

Appendix A

Designation of Systemically Important Financial Market Utilities

On July 18, 2012, the Financial Stability Oversight Council (Council) designated eight financial market utilities (FMUs) as systemically important under Title VIII of the Dodd-Frank Wall Street Reform and Consumer Protection Act (the Act). The designated FMUs are:

- The Clearing House Payments Company L.L.C. (PaymentsCo) on the basis of its role as operator of the Clearing House Interbank Payments System (CHIPS)
- CLS Bank International (CLS Bank or CLS)
- Chicago Mercantile Exchange, Inc. (CME)
- The Depository Trust Company (DTC)
- Fixed Income Clearing Corporation (FICC)
- ICE Clear Credit LLC (ICE Clear Credit)
- National Securities Clearing Corporation (NSCC)
- The Options Clearing Corporation (OCC)

Title VIII provides four specific factors the Council must take into consideration when determining whether an FMU is, or is likely to become, systemically important.¹ These factors are also incorporated with more detail provided in the Council's regulations regarding the designation of FMUs.² The four specific factors are (A) the aggregate monetary value of transactions processed by the FMU; (B) the aggregate exposure of the FMU to its counterparties; (C) the relationship, interdependencies, or other interactions of the FMU with other FMUs or payment, clearing, or settlement activities; and (D) the effect that the failure of or a disruption to the FMU would have on critical markets, financial institutions, or the broader financial system. Title VIII also requires the Council to take into consideration any other factors that the Council deems appropriate. The Council believes that the four identified factors provided an appropriate basis for making determinations, and thus the Council did not explicitly rely on any other factors.

This appendix provides a description of each FMU, as well as an analysis of its systemic importance based on the factors listed here. Each FMU received a letter on May 22, 2012 informing it that the Council had proposed its designation and providing it with the same rationale for the Council's determination provided in this appendix. This appendix does not, however, include any confidential data that were part of the Council's analysis, though such confidential data were included in the May 22 letters to each FMU. The FMUs each had 30 days to request a hearing if they disagreed with the proposed determination of the Council or the Council's proposed findings of fact, but no FMU requested such

a hearing. Accordingly, the Council has unanimously voted in favor of final designations on the following FMUs based on the analyses described here:

A. The Clearing House Payments Company L.L.C.

Description of the Clearing House Payments Company L.L.C.

PaymentsCo, a Delaware corporation, is the legal person that operates CHIPS, which is a multilateral system operated for the purpose of transferring payments among its 52 participants. Therefore, PaymentsCo, as a person that operates a multilateral system whose purpose is transferring payments among financial institutions, meets the definition of FMU set out in Title VIII.³

CHIPS is the only private sector system in the United States for settling large-value U.S. dollar payments continuously throughout the day. Large-value payment systems play a key role in financial markets by providing a means for banks to discharge payment obligations related to important financial market activities such as money market and commercial transactions. Payments settled by such systems are often high in value and require secure, reliable, and timely settlement. For example, two banks might use a large-value payment system to settle a time-sensitive interbank loan. For commercial transactions, a corporation may instruct its bank to use a large-value payment system to make critical payments to its suppliers.

Large-value payments settled over CHIPS often represent the U.S. dollar sides of transfers between U.S. money center banks and foreign banks operating in the United States, such as foreign exchange and Eurodollar transactions. CHIPS traffic also includes an increasing share of payments for transactions such as the adjustment of correspondent balances and payments associated with commercial transactions, bank loans, and securities transactions.

The 52 CHIPS participants are U.S. commercial banks, foreign banks with offices in the United States, and one private banker. These participants constitute some of the largest banks in the world by asset size and include bank subsidiaries of 22 financial institutions considered to be global systemically important financial institutions by the Financial Stability Board.⁴ Participants also send and receive payments over CHIPS on behalf of thousands of customers, including a large number of correspondent banks. U.S. depository institutions account for a substantial percentage of all value sent. Forty participants are headquartered outside the United States.

An important feature of CHIPS is that it can bilaterally and multilaterally net payments for settlement, which permits CHIPS to settle its daily average of payments with a fraction of funding. A disruption to CHIPS could therefore have a multiplier effect on the liquidity needs of participants.

Participants do not bear credit risk within CHIPS, as they do not extend credit to each other over the system. They do, however, bear liquidity risk. Because payment messages in the CHIPS queue are not guaranteed to settle, participants may not receive, either during the day or at the end of the day, payments they

are expecting to receive over CHIPS. Liquidity risk is high during the end-of-day settlement process when participants have a final expected position that depends on other participants meeting their final funding requirements. If a participant fails to fulfill its final funding requirement, CHIPS will net and release as many of the payments remaining in the queue as possible and then delete the rest from the system. The participants that were expecting to receive those deleted payments must then arrange to receive that liquidity outside of CHIPS.

Analysis of Systemic Importance

(A) Aggregate monetary value of transactions processed by CHIPS

The volume and value of payments settled over CHIPS demonstrate the high degree to which the U.S. banking system relies on CHIPS to facilitate significant financial flows, particularly those involving transfers between U.S. money center banks and foreign banks operating in the United States. As context for the value of payments settling through CHIPS, every two weeks, CHIPS settles payments equivalent to the gross domestic product of the United States.

Settlement volumes and values. CHIPS, settling \$1.6 trillion on average a day, has a substantial share by volume and value in the U.S. large-value payments market. A significant percentage of CHIPS volume is sent or received by participants on behalf of third parties that are not participants. At least 7,500 third parties are listed in the database that CHIPS maintains to facilitate the routing of payments straight through to their end beneficiaries.

Funding. The average and peak total participant funding for the CHIPS account at the Federal Reserve Bank of New York (FRBNY) per day in 2011 was substantial, with a significant portion being supplied by a small group of funding agents acting on behalf of nonfunding participants. Total funding is low relative to the value of payments settled over CHIPS because the bilateral and multilateral netting feature of the system allows for a high leverage of liquidity compared to a pure real-time gross settlement system, where payments are settled individually as they are submitted.

(B) Aggregate exposure of CHIPS to its counterparties

Credit exposures. There are no credit exposures within CHIPS, and there is no obligation to ensure the settlement of queued payments. Payment messages are not settled until they are released from the CHIPS queue, and all payment messages that are released are fully funded and settled with finality in real time.

Liquidity exposures. CHIPS does not bear liquidity exposures to its counterparties because it does not guarantee settlement of any payment messages that are not fully funded. While this feature, which is inherent to the design and rules of CHIPS, eliminates liquidity risk to the system, participants bear liquidity risk arising from unsettled payments in the queue. Participants are further exposed to liquidity risk because the funds used to settle payment messages over CHIPS are held in the CHIPS account at FRBNY as opposed to in the participants' own accounts.

Liquidity exposures for CHIPS participants are high because payment messages in the CHIPS queue are not guaranteed to settle. There is a possibility that participants may not receive, either during the day or at the end of the day, payments they are expecting to receive over CHIPS. This risk decreases over the course of the day because of the intraday finality of settled payments, but there is inherent liquidity risk in the end-of-day process, when participants must meet their final funding requirements and CHIPS must successfully execute payouts.

Settlement of the payments remaining in the queue at the end of the day is dependent on all participants successfully meeting their final funding requirements, which, on average, is in the billions of dollars. If some participants do not fulfill their final funding requirement, CHIPS will settle as many remaining payments as possible and then delete the rest from the system unsettled. There has been only one instance where a participant failed to meet its final funding requirement, resulting in payment messages worth \$7.3 billion failing to settle over CHIPS.

Since that disruption, the typical value of the payments settled at the end of the day has fallen to less than 1 percent of total daily value, yet that amount is still sizeable. If a large proportion of those payments failed to settle because of a disruption caused by the failure of one or more participants to make a final pay-in, it could put liquidity pressure on the intended recipients of those payments, which would need to make up that liquidity outside of CHIPS. Following the completion of final funding, a disruption impairing the ability of CHIPS to make payouts could trigger more significant disruptions to the liquidity positions of participants. In 2011, the daily average and peak of total CHIPS payouts at the end of the day were significant.

Under either disruption scenario, participants might have to borrow funds in the market late in the day to replace the payments or payouts not received in order to meet their payment obligations outside of CHIPS or Federal Reserve account balance requirements such as required reserves. This could be particularly challenging for a participant with more limited access to U.S. dollar funding markets, such as a bank in a weakened condition. For any participant, obtaining replacement funding late in the day could prove difficult or costly, as the liquidity of funding markets such as the Fed funds and repo markets declines toward the end of the business day.

(C) Relationships, interdependencies, or other interactions of CHIPS with other FMUs or payment, clearing, or settlement activities

The structure of participation in CHIPS indicates a tight, interdependent network of institutional relationships and payment flows, such that a disruption could reverberate throughout the financial system. Participants rely heavily on CHIPS to settle significant U.S. dollar financial flows each day, including transactions related to third-party activity for thousands of additional institutions. Activity underlying CHIPS payments spans foreign exchange, trade finance, remittance, correspondent banking, securities, and bank funding.

Concentration of participants and degree of tiering. CHIPS activity is highly concentrated with a small number of participants accounting for a relatively large percentage of the value of the payment messages sent and received. Funding for CHIPS is further concentrated with a small number of participants representing a majority of the funding.

Although no FMUs depend on CHIPS directly, the participants that send and receive the most value over CHIPS and contribute the most funding are also some of the most active participants by value in CLS Bank, DTC, FICC, NSCC, CME, ICE Clear Credit, and OCC. The liquidity problems caused by a disruption to CHIPS might therefore adversely affect the payment activities of CHIPS participants over those FMUs. Conversely, payment obligations arising within those other FMUs that were expected to settle over CHIPS could be disrupted.

Interdependencies indirectly link CHIPS not only to other FMUs and payment, clearing, and settlement activities, but also to the third-party customers that are the originators or beneficiaries of payments settled over CHIPS. Participants submit a majority of their CHIPS traffic by volume on behalf of one of thousands of third-party customers. Examples of third-party customers include affiliates and branches of CHIPS participants, other financial institutions, and nonfinancial corporations. Because of the scope and nature of these customers, a disruption to CHIPS could have a broader impact on both the financial system and the real economy than might be assumed from consideration of only the direct participants.

(D) Effect that the failure of or disruption to CHIPS would have on critical markets, financial institutions, or the broader financial system

Market effects of a failure of or long-term disruption to the functioning of CHIPS. There are two types of disruption to CHIPS that could have significant effects on critical markets, financial institutions, and the broader financial system. First, a disruption triggered by the failure of one or more participants to make a required pay-in at the end of the day could cause several billion dollars of payments not to settle over CHIPS, creating liquidity shortfalls for some participants and their customers late in the day. Second, a disruption triggered by an operational problem with CHIPS could cause significantly higher amounts of payments not to settle over CHIPS. An operational disruption could also cut off participants' access to the funds in the CHIPS account, which could be a significant amount by the end of the day.

The typical value of the payments settled at the end of the day is sizeable and varies based on market conditions and the amount of supplemental funding contributed by participants during the day. If one or more participants failed to make a required pay-in at the end of the day, a portion of those payments would not settle over CHIPS. As a result, the participants and their customers expecting to receive those payments would need to make them up outside of CHIPS and could, therefore, face liquidity shortfalls late in the day.

In the case of an operational disruption to CHIPS, participants could use the Fedwire Funds Service to settle payments. Their ability to do so would depend

on each participant's access to Fedwire, internal system capabilities, and access to sufficient intraday liquidity. In particular, the availability of liquidity varies by institution, such that some participants might need access to additional liquidity in order to reroute their CHIPS traffic. At a minimum, that increased liquidity demand could create incentives for participants to delay sending large outgoing payments over Fedwire until they first received large incoming payments. Delayed settlement of those outgoing payments could in turn delay the settlement of all downstream payments reliant on those funds, likely causing liquidity problems to spread.

Effects of a short-term disruption to the FMU. Depending on its timing, an operational disruption to CHIPS could leave participants without access to the increasingly significant amounts of liquidity held in the CHIPS account. As discussed under Consideration (B), the value of funds held in the CHIPS account rises steadily throughout the day, with the funds returned to participants as payouts at the end of day. A disruption that prevented CHIPS from making payouts at the end of the day could cause significant liquidity shortages for participants at a time of day when liquidity in funding markets may be least available. This is particularly true for the subset of CHIPS participants that do not have access to intraday credit from a Federal Reserve Bank. These participants might need to seek funding in the Fed funds and repo markets, where, as discussed previously, liquidity declines towards the end of the business day. Further, liquidity in these markets would likely be especially tight under the stressed market conditions surrounding a failure of or disruption to CHIPS. Without this funding late in the day, participants might not be able to meet their payment obligations outside of CHIPS or meet Federal Reserve account balance requirements, such as reserve requirements.

Under either scenario, a disruption to CHIPS could reverberate throughout the financial system, affecting the thousands of institutions worldwide that may be reliant on payments settled over CHIPS. As discussed under Consideration (A), CHIPS settles a sizeable overall share in the U.S. large-value payments market. Furthermore, a significant portion of the volume of payment messages sent over CHIPS is sent or received on behalf of one of thousands of third-party customers. In addition to disrupting third-party customers, as discussed under Consideration (C), a disruption to CHIPS might also indirectly disrupt other FMUs in the U.S. financial sector through the channel of shared participants.

