Shares were originally issued and sold to the Selling Shareholder on May 1, 2015, in a transaction exempt from the registration requirements of the Securities Act of 1933, as amended (the "Securities Act"), under Section 4(a)(2) thereof.

All of the Offered Shares offered by this prospectus are being sold by the Selling Shareholder. It is anticipated that the Selling Shareholder will sell the Offered Shares from time to time in one or more transactions, in negotiated transactions or otherwise, at prevailing market prices or at prices otherwise negotiated. We do not know when or in what amounts the Selling Shareholder may offer the Offered Shares for sale. The Selling Shareholder might not sell all of the Offered Shares offered by this prospectus. We will not receive any proceeds from the sales of the Offered Shares by the Selling Shareholder. We have agreed to pay all fees and expenses incurred by us incident to the registration of the Offered Shares, including Securities and Exchange Commission ("SEC") filing fees. The Selling Shareholder will be responsible for all costs and expenses in connection with its sale of the Offered Shares, including brokerage commissions or dealer discounts.

Our common stock is listed on the NASDAQ Global Select Market under the ticker symbol "MOFG." On November 9, 2015, the last reported sale price of our common stock as reported on the NASDAQ Global Select Market was \$31.49 per share. You are encouraged to obtain current quotations of the price of our common stock.

Our principal executive offices are located at 102 South Clinton Street, Iowa City, Iowa 52240, and our telephone number is (319) 356-5800.

Investing in our securities involves risks. You should refer to the section entitled "Risk Factors" on page 1 of this prospectus, as well as the risk factors included in certain of our periodic reports and other information that we file with the SEC and carefully consider that information before buying our securities.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

These securities are not savings accounts, deposits or other obligations of any bank and are not insured or guaranteed by the Federal Deposit Insurance Corporation or any other governmental agency.

The date of this prospectus is November 10, 2015.

Table of Contents

TABLE OF CONTENTS

| | |
|--|-----------|
| <u>ABOUT THIS PROSPECTUS</u> | <u>1</u> |
| <u>RISK FACTORS</u> | <u>1</u> |
| <u>MIDWESTONE FINANCIAL GROUP, INC.</u> | <u>2</u> |
| <u>SUMMARY OF MERGER TRANSACTION</u> | <u>2</u> |
| <u>USE OF PROCEEDS</u> | <u>3</u> |
| <u>DESCRIPTION OF CAPITAL STOCK</u> | <u>3</u> |
| <u>PLAN OF DISTRIBUTION</u> | <u>6</u> |
| <u>SELLING SHAREHOLDER</u> | <u>9</u> |
| <u>SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS</u> | <u>10</u> |
| <u>WHERE YOU CAN FIND ADDITIONAL INFORMATION</u> | <u>11</u> |
| <u>DOCUMENTS INCORPORATED BY REFERENCE</u> | <u>11</u> |
| <u>LEGAL MATTERS</u> | <u>12</u> |
| <u>EXPERTS</u> | <u>12</u> |

Table of Contents

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we have filed with the SEC using a shelf registration process on Form S-3. Under the shelf registration rules, using this prospectus, the Selling Shareholder may sell from time to time, in one or more offerings, on a continuous or delayed basis, the securities described in this prospectus. The registration statement that contains this prospectus (including the exhibits to the registration statement) contains additional information about us and the securities offered under this prospectus. You can read that registration statement at the SEC website at <http://www.sec.gov> or at the SEC office mentioned under the heading "WHERE YOU CAN FIND ADDITIONAL INFORMATION."

This prospectus provides you with a general description of the securities offered. We may provide one or more prospectus supplements containing specific information about the terms of a particular offering by the Selling Shareholder. The prospectus supplements may also add, update or change information contained in this prospectus. If information in the applicable prospectus supplement is inconsistent with the information in this prospectus, then the information in such prospectus supplement will apply and will supersede the information in this prospectus. You should carefully read both this prospectus and any prospectus supplement, together with additional information described under the heading "WHERE YOU CAN FIND ADDITIONAL INFORMATION," before you invest.

You should rely only on the information contained or incorporated by reference in this prospectus and any prospectus supplement. We have not authorized anyone to provide you with different or additional information. If anyone provides you with different or additional information, you should not rely on it.

You should not assume that the information in this prospectus or any accompanying prospectus supplement or any document incorporated by reference is accurate as of any date other than the date of that document.

Neither we nor anyone acting on our behalf is making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted.

In this prospectus, the terms "MidWestOne," "Company," "we," "us," and "our" refer to MidWestOne Financial Group, Inc. and its consolidated subsidiaries, collectively, unless the context requires otherwise. References in this prospectus to "MidWestOne Bank" mean MidWestOne Bank, an Iowa state-chartered bank with its main office in Iowa City, Iowa, and references to "Central Bank" mean Central Bank, a Minnesota state-chartered bank with its main office in Golden Valley, Minnesota. References to "the Banks" mean MidWestOne Bank and Central Bank.

RISK FACTORS

An investment in our securities involves a high degree of risk. Before making an investment decision, you should carefully read and consider the risk factor described below and the risk factors incorporated by reference in this prospectus, as well as those contained in any applicable prospectus supplement, as the same may be updated from time to time by our future filings with the SEC under the Securities Exchange Act of 1934, as amended (the "Exchange Act"). You should also refer to other information contained in or incorporated by reference in this prospectus and any applicable prospectus supplement, including our financial statements and the related notes incorporated by reference herein. Additional risks and uncertainties not known to us or that we deem immaterial may also materially and adversely affect our business and operations.

Table of Contents

Sales of large amounts of our common stock, or the perception that sales could occur, may depress our stock price.

Even if our business is doing well, the market price of our common stock could drop if our existing shareholders, including the Selling Shareholder, decide to sell their shares. As of October 29, 2015, the Selling Shareholder, the John M. Morrison Revocable Trust #4, owned approximately 23.9% of the outstanding shares of our common stock. The shares offered hereby represent all of the shares that the Selling Shareholder owns. The market price could drop significantly if the Selling Shareholder sells all of its shares in the future or other investors perceive sales to be imminent. Our stock price may suffer a significant decline if there were to be a sudden increase in the number of shares sold in the public market or market perception that the increased number of shares available for sale will exceed the demand for our common stock.

MIDWESTONE FINANCIAL GROUP, INC.

We are a financial holding company headquartered in Iowa City, Iowa. Our principal assets are the shares of stock of our bank subsidiaries, MidWestOne Bank and Central Bank, and our nonbank subsidiary, MidWestOne Insurance Services, Inc. As of September 30, 2015, we had total assets of approximately \$3.0 billion, total deposits of approximately \$2.5 billion and total shareholders' equity of approximately \$291 million.

We conduct a full-service community banking, trust and insurance agency business through our wholly-owned subsidiaries. MidWestOne Bank is an Iowa state-chartered bank headquartered in Iowa City, Iowa, with office locations in central and east-central, Iowa. Central Bank is a Minnesota state-chartered bank headquartered in Golden Valley, Minnesota, with office locations in Minnesota, Wisconsin and Florida. MidWestOne Insurance Services, Inc., headquartered in Oskaloosa, Iowa, is a full-service insurance agency that offers a wide range of insurance plans to individuals and businesses through six offices located in central and east-central Iowa.

Our full-service banking businesses include the customary consumer and commercial products and services that banks provide. Deposit products offered include checking and other demand deposit accounts, NOW accounts, savings accounts, money market accounts, certificates of deposit, individual retirement accounts and other time deposits. MidWestOne Bank and Central Bank offer commercial and industrial, agricultural, real estate mortgage and consumer loans. Other products and services include debit cards, automated teller machines, on-line banking, mobile banking, and safe deposit boxes. Our principal service consists of making loans to and accepting deposits from individuals, businesses, governmental units and institutional customers. MidWestOne Bank also has a trust and investment department through which it offers a variety of trust and investment services, including administering estates, personal trusts, conservatorships, pension and profit-sharing funds and providing property management, farm management, custodial, financial planning, investment management and retail brokerage services (the latter of which is provided through an agreement with a third-party registered broker-dealer).

Our principal executive offices are located at 102 South Clinton Street, Iowa City, Iowa 52240, and our phone number is (319) 356-5800.

Additional information about us is included in our filings with the SEC, which are incorporated by reference into this prospectus. See "WHERE YOU CAN FIND ADDITIONAL INFORMATION" and "DOCUMENTS INCORPORATED BY REFERENCE" in this prospectus.

SUMMARY OF MERGER TRANSACTION

On May 1, 2015, the Company consummated the merger with Central Bancshares, Inc. (the "Merger"). As part of the merger consideration, the Selling Shareholder, which was the sole

Table of Contents

shareholder of Central Bancshares, Inc., received 2,723,083 shares of our common stock. The Selling Shareholder is an accredited investor.

In connection with the Merger, we entered into a Shareholder Agreement (the "Shareholder Agreement") with the Selling Shareholder pursuant to which we agreed to file with the SEC a registration statement covering the resale of the Offered Shares issued to the Selling Shareholder in connection with the Merger. We have filed the registration statement of which this prospectus is a part to register the resale of the Offered Shares as required by the Shareholder Agreement. See "DESCRIPTION OF CAPITAL STOCK Common Stock Shareholder Agreement" for more information about the Shareholder Agreement.

USE OF PROCEEDS

We will not receive any proceeds from the sales of the Offered Shares by the Selling Shareholder.

DESCRIPTION OF CAPITAL STOCK

General

We have the authority to issue 15,000,000 shares of common stock, par value \$1.00 per share, and 500,000 shares of preferred stock, no par value per share. As of September 30, 2015, we had 11,406,431 shares of common stock and no shares of preferred stock issued and outstanding.

The following description of the material terms of our capital stock is only a summary. This summary does not purport to be a complete description of the terms and conditions of our capital stock in all respects and is subject to and qualified in its entirety by reference to our amended and restated articles of incorporation and amended and restated bylaws, each of which is incorporated herein by reference, as well as the Iowa Business Corporation Act ("BCA") and any other documents referenced in the summary and from which the summary is derived.

Common Stock

General. Under our amended and restated articles of incorporation, we have the authority to issue 15,000,000 shares of our common stock, par value \$1.00 per share, of which 11,406,431 shares were issued and outstanding as of September 30, 2015. As of September 30, 2015, there were 85,803 shares of our common stock underlying options and restricted stock units that have been awarded or granted pursuant to our equity incentive plans and 461,060 shares of our common stock reserved for future awards or grants under our equity incentive plans. Our common stock is listed for trading on the NASDAQ Global Select Market under the symbol "MOFG."

Each share of our common stock has the same relative rights and is identical in all respects to every other share of our common stock. Our shares of common stock are neither redeemable nor convertible, and the holders thereof have no preemptive or subscription rights to purchase any of our securities, except as set forth below under " Shareholder Agreement."

Voting Rights. Each outstanding share of our common stock is entitled to one vote on all matters submitted to a vote of shareholders. There is no cumulative voting in the election of directors.

Liquidation Rights. Upon our liquidation, dissolution or winding up, the holders of our common stock are entitled to receive, *pro rata*, our assets which are legally available for distribution, after payment of all debts and other liabilities and subject to the prior rights of any holders of preferred stock then outstanding.

Dividends Payable on Shares of Common Stock. In general, the holders of outstanding shares of our common stock are entitled to receive dividends out of assets legally available therefor at such times

Table of Contents

and in such amounts as our board of directors may from time to time determine. The ability of our board of directors to declare and pay dividends on our common stock may be affected by both general corporate law considerations and policies of the Board of Governors of the Federal Reserve (the "Federal Reserve") applicable to bank holding companies. As an Iowa corporation, we are subject to the limitations of Iowa law, which allows us to pay dividends unless, after such dividend: (i) we would not be able to pay our debts as they become due in the usual course of business; or (ii) our total assets would be less than the sum of our total liabilities plus any amount that would be needed, if we were to be dissolved at the time of the dividend payment, to satisfy the preferential rights upon dissolution of our shareholders whose rights are superior to the rights of our shareholders receiving the distribution. As a bank holding company, our ability to declare and pay dividends is also subject to the guidelines of the Federal Reserve regarding capital adequacy and dividends. The Federal Reserve guidelines generally require us to review the effects of the cash payment of dividends on our common stock and other Tier 1 capital instruments in light of our earnings, capital adequacy and financial condition. As a general matter, the Federal Reserve indicates that the board of directors of a bank holding company should eliminate, defer or significantly reduce the dividends if: (i) the company's net income available to shareholders for the past four quarters, net of dividends previously paid during that period, is not sufficient to fully fund the dividends; (ii) the prospective rate of earnings retention is inconsistent with the company's capital needs and overall current and prospective financial condition; or (iii) the company will not meet, or is in danger of not meeting, its minimum regulatory capital adequacy ratios. The Federal Reserve also possesses enforcement powers over bank holding companies and their nonbank subsidiaries to prevent or remedy actions that represent unsafe or unsound practices or violations of applicable statutes and regulations. Among these powers is the ability to proscribe the payment of dividends by banks and bank holding companies.

