

Supplement dated April 16, 2014 to Prospectus dated May 14, 2013

This supplement contains information that amends, supplements or modifies certain information contained in the Prospectus of HMS Income Fund, Inc. (the *Company*") dated May 14, 2013 (as so supplemented and amended, the "*Prospectus*"). This supplement is part of, and should be read in conjunction with, the Prospectus. The Prospectus has been filed with the Securities and Exchange Commission and is available at www.sec.gov or by calling (888) 446-3773. Capitalized terms used in this supplement have the same meanings as in the Prospectus, unless otherwise stated herein.

You should carefully consider the "Risk Factors" beginning on page 33 of the Prospectus before you decide to invest.

This supplement updates the Prospectus to reflect our receipt of an order issued by the SEC permitting us, subject to certain conditions more particularly described in the Prospectus, to co-invest with Main Street Capital Corporation and certain of its wholly-owned affiliates in customized lower middle market securities.

This supplement amends the Prospectus as follows:

PROSPECTUS SUMMARY

This supplement replaces the last three paragraphs in the section entitled "Prospectus Summary-Our Investment Process" on pages 7-8 of the Prospectus with the following:

As a BDC, we are subject to certain regulatory restrictions in making our investments, including limitations on our ability to co-invest with certain affiliates. However, we have received an order from the SEC, which we refer to in this Prospectus as the exemptive relief, that permits us, subject to certain conditions, to co-invest with Main Street in certain transactions originated by Main Street and/or our Advisers. The exemptive relief permits us, and certain of our directly or indirectly wholly-owned subsidiaries on one hand, and Main Street, and/or certain of its affiliates, on the other hand, to co-invest in the same investment opportunities where such investment would otherwise be prohibited under Section 57(a)(4) of the 1940 Act. Under the co-investment program described in our application for exemptive relief, as amended, we expect that co-investments between us and Main Street will be the norm rather than the exception, as substantially all potential co-investments that are appropriate investments for us should also be appropriate investments for Main Street, and vice versa. Limited exceptions to co-investing will be based on available capital, diversification and other relevant factors. Accordingly, now that we have received exemptive relief, our Sub-Adviser will treat every potential investment in customized lower middle market securities evaluated by Main Street as a potential investment opportunity for us, will determine the appropriate for us and propose an allocation between us and Main Street. If our Adviser, in advance, information about each potential investment that it deems appropriate for us and propose an allocation between us and Main Street. If our Adviser were to deem such potential co-investment transaction and proposed allocation appropriate for us our Adviser will present the transaction and the proposed allocation to us to the members of our board of directors who are (1) not interested persons of us or Main Street, and (2)

who do not have a financial interest in the proposed transaction or the proposed portfolio company, which directors are referred to as "Eligible Directors," and our Sub-Adviser will present the transaction and the proposed allocation for Main Street to the Eligible Directors of the Main Street board of directors. Each board, including a majority of the Eligible Directors of each board, will approve each proposed co-investment transaction and the allocation associated therewith prior to the consummation of any co-investment transaction. No independent director on our board of directors or Main Street's board of directors will have any direct or indirect financial interest in any co-investment transaction or any interest in any related portfolio company, other than through an interest (if any) in our or Main Street's securities, as applicable. Additional information regarding the operation of the co-investment program is set forth in the order for exemptive relief, which may be reviewed on the SEC's website at www.sec.gov.

In addition to the co-investment program described above and in the exemptive relief, we may continue to co-invest in syndicated deals and secondary loan market transactions where price is the only negotiated point.

This supplement replaces the third paragraph in the section entitled "Prospectus Summary-Estimated Use of Proceeds" on page 11 of the Prospectus with the following:

During our offering period, we intend to use a portion of the net proceeds of the offering and proceeds from the sale or repayment or other liquidation of existing investments to invest in customized lower middle market securities, depending on the availability of appropriate investment opportunities consistent with our investment objective and market conditions. By the end of our offering period, we expect to have invested a significant portion of our net proceeds in customized lower middle market securities. Our investment strategy contemplates that we will focus on investing capital in originated transactions that are sourced by our Sub-Adviser.

This supplement replaces the fifth bullet point in the section entitled "Prospectus Summary-Conflicts of Interest" on page 15 of the Prospectus with the following:

• To the extent permitted by the 1940 Act and staff interpretations, our Advisers may determine it appropriate for us and one or more other investment accounts managed by Main Street to participate in an investment opportunity. We, Main Street and certain of our respective affiliates have received exemptive relief allowing us to coinvest with Main Street pursuant to a specific investment program and subject to certain conditions. These co-investment opportunities may give rise to conflicts of interest or perceived conflicts of interest among us and the other participating parties; and

RISK FACTORS

This supplement replaces the risk factor entitled "The time and resources that individuals employed by the Advisers devote to us may be diverted and we may face additional competition due to the fact that neither our Advisers nor their affiliates are prohibited from raising money for or managing another entity that makes the same types of investments that we target." on pages 39-40 of the Prospectus with the following:

The time and resources that individuals employed by the Advisers devote to us may be diverted, and we may face additional competition due to the fact that neither our Advisers nor their affiliates are prohibited from raising money for or managing another entity that makes the same types of investments that we target.