Conclusion

Large-value payment systems such as CHIPS play a key role in financial markets by providing a means for banks to discharge payment obligations related to important financial market activities. CHIPS is a particularly large system, settling \$1.6 trillion on average a day representing a significant percentage of the value of the U.S. dollar large-value payment market. A disruption to CHIPS could significantly increase the amount of unsettled payments in the CHIPS queue, disrupt the ability of participants to manage their CHIPS traffic, and sufficiently alter the payment and funding patterns over CHIPS so as to cause liquidity disruptions affecting all participants, including 22 global systemically important institutions, and potentially spread to their customers and to other FMUs and

the broader financial system. The resulting widespread liquidity shortage could prove difficult or costly to ameliorate, particularly if the disruption were to cut off access to the funding in the CHIPS account and to occur at the end of the day amid already stressed market conditions.

Taking into consideration the significant value and proportion of large-value payments that settle over CHIPS, the increased liquidity required to reroute those payments to settle outside of CHIPS, and the risk to other FMUs and downstream financial institutions and nonfinancial companies that rely on those payments to settle, it is the assessment of the Council that a failure of or disruption to CHIPS could increase the risk of significant liquidity problems spreading among financial institutions or markets and thereby threaten the stability of the financial system of the United States. For the reasons set out here, the Council has determined that PaymentsCo should be designated as a systemically important FMU pursuant to Title VIII of the Act.

B. CLS Bank International

Description of CLS Bank International

CLS Bank, a legal person chartered by the Board of Governors of the Federal Reserve System under the Edge Act, operates a multilateral system that settles foreign exchange (FX) transactions among its financial institution members.⁵ Therefore, CLS Bank meets the definition of FMU set out in Title VIII of the Act.⁶

The FX market is one of the largest and most liquid global financial markets with an average aggregate daily value settled of 8.0 trillion U.S. dollar equivalent (USDE).⁷ The FX market plays a pivotal international role in determining the relative value of a currency, providing liquidity to the international banking system, and facilitating cross-border trade and investment. Because of its importance, the FX market has long been a focus of attention by finance ministries, central banks, and banking supervisors.

The FX market is an over-the-counter (OTC) market with globally dispersed participants that connect local trading centers into a liquid, global market. The three largest trading centers are located in the United Kingdom, the United States, and Japan respectively, although a number of other countries also host major centers. Due to the dispersion of market participants, the FX market is also a 24-hour market with large volumes of cross-border transactions. The three major instruments in the FX market are spot, forward, and FX swaps, which collectively account for approximately 94 percent of FX market activity. These instruments are typically considered part of the short-term international money market, serving as critically important cross-currency funding tools for a wide variety of participants. Settlement risk is the primary risk in the FX market and is a key source of systemic risk.

CLS Bank is the sole multi-currency settlement system of its kind, offering both liquidity savings and settlement risk mitigation across all major currencies, and the only one that operates on a global basis across all the major currencies.⁸ CLS Bank settles an average daily value of 4.77 trillion USDE, representing 68

percent of FX market activity in CLS Bank-eligible currencies and products. The CLS Bank system links thousands of institutions, including many of the largest banks, investment companies, and nonfinancial corporations, both domestic and foreign. Through CLS Bank, these institutions are able to reduce their settlement risk in the FX market through the use of payment-versus-payment (PVP) settlement.⁹ CLS Bank is also used by and uses a number of other FMUs to settle multi-currency payment flows. Among other potential effects, a failure of or disruption to the functioning of CLS Bank could substantially increase participants' liquidity risk and reintroduce significant settlement risk among institutions in the FX market.

Analysis of Systemic Importance

A) Aggregate monetary value of transactions processed by CLS Bank

CLS Bank settles a significant and increasing volume and value of activity in the FX market. Through its services, CLS Bank significantly reduces settlement risk and provides substantial liquidity savings through its use of multilateral net funding. If the volumes and values settled by CLS Bank continue to grow, CLS Bank's role in the FX market, and market participants' reliance on CLS Bank, will become even more significant.

Settlement volumes and values. CLS Bank estimates that it settles, by value, 68 percent of FX market activity in eligible currencies and products. In 2011, CLS Bank settled an average daily gross volume of 820,600 sides and an average aggregate daily value of 4.77 trillion USDE. In addition, through PVP settlement, CLS Bank mitigated a substantial amount of the settlement risk associated with the average daily gross volume settled. In 2011, CLS Bank settled a peak daily gross volume of 1,957,417 sides; on its peak settlement value day, March 19, 2008, CLS Bank settled approximately 10.3 trillion USDE.

In 2011, U.S. dollar transactions settled at CLS Bank accounted for a substantial amount of the average daily gross settlement volume and the average aggregate daily settlement value. In addition, U.S.-based settlement members accounted for a significant portion of the average aggregate daily value settled in 2011 at CLS Bank.

In 2011, the volume and value of transactions settled at CLS Bank increased by 4.7 percent and 15.5 percent, respectively, from 2010. Since 2007, the volume of transactions processed by CLS Bank has grown at a compound annual rate of 22 percent, with U.S. dollar transaction volumes growing at a compound annual rate of 23 percent. In addition, since 2007, the value of transactions processed by CLS Bank has grown at a compound annual rate of 7.3 percent, with the value of U.S. dollar transactions growing at a compound annual rate of 7.2 percent. In comparison, from 2007 through 2010, the total value of the FX market grew at a compound annual rate of 3.7 percent.

Funding. Members fund and defund their multi-currency accounts at CLS Bank through 17 real-time gross settlement (RTGS) systems, including the Federal Reserve's Fedwire Funds Service for U.S. dollar payments. Funding occurs on a multilateral net basis, which provides substantial netting efficiencies. In order to

smooth out the liquidity needs of its members, CLS Bank permits its members and their nostro agents to pay in over a five-hour funding window.

B) Aggregate exposure of CLS Bank to its counterparties

Although CLS Bank has a robust risk management framework, it is still exposed to significant credit and liquidity risk.

Credit exposures. CLS Bank may extend credit to its members in the form of haircut-adjusted short positions, which are collateralized by a member's long positions and capped at the aggregate short position limit (ASPL) for each settlement member. ASPLs vary among members based on an assessment of each member's credit, liquidity, and operational capabilities.¹⁰

Based on the ASPL for each settlement member, CLS Bank's maximum potential credit exposure is in the billions of USDE.¹¹ Though these exposures are collateralized by haircut-adjusted long positions, as a result of extreme exchange rate volatility, CLS Bank may have insufficient liquidity and incur financial losses, which it would allocate to its surviving members.

Liquidity exposures. In the event that a settlement member fails to pay in the currency required to cover a short position by the end of the funding window, CLS Bank will attempt to swap the failing member's remaining long positions for the currency required to fulfill CLS Bank's payout obligations. As a result, CLS Bank has obtained committed lines of liquidity across the 17 currencies that are eligible for settlement. U.S. dollar liquidity is provided by a group of U.S. depository institutions, each of which is also a settlement member.

In the case of a single member pay-in failure, the peak liquidity that CLS Bank would require from its committed liquidity providers is equivalent to the maximum ASPL. Provided that its currency haircuts are sufficient to mitigate market risk, CLS Bank's committed lines of liquidity should be sufficient to complete payouts in the appropriate currency, even if the failing member is a liquidity provider in the required currency. However, if CLS Bank's currency haircuts are insufficient to absorb a significant depreciation in the value of the members' long positions relative to the value of their short positions, CLS Bank's liquidity needs may exceed its committed liquidity lines, and CLS Bank may incur financial losses. Further, in the event that its liquidity providers are unwilling or unable to provide the committed liquidity, CLS Bank will credit its affected member(s) in an alternate currency, which its members may choose to receive as a payout or hold overnight at CLS Bank, thereby shifting liquidity risk to its member(s) and potentially resulting in liquidity disruptions to U.S. and foreign financial markets.

C) Relationships, interdependencies, or other interactions of CLS Bank with other FMUs or payment, clearing, or settlement activities

CLS Bank settlement activity is highly concentrated amongst its largest members. In addition, CLS Bank is highly interconnected with a number of other FMUs and trade repositories. These relationships and interdependencies increase the

potential for a disruption at CLS Bank to spread to other participants, FMUs, markets, and throughout the U.S. financial system.

Concentration of participants and degree of tiering. The value of instructions settled by CLS Bank is highly concentrated among the largest of its 63 members. Further, third-party settlement activity is highly concentrated among a group of members. Since the value of instructions settled in CLS Bank is highly concentrated, a disruption to one large member would have a significant impact on the risks faced by CLS Bank (see factor (D) for the impact of a failure to pay by one or more participants). However, the inclusion of the largest FX market participants in CLS Bank ensures that a significant proportion of the FX market is settled at CLS Bank using its PVP risk mitigating features.

In 2011, 27 of CLS Bank's 63 members were active in submitting instructions on behalf of third parties, though the majority of activity was concentrated among a few institutions. In aggregate, third-party transactions represent approximately 11 percent of the aggregate value settled by CLS Bank. In addition, the three largest U.S.-based third-party service providers account for more than 48 percent of total third-party activity.

Dependencies of other FMUs and trade repositories on CLS Bank. CLS Bank settles non-PVP instructions for The Warehouse Trust Company's Trade Information Warehouse (TIW), which is a subsidiary of DTCC, as well as the CME, ICE Clear Europe, Eurex, and LCH.Clearnet. Specifically, CLS Bank settles FX futures-related payments for the CME and ICE Clear Europe, and credit derivative-related payments for TIW, Eurex, and LCH.Clearnet. Settlement at CLS Bank provides operational and funding efficiencies for these FMUs and trade repositories. The link with the TIW is particularly notable, as it allows payments for OTC credit derivatives, which are calculated and bilaterally netted across participants, to be directly submitted for settlement at CLS Bank.

D) Effect that the failure of or disruption to CLS Bank would have on critical markets, financial institutions, or the broader financial system

A failure of or long-term disruption to CLS Bank may significantly increase settlement risk and liquidity demands in the FX market. In turn, these developments may reduce FX market activity and the flow of funds in U.S. and foreign financial markets and to the broader economy.

Market effects of a failure of or long-term disruption to the functioning of CLS Bank. In addition to potentially transmitting credit risk to its members via loss allocation, a failure of or long-term disruption to CLS Bank may result in a reversion to non-PVP settlement and therefore reintroduce significant credit risk to the FX market. Because CLS Bank is the sole global multi-currency settlement system that eliminates FX settlement risk across all major currencies, a failure of or long-term disruption to CLS Bank would require members to settle FX transactions through non-PVP settlement arrangements, including bilateral gross settlement, bilateral net settlement, and "on-us" settlement. A reversion to non-PVP settlement arrangements could reintroduce a substantial amount of settlement risk to the FX market daily. As a result, members would initially

experience a sudden increase in settlement risk that may significantly exceed counterparty settlement limits set by their internal credit risk management function and may have to suddenly and drastically reduce their trading activity to stay under prudent counterparty settlement limits. Alternatively, members would need to collect large amounts of collateral from counterparties or accept significantly higher levels of counterparty credit risk that may exceed their capital.

A reduction in trading activity would reduce the flow of funds between CLS Bank participants, including domestic and foreign banks, investment companies, and nonfinancial corporations, and would impair FX market liquidity. As FX instruments are typically considered part of the short-term international money market, a reduction of FX market liquidity would seriously disrupt cross-border funding markets. As a result, the impact of a failure of or long-term disruption to CLS Bank would be felt in U.S. and foreign financial markets, as well as in the broader economy. Further, in the absence of PVP settlement, a failure of an FX market participant would expose counterparties to significant credit risk that could lead to additional failures of, or an erosion of confidence in, other FX market participants. In addition, because CLS Bank settles transactions both directly and indirectly for thousands of institutions, including banks, investment companies, and nonfinancial corporations, the failure of CLS Bank or a disruption of its settlement services could have a crippling impact on international trade with adverse second-order effects on the real economy and U.S. financial stability.

In the absence of CLS Bank and multilateral net funding in the FX market, members would be required to provide additional liquidity to complete settlement, thereby increasing liquidity demands on market participants. As such funding may occur in stressed market conditions and require access to large and alternative sources of liquidity at short notice, there could be significant liquidity disruptions to financial markets. In particular, since the U.S. dollar accounts for a substantial percentage of settlement value at CLS Bank, demands for additional U.S. dollar liquidity may be substantial and could have a significant impact on major U.S.-based banks and the U.S. financial system. Assuming that members revert to bilateral gross settlement in the absence of CLS Bank, liquidity needs would increase substantially, therefore providing another incentive for members of CLS Bank to significantly reduce their trading activity and the flow of funds between CLS Bank participants.

In addition to a reduction in FX market activity and an increase in liquidity demands, the absence of CLS Bank would require that non-PVP settlement arrangements absorb an additional average daily volume of 795,000 sides. A sudden increase in the volume of non-PVP transactions, however, may result in immediate operational challenges due to capacity constraints, potentially preventing a significant volume of FX transactions from settling in a timely fashion and thereby spreading liquidity risk among participants and their counterparties. Further, to the extent that a failure of or disruption to the functioning of CLS Bank results in non-PVP settlement, the relevant RTGS systems would experience sudden increases in the volume and value of instructions settled. In the United States, for example, the Fedwire Funds Service

and CHIPS may be required to absorb a significant amount in additional U.S. dollar payment activity daily.