Most of our revenues available for the payment of dividends derive from amounts paid to us by the Banks. There are various statutory limitations that limit the ability of the Banks to pay dividends to us. *MidWestOne* Bank is an Iowa state-chartered bank and is subject to the laws and regulations of the Iowa Superintendent of Banking and to the regulations of the Federal Deposit Insurance Corporation (the "FDIC"). Central Bank is a Minnesota state-chartered bank and is subject to the laws and regulations of the Minnesota Department of Commerce and to the regulations of the FDIC. If a bank's primary banking regulator determines that the bank is engaged or is about to engage in an unsafe or unsound banking practice, the regulator may require, after notice and hearing, that the bank cease and desist from such practice. Depending on the financial condition of the bank, an unsafe or unsound practice could include the payment of dividends. In particular, the federal banking agencies have indicated that paying dividends that deplete a bank's capital base to an inadequate level would be an unsafe and unsound banking practice.

Under the Iowa Banking Act, Iowa state-chartered banks, such as *MidWestOne* Bank, generally may pay dividends only out of undivided profits. In addition, the Iowa Superintendent of Banking may restrict the declaration or payment of a dividend by an Iowa state-chartered bank.

Under the Minnesota Statutes, provided that it has established a surplus fund equal to at least 50% of its capital stock, the board of directors of a Minnesota state-chartered bank, such as Central Bank, may declare dividends out of net profits for the dividend period as they deem expedient, subject to the approval of the Minnesota Department of Commerce. Any remaining net profits for the dividend period will be available for the declaration of dividends for up to three subsequent annual dividend periods.

Furthermore, the payment of dividends by any financial institution is affected by the requirement to maintain adequate capital pursuant to applicable capital adequacy guidelines and regulations, and a financial institution generally is prohibited from paying any dividends if, following payment thereof, the institution would be undercapitalized. Even notwithstanding the availability of funds for dividends, the FDIC may prohibit the payment of any dividends by an insured bank, such as the Banks, if the FDIC determines such payment would constitute an unsafe or unsound practice.

Table of Contents

Shareholder Agreement. In connection with the merger of the Company with Central Bancshares, Inc., which was consummated on May 1, 2015, we entered into the Shareholder Agreement, dated November 20, 2014, with Riverbank Insurance Center, Inc., the holder of all outstanding Class A units (the "Insurance Agency Units") of Central Insurance Agency, LLC ("Insurance Agency Owner"), CBS, LLC ("TruPS Holder"), the John M. Morrison Revocable Trust #4 (the Selling Shareholder) and John M. Morrison, the trustee of the Selling Shareholder. Among other things, the Shareholder Agreement provides that: (i) the Selling Shareholder, Insurance Agency Owner, TruPS Holder and Mr. Morrison are subject to certain customary "standstill" provisions and a requirement that such parties vote their shares of our common stock in accordance with the terms of the Shareholder Agreement with respect to various matters for certain periods of time; (ii) the Selling Shareholder and Mr. Morrison are entitled to certain preemptive rights with respect to our securities until the earlier of November 20, 2017 and the date on which they beneficially own less than 10% of our common stock; (iii) the Selling Shareholder, Insurance Agency Owner, TruPS Holder and Mr. Morrison are subject to a general prohibition on the sale or transfer of shares of our common stock until May 1, 2016, except, among other things, if such shares are sold pursuant to a registration under the Securities Act; and (iv) after October 28, 2015, the Selling Shareholder is entitled to certain customary registration rights. The registration statement of which this prospectus is a part has been filed with the SEC pursuant to the exercise by the Selling Shareholder of the registration rights described in (iv) above. Although the Shareholder Agreement contemplated that the Company would acquire the Insurance Agency Units, representing 75% of the outstanding units of Central Insurance Agency, LLC, for \$2.6 million at or prior to the closing of the merger, the parties have agreed not to enter into such transaction, and the Insurance Agency Units have been sold to a third party.

The above description of the Shareholder Agreement is only a summary and does not purport to be complete. You must review the entire agreement for a full understanding of the terms of these securities. See "WHERE YOU CAN FIND ADDITIONAL INFORMATION" for information on how to obtain copies.

Preferred Stock

General. We may issue up to 500,000 shares of preferred stock, no par value per share, from time to time in one or more series. Our board of directors, without further approval of the shareholders, has the authority to fix the dividend rights and terms, conversion rights, voting rights, redemption rights and terms, liquidation preferences, sinking funds and any other rights, preferences, privileges and restrictions applicable to each series of preferred stock. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes, could, among other things, adversely affect the voting power of the holders of our common stock.

Anti-Takeover Provisions.

General. Our amended and restated articles of incorporation and amended and restated bylaws may have the effect of discouraging, delaying or preventing a change in control or an unsolicited acquisition proposal that a shareholder might consider favorable, including a proposal that might result in the payment of a premium over the market price for the shares held by shareholders. These provisions are summarized in the following paragraphs.

Authorized Shares of Capital Stock. Authorized but unissued shares of our common stock and preferred stock under our amended and restated articles of incorporation could (within the limits imposed by applicable law and NASDAQ Marketplace Rules) be issued in one or more transactions that could make a change of control of us more difficult, and therefore more unlikely. The additional authorized shares could be used to discourage persons from attempting to gain control of us by diluting the voting power of shares then outstanding or increasing the voting power of persons who would support the board of directors in a potential takeover situation, including by preventing or delaying a

Table of Contents

proposed business combination that is opposed by the board of directors although perceived to be desirable by some shareholders.

Limitations on Right to Call Special Meetings; Shareholder Proposal Notice Requirements. Under our amended and restated bylaws, a special meeting of our shareholders may be called only by: (i) the Chairman of our board of directors, our Chief Executive Officer or our President; or (ii) in accordance with Section 490.702 of the IBCA which requires written demand by shareholders owning at least 50% of the total voting power of the outstanding stock entitled to vote on the issue proposed to be considered at the special meeting. Additionally, our amended and restated bylaws require that shareholder proposals meet certain advanced notice and minimum informational requirements. These provisions could have the effect of delaying until the next annual shareholders' meeting shareholder actions which are favored by the holders of a majority of our outstanding voting securities.

State Anti-Takeover Laws. The IBCA contains an anti-takeover provision referred to as the "business combinations with interested shareholders" provision. This provision prevents a corporation from engaging in any business combination with an "interested shareholder" (as defined in the IBCA) for a period of three years following the time that the shareholder became an interested shareholder, unless one of the following conditions applies: (i) prior to the time that the shareholder became an interested shareholder, the board of directors of the corporation approved either the business combination or the transaction that resulted in the shareholder becoming an interested shareholder; (ii) upon consummation of the transaction which resulted in the shareholder becoming an interested shareholder, the interested shareholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced; or (iii) at or subsequent to the time the shareholder became an interested shareholder, the business combination is approved by the board of directors and authorized at an annual or special meeting of shareholders by the affirmative vote of at least 66²/₃% of the outstanding voting stock that is not owned by the interested shareholder.

PLAN OF DISTRIBUTION

We are registering the Offered Shares issued to the Selling Shareholder to permit the resale of these Offered Shares by the holders of the Offered Shares from time to time after the date of this prospectus. We will not receive any of the proceeds from the sale by the Selling Shareholder of the Offered Shares. We will bear all fees and expenses incident to our obligation to register the Offered Shares.

The Selling Shareholder may sell all or a portion of the Offered Shares beneficially owned by it and offered hereby from time to time directly or through one or more underwriters, broker-dealers or agents. If the Offered Shares are sold through underwriters or broker-dealers, the Selling Shareholder will be responsible for underwriting discounts or commissions or agent's commissions. The Offered Shares may be sold on any national securities exchange or quotation service on which the securities may be listed or quoted at the time of sale, in the over-the-counter market or in transactions otherwise than on these exchanges or systems or in the over-the-counter market and in one or more transactions at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale, or at negotiated prices. These sales may be effected in transactions, which may involve crosses or block transactions. The Selling Shareholder may use any one or more of the following methods when selling shares:

ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;

block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;

purchases by a broker-dealer as principal and resale by the broker-dealer for its account;

an exchange distribution in accordance with the rules of the applicable exchange;

Table of Contents

privately negotiated transactions;

settlement of short sales entered into after the effective date of the registration statement of which this prospectus is a part;

broker-dealers may agree with the Selling Shareholder to sell a specified number of such shares at a stipulated price per share;

through the writing or settlement of options or other hedging transactions, whether such options are listed on an options exchange or otherwise;

a combination of any such methods of sale; and

any other method permitted pursuant to applicable law.

The Selling Shareholder also may resell all or a portion of the shares in open market transactions in reliance upon Rule 144 under the Securities Act, as permitted by that rule, or Section 4(a)(1) under the Securities Act, if available, rather than under this prospectus, provided that it meets the criteria and conform to the requirements of those provisions.

Broker-dealers engaged by the Selling Shareholder may arrange for other broker-dealers to participate in sales. If the Selling Shareholder effects such transactions by selling Offered Shares to or through underwriters, broker-dealers or agents, such underwriters, broker-dealers or agents may receive commissions in the form of discounts, concessions or commissions from the Selling Shareholder or commissions from purchasers of the Offered Shares for whom they may act as agent or to whom they may sell as principal. Such commissions will be in amounts to be negotiated, but, except as set forth in a supplement to this Prospectus, in the case of an agency transaction will not be in excess of a customary brokerage commission in compliance with Financial Industry Regulatory Authority Rule 2121 and its supplementary materials.

In connection with sales of the Offered Shares or otherwise, the Selling Shareholder may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the Offered Shares in the course of hedging in positions they assume. The Selling Shareholder may also sell Offered Shares short and if such short sale shall take place after the date that this Registration Statement is declared effective by the Commission, the Selling Shareholder may deliver Offered Shares covered by this prospectus to close out short positions and to return borrowed shares in connection with such short sales. The Selling Shareholder may also loan or pledge Offered Shares to broker-dealers that in turn may sell such shares, to the extent permitted by applicable law. The Selling Shareholder may also enter into option or other transactions with broker-dealers or other financial institutions or the creation of one or more derivative securities which require the delivery to such broker-dealer or other financial institution of shares offered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction). Notwithstanding the foregoing, the Selling Shareholder has been advised that it may not use shares registered on this registration statement to cover short sales of our Offered Shares made prior to the date the registration statement, of which this prospectus forms a part, has been declared effective by the Commission.

The Selling Shareholder may, from time to time, pledge or grant a security interest in some or all of the Offered Shares owned by it and, if it defaults in the performance of its secured obligations, the pledgees or secured parties may offer and sell the Offered Shares from time to time pursuant to this prospectus or any amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act, amending, if necessary, the list of selling shareholders to include the pledgee, transferee or other successors in interest as selling shareholders under this prospectus. The Selling Shareholder also may transfer and donate the Offered Shares in other circumstances in which case the

Table of Contents

transferees, donees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

The Selling Shareholder and any broker-dealer or agents participating in the distribution of the Offered Shares may be deemed to be "underwriters" within the meaning of Section 2(a)(11) of the Securities Act in connection with such sales. In such event, any commissions paid, or any discounts or concessions allowed to, any such broker-dealer or agent and any profit on the resale of the shares purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act. Selling shareholders who are "underwriters" within the meaning of Section 2(a)(11) of the Securities Act will be subject to the applicable prospectus delivery requirements of the Securities Act and may be subject to certain statutory liabilities of, including but not limited to, Sections 11, 12 and 17 of the Securities Act and Rule 10b-5 under the Exchange Act.

The Selling Shareholder has informed the Company that it is not a registered broker-dealer and does not have any written or oral agreement or understanding, directly or indirectly, with any person to distribute the Offered Shares. Upon the Company being notified in writing by the Selling Shareholder that any material arrangement has been entered into with a broker-dealer for the sale of Offered Shares through a block trade, special offering, exchange distribution or secondary distribution or a purchase by a broker or dealer, a supplement to this prospectus will be filed, if required, pursuant to Rule 424(b) under the Securities Act, disclosing (i) the name of the Selling Shareholder and of the participating broker-dealer(s), (ii) the number of shares involved, (iii) the price at which such Offered Shares were sold, (iv) the commissions paid or discounts or concessions allowed to such broker-dealer(s), where applicable, (v) that such broker-dealer(s) did not conduct any investigation to verify the information set out or incorporated by reference in this prospectus, and (vi) other facts material to the transaction. In no event shall any broker-dealer receive fees, commissions and markups, which, in the aggregate, would exceed eight percent (8%).

Under the securities laws of some states, the Offered Shares may be sold in such states only through registered or licensed brokers or dealers. In addition, in some states the Offered Shares may not be sold unless such shares have been registered or qualified for sale in such state or an exemption from registration or qualification is available and is complied with.

There can be no assurance that the Selling Shareholder will sell any or all of the Offered Shares registered pursuant to the shelf registration statement, of which this prospectus forms a part.

