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THE ROLE OF SECURITIES LENDING IN WELL-FUNCTIONING MARKETS

ASSET MANAGER PERSPECTIVE

Securities lending markets contribute to well-functioning markets in important ways. The main vector for this contribution is that lending markets aid in efficient price discovery for assets. Asymmetries in the ability of investors to express opinions on the value of assets, in particular for low valuations, are reduced. This is particularly relevant for assets where breadth of ownership is limited, the case of the current environment.

We argue that an asset owner's stock lending activities are the result of an interplay between three separate objectives – contributing to well-functioning markets through an efficient stock lending market, generating income from the portfolio inventory, and ensuring that the relationship with corporates and exercising voting rights as a responsible investor is maintained.

In this note, we describe how we approach this interplay of objectives as a large, long-term investor. We first analyse how securities lending markets help in price discovery. We then consider the incentive structures and risks for stock borrowers, and highlight the important role that regulatory policy plays in that incentive structure. We conclude with a discussion of our approach to managing the lender's separate objectives.

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The Asset Manager Perspective series articulates Norges Bank Investment Management's views and reflections on issues topical for the financial industry. They are not meant to be definitive, rather they are intended as timely contributions for the benefit of all market participants. The series is written by employees, and is informed by our investment research and our experience as a large, long-term asset manager.

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The market for borrowing and lending financial assets – such as stock lending in equities or repo markets in fixed income instruments – is an important component of well-functioning asset markets. In common with most large asset owners and managers, Norges Bank Investment Management is an active participant in these markets.

Lending markets contribute to the well-functioning of markets for buying and selling assets. The main vector for this contribution is that lending markets aid in efficient price discovery for assets. Asymmetries in the ability of investors to express opinions on the value of assets, in particular for low valuations, are reduced. This is particularly relevant for assets where breadth of ownership is limited.

This contribution to well-functioning markets is one of the key considerations for our active participation in stock lending markets. The income from stock lending is another consideration, since it helps us to monetise our inventory of equity positions. This income compensates for risks taken on through securities lending, for the reduced portfolio management flexibility, and for changes in the relationship with corporates. The risks primarily stem from the potential mismatch between the lent-out securities' performance and that of the assets used as collateral, in the event of a counterparty default. Portfolio management flexibility is reduced since encumbered stocks that are lent out must be recalled before they can be sold out of a portfolio.

The income from stock lending must also compensate for changes in the relationship with corporates. Depending on the set-up of the stock lending programme, a lender may relinquish voting rights if stocks are not recalled over the record date. For responsible, active long-term investors, this requires careful consideration within the portfolio management process. We have to balance our ownership voting rights and relationships with many of the corporates we hold on the one hand and the contribution to well-functioning markets through securities lending as well as the income from the lending programme on the other.

An asset owner's stock lending activities are thus determined by the interplay of three separate objectives – contributing to well-functioning markets through an efficient stock lending market, generating income from the equity inventory, and ensuring that the relationship with corporates as a responsible, long-term investor is maintained.

In this note, we describe how we approach this interplay of these objectives. We first analyse how stock lending markets help in price discovery. We then consider the incentive structures and risks for stock borrowers, and highlight the important role that regulatory policy plays in that incentive structure. We conclude with a discussion of our approach to managing the lender's separate objectives.

The Contribution of Stock Lending to Well-Functioning Markets

The ability to borrow and lend financial assets is an important contributor to price discovery and liquidity in well-functioning asset markets. The academic argument goes back to Miller (1977)[1]: The supply of a financial asset, such as a stock, is finite and in general smaller than the aggregate demand for that asset at prices greater than zero. In the absence of stock lending, the market clearing price of the stock is the valuation of the marginal investor where aggregate demand for the stock equals total supply.

The presence of a stock lending market increases the supply of shares available for sale. Investors with the lowest valuation for a stock would be willing to pay the fees to borrow a stock and sell it short, enabling investors with a (higher) valuation to buy. These marginal buyers are priced out of the market without stock lending. The net result is that the market price of the security will be lower (reflecting the valuation of the new marginal investor), and the views of a greater proportion of investors will be reflected in the market. From the perspective of a long-term investor, this can increase the future risk premia received from holding a long position.

In both the case of a market with stock lending and one without, the net long ownership of a stock will still equal 100% of the free float – it is just the gross long ownership (and corresponding short positions) that are different. This means that regardless of the amount of short interest, there have to be some holders who do not lend out their shares – either because they fail to find borrowers, or because they do not want to lend their shares.