CLS Bank also provides settlement of payments related to credit derivatives and FX futures for multiple FMUs, both domestic and foreign. These FMUs benefit from funding efficiencies and straight-through processing by settling at CLS Bank and, in the short term, the absence of CLS Bank would be disruptive to these FMUs, as they would have to reroute payments over the relevant RTGS systems. Based on data compiled by the Federal Reserve Board, the U.S.-based members of CLS Bank are also members in several other FMUs. In the event that CLS Bank is unable to complete settlement and these members are unable to obtain timely settlement of their payment instructions through alternative settlement arrangements, liquidity disruptions may be transmitted to other key FMUs and markets.

Effects of a short-term disruption to the FMU. In the event that an operational, market, or funding-related event results in a short-term disruption to CLS Bank, CLS Bank would be required to defer settlement, but may be able to complete settlement before the end of the settlement day. Settlement, however, is heavily dependent on the closing times of the RTGS systems used to transfer funds to and from members' multi-currency accounts at CLS Bank and may require an extension of the operating hours of certain RTGS systems on which CLS Bank is dependent. Further, CLS Bank currently estimates that the largest single settlement member pay-in failure (in terms of its aggregate impact on the settlement of transaction at CLS Bank) would result in a significant percentage of transactions not settling. As a result, members would need to settle these transactions on a non-PVP basis outside of CLS Bank, thereby increasing the amount of settlement risk in the FX market significantly. In a pay-in failure situation, however, surviving members would receive additional pay-in calls, which, if met, would significantly reduce the value of unsettled transactions at CLS Bank.

In the event of a large single member default, CLS Bank could issue additional pay-in calls across the surviving members to fund additional liquidity.¹² As such funding may occur in stressed market conditions and require access to large and alternative sources of liquidity at short notice, there could be significant liquidity disruptions to financial markets. Further, as most additional funding will occur in U.S. dollars when U.S. markets are closed (between 3 a.m. and 6 a.m. ET), the impact on the financial system of the United States could be more severe.

The peak liquidity that CLS Bank could require from its committed liquidity providers is equivalent to the maximum ASPL. Provided that its currency haircuts are sufficient to mitigate market risk, CLS Bank's committed lines of liquidity should be sufficient for CLS Bank to satisfy its payout obligations in the appropriate currency, even if the failing member is a liquidity provider in the required currency. However, if additional members fail to fully satisfy the additional pay-in calls that result from the original pay-in failure, then CLS Bank's liquidity needs may exceed its committed liquidity lines. As a result, CLS Bank may be unable to meet its payout obligations, in which case it would pay an equivalent amount in an alternate currency and transfer its liquidity risk to its members.

Conclusion

CLS Bank is the sole global multi-currency settlement system of its kind, offering both liquidity savings and settlement risk mitigation across all major currencies. A failure of or long-term disruption to CLS Bank would have negative effects on both its members and the FX market, resulting in significant credit, liquidity, and operational disruptions. These effects would likely spill over into U.S. and global financial markets, as the FX market is critical to meeting cross-currency funding needs of global financial institutions. Further, PVP settlement in the FX market continues to be encouraged by central banks, market regulators, and other authorities in order to reduce settlement risk. Should the growth in the values and volumes settled by CLS Bank persist, perhaps due to the continued growth of the FX market and the inclusion of additional participants, settlement currencies, and settlement sessions, CLS Bank will assume an even more dominant role in the FX market. In the absence of alternative settlement arrangements offering both settlement risk mitigation and liquidity savings across a similar set of FX products and currencies, CLS Bank's expansion will reduce overall risk but also concentrate the risk associated with a potential disruption to or failure of CLS Bank.

Based on the significant values and volumes of FX market activity settled at CLS Bank, the extensive network of financial and nonfinancial institutions that depend on CLS Bank, the dependence of other critical FMUs on CLS Bank to effect settlement, and the lack of substitutes offering both settlement risk mitigation and liquidity savings, the Council has determined that CLS Bank should be designated as a systemically important FMU pursuant to Title VIII of the Act.

C. Chicago Mercantile Exchange, Inc.

Description of Chicago Mercantile Exchange, Inc.

CME is a subsidiary of CME Group, Inc. (CME Group), a public company. CME, through its U.S. clearing division (CME Clearing), provides clearing services among futures commission merchants (which are included in the definition of financial institution in Section 803 of the Act) and between futures commission merchants (FCMs) and customers. Therefore, CME meets the definition of FMU set out in Title VIII.¹³

CME is one of the largest central counterparty clearing services providers in the world, clearing 96 percent of the entire market for U.S. futures, options on futures, and commodity options.¹⁴ CME clears all contracts traded on the designated contract markets (DCMs)¹⁵ owned by CME Group, namely the Chicago Mercantile Exchange (CME DCM), Board of Trade of the City of Chicago, Inc. (CBOT), the New York Mercantile Exchange (NYMEX), and the Commodity Exchange, Inc. (COMEX). In addition, CME offers clearing services for the global OTC market through, *inter alia*, CME ClearPort.

CME provides central counterparty clearing services for futures, options, and swaps that can be used by market participants for a variety of purposes. Products cleared by CME range from commodity futures, which are essential to price discovery and liquidity for the underlying commodities, to interest rate swaps (IRS) and equity index contracts, which can be used as hedges or as investments

themselves. CME clears the largest and most liquid futures contracts based on the Standard & Poor's (S&P) 500 Index, Eurodollar, U.S. Treasury securities, and energy products, as well as IRS. CME functions as the central counterparty to market participants and clears a large number of transactions supported by significant collateral. As a central counterparty, CME stands between its members for every transaction cleared, serving as the seller to every buyer and the buyer to every seller. In effect, members substitute CME's credit for each other's credit.

While the purpose of the contracts cleared by CME can vary, all such contracts initially expose the participants on both sides of the contract to credit risk. By guaranteeing to each counterparty that the other side of the contract will be fulfilled, CME acts as a central counterparty to mitigate such risks. CME collects margin from each of its clearing members to offset the risks of a clearing member's contracts and nets margin calls across all of each member's contracts. On average, CME clears contracts with a notional value in the trillions of U.S. dollars and maintains collateral deposits averaging in the billions of U.S. dollars.

Analysis of Systemic Importance

A) Aggregate monetary value of transactions processed by CME

Number of transactions processed, cleared or settled. In 2011, CME cleared an average daily gross volume in the millions of futures and options contracts and average daily notional amounts in the millions of U.S. dollars for OTC CDS and OTC USD IRS; in the millions of euros for OTC euro IRS; and in the millions of pound sterling for OTC GBP IRS. CME cleared a peak daily gross volume in the millions of contracts and peak daily notional amounts in the billions of U.S. dollars of OTC CDS and OTC USD IRS, in the billions of euros of OTC euro IRS, and in the billions of pound sterling of OTC GBP IRS.

Value of transactions processed, cleared or settled. In 2011, CME cleared contracts with an average daily gross notional value in the trillions of U.S. dollars and average daily gross notional values in the millions of U.S. dollars of OTC CDS; millions of U.S. dollars of OTC USD IRS; millions of euros of OTC euro IRS; and millions of pounds sterling of OTC GBP IRS. The peak daily gross value of the contracts CME cleared was in the trillions of U.S. dollars for futures and options, billions of U.S. dollars for OTC CDS, billions of U.S. dollars for OTC USD IRS, billions of euros for OTC euro IRS, and billions of pound sterling for OTC GBP IRS.

Value of other financial flows. For all listed derivatives, except cleared OTC IRS and cleared OTC CDS, the average daily flow of funds (average daily variation margin plus change in average daily initial margin) in 2011 was in the billions of U.S. dollars, with a peak in the billions of U.S. dollars on August 8, 2011. The peak daily open interest was in the millions of U.S. dollars on August 25, 2011.

B) Aggregate exposure of CME to its counterparties

Credit exposures. The period-end aggregate value of all collateral posted as of December 30, 2011, was in the billions of U.S. dollars. On December 30, 2011, the member guaranty fund requirement across all three guaranty funds was \$4.5 billion, CME designated capital across the guaranty funds was \$300.0 million,

and the consolidated initial margin requirement was billions of U.S. dollars. For 2011, CME's guaranty fund held average deposits of \$3.8 billion, with a peak value of \$4.5 billion.

CME maintains minimum coverage of 99 percent for a liquidation period of one day for futures, 99 percent for a liquidation period of five days for OTC IRS, and 99 percent for a liquidation period of five days for OTC CDS.

The average aggregate daily value of collateral (after haircuts) posted to CME was in the billions of U.S. dollars. The peak aggregate dollar value of collateral (after haircuts) posted to CME was in the billions of U.S. dollars on June 2, 2011. For the 12 months ended December 30, 2011, the average intraday variation margin at CME was in the billions of U.S. dollars. The peak intraday variation margin at CME for all listed derivatives, excluding cleared OTC IRS and cleared OTC CDS, was in the billions of U.S. dollars on September 22, 2011.

For the 12 months ended December 30, 2011, the average daily value of initial margin at CME was in the billions of U.S. dollars. The peak daily value of initial margin at CME was in the billions of U.S. dollars on June 1, 2011.

It is anticipated that with the introduction of mandatory clearing for swaps, clearing volume and open interest will significantly increase, and margin on deposit and exposure will increase proportionally.

Liquidity resources. On December 30, 2011, the amount of liquidity resources (including only cash and U.S. Treasury and agency notes) at CME was in the billions of U.S. dollars, with billions of U.S. dollars of liquidity resources on June 2, 2011. As of December 30, 2011, the total value of lines of credit from banks or others was several billion U.S. dollars.

Liquidity exposures. For the 12 months ended December 30, 2011, the average daily variation margin CME paid to clearing members was in the billions of U.S. dollars. The peak daily variation margin CME paid to clearing members was in the billions of U.S. dollars on August 8, 2011. The largest intraday variation margin collect was in the billions of U.S. dollars on October 27, 2011.

C) Relationships, interdependencies, or other interactions of CME with other FMUs or payment, clearing, or settlement activities

Participants. CME has a total of 64 clearing members, including futures commission merchants (some of which are also broker-dealers), bank affiliates, and proprietary trading firms. Twenty-nine of CME's clearing members are foreign clearing members (including U.S. operations of non-U.S. entities). CME's clearing members include some of the largest banking and brokerage firms in the world.

Other FMUs. CME has a cross-margining agreement with OCC, which is dually registered as a Derivatives Clearing Organization (DCO) and as a securities clearing agency. The average amount of margin subject to the cross-margining agreement is in the millions of U.S. dollars. CME also has a cross-margining arrangement with FICC, which generated a savings of millions of U.S. dollars

on December 30, 2011 for clearing firms. In addition, CME has a mutual offset arrangement with Singapore Exchange Ltd. The mutual offset arrangement with Singapore Exchange Ltd. enables market participants to open a futures position in one of the following five contracts on one exchange and liquidate it on the other: Eurodollars, Euroyen TIBOR, Yen- and Dollar-Denominated Nikkei 225 futures, and E-micro S&P CNX Nifty (Nifty 50) futures.

Trading platforms. CME provides clearing services for the CME, CBOT, NYMEX, and COMEX exchanges that are all part of CME Group. CME also provides clearing services for the Green Exchange, a DCM that offers trading in environmental futures and options, and for Eris Exchange, LLC, a DCM that offers trading in IRS futures. The Dubai Mercantile Exchange, an energy-focused commodities exchange regulated by the Dubai Financial Services Authority, clears all of its trades through NYMEX, which outsources its clearing operations to CME Clearing.

Other external service providers. CME uses the following platforms: Bloomberg, Javelin, Tradeweb, Marketwire, Icelink, CME Globex, CME Clearport, and the CME's physical trading floor. In addition, CME uses the services of the following companies: ION, Sungard, WTD, FFastFill, ATEO, and Whentech. CME also maintains settlement bank relationships.

Average daily value of flows and other transactions with key financial institutions. For the 12-month period ended December 30, 2011, the average daily value of flows with key financial institutions was in the billions of U.S. dollars.

Average daily value of trades and other transactions on key trading platforms. CME's average daily value of trades was in the millions of U.S. dollars.

D) Effect that the failure of or disruption to CME would have on critical markets, financial institutions, or the broader financial system

Role of CME in the market served. In 2011, CME cleared 96 percent of the total U.S. futures and CFTC-regulated options market volume.¹⁶

Availability of substitutes. While several other clearinghouses clear products that may be viewed as serving as substitutes for some of the products cleared by CME, it would be impractical, in the short term, for another clearinghouse to substitute for CME.

Concentration by product type. As mentioned, CME clears 96 percent of all U.S. futures, options on futures, and commodity options volume.

Financial Data/Metrics. On December 30, 2011, CME had in the billions of U.S. dollars in cash and cash equivalents, in the billions of U.S. dollars in government securities, in the millions of U.S. dollars in valued securities, in the billions of U.S. dollars in letters of credit, and in the millions of U.S. dollars in escrow deposits of contracts.

Clearinghouses reduce the costs and operational risks of clearing and settlement among multiple market participants by mitigating counterparty risk, settling or netting participants' obligations, or providing other clearing services or arrangements that mutualize or transfer credit risk among participants. CME houses one of the largest clearinghouses worldwide.