The Selling Shareholder and any other person participating in such distribution will be subject to applicable provisions of the Exchange Act, including, without limitation, to the extent applicable, Regulation M of the Exchange Act, which may limit the timing of purchases and sales of any of the Offered Shares by the Selling Shareholder and any other participating person. To the extent applicable, Regulation M may also restrict the ability of any person engaged in the distribution of the Offered Shares to engage in market-making activities with respect to the Offered Shares. All of the foregoing may affect the marketability of the Offered Shares and the ability of any person or entity to engage in market-making activities with respect to the Offered Shares.

We will pay all expenses of the registration of the Offered Shares pursuant to the Shareholder Agreement, including, without limitation, Securities and Exchange Commission filing fees and expenses of compliance with state securities or "blue sky" laws; *provided, however*, that the Selling Shareholder will pay all underwriting discounts and selling commissions, if any and any related legal expenses incurred by it. We will indemnify the Selling Shareholder against certain liabilities, including some liabilities under the Securities Act, in accordance with the registration rights agreement, or the Selling Shareholder will be entitled to contribution. We may be indemnified by the Selling Shareholder against civil liabilities, including liabilities under the Securities Act, that may arise from any written information furnished to us by the Selling Shareholder specifically for use in this prospectus, in accordance with the Shareholder Agreement, or we may be entitled to contribution.

Table of Contents

SELLING SHAREHOLDER

We issued 2,723,083 shares of our common stock as merger consideration in connection with the Merger on May 1, 2015. The issuance of shares in connection with the Merger was exempt from the registration requirements of the Securities Act. The following table sets forth information relating to the Selling Shareholder's beneficial ownership of our common stock. This prospectus covers the offering for resale from time to time of up to 2,723,083 shares of the Offered Shares by the Selling Shareholder identified below. Such shares may also be sold by donees, pledgees and other transferees or successors in interest of the Selling Shareholder.

The following table sets forth the name of the Selling Shareholder, the number of shares of common stock beneficially owned by the Selling Shareholder prior to the offering, the number of Offered Shares being offered by the Selling Shareholder under this prospectus, the amount of common stock to be owned by the Selling Shareholder after completion of the offering (assuming the sale of all Offered Shares offered by this prospectus), and the percentage of common stock owned after completion of the offering.

We do not know when or in what amounts the Selling Shareholder may offer the Offered Shares for sale. The Selling Shareholder might not sell all of the Offered Shares offered by this prospectus. Because we have no knowledge of any agreements, arrangements or understandings related to any sale of the Offered Shares, we cannot estimate the number of shares of common stock that will be held by the Selling Shareholder after completion of the offering. For purposes of this prospectus, however, we have assumed that, upon completion of the offering, none of the Offered Shares covered by this prospectus will be held by the Selling Shareholder.

We prepared the table based on information provided to us by the Selling Shareholder prior to the date hereof. This information may change from time to time. In addition, since the date on which the Selling Shareholder provided this information to us, such Selling Shareholder may have sold, transferred or otherwise disposed of all or a portion of its Offered Shares in transactions exempt from or not subject to the registration requirement of the Securities Act since that date.

The trustee of the Selling Shareholder, John M. Morrison, is the chairman of our board of directors, and was previously the chairman of the board of directors of Central Bancshares, Inc. The Selling Shareholder is also currently the beneficial owner of over ten percent of our common stock. To our knowledge, the Selling Shareholder is not a broker-dealer nor an affiliate of a broker-dealer.

| Selling Shareholder | Number of Shares Beneficially Owned Before Offering | Number of Shares of Common Stock Offered by this Prospectus | Number of Shares Beneficially Owned After Offering(1) | Percentage of Shares Beneficially Owned After Offering(1)(2) |
|--|--|--|--|---|
| John M. Morrison Revocable Trust #4(3) | 2,723,083 | 2,723,083 | 0 | |

- (1) Represents the number or percentage of shares, as applicable, that will be held by the Selling Shareholder after completion of this offering based on the assumptions that (i) all Offered Shares registered for sale by the registration statement of which this prospectus forms part will be sold and (ii) no other shares of our common stock are acquired or sold by the Selling Shareholder prior to completion of this offering.
- (2) Based on 11,406,431 shares of common stock outstanding as of November 10, 2015.
- (3) John M. Morrison is the trustee of the John M. Morrison Revocable Trust #4 and has voting and investment power over the shares beneficially owned by the John M. Morrison Revocable Trust #4. Mr. Morrison also directly owns 500 shares of our common stock.

Table of Contents

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

Certain statements contained in or incorporated by reference into this prospectus that are not historical facts may constitute forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act. We intend such forward-looking statements to be covered by the safe harbor provisions for forward-looking statements contained in the Private Securities Litigation Reform Act of 1995, and we are including this statement for purposes of invoking these safe harbor provisions. These statements involve known and unknown risks, uncertainties and other factors that may cause actual results to be materially different from any results, levels of activity, performance or achievements expressed or implied by any forward-looking statement. These factors include, among other things, the factors listed below. Forward-looking statements, which may be based upon beliefs, expectations and assumptions of our management and on information currently available to management, are generally identifiable by the use of words such as "believe," "expect," "anticipate," "should," "could," "would," "plans," "intend," "project," "estimate," "forecast," "may" or similar expressions. These forward-looking statements are subject to certain risks and uncertainties that could cause actual results to differ materially from those expressed in, or implied by, these statements. Readers are cautioned not to place undue reliance on any such forward-looking statements, which speak only as of the date made. Additionally, we undertake no obligation to update any statement in light of new information or future events, except as required under federal securities law.

Our ability to predict results or the actual effect of future plans or strategies is inherently uncertain. Factors that could have an impact on our ability to achieve operating results, growth plan goals and future prospects include, but are not limited to, the following: (i) credit quality deterioration or pronounced and sustained reduction in real estate market values could cause an increase in our allowance for credit losses and a reduction in net earnings; (ii) the risks of mergers, including with Central Bancshares, Inc., including, without limitation, the related time and costs of implementing such transactions, integrating operations as part of these transactions and possible failures to achieve expected gains, revenue growth and/or expense savings from such transactions; (iii) our management's ability to reduce and effectively manage interest rate risk and the impact of interest rates in general on the volatility of our net interest income; (iv) changes in the economic environment, competition, or other factors that may affect our ability to acquire loans or influence the anticipated growth rate of loans and deposits and the quality of the loan portfolio and loan and deposit pricing; (v) fluctuations in the value of our investment securities; (vi) governmental monetary and fiscal policies; (vii) legislative and regulatory changes, including changes in banking, securities and tax laws and regulations and their application by our regulators (particularly with respect to the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 and the extensive regulations promulgated and to be promulgated thereunder, as well as the Basel III regulatory capital reforms and issued rules), and changes in the scope and cost of FDIC insurance and other coverages; (viii) the ability to attract and retain key executives and employees experienced in banking and financial services; (ix) the sufficiency of the allowance for loan losses to absorb the amount of actual losses inherent in our existing loan portfolio; (x) our ability to adapt successfully to technological changes to compete effectively in the marketplace; (xi) credit risks and risks from concentrations (by geographic area and by industry) within our loan portfolio; (xii) the effects of competition from other commercial banks, thrifts, mortgage banking firms, consumer finance companies, credit unions, securities brokerage firms, insurance companies, money market and other mutual funds, and other financial institutions operating in our markets or elsewhere or providing similar services; (xiii) the failure of assumptions underlying the establishment of allowances for loan losses and estimation of values of collateral and various financial assets and liabilities; (xiv) volatility of rate-sensitive deposits; (xv) operational risks, including data processing system failures or fraud; (xvi) asset/liability matching risks and liquidity risks; (xvii) the costs, effects and outcomes of existing or future litigation; (xviii) changes in general economic or industry conditions, nationally or in the communities in which we conduct business; (xix) changes in accounting policies and practices, as may be adopted by state and federal regulatory agencies and the Financial Accounting

Table of Contents

Standards Board; and (xx) other risk factors detailed in the "RISK FACTORS" section in our most recent Annual Report on Form 10-K and elsewhere in our periodic and current reports filed with the SEC.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We are subject to the information requirements of the Exchange Act, which means we are required to file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the internet at the SEC's website at <http://www.sec.gov>. You may also read and copy any document we file with the SEC at its Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. You may also obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330.

We make available free of charge through our website, www.midwestonefinancial.com, our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, proxy statement on Schedule 14A and all amendments to those reports as soon as reasonably practicable after such material is electronically filed with or furnished to the SEC. Information contained on or accessible through our website is not part of this prospectus or any prospectus supplement, and is therefore not incorporated by reference unless such information is otherwise specifically referenced elsewhere in this prospectus or a prospectus supplement.

DOCUMENTS INCORPORATED BY REFERENCE

The SEC allows us to "incorporate by reference" into this prospectus the information we file with the SEC. This permits us to disclose important information to you by referring to these separately filed documents. The information incorporated by reference is an important part of this prospectus, and the information we file subsequently with the SEC will automatically update the information in this prospectus. This historical and future information that is incorporated by reference in this prospectus is considered to be part of this prospectus and can be obtained at the locations described above under the heading "WHERE YOU CAN FIND ADDITIONAL INFORMATION." The information included elsewhere in this prospectus and the following documents incorporated by reference in this prospectus are considered to be part of this prospectus:

our Annual Report on Form 10-K for the fiscal year ended December 31, 2014, filed with the SEC on March 5, 2015;

our Quarterly Reports on Form 10-Q for the fiscal quarter ended March 31, 2015, filed with the SEC on April 30, 2015, the fiscal quarter ended June 30, 2015, filed with the SEC on August 10, 2015, and the fiscal quarter ended September 30, 2015, filed with the SEC on October 29, 2015;

our Current Reports on Form 8-K filed with the SEC on January 22, 2015 (except for information furnished under Item 2.02), February 9, 2015, April 17, 2015, April 23, 2015 (except for information furnished under Item 2.02), May 1, 2015 (as amended by Form 8-K/A filed June 5, 2015), June 12, 2015 (except for information furnished under Item 7.01), June 17, 2015, June 23, 2015 (as amended by Form 8-K/A filed June 24, 2015), June 30, 2015, July 17, 2015, July 24, 2015 (except for information furnished under Item 2.02), October 21, 2015 and October 22, 2015 (except for information furnished under Item 2.02);

the description of our common stock contained in the Company's Registration Statement filed with the SEC on August 4, 1994, pursuant to Section 12 of the Exchange Act on Form 8-A (File No. 000-24630), and all amendments and reports filed by the Company for the purpose of updating such description, including the prospectus constituting part of our Amendment No. 2 to Registration Statement on Form S-4 (File No. 333-147628) filed with the SEC on January 22, 2008, under the headings "SUMMARY Dividend Policy After the Merger; Coordination of

Table of Contents

Dividends," "SUMMARY Differences in the Rights of Shareholders," "PRICE RANGE OF COMMON STOCK AND DIVIDEND INFORMATION," "DESCRIPTION OF ISBF CAPITAL STOCK AND COMPARISON OF SHAREHOLDER RIGHTS" and "SUMMARY OF AMENDMENTS TO ISBF'S ARTICLES OF INCORPORATION AND BYLAWS";

any future filings made with the SEC under Sections 13(a), 13(c), 14 or 15(d) under the Exchange Act after the date of this document, excluding any document or portion thereof that has been furnished to and deemed not to be filed with the SEC.

Any statement contained in this prospectus or in a document incorporated or deemed to be incorporated by reference into this prospectus shall be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in any subsequently filed document which also is, or is deemed to be, incorporated by reference in this prospectus modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

We will provide you with a copy of any information that we incorporate by reference into this prospectus or the registration statement that contains this prospectus, at no cost, by writing or calling us. Requests for such materials should be directed to:

MidWestOne Financial Group, Inc.
Attention: Kenneth R. Urmie, Corporate Secretary
102 South Clinton Street
Iowa City, Iowa 52240
Telephone number: (319) 356-5800

LEGAL MATTERS

Certain legal matters as to the legality of the securities being registered will be passed upon for us by our special counsel in the State of Iowa, Dickinson, Mackaman, Tyler & Hagen, P.C. If the securities are being distributed in an underwritten offering, certain legal matters will be passed upon for the underwriters by counsel identified in the related prospectus supplement.

EXPERTS

The consolidated financial statements of MidWestOne Financial Group, Inc. as of and for the year ended December 31, 2014, and management's assessment of the effectiveness of internal control over financial reporting as of December 31, 2014, have been incorporated by reference in this prospectus and in the registration statement in reliance upon the reports of RSM US LLP (formerly McGladrey LLP), an independent registered public accounting firm, upon the authority of said firm as experts in accounting and auditing.

The consolidated financial statements of MidWestOne Financial Group, Inc. as of December 31, 2013 and for each of the years in the two-year period ended December 31, 2013, have been incorporated by reference in this prospectus and in the registration statement in reliance upon the report of KPMG LLP, an independent registered public accounting firm, incorporated by reference herein, upon the authority of said firm as experts in accounting and auditing.

Table of Contents

PROSPECTUS

\$75,000,000.00

MidWestOne Financial Group, Inc.

