January 24, 2011

VIA EMAIL

Alberta Securities Commission
British Columbia Securities Commission
Manitoba Securities Commission
Autorité des marchés financiers
New Brunswick Securities Commission
Ontario Securities Commission
Saskatchewan Financial Services Commission

c/o John Stevenson, Secretary
Ontario Securities Commission
20 Queen Street West
Suite 1900, Box 55
Toronto, Ontario M5H 3S8

Me Anne-Marie Beaudoin
Secrétaire de l'Autorité
Autorité des marchés financiers
800, square Victoria, 22e étage
C.P. 246, tour de la Bourse
Montréal (Québec) H4Z 1G3

Thomas A. Kloet
Chief Executive Officer
TMX Group Inc.
The Exchange Tower
130 King Street West
Toronto, ON M5X 1J2
T (416) 947-4320
F (416) 947-4332
tom.kloet@tmx.com

Re: Canadian Securities Administrators ("CSA") Consultation Paper 91-401 on Over-the-Counter Derivatives Regulation in Canada, CSA Derivatives Committee November 2, 2010 (the "Committee")

Dear Mr. Stevenson and Me Beaudoin:

TMX Group Inc. ("TMX Group") appreciates the opportunity to comment on the CSA Consultation Paper 91-401 on Over-the-Counter ("OTC") Derivatives Regulation in Canada (the "Consultation Paper"). The Consultation Paper invited the financial industry, market participants and the broader public to provide input on Committee proposals regarding the regulation of OTC derivatives in Canada. TMX Group commends the Committee and the CSA for its leadership in proposing a thoughtful framework for OTC derivative regulatory reform, and for raising very important questions to be considered in the development of such a framework. The implementation of OTC derivative regulatory reform will have a broad and substantial impact on the Canadian securities and commodities markets at large, as well as on TMX Group subsidiaries, and our domestic and foreign market participants. Although many of our comments are addressed in broad terms, we would be pleased for an opportunity to expand on our comments, either in writing or in person.

In addition to our responses to the questions posed in the Consultation Paper, we are also pleased to attach a copy of TMX Group's recent White Paper, "Transparency, Market Integrity and Risk Management: The Role of the Regulated Exchange." This paper, published in September 2010, describes and explains how the core competencies of a combined regulated exchange and clearing house are designed to meet the objectives and commitments of the G20 with respect to the improvement of OTC derivatives markets.

TMX Group

TMX Group is Canada's largest integrated exchange group operator. TMX Group's key subsidiaries operate cash and derivative markets for multiple asset classes including equities, fixed income and energy. Toronto Stock Exchange, TSX Venture Exchange, Montreal Exchange, Natural Gas Exchange Inc. ("NGX"), Boston Options Exchange (BOX), Shorcan, Equicom and other TMX Group companies provide trading markets, clearing facilities, data products and other services to the global financial community. TMX Group is headquartered in Toronto with offices in Montreal, Calgary, Vancouver and Houston.

RESPONSES

Clearing

1. Do you agree with the recommendations on the approach to implementing mandatory central clearing? What factors should be taken into consideration by regulators in identifying OTC derivatives appropriate for clearing and which are capable of being cleared?

We agree with the recommendations to implement a mandatory requirement for centralized clearing of OTC derivatives. The micro (or firm) level benefits of central clearing for OTC derivatives, including capital, collateral and operational efficiencies, and the macro (or systemic) level benefits, including systemic risk management, will greatly improve the resilience of the Canadian financial system and improve the overall efficiency of these markets.

In broad terms, OTC derivatives should have the following characteristics to be considered "CCP clearing-eligible":

1. A level of trading liquidity sufficient to ensure that market participants can achieve maximum economic benefit from a CCP model at low cost;
2. A degree of transparency in the price or rate formation process or, at a minimum, a market consensus or convention for the extrapolation of these prices or rates from various sources. Any such convention needs to produce representative results on position valuation, which is a core risk management function of a CCP; and
3. A degree of standardization in contract terms that contributes to both trading liquidity and allows for an efficient risk management process. This is crucial from

a default management standpoint as greater standardization facilitates the close-out process.

2. What is your view on possible solutions for accessing CCPs and allowing for the most efficient use of capital? Considerations should account for risk models, collateral netting, membership criteria, etc. Possible iterations are, but are not limited to:

a) Creation and Use of Canadian Multi-Asset CCP;

b) Accessing Global Single and/or Multi-Asset CCPs, with additional collateral requirements for non-cleared trades not available for clearing globally; or

c) Creation and Use of Canadian Single Asset or Multi-Asset CCPs used in combination with Global Single and Multi-Asset CCPs with collateral linkages between the CCPs.