The primary trigger of a default by CME would be a default by one or more clearing members with extraordinary losses in excess of CME's default resources. While such a default could conceivably result from circumstances local to those members, a default scenario would more likely be associated with a disruption to the markets more generally, including scenarios such as historically extraordinary volatility, extreme changes to normal price correlations, and acute reductions in liquidity.

An alternative trigger of a default by CME would be a failure by one of its settlement banks, in particular its concentration bank, because a substantial portion of CME's financial resources, as well as those of its members, are on deposit with these banks. Thus, if those financial resources were to suddenly become unavailable, CME's operations would be adversely affected to a considerable extent.

In addition, a CME default could result from a failure to maintain a generally sound financial condition, such as a failure to maintain sufficient capital or other financial resources against its general business risk or against the risk of one or more clearing member defaults.

As discussed previously, it would be impractical, in the short term, for another clearinghouse to substitute for CME. Moreover, even if swap transactions were replaced on a bilateral basis, if the market had moved since the trades were submitted to CME, it is unclear how the original counterparties would reinstate the original bilateral transaction. In addition, it could be difficult or impossible to reinstate the original transactions bilaterally if they were made on a trading platform. Because multilateral netting reduces the exposure of a clearinghouse's members to each other, the de-netting of positions resulting from a CME default would immediately increase counterparty risk, which could have serious consequences for market participants, including exposure to credit risk and demand for collateral.

Furthermore, netting provides a market benefit in that the margin required to collateralize the exposure of a portfolio is generally smaller than collateralizing its individual components, because the prices of the portfolio's components are often correlated. Central counterparty netting is more powerful, as each member's obligations to every other member can be netted and offset.¹⁷

Moreover, in the bilateral market, if A wishes to neutralize, e.g., a long exposure to B, A would typically enter into a transaction with a short exposure to another counterparty, e.g., C. This would offset A's market risk, but would leave A with credit risk to each of B and C. In a cleared market, if A has cleared a transaction with a long exposure and enters into a cleared transaction with an offsetting

short exposure, those exposures would be offset, leaving A with neither market nor credit risk.

Thus, the amount of collateral posted in a set of bilateral transactions to obtain the same level of protection that could be obtained through clearing would likely increase exponentially, thereby leading to some combination of a substantial increase in required collateral (with a consequent drain in liquidity), an increase in the number and exposure of uncollateralized transactions (creating greater exposures from further failures), and a decrease in the total number of transactions that are entered into (based on a reduction of credit, which would likely have a deleterious impact on the financial activity that those transactions hedge).

In addition, any disruption in the clearing or trading of these products would likely severely impede price discovery, which would result in both a decrease in market efficiency and a loss of liquidity for these products.

Moreover, there would likely be a negative impact on any economic activity that presupposes the protection of hedging activity.¹⁸ For example, livestock producers that do not want to take on the risk of changing prices in the cash markets may abandon production entirely if they cannot use the futures market to lock in a price ahead of actual merchandising, and those that do choose to continue production may face an uneven playing field against other competitors, thereby effectively making them not competitive in the global markets.

Similarly, a natural gas producer might use a futures contract to set a price now for gas that it will sell in the future to avoid being exposed to the possibility of lower prices. Without the protection of hedging, natural gas producers may reduce production activities to lower their price exposures. As hedging activities decrease, products become difficult to price and, without clear and competitive prices, the markets for those products become less liquid. As liquidity decreases in a market, market participants will likely demand additional collateral and, as the amount of available capital decreases, there will be an increased demand for credit, which, in an unstable market environment, will be difficult to obtain.

As positions move to the uncleared, bilateral market and are de-netted, settled and replaced, operational risks and costs would likely increase, thereby decreasing the number of reliable and readily available hedging opportunities. As a result, financial institutions and other market participants may reduce their investment activities, which could further stress the U.S. financial markets.

Finally, the contagion effect of a CME default if it were to lack sufficient resources to make timely payments obligations on variation margin could severely disrupt operations at other clearinghouses because of a crisis of confidence that interrupts the orderly functioning of the market and/or because of the impact that the loss of funds would have on an entity's ability (or willingness) to pay (1) losses owed to other DCOs, (2) increased collateral requirements for offsetting losing positions, (3) deposits in pension fund cash accounts or (4) bank financing charges. Essentially, the failure of CME would create enormous uncertainty about the status of initiated transactions as well as the financial positions of its clearing

members and their customers and could jeopardize the orderly functioning of other DCOs and the U.S. financial markets as a whole.

Conclusion

The data reviewed by the Council indicate that CME processes a significant volume of high-dollar-value transactions on a daily basis for critical U.S. markets.¹⁹ Moreover, it is questionable whether finding a substitute for CME's products is a viable short-term solution. Accordingly, even the shortest disruption of CME could disrupt clearing for a variety of futures and options transactions and could effectively freeze the futures and options markets, thereby creating liquidity and credit problems in the U.S. futures markets. The loss of central counterparty clearing in the products CME clears would increase collateral demands exponentially, resulting in a corresponding drain of liquidity.

A CME failure could also have an adverse impact on price discovery, which could, in turn, lead to inefficient markets and a correlated increase in liquidity problems. Finally, the contagion effect of a CME failure could impose material financial losses on CME's clearing members and other market participants (such as customers) and could lead to increased liquidity demands and credit problems across financial institutions, especially those that are active in the futures and options markets. Where these financial institutions are active in multiple U.S. markets, this contagion effect would have a broader impact and, as the markets experience growing stress, would likely lead to increased demand for credit, which would, in turn, likely lead to less liquidity. Thus, the Council believes that a significant disruption or failure of CME could have a major adverse impact on the U.S. financial markets, the impact of which would be exacerbated by the limited number of clearing alternatives currently available for the products cleared by CME. Accordingly, a failure or disruption of CME would likely have a significant detrimental effect on the liquidity of the futures and options markets, clearing members, which include large financial institutions, and other market participants, which would, in turn, likely threaten the stability of the broader U.S. financial system.

For the reasons set out here, the Council has determined that CME should be designated as a systemically important FMU pursuant to Title VIII of the Act.

D. The Depository Trust Company

Description of The Depository Trust Company

DTC is an FMU as defined in Title VIII of the Act because it manages or operates a multilateral system for the purpose of clearing and settling securities transactions among financial institutions and between financial institutions and DTC.²⁰

DTC serves as the central securities depository (CSD) for substantially all corporate and municipal debt and equity securities available for trading in the United States. DTC is a wholly owned subsidiary of DTCC and is generally administered as an industry-owned utility on an at-cost basis.

DTC provides depository services and asset servicing for a wide range of security types such as money market instruments (MMIs), equities, warrants, rights, corporate debt and notes, municipal bonds, government securities, asset-backed securities (ABS), and collateralized mortgage obligations. DTC's custodial services include the safekeeping, record keeping, book entry transfer, and pledge of securities among its participants. DTC substantially eliminates the physical movement of securities by providing book-entry deliveries of securities, which transfer the ownership of securities electronically among broker-dealers on behalf of the beneficial owners of the securities. In addition to processing book-entry transfers, including those trades cleared through the NSCC, DTC provides services to securities issuers, such as maintaining current ownership records and distributing payments to shareholders. In 2011, DTC maintained custody and ownership records for approximately \$39.5 trillion in securities.

DTC has 298 full service members and 72 limited service members. DTC members include U.S. broker-dealers, U.S. and non-U.S. banks or trust companies (including a trust company having limited powers), non-U.S. CSDs, U.S. government-sponsored enterprises (GSEs), and FRBNY. DTC direct participants include some of the largest banks in the world by asset size, and include affiliates of 25 of the 29 financial institutions considered to be globally systemically important.²¹ Trades that DTC settles for NSCC are executed on more than 50 trading venues (including all U.S. securities exchanges and alternative trading systems) and with other domestic and foreign clearing agencies.

Analysis of Systemic Importance

A) Aggregate monetary value of transactions processed through DTC

In 2011, DTC processed millions of book-entry securities deliveries and settled transactions with a substantial value. Average daily gross volume was 804,502 deliver orders, payment orders, and pledges, with an average daily gross transaction value of approximately \$573 billion. The peak daily gross number of transactions processed by DTC in 2011 was 1.24 million on June 29, 2011. In 2011, the average daily gross value of transactions processed by DTC was \$573 billion, \$339 billion of the total being MMIs and \$234 billion of the total being other securities. The peak daily gross value of transactions processed by DTC in 2011 was equal to \$728.8 billion on August 12, 2011.

The average aggregate credit balance paid to participants as a result of the day's settlement activity in the end-of-day cross-endorsed DTC-NSCC settlement was equal to \$32.8 billion in 2011, with a peak aggregate credit balance payment of \$78.3 billion on August 1, 2011. The average daily value of scheduled payments of dividend and principal and interest (P&I) payments due on DTC-eligible securities in 2011 was \$10.1 billion. The peak daily value of these P&I payments in 2011 was \$41.0 billion.

B) Aggregate exposure of DTC to its counterparties

DTC is the central securities depository for the United States and is responsible for the safekeeping, custody, and certain ownership records of \$39.5 trillion of securities as of December 31, 2011. As of December 31, 2011, total contributions to DTC's participants fund equaled approximately \$1.76 billion. The participants

fund is available to secure participants' obligations and certain liabilities of DTC, should they occur, such as when a participant fails to perform required payment or securities delivery obligations. DTC's participants fund supports the clearance and settlement of a substantial portion of all corporate and municipal debt, equity securities, ABS, exchange-traded funds (ETFs), and MMIs available for trading in the United States.

DTC extends intraday credit to its participants by allowing them to have net funds debit balances, which helps to facilitate the settlement process. These net debits are capped at a maximum of \$1.8 billion per legal entity and \$3 billion per affiliated family of participants. Through the various processes described here, DTC requires all transactions to be fully collateralized by its participants and therefore considers Value at Risk (VaR) not to apply to its operations.

DTC's liquidity resources are limited to a committed, secured line of credit and the value of assets held in the participants fund—including certain assets of the defaulting participant held in anticipation of settlement. DTC's line of credit, established with a syndicate of 31 banks, totaled \$1.9 billion as of December 31, 2011. DTC also maintained uncommitted credit lines totaling Can\$150 million with a participant to support Canadian settlement during 2011. Further, a \$50 million shared uncommitted credit line with NSCC and DTCC is maintained with a participant to support potential short-term operating cash requirements. In 2011, the peak liquidity exposure to a single affiliated family of counterparties was \$3 billion, which is the maximum net debit limit permitted for any participant family. DTC rules require such exposures to be fully collateralized in each instance.

C) Relationships, interdependencies, or other interactions of DTC with other FMUs or payment, clearing, or settlement activities

DTC's operations and the current market structure for securities trading and clearing involve significant interdependence between DTC and other FMUs, settlement banks, clearing members, credit facility lenders, custodians, exchanges, cross-margining entities, and pricing vendors. For example, NSCC—which provides clearance, settlement, and central counterparty services for nearly all broker-to-broker equity and corporate and municipal debt trades executed on major U.S. exchanges and other equity trading venues—relies on an interface with DTC to settle obligations via the book-entry movement of securities. Throughout the day, the debits and credits in a DTC participant's settlement account are netted to calculate, at any time, the net debit balance or net credit balance for the account. At end-of-day settlement, DTC and NSCC net the settlement balances of each DTC participant that is also a member of NSCC.

DTC maintains relationships with a number of other internationally important FMUs as well. In particular, DTC has established the Canadian-Link service with CDS Clearing and Depository Services, Inc. (CDS, Inc.), which enables DTC participants to clear and settle two categories of securities transactions: (1) cross-border Canadian dollar securities transactions with participants of CDS, Inc. and (2) intra-DTC Canadian dollar securities transactions with other DTC participants. DTC also has established accounts at two non-U.S. CSDs, namely Clearstream Bank AG in Germany and SIS SegInterSettle AG in Switzerland.

Non-U.S. CSDs with DTC accounts include: (1) CREST Nominees Ltd. (an affiliate of Euroclear) in the U.K. and Ireland; (2) Caja de Valores, S.A. in Argentina; (3) Tel Aviv Stock Exchange Clearing House (TASECH) in Israel; (4) Monte Titoli, S.p.A. in Italy; (5) Japan Securities Depository Center, Inc.; (6) Central Depository (Pte.) Ltd. in Singapore; and (7) Hong Kong Securities Clearing Company Limited. In addition, BM&F BOVESPA in Brazil and CDS, Inc. have pledgee accounts at DTC in order to receive U.S. securities collateral at DTC. Notably, however, the level of activity by CSD participants at DTC is insignificant in comparison to total DTC activity.

DTC has also formed a relationship with Omgeo, which provides global trade confirmation and trade matching systems for institutional trades. Trades by institutional investors are affirmed in Omgeo's trade confirmation and trade-matching systems, and the compared trade details are then passed on directly to DTC's settlement system for settlement on a delivery-versus-payment/receipt-versus-payment (DVP/RVP) basis.