This suggests that the quantity of stock borrowed is endogenous – determined by the linkage between the stock market and the lending market. In a recent paper[2], Blocher, Reed and Van Wesep (2013) develop this linkage explicitly, and show the equilibrium relationship between stock prices and the price to borrow shares. One of their key insights is that while supply constraints in the stock market are binding (every share outstanding has to be owned by somebody), there can be slackness in the lending market (not all shares available to lend are borrowed). This links the ability to borrow shares to stock prices and to future returns. The ability to borrow may be determined both by the availability of shares to borrow, and by potential short sale restrictions.

The existence of a stock lending market can thus contribute to more efficient price discovery. This is particularly relevant when ownership of assets is concentrated amongst relatively few, large market participants – characterising the current market environment. A greater percentage of shares outstanding in passively managed portfolios also increases the importance of a well-functioning stock lending market for price discovery.

1 Edward M. Miller, "Risk, Uncertainty and Divergence of Opinion", Journal of Finance, 1977.

2 Jesse Blocher, Adam V. Reed and Edward D. Van Wesep, "Connecting Two Markets: An Equilibrium Framework for Shorts, Longs, and Stock Loans", Journal of Financial Economics, 2013.

Large equity investors have shares of ownership that are generally significantly higher than their share of trading volume. This may be driven by mandate restrictions – such as in the case of passively managed funds – as well as by market impact cost considerations. The contribution to price discovery of these market participants is thus limited. They depend on the price discovery provided by other market participants who have a greater volume share than ownership share. This price discovery is reflected on a mark-to-market basis in the large market participants' portfolios. Passively managed portfolios are the limiting case – their contribution to price discovery is limited to providing information about the aggregate demand for equities.

The increasing institutional ownership – and the increasing concentration within institutional ownership – has shrunk the proportion of share free float that actively participates in price discovery. A growing proportion of shares may be viewed as being essentially never traded again after they enter a large institutional portfolio. This is particularly the case if that portfolio is part of a fund with growing assets under management. A recent example are funds that are part of defined contribution retirement plans in the U.S., as well as some fast-growing Exchange Traded Funds (ETFs). Stock lending markets can make some of these shares available for trading again.

Ensuring an Efficient Stock Lending Market

An efficient stock lending market can be beneficial for the price discovery process, particularly if stock ownership is concentrated, the supply of stocks is constrained, and there are heterogeneous valuations of the stock.

Efficiency in the stock lending market means that the fee received by the stock lender is sufficient to compensate for the loss in ownership rights (particularly over the record period, in the case of voting), the additional risk from collateral mismatch, and the potential reduction in portfolio liquidity stemming from encumbered positions. The relative magnitude of these effects varies both cross-sectionally and over time.

The cost paid by the borrower, similarly, has to be sufficiently attractive that it compensates for the cost of 'manufactured payments' (dividends and distributions) paid to the lender, as well as for the risk (potentially unlimited loss) inherent in a short position. Note that the cost faced by the borrower will be in excess of the fees received by the lender – it also includes collateral cost, as well as borrowing restrictions and prohibitions.

The borrower's cost thus includes both direct costs in the form of lending fees, as well as indirect costs and risks. Jones and Lamont (2002) enumerate some of these indirect costs and risks as they analyse the impact of such constraints on efficient price discovery[3]. These include institutional con-

3 Charles M. Jones and Owen A. Lamont, "Short-sale constraints and stock returns", Journal of Financial Economics, 2002.

straints (mandate prevents short selling), search cost to find a stock lender, the risk of having to post additional collateral if the price of the borrowed stock rises, and recall risk.

These costs and risks represent short sale constraints, in the sense that they still allow for short selling, but make it less attractive. There are also more categorical short sale prohibitions – either for certain market participants (e.g. through mandate restrictions) or for the market as a whole. The latter are typically the result of regulations. In the US, for example, there are circuit breaker rules, which invoke the so-called up-tick rule once a stock's price has moved by more than 10%. The up-tick rule specifies that short-sales can occur only at prices that are the same or higher than the previous trade print. In other markets, other versions of this up-tick rule are implemented.