**Common Stock
Preferred Stock
Debt Securities
Warrants
Subscription Rights
Units
Depositary Shares**

We may offer and sell, from time to time, in one or more offerings, together or separately, any combination of the securities described in this prospectus. The aggregate initial offering price of the securities that we offer will not exceed \$75,000,000.00. This prospectus describes some of the general terms that may apply to these securities and the general manner in which they may be offered. The specific terms of any securities to be offered, and the specific manner in which they may be offered, will be described in one or more supplements to this prospectus. This prospectus may not be used to sell securities unless accompanied by the applicable prospectus supplement. Before investing, you should carefully read this prospectus and any related prospectus supplement.

We may offer and sell these securities to or through one or more underwriters, dealers and agents, or directly to purchasers, on a continuous or delayed basis. If an offering of securities involves any underwriters, dealers or agents, then the applicable prospectus supplement will name the underwriters, dealers or agents and will provide information regarding any fee, commission or discount arrangements made with those underwriters, dealers or agents.

Our common stock is listed on the NASDAQ Global Select Market under the ticker symbol "MOFG." Our principal executive offices are located at 102 South Clinton Street, Iowa City, Iowa 52240 and our telephone number is (319) 356-5800.

Investing in our securities involves risks. You should refer to the section entitled "Risk Factors" on page 1 of this prospectus, as well as the risk factors included in the applicable prospectus supplement and certain of our periodic reports and other information that we file with the Securities and Exchange Commission and carefully consider that information before buying our securities.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

Edgar Filing: MidWestOne Financial Group, Inc. - Form 424B5

These securities are not savings accounts, deposits or other obligations of any bank and are not insured or guaranteed by the Federal Deposit Insurance Corporation or any other governmental agency.

The date of this prospectus is July 22, 2016.

Table of Contents

TABLE OF CONTENTS

| | |
|---|-----------|
| <u>ABOUT THIS PROSPECTUS</u> | <u>1</u> |
| <u>RISK FACTORS</u> | <u>1</u> |
| <u>MIDWESTONE FINANCIAL GROUP, INC.</u> | <u>2</u> |
| <u>USE OF PROCEEDS</u> | <u>2</u> |
| <u>RATIO OF EARNINGS TO FIXED CHARGES AND PREFERRED STOCK DIVIDENDS</u> | <u>2</u> |
| <u>DESCRIPTION OF CAPITAL STOCK</u> | <u>3</u> |
| <u>DESCRIPTION OF DEBT SECURITIES</u> | <u>7</u> |
| <u>DESCRIPTION OF WARRANTS</u> | <u>14</u> |
| <u>DESCRIPTION OF SUBSCRIPTION RIGHTS</u> | <u>15</u> |
| <u>DESCRIPTION OF UNITS</u> | <u>16</u> |
| <u>DESCRIPTION OF DEPOSITARY SHARES</u> | <u>16</u> |
| <u>PLAN OF DISTRIBUTION</u> | <u>19</u> |
| <u>SPECIAL CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS</u> | <u>20</u> |
| <u>WHERE YOU CAN FIND ADDITIONAL INFORMATION</u> | <u>22</u> |
| <u>DOCUMENTS INCORPORATED BY REFERENCE</u> | <u>22</u> |
| <u>LEGAL MATTERS</u> | <u>23</u> |
| <u>EXPERTS</u> | <u>23</u> |

Table of Contents

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we have filed with the Securities and Exchange Commission, which we refer to as the SEC, using a shelf registration process on Form S-3. Under the shelf registration rules, using this prospectus, together with the applicable prospectus supplement, we may sell from time to time, in one or more offerings, on a continuous or delayed basis, the securities described in this prospectus for an aggregate initial offering price of up to \$75,000,000.00. The registration statement that contains this prospectus (including the exhibits to the registration statement) contains additional information about us and the securities we are offering under this prospectus. You can read that registration statement at the SEC website at <http://www.sec.gov> or at the SEC office mentioned under the heading "WHERE YOU CAN FIND ADDITIONAL INFORMATION."

This prospectus provides you with a general description of the securities we may offer. Each time we sell any of these securities, we will provide one or more prospectus supplements containing specific information about the terms of that offering. The prospectus supplements may also add, update or change information contained in this prospectus. If information in the applicable prospectus supplement is inconsistent with the information in this prospectus, then the information in such prospectus supplement will apply and will supersede the information in this prospectus. You should carefully read both this prospectus and any prospectus supplement, together with additional information described under the heading "WHERE YOU CAN FIND ADDITIONAL INFORMATION," before you invest.

You should rely only on the information contained or incorporated by reference in this prospectus and any prospectus supplement. We have not authorized anyone to provide you with different or additional information. If anyone provides you with different or additional information, you should not rely on it.

You should not assume that the information in this prospectus or any accompanying prospectus supplement or any document incorporated by reference is accurate as of any date other than the date of that document.

Neither we nor anyone acting on our behalf is making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted.

In this prospectus, the terms "MidWestOne," "Company," "we," "us," and "our" refer to MidWestOne Financial Group, Inc. and its consolidated subsidiaries, collectively, unless the context requires otherwise. References in this prospectus to the "Bank" mean MidWestOne Bank, an Iowa state-chartered bank with its main office in Iowa City, Iowa.

RISK FACTORS

An investment in our securities involves a high degree of risk. Before making an investment decision, you should carefully read and consider the risk factors incorporated by reference in this prospectus, as well as those contained in any applicable prospectus supplement, as the same may be updated from time to time by our future filings with the SEC under the Securities Exchange Act of 1934, as amended, or the Exchange Act. You should also refer to other information contained in or incorporated by reference in this prospectus and any applicable prospectus supplement, including our financial statements and the related notes incorporated by reference herein. Additional risks and uncertainties not known to us or that we deem immaterial may also materially and adversely affect our business and operations.

Table of Contents

MIDWESTONE FINANCIAL GROUP, INC.

We are a bank holding company headquartered in Iowa City, Iowa. Our principal assets are the shares of stock of our bank subsidiary, MidWestOne Bank, and our nonbank subsidiary, MidWestOne Insurance Services, Inc. As of March 31, 2016, we had total assets of approximately \$3.0 billion, total deposits of approximately \$2.4 billion and total shareholders' equity of approximately \$301.8 million.

We conduct a full-service community banking, trust and insurance agency business through our wholly-owned subsidiaries. MidWestOne Bank is an Iowa state-chartered bank headquartered in Iowa City, Iowa, with office locations in central and east-central Iowa, Minnesota, primarily in the Twin Cities metro area, western Wisconsin and Naples and Fort Myers, Florida. MidWestOne Insurance Services, Inc., headquartered in Oskaloosa, Iowa, is a full-service insurance agency that offers a wide range of insurance plans to individuals and businesses through six offices located in central and east-central Iowa.

Our full-service banking businesses include the customary consumer and commercial products and services that banks provide. Deposit products offered include checking and other demand deposit accounts, NOW accounts, savings accounts, money market accounts, certificates of deposit, individual retirement accounts and other time deposits. MidWestOne Bank offers commercial and industrial, agricultural, real estate mortgage and consumer loans. Other products and services include debit cards, automated teller machines, on-line banking, mobile banking, and safe deposit boxes. Our principal service consists of making loans to and accepting deposits from individuals, businesses, governmental units and institutional customers. MidWestOne Bank also has a trust and investment department through which it offers a variety of trust and investment services, including administering estates, personal trusts, conservatorships, pension and profit-sharing funds and providing property management, farm management, custodial, financial planning, investment management and retail brokerage services (the latter of which is provided through an agreement with a third-party registered broker-dealer).

Our principal executive offices are located at 102 South Clinton Street, Iowa City, Iowa 52240, and our telephone number is (319) 356-5800.

Additional information about us is included in our filings with the SEC, which are incorporated by reference into this prospectus. See "WHERE YOU CAN FIND ADDITIONAL INFORMATION" and "DOCUMENTS INCORPORATED BY REFERENCE" in this prospectus.

USE OF PROCEEDS

Unless the applicable prospectus supplement states otherwise, we will use the net proceeds we receive from the sale of the securities for general corporate purposes, which may include, among other things, investments in or advances to our subsidiaries, working capital, capital expenditures, stock repurchases, debt repayment or the financing of possible acquisitions. The applicable prospectus supplement relating to a particular offering of securities by us will identify the use of proceeds for that offering. Until we use the net proceeds from an offering, we may place the net proceeds in temporary investments or deposit them in a bank.

RATIO OF EARNINGS TO FIXED CHARGES AND PREFERRED STOCK DIVIDENDS

The following table reflects our ratio of earnings to fixed charges and earnings to fixed charges and preferred stock dividends for each of the years in the five-year period ended December 31, 2015, as well as for the three months ended March 31, 2016. We did not pay any preferred stock dividends during the years ended December 31, 2015, 2014, 2013 or 2012, or during the three months ended March 31, 2016, because no shares of our preferred stock were outstanding during such periods. Consequently, the ratios of earnings to fixed charges and preferred stock dividends for these periods are the same as the ratios of earnings to fixed charges. Preferred stock dividends during the year ended

Table of Contents

December 31, 2011 consisted solely of the amounts due on our Fixed Rate Cumulative Perpetual Preferred Stock, Series A, which was issued to the U.S. Department of the Treasury on February 6, 2009, pursuant to its TARP Capital Purchase Program, and redeemed on July 6, 2011.

| | For the three | For the years ended December 31, | | | | |
|--|---------------|----------------------------------|-------|------|------|------|
| | months ended | 2015 | 2014 | 2013 | 2012 | 2011 |
| | March 31, | | | | | |
| | 2016 | | | | | |
| Ratio of earnings to fixed charges: | | | | | | |
| Excluding interest on deposits | 8.82 | 11.82 | 10.80 | 8.75 | 6.34 | 4.96 |
| Including interest on deposits | 3.46 | 4.03 | 3.65 | 3.07 | 2.36 | 1.90 |
| Ratio of earnings to fixed charges and preferred stock dividends: | | | | | | |
| Excluding interest on deposits | 8.82 | 11.82 | 10.80 | 8.75 | 6.34 | 4.08 |
| Including interest on deposits | 3.46 | 4.03 | 3.65 | 3.07 | 2.36 | 1.81 |

For purposes of computing the ratios of earnings to fixed charges and earnings to fixed charges and preferred stock dividends, "earnings" consist of income before income taxes plus fixed charges. "Fixed charges" consist of interest on borrowings, including interest payments on subordinated debentures, junior subordinated debentures, and other borrowings, and one-third of rent expense, which approximates the interest component of rent expense. In addition, where indicated, fixed charges include interest on deposits. A statement setting forth the details of the computation of the ratios of earnings to fixed charges displayed above is included as Exhibit 12.1 to the registration statement of which this prospectus is a part.

DESCRIPTION OF CAPITAL STOCK

General

We have the authority to issue 15,000,000 shares of common stock, par value \$1.00 per share, and 500,000 shares of preferred stock, no par value per share. As of March 31, 2016, we had 11,425,035 shares of common stock and no shares of preferred stock issued and outstanding.

The following description of the material terms of our capital stock is only a summary. This summary does not purport to be a complete description of the terms and conditions of our capital stock in all respects and is subject to and qualified in its entirety by reference to our amended and restated articles of incorporation and by-laws, each of which is incorporated herein by reference, as well as the Iowa Business Corporation Act, or IBCA, and any other documents referenced in the summary and from which the summary is derived.

Common Stock

General. Under our amended and restated articles of incorporation, we have the authority to issue 15,000,000 shares of our common stock, par value \$1.00 per share, of which 11,425,035 shares were issued and outstanding as of March 31, 2016. As of March 31, 2016, there were 95,600 shares of our common stock underlying options that have been issued pursuant to our equity incentive plans and 432,053 shares of our common stock reserved for future issuance under our equity incentive plans. Our common stock is listed for trading on the NASDAQ Global Select Market under the symbol "MOFG."

Each share of our common stock has the same relative rights and is identical in all respects to every other share of our common stock. Our shares of common stock are neither redeemable nor convertible, and the holders thereof have no preemptive or subscription rights to purchase any of our securities, except as set forth below under " Shareholder Agreement."

Table of Contents

Voting Rights. Each outstanding share of our common stock is entitled to one vote on all matters submitted to a vote of shareholders. There is no cumulative voting in the election of directors.

Liquidation Rights. Upon our liquidation, dissolution or winding up, the holders of our common stock are entitled to receive, *pro rata*, our assets which are legally available for distribution, after payment of all debts and other liabilities and subject to the prior rights of any holders of preferred stock then outstanding.