D) Effect that the failure of or disruption to DTC would have on critical markets, financial institutions, or the broader financial system

The immediate effects of a failure of or a disruption to the functioning of DTC would include a major disruption to the markets for which DTC is the central securities depository as well as financial losses for many of DTC's participants. A disruption to DTC's services would first lead to complete or partial disruption of a significant amount in gross transaction value settled by DTC and to dividend, interest, and certain principal payments made on a daily basis. Such a disruption similarly would completely or partially disrupt the additional \$23.8 billion average daily net settlement obligations that NSCC's Continuous Net Settlement system instructs at DTC on behalf of NSCC and its members. The markets would be impacted further by an inability to access or trade some or all of the \$39.5 trillion in securities for which DTC acts as custodian. The absence of DTC's services could also delay or prevent payment of dividends, principal, and interest to investors that own securities serviced by DTC. If a failure or disruption was triggered by losses to DTC, those losses might be shared by and cause stress to other FMUs, such as NSCC, with which it has a cross-guarantee agreement.

In addition, a failure or a disruption to the functioning of DTC would likely result in significant spillover effects on the rest of the U.S. economy, reducing the amount of credit available generally, reducing the value of household savings and corporate reserves, affecting the financing activities of corporations, destabilizing U.S. money market funds, and reducing the availability of secured credit.

Conclusion

DTC plays an important role in financial markets in particular because it holds in its custody substantially all corporate debt and equity securities available for trading

in the United States. Accordingly, a failure or disruption to the functioning of DTC could:

- Directly and negatively affect an enormous dollar value of financial assets held in custody and a substantial dollar value and volume of financial transactions in equity and debt markets;
- Impose material direct losses on participants and their customers for whom DTC acts as custodian;
- Cause liquidity or credit problems resulting from its failure or disruption to spread quickly and broadly among financial institutions and other markets; and
- Have cumulative negative effects on U.S. domestic equity and debt markets, financial institutions, and the broader financial system that are substantial in their own right and so severe as to create a risk that liquidity and credit problems experienced could spread among financial institutions and other markets and, therefore, threaten the stability of the financial system.

Accordingly, it is the assessment of the Council that a failure of or a disruption to DTC could increase the risk of significant liquidity problems spreading among financial institutions or markets and thereby threaten the stability of the financial system of the United States. For the reasons set out here, the Council has determined that DTC should be designated as a systemically important FMU pursuant to Title VIII of the Act.

E. Fixed Income Clearing Corporation

Description of Fixed Income Clearing Corporation

FICC is an FMU as defined in Section 803(6)(A) of the Act because it manages or operates a multilateral system for the purpose of clearing and settling securities transactions among financial institutions and between financial institutions and FICC.²²

FICC plays a prominent role in the fixed income market as the sole clearing agency in the United States acting as a central counterparty (CCP) and provider of significant clearance and settlement services for cash settled U.S. Treasury and agency securities and the non-private label mortgage-backed securities (MBS) markets. FICC is a wholly owned subsidiary of DTCC and is generally administered as an industry-owned utility on an at-cost basis.

FICC is made up of two divisions, the Government Securities Division (FICC/GSD) and Mortgage Backed Securities Division (FICC/MBSD), each providing clearing services in a different portion of the fixed income market. FICC/GSD provides clearing, settlement, risk management, central counterparty services, and a guarantee of trade completion for (1) U.S. Treasury bills, notes, bonds, Treasury inflation-protected securities (TIPS), and Separate Trading of Registered Interest and Principal Securities (STRIPS); and (2) Federal agency notes, bonds, and zero-coupon securities that are book-entry, Fedwire eligible, and non-mortgage backed (collectively, U.S. government and agency securities).

FICC/GSD accepts buy-sell transactions, repurchase and reverse repos, and Treasury auction purchases in several types of U.S. government securities. In 2011, the two divisions cleared transactions valued at \$1.1 quadrillion on a gross basis and \$64.8 trillion on a gross basis, respectively.

FICC/MBSD is the only centralized clearing facility in the non-private label MBS market. FICC/MBSD provides clearing, netting, settlement, risk management, and pool notification services to major market participants trading in pass-through MBS issued by the Ginnie Mae (GNMA), Freddie Mac, and Fannie Mae. FICC/MBSD also processes options trades for “to-be-announced” transactions. On April 2, 2012, FICC/MBSD began providing central counterparty services and a guarantee of trade completion for MBS.

Both FICC/GSD and FICC/MBSD have relationships with more than 100 participants. FICC/GSD’s members include the nation’s major brokers and dealers, as well as a wide range of entities that trade U.S. government securities. FICC/GSD’s direct members include some of the largest banks in the world by asset size and include affiliates of 23 of the 29 financial institutions considered to be globally systemically important.²³ FICC/MBSD’s participants generally include the following: (a) banks and trust companies, (b) dealers, (c) inter-dealer brokers, (d) government securities issuers, (e) registered investment companies, and (f) unregistered investment pools.

A distinguishing characteristic of FICC is the wide range of risks it faces and its ability to manage those risks. As a CCP, FICC faces credit risk, liquidity risk, custody and investment risks, and operational risk. FICC uses a combination of risk management tools to some of these risks to ensure it can meet its obligations. These tools include (1) membership standards with regard to financial resources and operational capacity, (2) collection of collateral deposits to meet clearing fund requirements and mark-to-market payments in the form of margin, and (3) close out and loss allocation procedures designed to facilitate an orderly liquidation in the event of a member default.

Another important feature of FICC is that it uses multilateral netting through which FICC/GSD and FICC/MBSD are able to reduce significantly the value of securities and payments that must be exchanged each day. A disruption to FICC could therefore have a multiplier effect on the liquidity needs of participants.

Analysis of Systemic Importance

A) Aggregate monetary value of transactions processed through FICC

In 2011, FICC/GSD processed 40.5 million transactions in U.S. government and agency securities worth \$1.1 quadrillion on a gross basis. Through multilateral netting, FICC/GSD reduced the value of financial obligations requiring settlement in 2011 from \$1.1 quadrillion to \$230 trillion. In 2011, FICC/MBSD processed MBS transactions worth approximately \$64.8 trillion, which through multilateral netting was reduced in value to \$3 trillion.

On an average day in 2011, FICC/GSD cleared 120,780 purchases and sales of U.S. government securities, 39,156 repo transactions, and 1,122 GCF repo

transactions, which in aggregate were reduced to 24,515 net obligations daily. The peak daily gross number of trades for these three categories was 255,241 purchase and sales, 44,238 repo transactions, and 1,636 GCF repo transactions, respectively. Peak aggregate netted obligations were 28,464 on July 29, 2011. Daily trading volume at FICC/MBSD averaged 10,556 compared sides in 2011. The daily gross number of compared sides at FICC/MBSD peaked at 30,237 on October 6, 2011.

In 2011, the average daily gross value of trades compared by FICC/GSD was \$893.7 billion for sales and purchases of U.S. government securities, \$1.7 trillion for repos, and \$796 billion for GCF repo transactions. The average daily net value settlement in all three categories was \$921 billion for FICC/GSD, and the average daily funds only settlement (FOS) was \$1.0 billion. The daily gross value of sales and purchases of U.S. government securities in 2011 peaked at \$1.6 trillion on August 9, 2011. For repos and GCF repo transactions, the daily gross value of trades peaked at \$1.9 trillion and \$1.2 trillion, respectively. These peaks occurred on August 3, 2011, and September 8, 2011, respectively. The peak total of netted transactions in 2011 for FICC/GSD was \$999.4 billion on July 29, 2011, and FOS peaked at \$2.6 billion on August 10, 2011. FICC/MBSD compared, on average, \$284.7 billion worth of transactions each day in 2011. FICC/MBSD's comparisons of trade par value peaked at \$988.2 billion on October 6, 2011.

FICC/GSD's peak increase in daily total clearing fund deposits in 2011 equaled \$0.5 billion on August 10, 2011. The average daily total of funds only settlement debit was \$0.3 billion, and funds only settlement debits peaked at \$1.8 billion on August 10, 2011. FICC/MBSD's average daily gross mark-to-market change for 2011, including changes in average daily initial margin, was \$3.4 billion, and its daily variation margin (mark to market) peaked at \$10.4 billion on January 6, 2011.

B) Aggregate exposure of FICC to its counterparties

In 2011, FICC/GSD maintained a clearing fund that averaged \$11.1 billion, while FICC/MBSD maintained a participants fund that averaged \$7.7 billion. The sizes of these funds peaked at \$25.0 billion for FICC/GSD on March 22, 2011 and \$15.2 billion for FICC/MBSD on March 22, 2011. The average daily VaR estimates at a 99 percent confidence level for FICC/GSD in 2011 was \$6.2 billion. The average VaR for FICC/MBSD in 2011 was \$5.0 billion. All of the collateral in the two funds was held in cash and in U.S. government and agency securities.

FICC/GSD has liquidity needs for day-to-day securities settlement, daily funds settlement obligations, and in the event of member default. FICC/MBSD, by contrast, in 2011, had liquidity needs only for daily funds settlement obligations, as it did not begin acting as central counterparty until April 2012. FICC/GSD's liquidity resources include the following: (1) the cash portion of the clearing fund; (2) the cash that would be obtained by entering into repo transactions using the eligible securities portion of the clearing fund (Treasury securities, agency securities guaranteed by the U.S. government, and certain U.S. agency/GSE pass-through securities); and (3) the cash that would be obtained by entering into repos using the securities underlying transactions that would have been delivered to the defaulting member had it not defaulted. In addition, FICC/GSD

could receive funds from its cross-margining and cross-guaranty arrangements if its resources proved insufficient to cover losses stemming from a member's default. FICC/GSD does not maintain any committed lines of credit.

In 2011, FICC/GSD's peak liquidity exposure to a single counterparty totaled \$111 billion. In 2011, FICC/MBSD's peak liquidity exposure to a single counterparty totaled \$25 billion. This exposure was required to be covered by the settlement obligations of other FICC/MBSD participants or through use of the FICC/MBSD participants fund. For the year ended December 31, 2011, FICC/GSD had an average of \$10.6 billion in liquidity resources, which was comprised of \$3.7 billion in cash and \$6.9 billion in U.S. Treasury and agency securities. FICC/MBSD had an average of \$7.1 billion in liquidity resources in 2011, of which \$3.5 billion was in cash and \$3.6 billion was in U.S. Treasury and agency securities.

C) Relationships, interdependencies, or other interactions of FICC with other FMUs or payment, clearing, or settlement activities

FICC/GSD has formed relationships with other market participants to mitigate the risks attending the potential default of a mutual participant. FICC/GSD has established a cross-margining arrangement with CME, and FICC has established a multilateral cross-guaranty agreement with both the OCC and FICC's affiliates, NSCC and DTC, to cover certain obligations of a common defaulting member to the extent of available resources of the member. FICC/GSD has also formed a relationship with NYPC, a U.S. futures clearing corporation, to allow joint clearing members to cross-margin certain positions cleared at FICC/GSD with certain positions cleared at NYPC in a "one pot" margin portfolio.

FICC/GSD has only two clearing banks, JPMorgan Chase and Bank of New York Mellon. These two entities are critically important to FICC for GCF repos and security settlement processing. FICC/GSD also relies on FRBNY, both to issue U.S. Treasury securities and to collect and pay margin deposits. Payments to and from FICC/MBSD are made via DTC's sub-account at FRBNY.

In addition, FICC's parent company, DTCC, provides significant services to FICC pursuant to a service agreement, including internal audit, corporate communications, corporate and regulatory compliance, executive services, finance, administration services, and legal services.

D) Effect that the failure of or disruption to FICC would have on critical markets, financial institutions, or the broader financial system

A failure of or a disruption to the functioning of FICC/GSD would be broad and severe. First, it could cause a complete or partial disruption of the substantial number and value of transactions typically pending to be cleared and settled through FICC/GSD in a two-day settlement cycle. Additionally, FICC/GSD members could face financial losses equal to the average net value of transactions guaranteed by FICC/GSD over the two-day settlement cycle, due to the full or partial absence of the FICC/GSD trade guarantee. These potential losses would be compounded by liquidity pressures due to at least a temporary limitation on a member's ability to access collateral in the clearing and participant funds. As

of December 31, 2011, the approximate values of such contributions were \$11.1 billion for FICC/GSD and \$6.5 billion for FICC/MBSD.

There would also be a disruption to new trading activity in U.S. government securities and MBS markets. Because there are no other clearing agencies providing services similar to those of FICC, trades would need to be settled on a bilateral basis.

In addition, a failure of or a disruption to the functioning of FICC would likely result in significant spillover effects on the rest of the U.S. economy, reducing the amount of credit available generally, drawing assets away from other productive uses, reducing the value of corporate reserves and household savings, destabilizing U.S. money market funds, and negatively affecting financing activities of the U.S. government and GSEs.

Conclusion

FICC plays an important role in financial markets due to the high gross notional value of the trades FICC/GSD and FICC/MBSD clear and the efficiencies they provide through multilateral netting of trades and payments among their members. In particular, because FICC/GSD is the sole clearing agency in the United States acting as a central counterparty for cash-settled U.S. government and agency securities, and FICC/MBSD is the predominant provider of clearance and settlement services for U.S. MBS markets, a failure or disruption to the functioning of FICC could:

- Directly and negatively affect an enormous dollar value and volume of financial transactions in the U.S. government securities and MBS markets;
- Impose material direct losses on FICC counterparties and create new demands for liquidity and new credit problems among financial institutions and others that rely on such markets for credit or liquidity;
- Cause liquidity or credit problems resulting from its failure or disruption to spread quickly and broadly among financial institutions and other markets; and
- Have cumulative negative effects on U.S. government and MBS markets, financial institutions, and the broader financial system that are substantial in their own right and so severe as to create a risk that liquidity and credit problems experienced could spread among financial institutions and other markets and, therefore, threaten the stability of the financial system.