Another regulatory prohibition concerns 'naked' short selling, where stocks are sold short without a borrow having been located. This could lead to settlement fails. The SEC has introduced Regulation SHO in 2005, targeting abusive naked short selling and reducing failed deliveries. Other markets have similar rules, designed to ensure that the aggregate net number of shares that are claimed to be owned are in line with the shares outstanding.

In addition to these market structure based regulatory prohibitions, there are ad hoc blanket bans on short selling, typically in response to significant market stress. Recent examples occurred during the financial crisis in 2008 and later during the European crisis in 2012. These prohibitions are meant to slow a decline in stock prices in high-volatility environments. Empirical analysis generally shows that these prohibitions are not effective in achieving this objective[4]. Moreover, they might impose significant unintended costs, particularly through wider bid/ask spreads, cross-instrument arbitrage failures and higher opportunity costs from failing to complete mutually beneficial trades[5].

Efficient stock lending markets thus primarily need a careful management of the costs and risks faced by borrowers. While the efficiency of price discovery will be greater the lower those costs are, arguably some of these costs are desirable for well-functioning markets. The ban on naked short selling, such as Regulation SHO, is an example of a cost that, while hindering the activities of short sellers, improves the overall well-functioning of markets. Carefully designed exemptions for market makers help to ensure that equity markets can still clear continuously. This is a significant benefit.

Some other costs are similarly under the purview of regulators, such as the ability to introduce temporary, ad hoc blanket bans on short selling. Based on the empirical evidence, we believe that the negative impact on well-functioning markets, in both the short and the long term, outweighs the short term benefit of 'taming animal spirits'. On balance, the stock market as the ultimate arbiter of a firm's value can act as a credible protection against reckless

4 Robert Battalio, Hamid Mehran and Paul Schultz, "Market Declines: What is Accomplished by Banning Short-Selling?", Federal Reserve Bank of New York Current Issues in Economics and Finance, 2012.

5 Ekkehart Boehmer, Charles M. Jones and Xiaoyan Zhang, "Shackling Short Sellers: The 2008 Shorting Ban", Review of Financial Studies, 2013.

corporate behaviour, better than regulations can. As such, the risk to management of a bear run on a corporation should be real.

Other costs, particularly search costs to find a lender, are in the purview of intermediaries such as stock lending agents. Regulatory pressure in recent years has constrained the balance sheets of many broker dealers. This has had an impact on their securities lending activities, and is shifting the balance between broker/dealers and custodians as intermediaries. Search costs are potentially increasing as a result of this. While transparency in the securities lending market has improved in the last few years, with several market data providers entering the space, search costs are still a meaningful component of a borrower's calculations. Regulators can play a constructive role here by encouraging further improvements in market transparency.

Lastly, some of the costs faced by borrowers are a function of lender behaviour. Engelberg, Reed and Ringgenberg (2016) show that the time-series dynamics of loan fees and share availability are some of the key determinants of borrower costs[6]. Volatility in these factors tends to lead to less short-selling activity and has a significant impact on stock returns. From a stock lender's perspective, this suggests that ensuring a steady supply of lendable shares is an important contribution to well-functioning stock loan markets. The increase in institutional share ownership and the emergence of passive funds with stock loan mandates is likely to have helped to improve the supply of lendable shares.

Balancing Objectives as a Long-Term Investor

For large, long-term investors, participation in the stock loan market requires balancing a number of objectives: the desire to contribute to well-functioning markets, the need to act as a responsible investor by exercising voting rights, maintenance of relationships and dialogue with the companies invested in, and responsibility to generate returns for funds under management. We have developed a robust process that allows us to balance these objectives.

Having short sellers contribute successfully to well-functioning markets requires a careful management of the costs they face. Some costs are direct – the borrowing fees – others are risk driven. Some of these risks are under the control of intermediaries or of regulators, but the stock lender can contribute to mitigating some of the risks. At the same time, stock lending exposes the lender to additional risks as well as the loss of ownership rights.

The long-term investor's key contribution to well-functioning stock lending markets is to provide a steady and consistent supply of shares available to borrow, while ensuring that the investor is compensated for the additional risks and loss of ownership right.

6 Joseph Engelberg, Adam Reed and Matthew Ringgenberg, "Short Selling Risk", UNC Kenan-Flagler Research Paper No. 2312625, 2016.

This balancing act leads to the (generally temporary) emergence of a subset of 'hot' stocks, which are hard to borrow. This status as a hot stock is typically linked to some corporate action and, on occasions, to voting considerations. We view these stocks as an expression of the balancing act responsible investors have to perform.