Dividends Payable on Shares of Common Stock. In general, the holders of outstanding shares of our common stock are entitled to receive dividends out of assets legally available therefor at such times and in such amounts as our board of directors may from time to time determine. The ability of our board of directors to declare and pay dividends on our common stock may be affected by both general corporate law considerations and policies of the Board of Governors of the Federal Reserve, or the Federal Reserve, applicable to bank holding companies. As an Iowa corporation, we are subject to the limitations of Iowa law, which allows us to pay dividends unless, after such dividend: (i) we would not be able to pay our debts as they become due in the usual course of business; or (ii) our total assets would be less than the sum of our total liabilities plus any amount that would be needed, if we were to be dissolved at the time of the dividend payment, to satisfy the preferential rights upon dissolution of our shareholders whose rights are superior to the rights of our shareholders receiving the distribution. As a bank holding company, our ability to declare and pay dividends is also subject to the guidelines of the Federal Reserve regarding capital adequacy and dividends. The Federal Reserve guidelines generally require us to review the effects of the cash payment of dividends on our common stock and other Tier 1 capital instruments in light of our earnings, capital adequacy and financial condition. As a general matter, the Federal Reserve indicates that the board of directors of a bank holding company should eliminate, defer or significantly reduce the dividends if: (i) the company's net income available to shareholders for the past four quarters, net of dividends previously paid during that period, is not sufficient to fully fund the dividends; (ii) the prospective rate of earnings retention is inconsistent with the company's capital needs and overall current and prospective financial condition; or (iii) the company will not meet, or is in danger of not meeting, its minimum regulatory capital adequacy ratios. The Federal Reserve also possesses enforcement powers over bank holding companies and their nonbank subsidiaries to prevent or remedy actions that represent unsafe or unsound practices or violations of applicable statutes and regulations. Among these powers is the ability to proscribe the payment of dividends by banks and bank holding companies.

Most of our revenues available for the payment of dividends derive from amounts paid to us by the Bank. There are various statutory limitations that limit the ability of the Bank to pay dividends to us. The Bank is an Iowa state-chartered bank and is subject to the laws and regulations of the Iowa Superintendent of Banking and to the regulations of the Federal Deposit Insurance Corporation. If a bank's primary banking regulator determines that the bank is engaged or is about to engage in an unsafe or unsound banking practice, the regulator may require, after notice and hearing, that the bank cease and desist from such practice. Depending on the financial condition of the bank, an unsafe or unsound practice could include the payment of dividends. In particular, the federal banking agencies have indicated that paying dividends that deplete a bank's capital base to an inadequate level would be an unsafe and unsound banking practice.

Under the Iowa Banking Act, Iowa state-chartered banks, such as the Bank, generally may pay dividends only out of undivided profits. In addition, the Iowa Superintendent of Banking may restrict the declaration or payment of a dividend by an Iowa state-chartered bank.

Furthermore, the payment of dividends by any financial institution is affected by the requirement to maintain adequate capital pursuant to applicable capital adequacy guidelines and regulations, and a financial institution generally is prohibited from paying any dividends if, following payment thereof, the institution would be undercapitalized. Even notwithstanding the availability of funds for dividends, the

Table of Contents

FDIC may prohibit the payment of any dividends by an insured bank, such as the Bank, if the FDIC determines such payment would constitute an unsafe or unsound practice.

Shareholder Agreement. In connection with the merger of the Company with Central Bancshares, Inc., which was consummated on May 1, 2015, we entered into the Shareholder Agreement, dated November 20, 2014, with Riverbank Insurance Center, Inc., the holder of all outstanding Class A units of Central Insurance Agency, LLC, or Insurance Agency Owner, CBS, LLC, or TruPS Holder, the John M. Morrison Revocable Trust #4, or the Trust, and John M. Morrison, the trustee of the Trust. Among other things, the Shareholder Agreement provides that: (i) the Trust, Insurance Agency Owner, TruPS Holder and Mr. Morrison are subject to certain customary "standstill" provisions and a requirement that such parties vote their shares of our common stock in accordance with the terms of the Shareholder Agreement with respect to various matters for certain periods of time; and (ii) the Trust and Mr. Morrison are entitled to certain preemptive rights with respect to our securities until the earlier of November 20, 2017 and the date on which they beneficially own less than 10% of our common stock.

The above description of the Shareholder Agreement is only a summary and does not purport to be complete. You must review the entire agreement for a full understanding of the terms of these securities. See "WHERE YOU CAN FIND ADDITIONAL INFORMATION" for information on how to obtain copies.

Preferred Stock

General. We may issue up to 500,000 shares of preferred stock, no par value per share, from time to time in one or more series. Our board of directors, without further approval of the shareholders, has the authority to fix the dividend rights and terms, conversion rights, voting rights, redemption rights and terms, liquidation preferences, sinking funds and any other rights, preferences, privileges and restrictions applicable to each series of preferred stock. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes, could, among other things, adversely affect the voting power of the holders of our common stock.

The applicable prospectus supplement and any other offering materials relating to any series of preferred stock issued under the registration statement of which this prospectus is a part will specify the terms of the series, including:

the maximum number of shares in the series and the designation of the series;

the terms on which dividends, if any, will be paid;

the terms on which the shares of the series may be redeemed, if at all;

the liquidation preference, if any;

the terms of any retirement or sinking fund for the purchase or redemption of the shares of the series;

the terms and conditions, if any, on which the shares of the series will be convertible into, or exchangeable for, shares of any other class or classes of common or preferred stock;

the voting rights, if any, of the shares of the series; and

any or all other preferences and relative, participating, operational or other special rights or qualifications, limitations or restrictions of the shares of the series.

The description of preferred stock above and the description of the terms of a particular series of preferred stock contained in the applicable prospectus supplement and other offering materials, if any, are not complete. You should refer to the applicable certificate of designations with respect to a series

Table of Contents

of preferred stock for complete information concerning the terms of that series. A copy of the certificate of designations for each series of preferred stock will be filed with the SEC as an exhibit to the registration statement of which this prospectus is a part or as an exhibit to a filing incorporated by reference in the registration statement.

Anti-Takeover Provisions.

General. Our amended and restated articles of incorporation and amended and restated bylaws may have the effect of discouraging, delaying or preventing a change in control or an unsolicited acquisition proposal that a shareholder might consider favorable, including a proposal that might result in the payment of a premium over the market price for the shares held by shareholders. These provisions are summarized in the following paragraphs.

Authorized Shares of Capital Stock. Authorized but unissued shares of our common stock and preferred stock under our amended and restated articles of incorporation could (within the limits imposed by applicable law and NASDAQ Marketplace Rules) be issued in one or more transactions that could make a change of control of us more difficult, and therefore more unlikely. The additional authorized shares could be used to discourage persons from attempting to gain control of us by diluting the voting power of shares then outstanding or increasing the voting power of persons who would support the board of directors in a potential takeover situation, including by preventing or delaying a proposed business combination that is opposed by the board of directors although perceived to be desirable by some shareholders.

Limitations on Right to Call Special Meetings; Shareholder Proposal Notice Requirements. Under our amended and restated bylaws, a special meeting of our shareholders may be called only by: (i) the Chairman of our board of directors, our Chief Executive Officer or our President; or (ii) in accordance with Section 490.702 of the IBCA which requires written demand by shareholders owning at least 50% of the total voting power of the outstanding stock entitled to vote on the issue proposed to be considered at the special meeting. Additionally, our amended and restated bylaws require that shareholder proposals meet certain advanced notice and minimum informational requirements. These provisions could have the effect of delaying until the next annual shareholders' meeting shareholder actions which are favored by the holders of a majority of our outstanding voting securities.

State Anti-Takeover Laws. The IBCA contains an anti-takeover provision referred to as the "business combinations with interested shareholders" provision. This provision prevents a corporation from engaging in any business combination with an "interested shareholder" (as defined in the IBCA) for a period of three years following the time that the shareholder became an interested shareholder, unless one of the following conditions applies: (i) prior to the time that the shareholder became an interested shareholder, the board of directors of the corporation approved either the business combination or the transaction that resulted in the shareholder becoming an interested shareholder; (ii) upon consummation of the transaction which resulted in the shareholder becoming an interested shareholder, the interested shareholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced; or (iii) at or subsequent to the time the shareholder became an interested shareholder, the business combination is approved by the board of directors and authorized at an annual or special meeting of shareholders by the affirmative vote of at least 66²/₃% of the outstanding voting stock that is not owned by the interested shareholder.

The Bank Holding Company Act of 1956. The ability of a third party to acquire us is also limited under applicable banking regulations. The Bank Holding Company Act of 1956, or the Bank Holding Company Act, requires any "bank holding company" (as defined in that Act) to obtain the approval of the Federal Reserve prior to acquiring more than 5% of our outstanding common stock. Any person other than a bank holding company is required to obtain prior approval of the Federal Reserve to acquire 10% or more of our outstanding common stock under the Change in Bank Control

Table of Contents

Act of 1978. Federal law also prohibits any person or company from acquiring "control" of an FDIC-insured depository institution or its holding company without prior notice to the appropriate federal bank regulator. "Control" is conclusively presumed to exist upon the acquisition of 25% or more of the outstanding voting securities of a bank or bank holding company, but may arise under certain circumstances between 10% and 24.99% ownership. For purposes of calculating ownership thresholds under these banking regulations, bank regulators would likely at least take the position that the minimum number of shares, and could take the position that the maximum number of shares, of the Company's common stock that a holder is entitled to receive pursuant to securities convertible into or settled in the Company's common stock, including pursuant to the Company's warrants to purchase the Company's common stock held by such holder, must be taken into account in calculating a shareholder's aggregate holdings of the Company's common stock.

DESCRIPTION OF DEBT SECURITIES

General

The debt securities that we may offer using this prospectus consist of notes, debentures or other evidences of indebtedness. Any debt securities that we offer and sell will be our direct obligations. Debt securities may be issued in one or more series. All debt securities of any one series need not be issued at the same time, and unless otherwise provided, a series of debt securities may be reopened, with the required consent of the holders of outstanding debt securities, for issuance of additional debt securities of that series or to establish additional terms of that series of debt securities (with such additional terms applicable only to unissued or additional debt securities of that series). The form of indenture has been filed as an exhibit to the registration statement of which this prospectus is a part and is subject to any amendments or supplements that we may enter into with the trustee(s). The material terms of the indenture are summarized below and we refer you to the indenture for a detailed description of these material terms. Additional or different provisions that are applicable to a particular series of debt securities will, if material, be described in a prospectus supplement relating to the offering of debt securities of that series. These provisions may include, among other things and to the extent applicable, the following:

the title of the debt securities, including, as applicable, whether the debt securities will be issued as senior debt securities, senior subordinated debt securities, subordinated debt securities or junior subordinated debt securities, and any subordination provisions particular to the series of debt securities;

any limit on the aggregate principal amount of the debt securities;

if other than 100% of the aggregate principal amount, the percentage of the aggregate principal amount at which we will sell the debt securities (i.e., original issuance discount);

the date or dates, whether fixed or extendable, on which the principal of the debt securities will be payable;

the rate or rates, which may be fixed or variable, at which the debt securities will bear interest, if any, the date or dates from which any such interest will accrue, the interest payment dates on which we will pay any such interest, the basis upon which interest will be calculated if other than that of a 360-day year consisting of twelve 30-day months, and, in the case of registered securities, the record dates for the determination of holders to whom interest is payable;

any provisions relating to the issuance of the debt securities of the series at an original issue discount;

Edgar Filing: MidWestOne Financial Group, Inc. - Form 424B5

Table of Contents

the place or places where the principal of, and any premium or interest on, the debt securities will be payable and, if applicable, where the debt securities may be surrendered for conversion or exchange;

whether we may, at our option, redeem, repurchase or repay the debt securities, and if so, the price or prices at which, the period or periods within which, and the terms and conditions upon which, we may redeem, repurchase or repay the debt securities, in whole or in part, pursuant to any sinking fund or otherwise;

if other than 100% of the aggregate principal amount thereof, the portion of the principal amount of the debt securities which will be payable upon declaration of acceleration of the maturity date thereof or provable in bankruptcy, or, if applicable, which is convertible or exchangeable;

any obligation we may have to redeem, purchase or repay the debt securities pursuant to any sinking fund or analogous provisions or at the option of a holder of debt securities, and the price or prices at which, the currency in which and the period or periods within which, and the other terms and conditions upon which, the debt securities will be redeemed, purchased or repaid, in whole or in part, pursuant to any such obligation, and any provision for the remarketing of the debt securities;

whether the debt securities will be registered securities or unregistered securities or both, and the rights of the holders of the debt securities to exchange unregistered securities for registered securities, or vice versa, and the circumstances under which any such exchanges, if permitted, may be made;

the denominations, which may be in U.S. dollars or in any foreign currency, in which the debt securities will be issued, if other than denominations of \$1,000.00 and any integral multiple thereof;

whether the debt securities will be issued in the form of certificated debt securities, and if so, the form of the debt securities (or forms thereof if unregistered and registered securities are issuable in that series), including the legends required by law or as we deem necessary or appropriate, the form of any coupons or temporary global security which may be issued and the forms of any other certificates which may be required under the indenture or which we may require in connection with the offering, sale, delivery or exchange of the debt securities;

if other than U.S. dollars, the currency or currencies in which payments of principal, interest and other amounts payable with respect to the debt securities will be denominated, payable, redeemable or repurchasable, as the case may be;

whether the debt securities may be issuable in tranches;

the obligations, if any, we may have to permit the conversion or exchange of the debt securities into common stock, preferred stock or other capital stock or property, or a combination thereof, and the terms and conditions upon which such conversion or exchange will be effected (including the conversion price or exchange ratio), and any limitations on the ownership or transferability of the securities or property into which the debt securities may be converted or exchanged;

any trustees, authenticating or paying agents, transfer agents or registrars or any other agents with respect to the debt securities;

if the debt securities do not bear interest, the applicable dates required under the indenture for furnishing information to the trustee regarding the holders of the debt securities;