Accordingly, it is the assessment of the Council that a failure of or a disruption to FICC could increase the risk of significant liquidity problems spreading among financial institutions or markets and thereby threaten the stability of the financial system of the United States. For the reasons set out here, the Council has determined that FICC should be designated as a systemically important FMU pursuant to Title VIII of the Act.

F. ICE Clear Credit LLC

Description of ICE Clear Credit LLC

ICE Clear Credit is a Delaware limited liability company and an indirect subsidiary of Intercontinental Exchange, Inc., a Delaware corporation. ICE Clear Credit provides central counterparty clearing services to direct participants that are financial institutions, as well as to indirect market participants (customers). Therefore, ICE Clear Credit is an FMU as set out in Title VIII of the Act.²⁴

ICE Clear Credit clears a majority of the CDS products in the United States that are eligible for clearing by a central counterparty. ICE Clear Credit currently clears 46 North American CDS contracts (Index Contracts), 132 single-name components of North American CDS contracts (Single-Name Contracts), and four foreign sovereign CDS contracts (Sovereign Contracts).²⁵ Specifically, ICE Clear Credit clears all of the active North American CDS indices for the 5-year and 10-year tenors, and—save for certain financials—the most liquid U.S. single names in the CDS market. Of the products that are accepted for clearing by ICE Clear Credit, as of December 31, 2011, ICE Clear Credit cleared approximately 66 percent of all bilateral trades where both the buyer and the seller are ICE Clear Credit clearing participants. In addition, ICE Clear Credit is currently the only clearinghouse worldwide that clears foreign sovereign CDS. Since 2009, ICE Clear Credit has cleared over 300,000 CDS transactions whose notional value is in the trillions of U.S. dollars.²⁶

ICE Clear Credit has a total of 27 clearing members, 14 of which are financial or banking groups and 9 of which are non-U.S. domiciled. ICE Clear Credit's clearing members include some of the largest financial institutions designated as G-SIFIs by the Financial Stability Board.

Irrespective of whether a CDS is being used to hedge risk or take on exposure to certain credit markets, as a bilateral contract between two market participants, a CDS creates credit and liquidity risk exposure between the counterparties to the CDS contract. For centrally cleared CDS contracts, ICE Clear Credit reduces these risks by serving as a central counterparty, interposing itself between the two original bilateral counterparties. Additionally, ICE Clear Credit improves market transparency and functioning by establishing robust daily settlement prices for the CDS trades that it clears, which periodically its members are required to stand behind, as well as monitoring and reporting open positions among clearing members.

Analysis of Systemic Importance

A) Aggregate monetary value of transactions processed by ICE Clear Credit

Number of transactions processed, cleared or settled. In 2011, ICE Clear Credit cleared an average daily gross volume of 821 Index Contracts, 1,145 Single-Name Contracts, and 397 Sovereign Contracts. ICE Clear Credit cleared a peak daily gross volume of 7,222 Index Contracts, 14,708 Single-Name Contracts, and 5,680 Sovereign Contracts.

Value of transactions processed, cleared or settled. In 2011, ICE Clear Credit cleared contracts with an average daily gross notional value in the billions of dollars in each of Index Contracts, Single-Name Contracts, and Sovereign Contracts. The peak daily gross notional values of the contracts ICE Clear Credit cleared were in the hundred billion dollar range for each of Index Contracts, Single-Name Contracts, and Sovereign Contracts.

Value of other financial flows. For all listed derivatives, the average daily flow of funds (average daily mark-to-market valuation plus change in average daily initial margin) was in the millions of dollars for initial margin and in the hundred million dollar range for adjusted mark-to-market, and for all intraday fees (adjusted mark-to-market, upfront fee, coupon plus credit event). The peak daily flow of funds was over a billion dollars for initial margin and in the hundreds of millions of dollars for adjusted mark-to-market and for all intraday fees (adjusted mark-to-market, upfront fee, coupon plus credit event). The peak daily open interest was in the hundreds of billions for each of Index Contracts and Single-Name Contracts, and in the tens of billions of dollars range for Sovereign Contracts.

B) Aggregate exposure of ICE Clear Credit to its counterparties

Credit exposures. During 2011, the average size of ICE Clear Credit's guaranty fund was in the billions of U.S. dollars, with a peak size of billions of U.S. dollars.

It is anticipated that following the implementation of a clearing requirement for swaps, clearing volume and open interest will significantly increase, and margin on deposit and exposure will increase proportionally.

Liquidity resources. The average amount of liquidity resources (including only cash and U.S. Treasury and agency notes) at ICE Clear Credit was billions of U.S. dollars, with a peak amount in the billions of U.S. dollars. As of December 31, 2011, the total value of lines of credit from banks or others was millions of dollars.

Liquidity exposures. The average aggregate daily dollar value of payouts by ICE Clear Credit to clearing members was in the millions of U.S. dollars, with a peak in the millions of U.S. dollars. The peak liquidity need with a single counterparty was in the millions of U.S. dollars.

C) Relationships, interdependencies, or other interactions of ICE Clear Credit with other FMUs or payment, clearing, or settlement activities

Participants. ICE Clear Credit has a total of 27 clearing members,²⁷ 14 of which are financial or banking groups and 9 of which are non-U.S. domiciled. ICE Clear Credit's clearing members include some of the largest banking and brokerage firms in the world.

Other FMUs. ICE Clear Credit does not have any relationships with other FMUs, other than its affiliate relationships.

Trading platforms. ICE Clear Credit clears OTC swaps (all cleared CDS transactions are executed bilaterally) and therefore does not have a relationship with any trading platforms. However, it is expected that ICE Clear Credit will

begin clearing transactions executed on DCMs or swap execution facilities with the commencement of CDS trading through such venues.

Other external service providers. ICE Clear Credit uses The Clearing Corporation for license fee and management services and ICE for technology and management services.

Average daily value of flows and other transactions with key financial institutions. ICE Clear Credit does not have any flows with unaffiliated key financial institutions other than its clearing members, settlement banks, and repo counterparties.

Average daily value of trades and other transactions on key trading platforms. ICE Clear Credit clears OTC swaps and therefore does not have a relationship with any trading platforms.

Average daily value of services provided and other transactions with other external service providers not captured. ICE Clear Europe uses ICE Clear Credit for technology and management services.

D) Effect that the failure of or disruption to ICE Clear Credit would have on critical markets, financial institutions, or the broader financial system

Role of ICE Clear Credit in the market served. In 2011, of the North American Index and Single-Name CDS market CDS products that ICE Clear Credit accepts for clearing, ICE Clear Credit cleared approximately 66 percent of all bilateral trades where both the buyer and the seller are ICE Clear Credit Clearing participants. It is also the only clearinghouse worldwide that clears foreign sovereign CDS.

Availability of substitutes. Currently, no other DCOs clear the breadth of products cleared by ICE Clear Credit. Accordingly, it is impracticable to expect that one could continue clearing ICE Clear Credit's CDS products immediately or in the short term following a disruption of ICE Clear Credit's operations.

Concentration by product type. ICE Clear Credit is currently the only clearinghouse worldwide that clears foreign sovereign CDS. In addition, ICE Clear Credit clears all of the active North American CDS indexes for the 5-year and 10-year tenors, and—save for certain financials—the most liquid U.S. single names in the CDS market.

Financial Data/Metrics. On December 30, 2011, ICE Clear Credit had in the billions of U.S. dollars in cash and cash equivalents and in the billions of U.S. dollars in government securities.

ICE Clear Credit reduces systemic risk in the CDS market in a number of ways. First, ICE Clear Credit lowers counterparty risk exposures among market participants through the novation of CDS contracts. Second, ICE Clear Credit lowers the likelihood of a default leading to a financial contagion of defaults across major CDS counterparties by maintaining substantial financial resources to manage the default of its two largest clearing members. Third, ICE Clear

Credit reduces credit, liquidity, and operational risk by facilitating the timely settlement of trade-related payment obligations. ICE Clear Credit is one of the largest clearers of CDS transactions worldwide.

The primary trigger of a default by ICE Clear Credit would be a default by one or more clearing members with extraordinary losses in excess of ICE Clear Credit's default resources. While such a default could conceivably result from circumstances local to those members, a default scenario would more likely be associated with a disruption to the markets more generally, including scenarios such as extreme volatility, extreme changes to normal price correlations, and acute reductions in liquidity. ICE Clear Credit may be more exposed to such circumstances than other central counterparties, because it has significant exposure to credit default swaps, which have jump-to-default risk.

An alternative trigger of a default by ICE Clear Credit would be a failure of its settlement bank or one of ICE Clear Credit's overnight reverse repo counterparties, because a substantial portion of ICE Clear Credit's financial resources are on deposit with such entities. Thus, if those financial resources were to suddenly become unavailable, ICE Clear Credit's operations would be adversely affected to a considerable extent. In addition, an ICE Clear Credit default could result from a failure to maintain a generally sound financial condition, such as a failure to maintain sufficient capital or other financial resources against its general business risk or against the risk of one or more clearing member defaults.

An ICE Clear Credit failure, or a disruption in the functioning of its clearing services, would effectively mean the immediate loss of the dominant clearing platform for the credit default products it clears. This disruption would likely expose ICE Clear Credit's clearing members and other market participants to credit and liquidity risks. The significant margin deposits held by ICE Clear Credit could lead to a period wherein affected entities may be unable to access, or in a worst case scenario would lose, the collateral they posted with the clearinghouse. Furthermore, if ICE Clear Credit does not have sufficient financial resources to satisfy its obligations to surviving market participants, the ability of those participants to meet other financial obligations could be adversely impacted. An ICE Clear Credit failure or disruption of its services could directly pose credit and liquidity risk to other financial market infrastructures, which include depositories, other clearinghouses, custodians, DCMs, trade repositories, and swap execution facilities. Since many of ICE Clear Credit's clearing members are G-SIFIs, a disruption or failure could indirectly pose credit and liquidity issues to every major market in the United States, every significant market participant in the United States, and all significant financial market infrastructures in the United States.

In the event of an ICE Clear Credit failure, it is unlikely in the short term that a substitute could take over ICE Clear Credit's clearing operations. Moreover, market participants would have to post substantially more collateral to enter into transactions in a bilateral space and obtain the same level of protection or exposure than they would through ICE Clear Credit. For example, in the bilateral market, if A wishes to neutralize, e.g., a long exposure to B, A

would typically enter into a transaction with a short exposure to another counterparty, e.g., C. This would offset A's market risk, but would leave A with credit risk to each of B and C that A would need to collateralize. Furthermore, the margin required to collateralize the exposure of a portfolio is generally smaller than collateralizing its individual components because the prices of the portfolio's components are often correlated. Central counterparty netting is more powerful, as each member's obligations to every other member can be treated as one portfolio that is netted and offset.²⁸ There could also be an increase in the number and exposure of uncollateralized transactions (creating greater exposures from further failures) and a decrease in the total number of transactions. This would likely have a deleterious impact on the financial activity that relates to those transactions.

In addition, any disruption in the clearing of these products would likely impede the price discovery benefit of central counterparty clearing, which would result in a decrease or loss of liquidity for these products and lead to market opacity. Large aggregate exposures to counterparties under CDS contracts could be hidden in opaque markets until the bankruptcy of a major CDS market participant is imminent. The circumstances of such an event, which figured prominently in the recent U.S. financial crisis, could have additional consequences on the ability of U.S. financial institutions to obtain credit. Bank lending could freeze until such time as market participants' CDS exposure can be adequately priced and it becomes clear market participants are able to honor contract obligations in a stressed financial environment.

Furthermore, not only would price discovery and liquidity be impacted by such an event, but there also would likely be a negative impact on any economic activity that presupposes the protection of hedging activity. Assume, for example, that a large U.S. based financial institution (FII) hedged its exposure to the corporation A corporate bonds it purchased by buying CDS protection from another financial institution, and the trade was then cleared at ICE Clear Credit. If any of ICE Clear Credit's members default and ICE Clear Credit does not have, and cannot obtain, sufficient financial resources to maintain operations, this CDS protection would no longer be active. If corporation A were then to suddenly default, FII could have a large loss on the corporation A bonds; a loss that, but for ICE Clear Credit's failure, should have been hedged by the CDS. As positions move to the bilateral market and are de-netted, settled, and replaced, operational risks and costs would likely increase, thereby decreasing the number of reliable and readily available hedging opportunities. As a result, financial institutions and other market participants may reduce their investment activities, which could further stress the U.S. financial markets.

In addition, an ICE Clear Credit failure or disruption would pose a substantial adverse impact to the CDS market for the products cleared by ICE Clear Credit. Market participants would likely experience substantial uncertainty around, and possibly outright loss of their CDS positions at ICE Clear Credit. Market participants would no longer be able use CDS to manage credit risk without increasing bilateral counterparty credit risk. This, in turn, is likely to cause a loss of confidence in the CDS market in general. For holders of the debt of

reference entities to CDS, those participants may be forced to sell large amounts of securities at potentially fire-sale prices if their CDS protection ceases to exist. Market participants that transact with any reference entity and use CDS to hedge credit risk may be forced to reduce or cease financial and other transactions with those entities. Banks or other users of index CDS as broad-based, macroeconomic hedges to credit risk may need to quickly sell securities or reduce lending activity in order to comply with capital requirements in the absence of CDS hedging benefits. Market participants that use sovereign CDS to hedge direct exposures to those countries, indirect exposures to entities domiciled in those countries or overall country risk may be forced to quickly sell securities and reduce or cease financial and other transactions with those entities. All of these effects represent the substantial risk of contagion from a disruption in the CDS market.