We believe that the ideal model for CCP access in an intermediated clearing model, considering both the international nature of the OTC derivatives markets and risk model concerns, is the use of a Canadian multi-asset class CCP with linkages to global (single and/or multi-asset class) CCPs.

Given the unique nature of the Canadian marketplace, this solution would ensure that:

1. OTC derivatives markets and participants that are more local in nature are serviced appropriately; and
2. OTC derivatives markets that are global in nature would be serviced locally, while still providing for access to global counterparties.

From a risk management standpoint, a Canadian multi-asset class CCP with linkages to global CCPs would provide greater certainty in default scenarios than the alternatives and would also avoid any conflict of law issues which may arise when dealing across jurisdictions. Furthermore, a multi-asset class Canadian CCP would provide the greatest capital, collateral and operational benefits to participants using such a service in a single default fund framework as all trading activities would be directed to a single counterparty, thus providing for the greatest synergies across markets and products.

It should be noted that in the context of inter-CCP linkages, an appropriate cross-collateralization model would need to be implemented between participating CCPs such that the risk of contagion across jurisdictions, and between CCPs, is minimized.

3. Is there sufficient liquidity in each of the individual Canadian derivatives markets (e.g. equities, interest rate, commodities, foreign exchange, etc.) to support the creation of a Canadian CCP? Which derivatives markets may pose challenges to the operation of a Canadian CCP?

A large proportion of the product classes within these aforementioned OTC derivatives markets exhibit sufficient trading liquidity such that the development of a Canadian CCP is achievable in a cost-efficient manner. As the majority of the trading liquidity in many

of these OTC derivatives markets is concentrated in “vanilla” derivatives which would qualify as CCP clearing-eligible, market participants would benefit from the advantages that centralized clearing offers. For products that are more structured in nature, or “exotic”, we believe that the uncleared Trade Repository option is a more viable solution.

A marketplace is comprised of two elements: product and participant. The success of a CCP solution hinges on the eligibility, or willingness, of both constituent parts. Any OTC derivatives marketplace that is dominated by participants who are unaccustomed and/or ill-equipped to dealing in a traditional CCP framework will present extensive challenges to the successful introduction of a traditional CCP. Certain markets may lend themselves to alternative CCP models. A primary example of such a market is the energy commodity market which is operated by NGX through a non-mutualized proprietary CCP model. In this case, a large proportion of market participants are commercial end-users who may not be willing to participate in a classic survivor-pay CCP construct. Furthermore, many commercial end-users do not have Treasury functions that are equipped to handle daily margin calls or to manage securities inventories used to pledge collateral. In this regard, many of these participants may view the classic CCP framework as too onerous or restrictive, thus putting at risk the success of the CCP initiative.

4. Is there a willingness and an ability of Canadian market participants to use, create or participate in the creation of a Canadian CCP solution?

TMX Group currently operates two CCPs - CDCC and NGX – and is both willing and able to participate in the creation, development and operation of either expanded or additional Canadian CCP solutions.

CDCC

CDCC, part of the TMX Group, has a 35-year track record as the CCP in North America that clears and settles Canadian futures, options and options on futures. CDCC is a multi-asset class central counterparty clearinghouse that currently provides clearing services for exchange-traded interest rate, equity, currency and commodity derivatives, and OTC equity derivatives. CDCC is also in the process of implementing clearing services for OTC fixed income derivatives (repo) pursuant to a mandate from the Investment Industry Association of Canada.

CDCC is well-positioned to leverage its existing infrastructure to support the clearing of additional OTC derivatives activity. This infrastructure includes:

- A neutral and committed ownership structure, with independence of governance and a commitment to global clearing best practices.
- A globally standard clearing model, based on CPSS-IOSCO best practices, including an FCM customer model, with a survivor pay default process.
- AA rating from Standard & Poor’s based on CDCC’s prudent and standardized risk management policies and operational procedures.

- Regulatory recognition as a Canadian clearing organization by the Autorité des marchés financiers.
- Recognition as a clearinghouse within the Payment and Settlement Act.
- A planned designation by the Bank of Canada recognizing CDCC's Canadian Derivatives Clearing System (CDCS) as a systemically important infrastructure, thereby providing it with access to central bank money settlement, and which will likely will be a requirement for future linkage opportunities.
- A modern, flexible, scalable and adaptable clearing technology infrastructure.
- A clearing infrastructure that supports the market for Canadian interest rates and equities including futures and options, as well as the planned implementation of the fixed income (repo) clearing that will provide capital efficiency opportunities from margin offsets with other OTC markets.
- An existing membership representing the majority of the significant Canadian financial market institutions, as well as the Canadian subsidiaries of many of the largest global OTC market participants which provides an instant window to a global, comprehensive clearing solution.