Table of Contents

any deletions from, modifications of or additions to (i) the events of default with respect to the debt securities or (ii) the rights of the trustee or the holders of the debt securities in connection with events of default;

any deletions from, modifications of or additions to the covenants with respect to the debt securities;

if the amount of payments of principal of, and make-whole amount, if any, and interest on the debt securities may be determined with reference to an index, the manner in which such amount will be determined;

whether the debt securities will be issued in whole or in part in the global form of one or more debt securities and, if so, the depository for such debt securities, the circumstances under which any such debt security may be exchanged for debt securities registered in the name of, and under which any transfer of debt securities may be registered in the name of, any person other than such depository or its nominee, and any other provisions regarding such debt securities;

whether, under what circumstances and the currency in which, we will pay additional amounts on the debt securities to any holder of the debt securities who is not a U.S. person in respect of any tax, assessment or governmental charge and, if so, whether we will have the option to redeem such debt securities rather than pay such additional amounts (and the terms of any such option);

whether the debt securities, in whole or specified parts, will be defeasible, and, if the securities may be defeased, in whole or in specified part, any provisions to permit a pledge of obligations other than certain government obligations to satisfy the requirements of the indenture regarding defeasance of securities and, if other than by resolution of our board of directors, the manner in which any election to defease the debt securities will be evidenced;

whether the debt securities will be secured by any property, assets or other collateral and, if so, a general description of the collateral and the terms of any related security, pledge or other agreements;

the persons to whom any interest on the debt securities will be payable, if other than the registered holders thereof on the regular record date therefor;

the dates on which interest, if any, will be payable and the regular record dates for interest payment dates;

any restrictions, conditions or requirements for transfer of the debt securities; and

any other material terms or conditions upon which the debt securities will be issued.

Unless otherwise indicated in the applicable prospectus supplement, we will issue debt securities in fully registered form without coupons and in denominations of \$1,000.00 and in integral multiples of \$1,000.00, and interest will be computed on the basis of a 360-day year of twelve 30-day months. If any interest payment date or the maturity date falls on a day that is not a business day, then the payment will be made on the next business day without additional interest and with the same effect as if it were made on the originally scheduled date.

Unless otherwise indicated in the applicable prospectus supplement, the trustee will act as paying agent and registrar for the debt securities under the indenture. We may also act as paying agent under the indenture.

The applicable prospectus supplement will contain a description of U.S. federal income tax consequences relating to the debt securities, to the extent applicable.

Table of Contents

Covenants

The applicable prospectus supplement will describe any covenants, such as restrictive covenants restricting us or any of our subsidiaries from incurring, issuing, assuming or guarantying any indebtedness or restricting us or any of our subsidiaries from paying dividends or acquiring any of our or its capital stock.

Consolidation, Merger and Transfer of Assets

The indenture permits a consolidation or merger between us and another entity and/or the sale, conveyance or lease by us of all or substantially all of our property and assets; *provided, however*, that:

the resulting or acquiring entity, if other than us, is organized and existing under the laws of a U.S. jurisdiction and assumes all of our responsibilities and liabilities under the indenture, including the payment of all amounts due on the debt securities and performance of the covenants in the indenture;

immediately after the transaction, and giving effect to the transaction, no event of default under the indenture exists; and

we have delivered to the trustee an officers' certificate stating that the transaction and, if a supplemental indenture is required in connection with the transaction, the supplemental indenture, comply with the indenture and that all conditions precedent to the transaction contained in the indenture have been satisfied.

If we consolidate or merge with or into any other entity, or sell or lease all or substantially all of our assets in compliance with the terms and conditions of the indenture, the resulting or acquiring entity will be substituted for us in the indenture and the debt securities with the same effect as if it had been an original party to the indenture and the debt securities. As a result, such successor entity may exercise our rights and powers under the indenture and the debt securities, in our name, and, except in the case of a lease, we will be released from all our liabilities and obligations under the indenture and under the debt securities.

Notwithstanding the foregoing, we may transfer all of our property and assets to another entity if, immediately after giving effect to the transfer, such entity is our wholly-owned subsidiary. The term "wholly-owned subsidiary" means any subsidiary in which we and/or our other wholly-owned subsidiaries own all of the outstanding capital stock.

Modification and Waiver

Under the indenture, some of our rights and obligations and some of the rights of the holders of the debt securities may be modified or amended with the consent of the holders of not less than a majority in aggregate principal amount of the outstanding debt securities affected by the modification or amendment. However, the following modifications and amendments will not be effective against any holder without its consent:

a change in the stated maturity date of any payment of principal or interest;

a reduction in the principal amount of, or interest on, any debt securities;

an alteration or impairment of any right to convert at the rate or upon the terms provided in the indenture;

a change in the currency in which any payment on the debt securities is payable;

an impairment of a holder's right to sue us for the enforcement of payments due on the debt securities; or

Table of Contents

a reduction in the percentage of outstanding debt securities required to consent to a modification or amendment of the indenture or required to consent to a waiver of compliance with certain provisions of the indenture or certain defaults under the indenture.

Under the indenture, the holders of not less than a majority in aggregate principal amount of the outstanding debt securities may, on behalf of all holders of the debt securities:

waive compliance by us with certain restrictive provisions of the indenture; and

waive any past default under the indenture in accordance with the applicable provisions of the indenture, except a default in the payment of the principal of, or interest on, any series of debt securities.

Finally, we and the indenture trustee may, from time to time, amend the indenture without the consent of holders of the debt securities for certain purposes, including but not limited to:

to evidence the succession of another entity to us or successive successions and the assumption by such entity of our covenants, agreements and obligations under the indenture;

to add additional events of default for the protection of the holders of debt securities;

to add covenants for the protection of the holders of debt securities; and

to make certain other administrative modifications which do not materially and adversely affect the interests of the holders of debt securities.

Events of Default

Unless we indicate otherwise in the applicable prospectus supplement, "event of default" under the indenture will mean, with respect to any series of debt securities, any of the following:

failure to pay interest on any debt security for 30 days after the payment is due;

failure to pay the principal of any debt security when due, either at maturity, upon redemption, by declaration or otherwise;

failure on our part to observe or perform any other covenant or agreement in the indenture that applies to the debt securities for 90 days after we have received written notice of the failure to perform in the manner specified in the indenture; and

certain events of bankruptcy, insolvency or reorganization.

If an event of default occurs and continues, the trustee or the holders of not less than 25% in aggregate principal amount of the outstanding debt securities of such series may declare the entire principal of all the debt securities to be due and payable immediately, except that, if the event of default is caused by certain events of bankruptcy, insolvency or reorganization, the entire principal of all of the debt securities of such series will become due and payable immediately without any act on the part of the trustee or holders of the debt securities. If such a declaration occurs, the holders of a majority of the aggregate principal amount of the outstanding debt securities of such series can, subject to conditions, rescind the declaration.

Edgar Filing: MidWestOne Financial Group, Inc. - Form 424B5

The indenture requires us to furnish to the trustee, not less often than annually, a certificate from our principal executive officer, principal financial officer or principal accounting officer, as the case may be, as to such officer's knowledge of our compliance with all conditions and covenants under the indenture. The trustee may withhold notice to the holders of debt securities of any default, except defaults in the payment of principal of, or interest on, any debt securities if the trustee in good faith determines that the withholding of notice is in the best interests of the holders. For purposes of this paragraph, "default" means any event which is, or after notice or lapse of time or both would become, an event of default under the indenture.

Table of Contents

The trustee is not obligated to exercise any of its rights or powers under the indenture at the request, order or direction of any holders of debt securities, unless the holders offer the trustee satisfactory security or indemnity. If satisfactory security or indemnity is provided, then, subject to other rights of the trustee, the holders of a majority in aggregate principal amount of the outstanding debt securities may direct the time, method and place of:

conducting any proceeding for any remedy available to the trustee; or

exercising any trust or power conferred upon the trustee.

The holder of a debt security will have the right to begin any proceeding with respect to the indenture or for any remedy only if:

the holder has previously given the trustee written notice of a continuing event of default;

the holders of not less than a majority in aggregate principal amount of the outstanding debt securities have made a written request of, and offered reasonable indemnity to, the trustee to begin such proceeding;

the trustee has not started such proceeding within 60 days after receiving the request; and

no direction inconsistent with such written request has been given to the trustee under the indenture.

However, the holder of any debt security will have an absolute right to receive payment of principal of, and interest on, the debt security when due and to institute suit to enforce payment.

Satisfaction and Discharge; Defeasance

Satisfaction and Discharge of Indenture. Unless otherwise indicated in the applicable prospectus supplement, if at any time,

we have paid the principal of and interest on all the debt securities of any series, except for debt securities which have been destroyed, lost or stolen and which have been replaced or paid in accordance with the indenture, as and when the same has become due and payable;

we have delivered to the trustee for cancellation all debt securities of any series theretofore authenticated, except for debt securities of such series which have been destroyed, lost or stolen and which have been replaced or paid as provided in the indenture; or

all the debt securities of such series not theretofore delivered to the trustee for cancellation have become due and payable, or are by their terms to become due and payable within one year or are to be called for redemption within one year, and we have deposited with the trustee, in trust, sufficient money or government obligations, or a combination thereof, to pay the principal, any interest and any other sums due on the debt securities, on the dates the payments are due or become due under the indenture and the terms of the debt securities;

then the indenture shall cease to be of further effect with respect to the debt securities of such series, except for (i) rights of registration of transfer and exchange, and our right of optional redemption, (ii) substitution of mutilated, defaced, destroyed, lost or stolen debt securities, (iii) rights of holders to receive payments of principal thereof and interest thereon upon the original stated due dates therefor (but not upon acceleration) and remaining rights of the holders to receive mandatory sinking fund payments, if any, (iv) the rights, obligations and immunities of the trustee under the indenture, and (v) the rights of the holders of such series of debt securities as beneficiaries thereof with respect to the property so deposited with the trustee payable to all or any of them.

Table of Contents

Defeasance and Covenant Defeasance. Unless otherwise indicated in the applicable prospectus supplement, we may elect with respect to any debt securities of any series either:

to defease and be discharged from all of our obligations with respect to such debt securities ("defeasance"), with certain exceptions described below; or

to be released from our obligations with respect to such debt securities under such covenants as may be specified in the applicable prospectus supplement, and any omission to comply with those obligations will not constitute a default or an event of default with respect to such debt securities ("covenant defeasance").

We must comply with the following conditions before the defeasance or covenant defeasance can be effected:

we must irrevocably deposit with the indenture trustee or other qualifying trustee, under the terms of an irrevocable trust agreement in form and substance satisfactory to the trustee, trust funds in trust solely for the benefit of the holders of such debt securities, sufficient money or government obligations, or a combination thereof, to pay the principal, any interest and any other sums on the due dates for those payments; and

we must deliver to the trustee an opinion of counsel to the effect that the holders of such debt securities will not recognize income, gain or loss for federal income tax purposes as a result of such defeasance or covenant defeasance, as the case may be, to be effected with respect to such debt securities and will be subject to federal income tax on the same amount, in the same manner and at the same times as would be the case if such defeasance or covenant defeasance, as the case may be, had not occurred.

In connection with defeasance, any irrevocable trust agreement contemplated by the indenture must include, among other things, provision for: (i) payment of the principal of and interest on such debt securities, if any, appertaining thereto when due (by redemption, sinking fund payments or otherwise); (ii) the payment of the expenses of the trustee incurred or to be incurred in connection with carrying out such trust provisions; (iii) rights of registration, transfer, substitution and exchange of such debt securities in accordance with the terms stated in the indenture; and (iv) continuation of the rights, obligations and immunities of the trustee as against the holders of such debt securities as stated in the indenture.

The accompanying prospectus supplement may further describe any provisions permitting or restricting defeasance or covenant defeasance with respect to the debt securities of a particular series.

Global Securities

Unless otherwise indicated in the applicable prospectus supplement, each debt security offered by this prospectus will be issued in the form of one or more global debt securities representing all or part of that series of debt securities. This means that we will not issue certificates for that series of debt securities to the holders. Instead, a global debt security representing that series will be deposited with, or on behalf of, a securities depository and registered in the name of the depository or a nominee of the depository. Any such depository must be a clearing agency registered under the Exchange Act. We will describe the specific terms of the depository arrangement with respect to a series of debt securities to be represented by a global security in the applicable prospectus supplement.

Notices

We will give notices to holders of the debt securities by mail at the addresses listed in the security register. In the case of notice in respect of unregistered securities or coupon securities, we may give notice by publication in a newspaper of general circulation in New York, New York.