Finally, the contagion effect of an ICE Clear Credit default, if it were to lack sufficient resources to make timely payments for mark-to-market obligations, could severely disrupt operations at other clearinghouses because of a crisis of confidence that interrupts the orderly functioning of the market and/or because of the impact that the loss of funds would have on an entity's ability (or willingness) to pay (1) losses owed to other DCOs, (2) increased collateral requirements for offsetting out-of-the money positions, (3) deposits in pension fund cash accounts, or (4) bank financing charges. Essentially, the failure of ICE Clear Credit would create enormous uncertainty about the status of initiated transactions, as well as the financial positions of its clearing members and their customers, and could jeopardize the orderly functioning of clearing members, other DCOs, and the U.S. financial markets as a whole.

Based on its review of the information set forth here, the Council recognizes that ICE Clear Credit currently clears a specific range of the total credit derivatives market.²⁹ ICE Clear Credit also has a membership of 27 clearing members, including 14 financial or banking groups. Accordingly, when viewed narrowly the effects of a failure or disruption of ICE Clear Credit could be considered to affect a finite number of the world's largest financial institutions, each of which has, theoretically, immediate access to the bilateral markets for CDS products and various other sources of credit and liquidity in the event of such a failure or disruption.

However, the immediate loss of a clearing platform for most of the products cleared by ICE Clear Credit would effectively lead to at least a temporary disruption of the CDS market for these products as the market infrastructure through which positions are established, maintained, and closed out would be gone. This, together with the increased risks and costs in the bilateral markets, would create great uncertainty about the capacity of already strained markets to accommodate any anticipated corresponding liquidity needs, which would likely lead to increased credit and liquidity problems for market participants. As these risks and costs increase, institutions may reduce their investment activities due to a lack of reliable and readily available hedging opportunities, which could further stress the U.S. financial markets.

Moreover, under rules recently promulgated by the CFTC³⁰ and equivalent rules being considered by the SEC pursuant to the Act, ICE Clear Credit will likely be required to expand its membership base to include smaller financial institutions and permit the direct involvement of buy-side firms for the first time. These new regulatory standards will also result in numerous financial institutions being required to clear trades with other financial institutions when clearing is offered by one or more FMUs and thereby increase their practical reliance on ICE Clear Credit in a manner consistent with the policy direction established by the Act. Thus, and especially upon these new standards taking effect, a failure or disruption of ICE Clear Credit would necessarily involve a broader segment of the financial community and have a wider impact on the financial system of the United States than would have been true in the recent past. These more widespread effects reinforce the Council's conclusion that a failure or disruption to the functioning of ICE Clear Credit could create or increase the risk of liquidity and credit problems spreading among financial institutions or markets and thereby threaten the stability of the financial system of the United States.

Conclusion

The data reviewed by the Council indicate that ICE Clear Credit processes high-dollar-value transactions on a daily basis for critical U.S. financial markets³¹ and holds large amounts of collateral on deposit. Coupled with the unique nature of CDS and the attendant jump-to-default risk that has to be managed, as well as the size and nature of ICE Clear Credit's clearing members, a significant disruption to or failure of ICE Clear Credit could create instability in the U.S. CDS and securities markets. Moreover, there are currently no substitute DCOs for many of ICE Clear Credit's products. The loss of central counterparty clearing in the products ICE Clear Credit clears would increase collateral demands exponentially, resulting in a corresponding drain of liquidity.

An ICE Clear Credit failure could also have an adverse impact on price discovery, which could, in turn, lead to inefficient markets and a correlated increase in liquidity problems. Finally, the contagion effect of an ICE Clear Credit failure could impose material financial losses on ICE Clear Credit's clearing members and other market participants (such as customers) that could lead to increased liquidity demands and credit problems across financial institutions. Where these financial institutions are active in multiple U.S. markets, this contagion effect would have a broader impact and, as the markets experience growing stress, would likely lead to increased demand for credit, which would, in turn, likely lead to less liquidity. Thus, the Council believes that a significant disruption or failure of ICE Clear Credit could have a major adverse impact on the stability of the U.S. financial markets, the impact of which would be exacerbated by the lack of clearing alternatives currently available for many of the products cleared by ICE Clear Credit. Accordingly, a failure or disruption of ICE Clear Credit would likely have a significant detrimental effect on the liquidity of the swaps markets and impose significant financial losses on clearing members, which include large financial institutions and other market participants, which would, in turn, likely threaten the stability of the broader U.S. financial system.

For the reasons set out here, the Council has determined that ICE Clear Credit should be designated as a systemically important FMU pursuant to Title VIII of the Act.

G. National Securities Clearing Corporation

Description of National Securities Clearing Corporation

NSCC is a FMU as set out in Title VIII of the Act because it manages or operates a multilateral system for the purpose of clearing and settling securities transactions among financial institutions and between financial institutions and NSCC.³²

NSCC plays a prominent role in providing clearance, settlement, and CCP services for nearly all broker-to-broker equity and corporate and municipal debt trades executed on major U.S. exchanges and other equity trading venues. NSCC is a wholly owned subsidiary of DTCC and is generally administered as an industry-owned utility on an at-cost basis.

NSCC provides clearing, settlement, risk management, central counterparty services and a guarantee of completion for virtually all broker-to-broker trades involving equity securities, corporate and municipal debt securities, American depository receipts (ADRs), ETFs, and unit investment trusts (UITs). Clearance and settlement generally occurs through NSCC's Continuous Net Settlement (CNS) system, under which all eligible compared and recorded transactions for a particular settlement date are netted by issue into one net long (buy) or net short (sell) position. NSCC guarantees the settlement of matched trades and, as a CCP, is the legal counterparty to all of its members' net settlement obligations. NSCC's CCP services reduce its members' costs and risks associated with securities transfers. In 2011, NSCC, on a gross basis, cleared 20.9 billion equity, corporate and municipal bond, ADR, ETF, and UIT trades worth \$220.7 trillion on a gross basis.

NSCC has 187 full service members and 647 limited service members. NSCC members consist of registered broker-dealers, or banks or trust companies (including a trust company having limited powers) that are members of the Federal Reserve System or are supervised and examined by state or federal authorities having supervision over banks or registered clearing agencies. NSCC direct members include some of the largest banks in the world by asset size and include affiliates of 24 of the 29 financial institutions considered to be globally systemically important.³³ Trades that NSCC clears and settles for its members are executed on more than 50 trading venues for which it provides services (including all U.S. securities exchanges and alternative trading systems) and with other domestic and foreign clearing agencies.

A distinguishing characteristic of NSCC is the wide range of risks it faces and its ability to manage those risks. As a CCP, NSCC faces credit risk, liquidity risk, custody and investment risks, and operational risk. NSCC uses a combination of risk management tools to mitigate some of these risks to ensure it can meet its obligations. These tools include (1) membership standards with regard to financial resources and operational capacity, (2) collection of collateral deposits to meet clearing fund requirements and mark-to-market payments in the form

of margin, and (3) close out and loss allocation procedures designed to facilitate an orderly liquidation in the event of a member default.

Another important feature of NSCC is that it uses multilateral netting through which NSCC is able to reduce significantly the value of securities and payments that must be exchanged each day. A disruption to NSCC could therefore have a multiplier effect on the liquidity needs of members.

Analysis of Systemic Importance

A) Aggregate monetary value of transactions processed through NSCC

In 2011, NSCC cleared \$220.7 trillion worth of trades on a gross basis, which represented nearly all broker-to-broker equity and debt trades executed on the major U.S. exchanges and most other equity trading venues.

On an average trading day in 2011, NSCC cleared 83 million securities trades. The peak daily gross number of trades in 2011 was 199 million trades on August 8, 2011, with peak netted obligations equal to 204,000 trades. The historic peak day for trades occurred on October 10, 2008, when NSCC cleared 209.4 million transactions. In 2011, the average daily gross value of transactions settled by NSCC was \$883 billion, with average aggregate netted obligations of \$23.8 billion. The peak daily gross value of trades in 2011 was equal to \$1.9 trillion on August 8, 2011, with the peak daily netted obligation equal to \$78 billion.

The average daily value of mark-to-market contributions to and distributions from NSCC's clearing fund for 2011 was \$408.5 million. The peak daily value of contributions to and distributions from NSCC's clearing fund was \$4.4 billion on August 9, 2011.

B) Aggregate exposure of NSCC to its counterparties

In 2011, the average daily size of the NSCC clearing fund requirement was \$3.9 billion and the peak size of the NSCC clearing fund requirement was \$10.2 billion (on August 9, 2011). The average daily VaR estimate at a 99 percent confidence level for NSCC in 2011 was \$2.9 billion, and the peak VaR for NSCC was \$6.3 billion on August 12, 2011. Using the scenario of a default of NSCC's largest participant family, NSCC's peak daily liquidity exposure to a single counterparty in 2011 was \$13 billion. In 2011 the average daily value of all collateral posted to NSCC, including excess deposits, was \$5.1 billion, and the peak value of all collateral posted to NSCC was \$11.9 billion (on August 9, 2011). All of the collateral in the clearing fund was held by NSCC in cash and U.S. government and agency securities.

NSCC seeks to maintain sufficient liquidity to enable it to settle transactions in the default of the member-family to which NSCC has the largest aggregate settlement exposure over the three days between the time when its guarantee is issued, generally one day following the trade date (T+1), and final settlement (T+3). NSCC's liquidity resources are limited to a line of credit, its retained earnings, and the value of assets held as collateral, including certain securities of the defaulting member delivered in anticipation of settlement. NSCC's liquidity facility is a \$6.2 billion committed line of credit through a syndicated loan facility.

The amount of funds available to NSCC under the committed credit facility is limited not only by the overall size of the facility, but also by the amount of assets available to NSCC to pledge as collateral to lenders supporting the facility. NSCC is also required to contribute up to 25 percent of its retained earnings in the event the clearing fund and other collateral is not sufficient to cover a loss. NSCC's retained earnings were \$151 million as of December 31, 2011. For 2011, the average daily amount of NSCC's liquidity resources held in cash and U.S. Treasury and agency securities was \$4.7 billion. The peak amount of such liquidity resources was \$7.9 billion.

C) Relationships, interdependencies, or other interactions of NSCC with other FMUs or payment, clearing, or settlement activities

NSCC's CNS system relies on an interface with its affiliate DTC for the book-entry movement of beneficial ownership of securities through securities accounts established at DTC to settle obligations. CNS short positions (i.e., obligations to deliver) are compared against members' DTC accounts to determine issue availability. If securities are available, they are transferred from the NSCC member's account at DTC to NSCC's account at DTC. The allocation of CNS long positions (i.e., obligations to receive) to receiving NSCC members is processed in an order determined by an algorithm built into the system. Securities are automatically allocated to NSCC members' long positions as the securities are received by NSCC.

Throughout the day, the debits and credits in a DTC participant's settlement account are netted to calculate, at any time, the net debit balance or net credit balance for the account. At end-of-day settlement, DTC and NSCC net the settlement balances of each DTC participant that is also a member of NSCC. After end-of-day netting with NSCC (also known as cross-endorsement), DTC reports final figures for each DTC participant. Because each DTC participant must settle through a "Settling Bank," there is a "roll-up" for each Settling Bank which is a net-net balance payable from or to such Settling Bank. Payments are made to and from DTC's account at FRBNY through the Federal Reserve National Settlement Service System. Payments are made to and from NSCC on the National Settlement System through the FRBNY sub-account of DTC. DTC and NSCC are also parties to a netting contract and limited cross-guaranty agreement.

CDS Clearing and Depository Services Inc. (CDS, Inc.), the Canadian central securities depository and central counterparty, is a full service member of NSCC, as well as a participant of DTC. This relationship enables CDS, Inc. participants to clear and settle OTC trades with U.S. broker-dealers through sponsored accounts maintained by CDS, Inc. with DTC and NSCC and entitles them to the privileges of direct membership in both organizations. However, CDS, Inc. participants are not members of DTC and NSCC and therefore must look only to CDS, Inc. for satisfaction of clearance and settlement obligations. Thus, if a CDS, Inc. participant defaults on its obligation to DTC or NSCC, CDS, Inc. is required to meet that obligation. CDS, Inc. mitigates its exposure to potential losses by requiring participants to commit collateral to CDS, Inc. in amounts equivalent to those required as collateral by NSCC and DTC.

NSCC receives transactions on exercises and assignments of options from OCC that are cleared and settled through NSCC. NSCC and OCC rely on one another for coverage of certain risks through a Third Amended and Restated Options Exercise Settlement Agreement between them (the Accord). The arrangement is designed to facilitate the settlement of the underlying securities upon the exercise or assignment of such options by mitigating duplicative margin requirements. The Accord provides for a two-way guaranty between OCC and NSCC of the mark-to-market amounts for options transactions for which NSCC has guaranteed completion in the event of a mutual participant's failure. The failure of OCC to meet its obligations under that agreement, and vice versa, could impair the ability of the parties to ensure access to adequate margin with respect to a failing participant that is a common member of both NSCC and OCC. Additionally, there is an agreement with OCC providing for the settlement of exercises and assignments of options on securities cleared and settled through NSCC in the event of a mutual participant's failure.