NGX

NGX is a leading trading and central counterparty clearing system for energy products in the North American market providing electronic trading, central counterparty clearing and data services to the North American natural gas, oil and electricity markets.

- NGX physically settles over 25 BCF per day in natural gas with net settlement amounts of over CAD $12 billion/annum.
- NGX's clearing framework does not mutualize credit risk among participants but rather, contract performance is backed by the margin deposited by participants and by the clearing house guarantee fund.
- NGX is recognized as an exchange and clearing agency by the Alberta Securities Commission.
- NGX operates as an Exempt Commercial Market in the US, where it is registered with the CFTC as a Derivatives Clearing Organization.

Canadian commodity market participants (energy in particular) have demonstrated a strong willingness and ability to use a Canadian CCP solution. By way of example, a large majority of Canada's Natural Gas physical spot market is cleared through NGX's centralized clearing services. With respect to creation of a Canadian CCP solution, market participants in the energy markets have, historically, shown little interest in creating a CCP; they have however provided valuable direction and guidance as to the design and scope of CCP services.

CDCC and NGX operate clearing services for different markets, along different models. It is imperative that CCPs are responsive to the requirements of the markets they serve, ensuring that the framework of the clearing models are in alignment with the capital and risk profiles of the market participants. This requires regulatory flexibility in

the structure of the CCP to ensure harmonization with market requirements and the ability for market participants to participate and/or provide direction which shape the services provided by CCPs, all while ensuring that the resulting solutions are in alignment with global best practices for managing risk.

5. How should non-financial intermediary users of derivatives be able to clear their derivative trades? Should this occur through direct access and membership in a CCP or should this be done through an indirect clearing model with financial intermediary CCP members acting as agents for the non-member CCP derivative participants?

In a typical FCM model, CCPs accept only registered (regulated) entities as direct clearing participants. The reason for this is largely based on risk management processes and controls as the CCP relies on regulatory infrastructure to provide frequent financial reporting. This reporting is the foundation on which CCPs base their on-going credit reviews of their clearing participants. Barring any changes in the reporting frequency and/or harmonization of financial statement reporting standards across these non-financial intermediaries, we believe it is unlikely that they would be considered direct clearing participants, but rather would clear their activity through a direct clearing participant on an agency basis.

In a less traditional proprietary CCP model, such as that adopted by NGX, large energy companies transacting as principal qualify as direct clearing members. These entities generally have legitimate hedging needs and restrictions on direct participation in NGX's CCP would have significant economic consequences as well as negatively impact the regulated commodity markets. However, most commercial end-users will have legitimate reasons to be entitled to appropriate exemptions from a mandatory trading and/or clearing regime. NGX acknowledges that it may not be appropriate to grant commercial end-user exemptions for those entities that may pose heightened systemic risk concerns to the markets based on their overall aggregate size as well as the scope of any speculative activity.

Electronic Trading

1. Should regulators choose to implement mandatory electronic trading, which of the frameworks discussed above should regulators use in respect of such implementation (i.e. mandatory trading of products subject to mandatory clearing; mandatory trading contingent on the availability of a trading platform; allowing participants to determine whether or not to trade on a platform)?

TMX Group supports the mandatory electronic trading of OTC derivatives, in appropriate products, on an organized exchange.

Electronic trading on an organized exchange offers significant benefits for market integrity and systemic stability. Electronic exchange trading allows participants to easily and efficiently access the marketplace. From the perspective of trade execution, electronic exchanges provide a level playing field in terms of a fair and transparent

market model, efficient price discovery, market liquidity and anonymity. Market abuse can be more effectively detected and prevented via the surveillance of electronic markets, and the centralization of business processes provides operational efficiencies. Finally, additional efficiencies and trading opportunities are provided by the ability to view and trade on multiple live markets through a single electronic trading system.

Two of the key requirements for successful trading on an organized electronic exchange are liquidity and standardization. These are also prerequisites for central counterparty clearing. Given the benefits to risk management and systemic stability of central counterparty clearing, and the fact that greater liquidity and standardization are required for trading than for central counterparty clearing, we believe that where derivatives are electronically traded, they should also be centrally cleared. An exception to this general statement is physical forwards that may be traded on exchange but are designed, and transact, as a physical forward market (a trade for deferred shipment of the commodity). This is in contrast to a futures or swap market that has speculative participation, substantial liquidity and product offsets as opposed to delivery of the underlying commodity.

Not every product and market will be ripe for trading on an electronic exchange, and therefore any requirement of electronic trading should be dependent on the availability of an appropriate trading venue. Consistent with our comments elsewhere, we suggest that appropriateness include the concepts of regulatory oversight by the relevant regulatory authority, i.e. the regulatory authority that is mandating electronic trading, multilateral (not single-dealer) trading, and accessibility to Canadian participants. Where an otherwise appropriate (well-regulated, multilateral, accessible) trading venue exists in a foreign jurisdiction, the absence of such a facility in Canada should not necessarily provide a shelter for participants who are seeking to avoid a trading obligation.