Table of Contents

Governing Law

The indenture and the debt securities will be governed by, and construed in accordance with, the laws of the State of New York, except to the extent the Trust Indenture Act of 1939, as amended, or the Trust Indenture Act, is applicable.

Regarding the Trustee

General. We will enter into the indenture with a trustee that is qualified to act under the Trust Indenture Act and with any other trustees chosen by us and appointed in a supplemental indenture for a particular series of debt securities.

Resignation or Removal of Trustee. If the trustee has or acquires a conflicting interest within the meaning of the Trust Indenture Act, the trustee must either eliminate its conflicting interest or resign, to the extent and in the manner provided by, and subject to the provisions of, the Trust Indenture Act and the indenture. Any resignation will require the appointment of a successor trustee under the indenture in accordance with the terms and conditions of the indenture.

The trustee may resign or be removed by us with respect to one or more series of debt securities and a successor trustee may be appointed to act with respect to any such series. The holders of a majority in aggregate principal amount of the debt securities of any series may remove the trustee with respect to the debt securities of such series.

Annual Trustee Report to Holders of Debt Securities. The trustee will be required to submit certain reports to the holders of the debt securities regarding, among other things, the trustee's eligibility to serve as such, the priority of the trustee's claims regarding advances made by it, and any action taken by the trustee materially affecting the debt securities.

Certificates and Opinions to Be Furnished to Trustee. The indenture provides that, in addition to other certificates or opinions specifically required by other provisions of the indenture, every application by us for action by the trustee must be accompanied by a certificate from one or more of our officers and an opinion of counsel (who may be our counsel) stating that, in the opinion of the signers, all conditions precedent to such action have been complied with by us.

Certain Relationships in the Ordinary Course. From time to time, we may maintain deposit accounts and conduct other banking transactions with the trustee to be appointed under the indenture or its affiliates in the ordinary course of business.

DESCRIPTION OF WARRANTS

The following describes some of the general terms and provisions of warrants we may issue. Warrants may be issued independently or together with any other securities offered by any prospectus supplement and other offering materials, if any, and may be attached to or separate from those securities. Warrants may be issued under warrant agreements to be entered into between us and a warrant agent or may be represented by individual warrant certificates, all as specified in the applicable prospectus supplement and other offering materials, if any. The warrant agent, if any, for any series of warrants will act solely as our agent and will not assume any obligation or relationship of agency or trust for or with any holders or beneficial owners of warrants.

The applicable prospectus supplement and any other offering materials relating to any warrants we may issue will specify the terms of the warrants, including:

the title and aggregate number of the warrants;

the price or prices at which the warrants will be issued;

the title, amount and terms of the securities purchasable upon exercise of the warrants;

the title, amount and terms of the securities offered with the warrants and the number of warrants issued with each such security;

Table of Contents

the date, if any, on and after which the warrants and the related securities will be separately transferable;

the price at which the related securities may be purchased upon exercise of the warrants;

the exercise period for the warrants;

the minimum or maximum number of warrants which may be exercised at any one time;

any applicable anti-dilution, redemption or call provisions;

any applicable book-entry provisions; and

any other terms of the warrants.

Before exercising their warrants, holders of warrants will not have any of the rights of holders of the securities purchasable upon such exercise, including the right to receive dividends, if any, or payments upon our liquidation, dissolution or winding-up, or to exercise voting rights, if any.

DESCRIPTION OF SUBSCRIPTION RIGHTS

This section describes the general terms of the subscription rights to purchase common stock or other securities that we may offer to shareholders using this prospectus. The following description is only a summary, does not purport to be complete and is subject to and qualified in its entirety by reference to the applicable forms of subscription agent agreement and subscription certificate for a full understanding of all terms of any series of subscription rights. The forms of the subscription agent agreement and the subscription certificate will be filed with the SEC as an exhibit to the registration statement of which this prospectus is a part or as an exhibit to a filing incorporated by reference in the registration statement. See "WHERE YOU CAN FIND ADDITIONAL INFORMATION" for information on how to obtain copies.

Subscription rights may be issued independently or together with any other security and may or may not be transferable. As part of any subscription rights offering, we may enter into a standby underwriting or other arrangement under which the underwriters or any other person would purchase any securities that are not purchased in such subscription rights offering. If we issue subscription rights, they will be governed by a separate subscription agent agreement that we will sign with a bank or trust company, as rights agent, that will be named in the applicable prospectus supplement. The rights agent will act solely as our agent and will not assume any obligation to any holders of subscription rights certificates or beneficial owners of subscription rights.

The prospectus supplement relating to any subscription rights we offer will describe the specific terms of the offering and the subscription rights, including the record date for shareholders entitled to the subscription rights distribution, the number of subscription rights issued and the number of shares of common stock that may be purchased upon exercise of the subscription rights, the exercise price of the subscription rights, the date on which the subscription rights will become effective and the date on which the subscription rights will expire, and certain U.S. federal income tax considerations.

In general, a subscription right entitles the holder to purchase for cash a specific number of shares of common stock or other securities at a specified exercise price. The rights are normally issued to shareholders as of a specific record date, may be exercised only for a limited period of time and become void following the expiration of such period. If we determine to issue subscription rights, we will accompany this prospectus with the applicable prospectus supplement that will describe, among other things:

the record date for shareholders entitled to receive the subscription rights;

Table of Contents

the number of shares of common stock or other securities that may be purchased upon exercise of each subscription right;

the exercise price of the subscription rights;

whether the subscription rights are transferable;

the period during which the subscription rights may be exercised and when they will expire;

the steps required to exercise the subscription rights;

whether the subscription rights include "oversubscription rights" so that the holder may purchase more securities if other holders do not purchase their full allotments; and

whether we intend to sell the shares of common stock or other securities that are not purchased in the rights offering to an underwriter or other purchaser under a contractual "standby" commitment or other arrangement.

If fewer than all of the subscription rights issued in any rights offering are exercised, we may offer any unsubscribed securities directly to persons other than shareholders, to or through agents, underwriters or dealers or through a combination of such methods, including pursuant to standby arrangements, as described in the applicable prospectus supplement.

After the close of business on the expiration date, all unexercised subscription rights will become void.

DESCRIPTION OF UNITS

As specified in the applicable prospectus supplement, we may issue units consisting of one or more debt securities, shares of common stock, shares of preferred stock or warrants or any combination of such securities, including guarantees of any securities.

The applicable prospectus supplement and any other offering materials relating to any units issued under the registration statement of which this prospectus is a part will specify the terms of the units, including:

the terms of the units and of any of the debt securities, common stock, preferred stock, warrants and guarantees comprising the units, including whether and under what circumstances the securities comprising the units may be traded separately;

a description of the terms of any unit agreement governing the units; and

a description of the provisions for the payment, settlement, transfer or exchange of the units.

DESCRIPTION OF DEPOSITARY SHARES

This section outlines certain provisions of the deposit agreement that will govern any depositary shares, the depositary shares themselves and the depositary receipts. This information may not be complete in all respects and is subject to and qualified in its entirety by reference to the relevant deposit agreement and depositary receipt with respect to the depositary shares relating to any particular series of preferred stock. A copy of the deposit agreement and form of depositary receipt relating to any depositary shares we issue will be filed with the SEC as an exhibit to the registration statement of which this prospectus is a part or as an exhibit to a filing incorporated by reference in the registration statement. The specific terms of any depositary shares we may offer will be described in the applicable prospectus supplement. If so described in the applicable prospectus supplement, the terms of that series of depositary shares may differ from the general description of terms presented below.

Table of Contents

General

We may offer fractional interests in shares of our preferred stock, rather than full shares of preferred stock. If we do, we will provide for the issuance by a depositary to the public of receipts for depositary shares, each of which will represent a fractional interest in a share of a particular series of preferred stock.

The shares of any series of preferred stock underlying the depositary shares will be deposited under a separate deposit agreement between us and a bank or trust company having its principal office in the United States and having a combined capital and surplus of such amount as may be set forth in the applicable prospectus supplement, which we refer to in this section as the depositary. We will name the depositary in the applicable prospectus supplement. Subject to the terms of the deposit agreement, each owner of a depositary share will have a fractional interest in all the rights and preferences of the preferred stock underlying the depositary share. Those rights include any dividend, voting, redemption, conversion and liquidation rights.

The depositary shares will be evidenced by depositary receipts issued under the deposit agreement. Purchasers of fractional interests in shares of the related series of preferred stock will receive depositary receipts as described in the applicable prospectus supplement.

Unless we specify otherwise in the applicable prospectus supplement, purchasers will not be entitled to receive the whole shares of preferred stock underlying the depositary shares.

Dividends

The depositary will distribute all cash dividends or other cash distributions in respect of the preferred stock underlying the depositary shares to each record holder of depositary shares based on the number of the depositary shares owned by that holder on the relevant record date. The depositary will distribute only that amount which can be distributed without attributing to any holder of depositary shares a fraction of one cent, and any balance not so distributed will be added to and treated as part of the next sum received by the depositary for distribution to record holders of depositary shares.

If there is a distribution other than in cash, the depositary will distribute property to the entitled record holders of depositary shares, unless the depositary determines that it is not feasible to make that distribution. In that case the depositary may, with our approval, adopt the method it deems equitable and practicable for making that distribution, including any sale of property and distribution of the net proceeds from this sale to the concerned holders.

The deposit agreement will also contain provisions relating to how any subscription or similar rights offered by us to holders of the preferred stock will be made available to the holders of depositary shares.

Conversion or Exchange Rights

If any series of preferred stock underlying the depositary shares is subject to conversion or exchange, the applicable prospectus supplement will describe the rights or obligations of each record holder of depositary receipts to convert or exchange the depositary shares.

Redemption

If the series of the preferred stock underlying the depositary shares is subject to redemption, all or a part of the depositary shares will be redeemed from the redemption proceeds of that series of the preferred stock held by the depositary. The redemption price per depositary share will bear the same relationship to the redemption price per share of preferred stock that the depositary share bears to the underlying preferred stock. Whenever we redeem preferred stock held by the depositary, the depositary

Table of Contents

will redeem, as of the same redemption date, the number of depositary shares representing the preferred stock redeemed. If less than all the depositary shares are to be redeemed, the depositary shares to be redeemed will be selected by lot or *pro rata* as determined by the depositary.

After the date fixed for redemption, the depositary shares called for redemption will no longer be outstanding. When the depositary shares are no longer outstanding, all rights of the holders will cease, except the right to receive money or other property that the holders of the depositary shares were entitled to receive upon the redemption. Payments will be made when holders surrender their depositary receipts to the depositary.

Voting Rights

When the depositary receives notice of any meeting at which the holders of the preferred stock may vote, the depositary will mail information about the meeting contained in the notice, and any accompanying proxy materials, to the record holders of the depositary shares relating to the preferred stock. Each record holder of such depositary shares on the record date, which will be the same date as the record date for the preferred stock, will be entitled to instruct the depositary as to how the preferred stock underlying the holder's depositary shares should be voted.

Taxation

Owners of depositary shares will be treated for U.S. federal income tax purposes as if they were owners of the preferred stock represented by the depositary shares. If necessary, the applicable prospectus supplement will provide a description of U.S. federal income tax consequences relating to the purchase and ownership of the depositary shares and the preferred stock represented by the depositary shares.

Amendment and Termination of the Deposit Agreement

The form of depositary receipt evidencing the depositary shares and any provision of the deposit agreement may be amended by agreement between us and the depositary at any time. However, certain amendments as specified in the applicable prospectus supplement will not be effective unless approved by the record holders of at least a majority of the depositary shares then outstanding. A deposit agreement may be terminated by us or the depositary only if:

all outstanding depositary shares relating to the deposit agreement have been redeemed; or

there has been a final distribution on the preferred stock of the relevant series in connection with our liquidation, dissolution or winding up of our business and the distribution has been distributed to the holders of the related depositary shares.

Charges of Depositary

We will pay all transfer and other taxes and governmental charges arising solely from the existence of the depositary arrangements. We will pay associated charges of the depositary for the initial deposit of the preferred stock and any redemption of the preferred stock. Holders of depositary shares will pay transfer and other taxes and governmental charges and any other charges that are stated to be their responsibility in the deposit agreement.

Resignation and Removal of Depositary

The depositary may resign at any time by delivering notice to us. We may also remove the depositary at any time. Resignations or removals will take effect when a successor depositary is appointed and it accepts the appointment.

Table of Contents

PLAN OF DISTRIBUTION

We may sell the securities offered by this prospectus to one or more underwriters or dealers for resale, through agents, directly to purchasers or through a combination of any such methods of sale. The name of any such underwriter, dealer or agent involved in the offer and sale of the securities, the amounts underwritten and the nature of its obligation to take the securities will be stated in the applicable prospectus supplement. We have reserved the right to sell the securities directly to investors on our own in those jurisdictions where we are authorized to do so. The sale of the securities may be effected in transactions: (i) on any national or international securities exchange or quotation service on which the securities may be listed or quoted at the time of sale; (ii) in the over-the-counter market; (iii) in transactions otherwise than on such exchanges or in the over-the-counter market; or (iv) through the writing of options.