In addition, NSCC's parent company, DTCC, provides significant services to NSCC pursuant to a service agreement, including internal audit, corporate communications, corporate and regulatory compliance, executive services, finance, administration services, and legal services.

D) Effect that the failure of or disruption to NSCC would have on critical markets, financial institutions, or the broader financial system

The primary effect of a failure of or a disruption to the functioning of NSCC would be a disruption to the settlement of the \$3.5 trillion in notional value of transactions typically pending to be cleared and settled through NSCC on an average day. Additionally, initiating new trades would be difficult at best due to the lack of any clearing agencies offering similar services. Given the enormous efficiencies of multilateral netting provided by NSCC, bilateral settlement of transactions at current normal volumes would not be practical.

A failure of or a disruption to the functioning of NSCC would have several other likely effects. Members of NSCC could experience financial losses or liquidity shortages due to NSCC's inability to honor its central counterparty obligations and due to members' inability to access clearing fund contributions. There would also be financial and operational stresses placed on other FMUs such as DTC and OCC, which have closely related operations. Additionally, if bilateral gross settlement of NSCC-cleared trades were attempted, DTC's capacity could be overwhelmed as it experiences enormous increases in values and volumes of transactions.

In addition, a failure or a disruption to the functioning of NSCC would likely result in significant spillover effects on the rest of the U.S. economy, reducing the amount of credit available generally, drawing assets away from other productive uses, reducing the value of household savings, and affecting the financing activities of corporations and municipalities.

Conclusion

NSCC plays an important role in financial markets due to the high gross notional value of the trades NSCC clears and the efficiencies it provides through multilateral netting of trades and payments among its members. In particular, because NSCC clears and settles virtually all broker-to-broker equity and corporate and municipal debt securities transactions in the United States and supports more than 50 trading venues for which it provides services (including all U.S. securities exchanges and alternative trading systems), a failure or disruption to the functioning of NSCC could:

- Directly and negatively affect an enormous dollar value and volume of financial transactions in equity and debt markets;
- Impose material direct losses on NSCC counterparties and create new demands for liquidity and new credit problems among financial institutions and others that rely on such markets for credit or liquidity;
- Cause liquidity or credit problems resulting from its failure or disruption to spread quickly and broadly among financial institutions and other markets; and
- Have cumulative negative effects on U.S. domestic equity and debt markets, financial institutions, and the broader financial system that are substantial in their own right and so severe as to create a risk that liquidity and credit problems experienced could spread among financial institutions and other markets and, therefore, threaten the stability of the financial system.

Accordingly, it is the assessment of the Council that a failure of or a disruption to NSCC could increase the risk of significant liquidity problems spreading among financial institutions or markets and thereby threaten the stability of the financial system of the United States. For the reasons set out here, the Council determined that NSCC should be designated as a systemically important FMU pursuant to Title VIII of the Act.

H. The Options Clearing Corporation

Description of The Options Clearing Corporation

The Options Clearing Corporation (OCC) is an FMU as defined in Title VIII of the Act because it manages or operates a multilateral system for the purpose of clearing and settling securities transactions among financial institutions and between financial institutions and OCC.³⁴

OCC is the predominant clearing organization for U.S. options markets. OCC provides its clearing members with clearing and settlement services that eliminate the need for individual counterparties to bilaterally exchange option premiums and collect and maintain margin on a daily basis. These services increase the speed and efficiency of trading and settlement while reducing members' operational expenses. Additionally, OCC acts as a central counterparty for certain options and other derivatives therefore reducing credit risk for its members.

OCC's clearing members serve institutional investors, professional traders, and retail customers. OCC currently has approximately 120 clearing members, which comprise some of the largest domestic and foreign financial institutions including banks, broker-dealers, futures commission merchants, investment advisers, and investment funds. OCC's members include some of the largest banks in the world by asset size and include affiliates of 17 of the 29 financial institutions considered to be globally systemically important.³⁵

The primary services that OCC provides relate to the clearing and settlement of options and futures. The types of options cleared include those on equities, indices, currency, and commodities though equity options accounted for approximately 93 percent of total clearing volume. OCC is the sole issuer and settling agent for all stock options, equity index options, and single-stock futures listed on U.S. exchanges.

When OCC accepts a trade for clearing, it becomes a central counterparty for the transaction and therefore is subject to credit risk resulting from the transactions it clears. OCC mitigates the risk from these transactions by collecting margin collateral from its members and by maintaining a clearing fund. However, it is still exposed to market risk should it be necessary to liquidate collateral as well as model risk that exists relating to the methodology used to calculate margin calls.

Analysis of Systemic Importance

(A) Aggregate monetary value of transactions processed through OCC

OCC also cleared stock lending transactions covering a total of 7.3 billion shares in 2011. The dollar value and volume of options transactions handled by OCC includes substantially all of the equity options traded on U.S. options exchanges.

In 2011, OCC cleared an average daily gross volume of 18.1 million option contracts, 152,000 futures contracts and 29 million stock loan shares. The peak daily gross volume for OCC in 2011 was approximately 41.5 million option contracts, 383,000 futures contracts and 89.3 million stock loan shares. OCC's average month-end open interest for 2011 was 305 million option contracts and 960,000 futures contracts. Daily open interest peaked at approximately 386 million option contracts on August 19, 2011 and 1.2 million futures contracts on December 16, 2011.

In 2011, the average daily gross value of premium exchanged by OCC was \$5.95 billion for option contracts and \$1.2 billion for stock loan transactions. The peak daily gross value of premium exchanged during 2011 was \$20.3 billion for options contracts and \$3.1 billion for stock loan transactions, respectively. The average notional value of open interest for contracts cleared by OCC in 2011 was \$3.3 trillion based on month-end data.

OCC processed an average of \$1.2 billion in daily changes in initial and variation margin payments in 2011, and the peak daily initial and variation margin payments processed by OCC was \$22.1 billion on August 8, 2011.

(B) Aggregate exposure of OCC to its counterparties

As of December 31, 2011, OCC held \$76.3 billion in margin deposits on behalf of its clearing members, \$57.3 billion of which consisted of cash and other underlying securities accepted as margin by OCC and approximately \$19 billion of which consisted of equity and index option escrow deposits accepted in lieu of margin. As of December 31, 2011, OCC also maintained a clearing fund for options and futures clearing activity totaling \$2.9 billion. All of the collateral in the clearing fund was held in the form of cash and U.S. Treasury securities.

In 2011, the average aggregate daily value of collateral (after haircut) posted to OCC was \$89.8 billion. OCC's VaR estimate at a 99 percent confidence level was on average \$15 billion in 2011, and the average collateral required to be deposited with OCC to cover that exposure was \$33.6 billion. The daily average size of the OCC clearing fund in 2011 was \$2.8 billion, and the remaining \$53.4 billion in collateral deposits consisted of mark-to-market charges to cover changes in the value of option positions and stock and index option contracts held in escrow in lieu of margin. The average collateral coverage ratio for OCC during 2011 was 135 percent based on the ratio of valued collateral (not including option collateral held in escrow) over estimated margin requirements, using month-end data over a 12-month period. The aggregate dollar value of collateral (after haircut) posted to OCC peaked at \$123.7 billion on August 9, 2011. In 2011, the peak VaR was \$35.7 billion, the peak collateral requirement was \$63.5 billion, and the peak clearing fund requirement was \$3.4 billion.

OCC's liquidity resources include the defaulting member's collateral, the assets in the clearing fund, and a \$2 billion secured line of credit.³⁶ The amount of funds available to OCC under the committed secured credit facility is constrained not only by the overall size of the facility, but also by the amount of assets that OCC can pledge as collateral to lenders supporting the facility, which is limited to the securities in OCC's clearing fund. OCC's bylaws give it the authority to use a defaulting clearing member's margin and clearing fund deposits to obtain temporary liquidity for purposes of meeting obligations arising out of (1) the default or suspension of a clearing member or any action taken by OCC in connection therewith or (2) the failure of any bank or any clearing organization to perform any obligation owed to OCC. In addition, OCC may use such assets to borrow or otherwise obtain funds through any means determined to be reasonable by its Chairman, Management Vice Chairman, or President of the Corporation in his or her discretion (including, without limitation, pledging such assets as security for loans and/or using such assets to effect repurchase, securities lending, or other transactions). OCC rules provide, among other things, that upon the suspension of a clearing member, OCC shall promptly liquidate, in the most orderly manner practicable, all of the clearing member's margin.

For 2011, the average amount of OCC's liquidity resources held in cash and U.S. Treasury and agency notes was \$12 billion, and the peak amount of liquid resources was \$25.8 billion. The peak liquidity exposure OCC experienced with a single counterparty occurred on September 19, 2011, when the exposure totaled \$3 billion. OCC did not provide information regarding the average peak exposure to individual members during the course of 2011.

(C) Relationships, interdependencies, or other interactions of OCC with other FMUs or payment, clearing, or settlement activities

OCC's operations and the current market structure for listed options trading and clearing involve significant interdependence between OCC, other FMUs, settlement banks, clearing members, credit facility lenders, custodians, exchanges, cross-margining entities, and pricing vendors.

OCC maintains two active cross-margin relationships with the CME and ICE Clear U.S. OCC clearing members use these cross-margin relationships to realize the benefits of net settlement across the securities and futures markets, as well as billions of dollars of savings on clearinghouse margin requirements. OCC's average margin amount in 2011 subject to these cross-margining arrangements was approximately \$2.3 billion.

OCC is party to a multilateral cross-guaranty agreement with DTC, FICC, and NSCC, which provides for the sharing of residual close-out proceeds from a defaulting member between these clearing agencies in the event that one clearinghouse is in an excess position and another is in a shortfall position. In addition, OCC maintains an agreement with NSCC that governs the loss or profit sharing resulting from the settlement of exercised or assigned options of a common defaulting member. That arrangement is designed to facilitate the settlement of the underlying securities upon the exercise or assignment of such options by mitigating duplicative margin requirements.

DTC, in its role as a securities depository, provides services to OCC clearing members, including the ability to pledge collateral held in DTC accounts to OCC for collateral purposes. The most prevalent form of collateral—valued securities—is pledged to OCC in this manner. DTC also provides the operational support for securities lending transactions to be executed in both the bilateral stock loan program and the AQS Market Loan platform.

(D) Effect that the failure of or disruption to OCC would have on critical markets, financial institutions, or the broader financial system

Should there be a failure of or disruption to the functioning of OCC, the immediate effects could be manifested in two primary forms. The first is direct financial stress placed on clearing members who would be at least temporarily unable to access margin collateral and clearing fund deposits. Additionally, there could be a complete or partial disruption of the \$3.3 trillion in average notional value of open interest for which OCC is issuer and guarantor as well as a sudden decrease in options trading activity in the markets for which OCC is the sole clearing agent due to increased risk and decreased efficiency in OCC's absence. As of December 31, 2011, OCC held \$57.3 billion in margin deposits on behalf of its clearing members, \$2.9 billion in clearing fund deposits, and \$19 billion in equity and index option escrow deposits accepted in lieu of margin. A failure of or disruption to the functioning of OCC could temporarily limit participants' access to these deposits in the short term and possibly result in losses of the \$19 billion of escrow deposits.

In addition, in the event OCC is no longer available as an issuer and guarantor, options cleared and settled through OCC may have to be replaced, to the extent practicable, including through entering into transactions in the underlying instruments, with an average replacement value of approximately \$3.3 trillion. In the event such a disruption were to occur, settlement of many future transactions in options contracts currently cleared by OCC could be required to occur on a bilateral basis between the parties to the respective transactions in a daily average amount of \$5.95 billion. The same is true of stock loan transactions with an average daily gross value of \$1.2 billion.

In addition, a failure or disruption to the functioning of OCC would likely result in significant spillover effects on the rest of the U.S. economy, reducing the amount of credit available generally, drawing assets away from other productive uses, disrupting the markets for securities and indexes underlying options cleared by OCC, reducing the value of household savings, and reducing the ability of corporations to use options to manage risks.

Conclusion

OCC is the sole clearing agency providing clearance and settlement services for U.S.-listed options. A failure or disruption of OCC could:

- Directly and negatively affect significant dollar value and volume of financial transactions in options and futures markets;
- Impose material direct losses on OCC counterparties and create new demands for liquidity and new credit problems among financial institutions and others that rely on options markets for risk management and other purposes;
- Cause liquidity or credit problems resulting from its failure or disruption to spread quickly and broadly among financial institutions and other markets; and
- Have cumulative negative effects on U.S. domestic options and futures markets, financial institutions, and the broader financial system that are substantial in their own right and so severe as to create a risk that liquidity and credit problems experienced could spread among financial institutions and other markets.

Accordingly, it is the assessment of the Council that a failure of or a disruption to OCC could increase the risk of significant liquidity or credit problems spreading among financial institutions or markets and thereby threaten the stability of the financial system of the United States. For the reasons set out here, the Council has determined that OCC should be designated as a systemically important FMU pursuant to Title VIII of the Act.