Outside the universe of these hot stocks, stock lenders should provide as consistent a supply of shares as possible. This typically involves negotiations with custodians and stock lending desks. In particular, providing a long-term supply of shares should lead to a premium on the lending fees received, since it can substantially reduce the recall risk faced by the borrower.

On the other hand, exercising voting rights, being a responsible investor and the maintenance of relationships and dialogue with the corporates held in a long term investor's portfolio are also important, in our view. Active participation in corporate governance is one of the key duties of long-term shareholders, and critically contributes to the well-functioning not just of markets, but of the economy as a whole. As an organisation, we seek to ensure that our input to corporate governance remains relevant and in accordance with our responsibilities; this can and does involve restricting the supply of shares for stock lending as appropriate.

The third objective of long-term investors is to generate returns from the stock lending activity if it is within their mandate. There are several components to these returns. First, an active stock lending market contributes to efficient price discovery. Since the views of more heterogeneous market participants can be reflected in the share price, this may lead to lower share prices 'today'. The terminal value of these shares 'tomorrow' – whatever it may be – remains unchanged. For investors with repeated cash flows, the rebalancing benefit can be substantial.

Second, stock lending generates income – both through explicit loan fees and through interest received from collateral. In addition, the stock borrower replicates and pays to the lender interim dividend distributions from the stock – this means that the lender retains the cash flow profile of an actual shareholder, even though they have lent out their shares. These manufactured payments may give rise to differential tax implications in certain circumstance and jurisdictions. The borrower of the stock may be subject to different income tax treatment of dividends received than the lender of the stock (for example, they could be corporate investors with a dividend exemption). Even though the total amount of dividends paid out remains unchanged, the tax revenue received may be lower if the composite tax obligation of the borrowers is lower than that of the lenders. The borrower's tax benefit can then be shared with the lender, subject to negotiation and applicable tax rules.

We believe that differential tax treatment of investors does not contribute to well-functioning markets. Asset managers should conduct their stock lending activity in a way that complies with local tax rules, and seek to avoid entering into securities lending transactions for the purpose of improving their tax position. Similarly, they should not lend the benefit of their favourable tax characteristics to third parties. They should also not lend out shares if they are solely sought for voting purposes.

Conclusion

Securities lending markets contribute to well-functioning markets in important ways. This is particularly true when ownership of the securities is concentrated, as is the case for most of today's stock and bond markets. Price discovery is improved significantly when the inventory of securities held by long-term, large institutional holders is made available to actively trading market participants through securities lending. This enables the views of a broader cross-section of market participants to be reflected in the price.

Designing robust securities lending markets involves contributions from lenders, intermediaries and regulators. Variability in the lending environment is detrimental to lending markets as it increases the borrower's risks and costs and lowers their willingness to contribute to price discovery.

For intermediaries, whether prime brokerages or agents such as custodians, the focus should be on providing increased transparency into the state of the securities lending market. While it is probably unrealistic to imagine the return of a stock lending post at the stock exchange, which provided price transparency as the stock lender of last resort, increasing the available information on price and quantity available should be a goal. This is a task for both data providers and regulators who can encourage increased transparency.

For regulators, their key contribution should be predictability in regulation. A well-planned regulatory environment, specifying the constraints under which borrowers must operate, is preferable to ad-hoc intervention. We believe the current regulatory environment is generally well-designed in this regard and helps to foster a robust stock lending market.

Lastly, stock lenders contribute significantly as well. Their main contribution is to ensure stability in the supply of lendable securities. This is generally more important than maximising the amount of lendable securities. Supply constraints are typically slack. Moreover, short sellers' contribution to efficient price discovery is convex – the first short sellers contribute more to price discovery than the marginal participant.

Ensuring an adequate income for stock lenders to compensate for risks is equally important, as is balancing the voting responsibilities as a long-term investor with the contribution to well-functioning price discovery. However, this has to be seen in the broader context of markets as part of society. We do not believe that dividend tax differential based strategies that are enabled by targeted crafting of stock lending relationships are a net benefit to the market or society overall, even though they may be individually beneficial to a stock lender.

The stock lenders' contribution to efficient price discovery is particularly important as institutional ownership increases, and a greater portion of shares outstanding are held in large portfolios, not contributing to price discovery. As this process of institutionalisation continues, stock lenders have a vested interest in ensuring that stock lending markets continue to function well.