In addition, we may issue the securities as a dividend or distribution or in a subscription rights offering to our existing security holders. In some cases, we or dealers acting with us or on our behalf may also purchase securities and re-offer them to the public by one or more of the methods described above. This prospectus may be used in connection with any offering of our securities through any of these methods or other methods described in the applicable prospectus supplement.

We, our agents and underwriters may offer and sell the securities at a fixed price or prices that may be changed, at market prices prevailing at the time of sale, at prices related to such prevailing market prices or at negotiated prices.

We may solicit offers to purchase securities directly from the public from time to time. We also may designate agents from time to time to solicit offers to purchase securities from the public on our behalf. If required, the prospectus supplement relating to any particular offering of securities will name any agents designated to solicit offers, and will include information about any commissions we may pay the agents in that offering.

We may sell securities from time to time to one or more underwriters who would purchase the securities as principal for resale to the public, either on a firm-commitment or best-efforts basis. If we use underwriters to sell securities, we may enter into an underwriting agreement with them at the time of the sale and will name them in the applicable prospectus supplement. In connection with the sale of the securities, underwriters may be deemed to have received compensation from us in the form of underwriting discounts or commissions and may also receive commissions from purchasers of the securities for whom they may act as agents. Any underwriting compensation paid by us to underwriters or agents in connection with the offering of the securities, and any discounts, concessions or commissions allowed by underwriters to participating dealers, will be set forth in the applicable prospectus supplement to the extent required by applicable law. Underwriters may sell the securities to or through dealers, and such dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters or commissions (which may be changed from time to time) from the purchasers for whom they may act as agents.

Dealers and agents participating in the distribution of the securities may be deemed to be underwriters, and any discounts and commissions received by them and any profit realized by them on resale of the securities may be deemed to be underwriting discounts and commissions under the Securities Act, as amended, or the Securities Act.

If so indicated in the applicable prospectus supplement, we will authorize underwriters, dealers or agents to solicit offers from certain specified institutions to purchase offered securities from us at the public offering price set forth in the prospectus supplement pursuant to delayed delivery contracts providing for payment and delivery on a specified date in the future. Such contracts will be subject to any conditions set forth in the applicable prospectus supplement, and the prospectus supplement will set forth the commission payable for solicitation of such contracts. The underwriters and other persons

Table of Contents

soliciting such contracts will have no responsibility for the validity or performance of any such contracts.

If we offer securities in a subscription rights offering to our existing security holders, we may enter into a standby underwriting agreement with dealers, acting as standby underwriters. We may pay the standby underwriters a commitment fee for the securities they commit to purchase on a standby basis. If we do not enter into a standby underwriting arrangement, we may retain a dealer-manager to manage a subscription rights offering for us.

Underwriters, dealers and agents may be entitled, under agreements entered into with us, to indemnification against and contribution towards certain civil liabilities, including any liabilities under the Securities Act.

To facilitate the offering of securities, certain persons participating in the offering may engage in transactions that stabilize, maintain, or otherwise affect the price of the securities. These may include over-allotment, stabilization, syndicate short-covering transactions and penalty bids. Over-allotment involves sales in excess of the offering size, which creates a short position. Stabilizing transactions involve bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum. Syndicate short-covering transactions involve purchases of securities in the open market after the distribution has been completed in order to cover syndicate short positions. Penalty bids permit the underwriters to reclaim selling concessions from dealers when the securities originally sold by the dealers are purchased in covering transactions to cover syndicate short positions. These activities may stabilize, maintain or otherwise affect the market price of the securities. As a result, these transactions may cause the price of the securities sold in an offering to be higher than it would otherwise be in the open market. These transactions may be effected on an exchange or automated quotation system, if the securities are listed on that exchange or admitted for trading on that automated quotation system, or in the over-the-counter market or otherwise. These transactions, if commenced, may be discontinued by the underwriters at any time.

The amount of expenses expected to be incurred by us in connection with any issuance of securities will be set forth in the applicable prospectus supplement.

Under Rule 15c6-1 of the Exchange Act, trades in the secondary market generally are required to settle in three business days, unless the parties to any such trade expressly agree otherwise. Your prospectus supplement may provide that the original issue date for your securities may be more than three scheduled business days after the trade date for your securities. Accordingly, in such a case, if you wish to trade securities on any date prior to the third business day before the original issue date for your securities, you will be required, by virtue of the fact that your securities initially are expected to settle in more than three scheduled business days after the trade date for your securities, to specify alternative settlement arrangements to prevent a failed settlement.

Underwriters, agents and their affiliates may be customers of, engage in transactions with, or perform services for us or our subsidiaries in the ordinary course of their businesses. In connection with the distribution of the securities offered under this prospectus, we may enter into swap or other hedging transactions with, or arranged by, underwriters or agents or their affiliates. These underwriters or agents or their affiliates may receive compensation, trading gain or other benefits from these transactions.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

Certain statements contained in or incorporated by reference into this prospectus that are not historical facts may constitute forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act. We intend such forward-looking statements to be covered by the safe harbor provisions for forward-looking statements contained in the Private Securities

Table of Contents

Litigation Reform Act of 1995, and we are including this statement for purposes of invoking these safe harbor provisions. These statements involve known and unknown risks, uncertainties and other factors that may cause actual results to be materially different from any results, levels of activity, performance or achievements expressed or implied by any forward-looking statement. These factors include, among other things, the factors listed below. Forward-looking statements, which may be based upon beliefs, expectations and assumptions of our management and on information currently available to management, are generally identifiable by the use of words such as "believe", "expect", "anticipate", "should", "could", "would", "plans", "intend", "project", "estimate", "forecast", "may" or similar expressions. These forward-looking statements are subject to certain risks and uncertainties that could cause actual results to differ materially from those expressed in, or implied by, these statements. Readers are cautioned not to place undue reliance on any such forward-looking statements, which speak only as of the date made. Additionally, we undertake no obligation to update any statement in light of new information or future events, except as required under federal securities law.

Factors that could cause actual results to differ materially from the results anticipated or projected include, but are not limited to, the following: (i) credit quality deterioration or pronounced and sustained reduction in real estate market values could cause an increase in our allowance for credit losses and a reduction in net earnings; (ii) our management's ability to reduce and effectively manage interest rate risk and the impact of interest rates in general on the volatility of our net interest income; (iii) changes in the economic environment, competition, or other factors that may affect our ability to acquire loans or influence the anticipated growth rate of loans and deposits and the quality of the loan portfolio and loan and deposit pricing; (iv) fluctuations in the value of our investment securities; (v) governmental monetary and fiscal policies; (vi) legislative and regulatory changes, including changes in banking, securities and tax laws and regulations and their application by our regulators (particularly with respect to the Dodd-Frank Wall Street Reform and Consumer Protection Act and the extensive regulations promulgated and to be promulgated thereunder, as well as the Basel III regulatory capital reforms), and changes in the scope and cost of Federal Deposit Insurance Corporation insurance and other coverages; (vii) the ability to attract and retain key executives and employees experienced in banking and financial services; (viii) the sufficiency of the allowance for loan losses to absorb the amount of actual losses inherent in our existing loan portfolio; (ix) our ability to adapt successfully to technological changes to compete effectively in the marketplace; (x) credit risks and risks from concentrations (by geographic area and by industry) within our loan portfolio; (xi) the effects of competition from other commercial banks, thrifts, mortgage banking firms, consumer finance companies, credit unions, securities brokerage firms, insurance companies, money market and other mutual funds, and other financial institutions operating in our markets or elsewhere or providing similar services; (xii) the failure of assumptions underlying the establishment of allowances for loan losses and estimation of values of collateral and various financial assets and liabilities; (xiii) the risks of mergers, including, without limitation, the related time and costs of implementing such transactions, integrating operations as part of these transactions and possible failures to achieve expected gains, revenue growth and/or expense savings from such transactions; (xiv) volatility of rate-sensitive deposits; (xv) operational risks, including data processing system failures or fraud; (xvi) asset/liability matching risks and liquidity risks; (xvii) the costs, effects and outcomes of existing or future litigation; (xviii) changes in general economic or industry conditions, nationally or in the communities in which we conduct business; (xix) changes in accounting policies and practices, as may be adopted by state and federal regulatory agencies and the Financial Accounting Standards Board; (xx) cyber-attacks; and (xxi) other risk factors detailed in the "Risk Factors" section of the applicable prospectus supplement issued in connection with the issuance of securities and in our most recent Annual Report on Form 10-K and elsewhere in our periodic and current reports filed with the SEC.

Table of Contents

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We are subject to the information requirements of the Exchange Act, which means we are required to file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the internet at the SEC's website at <http://www.sec.gov> or on our website at www.midwestone.com. You may also read and copy any document we file with the SEC at its Public Reference Room at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. You may also obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330.

DOCUMENTS INCORPORATED BY REFERENCE

The SEC allows us to "incorporate by reference" into this prospectus the information we file with the SEC. This permits us to disclose important *information* to you by referring to these separately filed documents. The information incorporated by reference is an important part of this prospectus, and the information we file subsequently with the SEC will automatically update the information in this prospectus. This historical and future information that is incorporated by reference in this prospectus is considered to be part of this prospectus and can be obtained at the locations described above under the heading "Where You Can Find Additional Information." The information included elsewhere in this prospectus and the following documents incorporated by reference in this prospectus is considered to be part of this prospectus:

our Annual Report on Form 10-K for the fiscal year ended December 31, 2015, filed with the SEC on March 3, 2016, including the portions of our Definitive Proxy Statement on Schedule 14A filed on March 11, 2016 that are incorporated therein;

our Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2016, filed with the SEC on May 5, 2016;

our Current Reports on Form 8-K filed with the SEC on January 20, 2016, January 28, 2016 (except for information furnished under Item 2.02), February 2, 2016 (except for information furnished under Item 7.01), April 5, 2016, April 18, 2016 (except for information furnished under Item 7.01), April 22, 2016 and April 28, 2016 (except for information furnished under Item 2.02);

the description of our common stock contained in the Company's Registration Statement filed with the SEC on August 4, 1994, pursuant to Section 12 of the Exchange Act on Form 8-A (File No. 000-24630), and all amendments and reports filed by the Company for the purpose of updating such description, including the prospectus constituting part of our Amendment No. 2 to Registration Statement on Form S-4 (File No. 333-147628) filed with the SEC on January 22, 2008, under the headings "SUMMARY-Dividend Policy After the Merger; Coordination of Dividends," "SUMMARY-Differences in the Rights of Shareholders," "PRICE RANGE OF COMMON STOCK AND DIVIDEND INFORMATION," "DESCRIPTION OF ISBF CAPITAL STOCK AND COMPARISON OF SHAREHOLDER RIGHTS" and "SUMMARY OF AMENDMENTS TO ISBF'S ARTICLES OF INCORPORATION AND BYLAWS"; and

any future filings made with the SEC under Sections 13(a), 13(c), 14 or 15(d) under the Exchange Act, after the date of this document, excluding any document or portion thereof that has been furnished to and deemed not to be filed with the SEC.

Any statement contained in this prospectus or in a document incorporated or deemed to be incorporated by reference into this prospectus shall be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in any subsequently filed document which also is, or is deemed to be, incorporated by reference in this prospectus modifies or supersedes

Table of Contents

such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

We will provide you with a copy of any information that we incorporate by reference into this prospectus or the registration statement that contains this prospectus, at no cost, by writing or calling us. Requests for such materials should be directed to:

MidWestOne Financial Group, Inc.
Attention: Kenneth R. Urmie, Corporate Secretary
102 South Clinton Street
Iowa City, Iowa 52240
Telephone number: (319) 356-5800

LEGAL MATTERS

Certain legal matters in connection with the offering of securities made by this prospectus generally will be passed upon for us by our special counsel in the State of Iowa, Pugh Hagan Prahm PLC. Certain other legal matters particular to any offering of debt securities made by this prospectus will be passed upon for us by Barack Ferrazzano Kirschbaum & Nagelberg LLP. If the securities are being distributed in an underwritten offering, certain legal matters will be passed upon for the underwriters by counsel identified in the related prospectus supplement.

EXPERTS

The consolidated financial statements of MidWestOne Financial Group, Inc. as of December 31, 2015 and 2014 and for each of the years in the two-year period ended December 31, 2015 and Note 22 for the year ended December 31, 2013, and management's assessment of the effectiveness of internal control over financial reporting as of December 31, 2015, have been incorporated by reference in this prospectus and in the registration statement in reliance upon the reports of RSM US LLP, an independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing. The consolidated financial statements of MidWestOne Financial Group, Inc. for the year ended December 31, 2013, before the effects of the adjustments to retroactively reflect the change in the composition of reportable segments described in Note 22, have been incorporated by reference in this prospectus and in the registration statement in reliance upon the report of KPMG LLP, an independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing.

Table of Contents

2,500,000 Shares

MidWestOne Financial Group, Inc.

Common Stock

PROSPECTUS SUPPLEMENT

March 17, 2017