The investment professionals employed by our Sub-Adviser currently manage Main Street and other investment entities, and neither our Adviser nor our Sub-Adviser is prohibited from raising money for and managing future investment entities that make the same types of investments as those we target; provided, however, that during the terms of the Investment Advisory Agreement and Sub-Advisory Agreement, except as otherwise agreed, neither the Adviser nor the Sub-Adviser may serve as an investment adviser to a public, non-traded BDC (except this restriction will not apply to the Adviser and Sub-Adviser working together on another fund sponsored by the Adviser or the Sub-Adviser). As a result, the time and resources that our Advisers devote to us may be diverted, and during times of intense activity in other programs, they may devote less time and resources to our business than is necessary or appropriate. In addition, we may compete with any such investment entity for the same investors and investment opportunities. While the 1940 Act imposes significant limits on our co-investing with Main Street or other entities managed by our Advisers, we have requested and received from the SEC exemptive relief under the 1940 Act that allows us additional latitude to co-invest with Main Street.

This supplement deletes the risk factor entitled "If we do not obtain exemptive relief from the SEC to allow us to co-invest alongside Main Street and/or certain of its affiliates, we may be required to adjust our investment strategy." on page 40 in its entirety.

This supplement replaces the risk factor entitled "Our Sub-Adviser may face conflicts of interest in allocating investment opportunities between us and itself and its affiliates." on page 40 of the Prospectus with the following:

Our Sub-Adviser may face conflicts of interest in allocating investment opportunities between us and itself and its affiliates.

The investment professionals employed by our Sub-Adviser are also the investment professionals responsible for investing and managing Main Street's securities portfolio. These professionals are responsible for allocating investment opportunities between us and Main Street. Our exemptive relief imposes on our Sub-Adviser the obligation to evaluate whether each investment opportunity its investment professionals review for Main Street is also appropriate for us and to propose an allocation of such opportunity to us if it deems such opportunity to be appropriate. If our Sub-Adviser arbitrarily determines that certain investment opportunities are appropriate for Main Street but not appropriate for us, or if our Sub-Adviser proposes an allocation of an investment opportunity to us that is disproportionately small relative to the proposed allocation to Main Street and our ability to fund the investment, our operating results could be adversely affected.

This supplement replaces the risk factor entitled "Our ability to enter into and exit transactions with our affiliates will be restricted." on pages 42-43 of the Prospectus with the following:

Our ability to enter into and exit transactions with our affiliates will be restricted.

We are prohibited under the 1940 Act from participating in certain transactions with certain of our affiliates without the prior approval of a majority of the independent members of our board of directors and, in some cases, the SEC. Any person that owns, directly or indirectly, 5% or more of our outstanding voting securities is considered our affiliate for purposes of the 1940 Act and we are generally prohibited from buying or selling any securities from or to such affiliate, absent the prior approval of our board of directors. The 1940 Act also prohibits certain "joint" transactions with certain of our affiliates, which could include investments in the same portfolio company (whether at the same or different times), without prior approval of our board of directors and, in some cases, the SEC. If a person acquires more than 25% of our voting securities, we will be prohibited from buying or selling any security from or to such person or certain of that person's affiliates, or entering into prohibited joint transactions with such persons, absent the prior approval of the SEC. Similar restrictions limit our ability to transact business with our officers or directors or their affiliates. We have, however, received an exemptive order from the SEC to co-invest with Main Street under the terms set forth in the exemptive relief.

INVESTMENT OBJECTIVE AND STRATEGIES

This supplement replaces the sixth, seventh and eighth paragraphs in the section entitled "Investment Objective and Strategies - Our Company" on page 80 of the Prospectus with the following:

As a BDC, we are subject to certain regulatory restrictions in making our investments, including limitations on our ability to co-invest with certain affiliates. However, we have received exemptive relief from the SEC that permits us, subject to certain conditions, to co-invest with Main Street in certain transactions originated by Main Street and/or our Advisers. The exemptive relief permits us, and certain of our directly or indirectly wholly-owned subsidiaries on one hand, and Main Street, and/or certain of its affiliates, on the other hand, to co-invest in the same investment opportunities where such investment would otherwise be prohibited under Section 57(a)(4) of the 1940 Act. Under the co-investment program described in our application for exemptive relief, as amended, we expect that co-investments between us and Main Street will be the norm rather than the exception, as substantially all potential co-investments that are appropriate investments for us should also be appropriate investments for Main Street, and vice versa. Limited exceptions to co-investing will be based on available capital, diversification and other relevant factors. Accordingly, now that we have received exemptive relief, our Sub-Adviser will treat every potential investment in customized lower middle market securities evaluated by Main Street as a potential investment opportunity for us, will determine the appropriateness of each potential investment for co-investment by us, will provide to our Adviser, in advance, information about each potential investment that it deems appropriate for us, our Adviser will present the transaction and the proposed allocation to us to the members of our board of directors who are (1) not interested persons of us or Main Street, and (2) who do not have a financial interest in the proposed transaction or the proposed portfolio company, which directors are referred to as "Eligible Directors," and our Sub-Adviser will present the transaction and the proposed allocation for Main Street to the Eligible Di

directors. Each board, including a majority of the Eligible Directors of each board, will approve each proposed co-investment transaction and the allocation associated therewith prior to the consummation of any co-investment transaction. No independent director on our board of directors or Main Street's board of directors will have any direct or indirect financial interest in any co-investment transaction or any interest in any related portfolio company, other than through an interest (if any) in our or Main Street's securities, as applicable. Additional information regarding the operation of the co-investment program is set forth in the order for exemptive relief, which may be reviewed on the SEC's website at www.sec.gov.

In addition to the co-investment program described above and in the exemptive relief, we may continue to co-invest in syndicated deals and secondary loan market transactions where price is the only negotiated point.

This supplement deletes the last paragraph in the section entitled "Investment Objective and Strategies - Our Investment Process" on page 81 of the Prospectus in its entirety.

CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

This supplement replaces the three paragraphs in the section entitled "Certain Relationships and Related Party Transactions - Competition/Co-Investment" on page 121 of the Prospectus with the following:

As a BDC, we are subject to certain regulatory restrictions in making our investments, including limitations on our ability to co-invest with certain affiliates. However, we have received exemptive relief from the SEC that permits us, subject to certain conditions, to co-invest with Main Street in certain transactions originated by Main Street and/or our Advisers. The exemptive relief permits us, and certain of our directly or indirectly wholly-owned subsidiaries on one hand, and Main Street, and/or certain of its affiliates, on the other hand, to co-invest in the same investment opportunities where such investment would otherwise be prohibited under Section 57(a)(4) of the 1940 Act. Under the coinvestment program described in our application for exemptive relief, as amended, we expect that co-investments between us and Main Street will be the norm rather than the exception, as substantially all potential co-investments that are appropriate investments for us should also be appropriate investments for Main Street, and vice versa. Limited exceptions to co-investing will be based on available capital, diversification and other relevant factors. Accordingly, now that we have received exemptive relief, our Sub-Adviser will treat every potential investment in customized lower middle market securities evaluated by Main Street as a potential investment opportunity for us, will determine the appropriateness of each potential investment for co-investment by us, will provide to our Adviser, in advance, information about each potential investment that it deems appropriate for us and propose an allocation between us and Main Street. If our Adviser were to deem such potential co-investment transaction and proposed allocation appropriate for us, our Adviser will present the transaction and the proposed allocation to us to the members of our board of directors who are (1) not interested persons of us or Main Street, and (2) who do not have a financial interest in the proposed transaction or the proposed portfolio company, which directors are referred to as "Eligible Directors," and our Sub-Adviser will present the transaction and the proposed allocation for Main Street to the Eligible Directors of the Main Street board of directors. Each board, including a majority of the Eligible Directors of each board, will approve each proposed co-investment transaction and the allocation associated therewith prior to the consummation of any co-investment transaction. No independent director on our board of directors or Main Street's board of directors will have any direct or indirect financial interest in any co-investment transaction or any interest in any related portfolio company, other than through an interest (if any) in our or Main Street's securities, as applicable. Additional information regarding the operation of the co-investment program is set forth in the order for exemptive relief, which may be reviewed on the SEC's website at www.sec.gov.

In addition to the co-investment program described above and in the exemptive relief, we may continue to co-invest in syndicated deals and secondary loan market transactions where price is the only negotiated point.

REGULATION

This supplement replaces the last paragraph in the section entitled "Regulation" on page 146 of the Prospectus with the following:

As a BDC, we are generally not permitted to invest in any portfolio company in which our Adviser, Main Street or any of their affiliates currently have an investment or to make any co-investments with our Adviser, Main Street or any of their affiliates without an exemptive order from the SEC. As described in more detail in "Certain Relationships and Related Party Transactions," however, we have received exemptive relief from the SEC that permits us to co-invest with our Advisers or their affiliates, including Main Street, in certain transactions originated by Main Street, our Advisers or their affiliates.