Therefore we support the mandated electronic trading of those products that are ripe for regulation. We recommend a framework of mandatory trading of products where there is sufficient standardization and liquidity, the availability of a suitable and appropriate electronic venue, and contingent upon the availability of central counterparty clearing.

2. Should regulators impose specific requirements on facilities where OTC derivatives trade? What specific elements should these requirements include (i.e. should these requirements be comparable to the requirements established in Regulation 21-101 respecting Marketplace Operation and Regulation 23-101 respecting Trading Rules?

Regulatory oversight of markets is essential to the achievement of the G20 objectives. It is our view that the use of well-regulated exchanges and central counterparty clearing houses should be favoured in any plan to move OTC trading onto exchanges or electronic trading facilities. While market rules and market models vary between trading venues, a level regulatory playing field should be established for the trading of listed futures and options and the trading of OTC derivatives which are determined to be ripe for regulation. The regulatory framework should not encourage the migration of

activity from exchange-traded markets to electronic facilities with significantly lower regulatory and compliance requirements.

3. Do you agree with the criteria on assessing the degree of standardization necessary for mandating trading of OTC derivatives on an organized trading platform (namely, legal, process and product standardization)? Is there any other element that the CSA should take into account?

We agree with the criteria of legal, process and product standardization as discussed in the CESR Consultation Paper on the Standardization and Exchange Trading of OTC Derivatives. We would add the criterion of liquidity to the requirements.

4. Is the availability of CCP clearing an essential pre-determining factor for a derivative contract to be traded on an organized trading platform?

There are examples of organized trading platforms that provide execution without CCP clearing. However, given that standardization and liquidity thresholds are lower for CCP clearing than for exchange trading, we believe that CCP clearing is an important starting point for the migration of trading onto an organized trading platform. Exchange trading should be combined with central counterparty clearing in order to maximize market integrity and systemic stability.

Capital and Collateral

1. What are the consequences that you foresee from higher capital requirements for financial institutions for derivative transactions not cleared through a CCP?

It is difficult to foresee the exact consequences from higher capital requirements for financial institutions, but we believe that this will certainly increase the cost of trading relative to the current context. This cost may be translated into wider bid-offer spreads or passed through to the market in some other form. Furthermore, depending on the magnitude on the increased costs, this may lead to a loss of trading liquidity in specific products/markets, potentially putting an end to trading in specific markets altogether.

For this reason, it is important to ensure that the net be cast wide enough to ensure that sufficient “CCP clearing-eligible” OTC derivatives be admitted for CCP clearing. This will ensure that participants are able to realize benefits on a wide array of products without losing completeness in the marketplace.

2. What are the consequences of mandatory collateral requirements for non-financial entities for non-cleared trades?

Similar to the argument on higher capital standards, mandatory collateral requirements will lead to a downstream increase in trading costs for non-financial entities which may lead them to exit certain market segments.

However, for those non-financial entities that choose to clear their transactions in OTC derivatives through a direct clearing participant of a CCP and where client segregation of positions and collateral is available, there is a realizable benefit to the underlying client from portfolio and/or cross-margining which may substantially reduce the cost impact associated with funding collateral to cover risk exposures.

3. Do the differing capital standards currently imposed by Canadian regulators result in a level playing field for OTC derivatives market participants?

We believe that similar capital standards across dealers, banks, pension funds and insurance companies would have a positive impact on the liquidity of the OTC derivatives markets.

End-Users and Significant Market Participants

1. What are your views on the general approach of providing commercial hedging end-users of OTC derivatives with exemptions from the mandatory clearing, electronic trading, margin and/or collateral requirements? If such trades are exempt, what would the effect be on financial institutions on the other side of these trades?

With respect to exemptions from mandatory trading and clearing requirements, consideration must be given to appropriate carve outs, particularly in commodity and energy markets. Exemptions should be available to select participant groups that do not pose sufficient systemic risk concerns and who have a valid need to enter into risk mitigating derivative transactions. For instance, non-financial entity end-users who engage in transactions as a necessary part of hedging price risk for a primary business related to producing or using commodities may be unduly and adversely impacted by mandatory trading and clearing requirements. The capital and infrastructure requirements necessary for exchange-trading and CCP clearing may be unnecessarily onerous or constraining, and impact the rates paid for services or energy by the general public. We would encourage a detailed analysis of the competing concerns raised for this group and the scope and nature of any appropriate carve-outs from a mandatory regime.

In the event that such trades are exempted from the mandatory clearing, electronic trading, margin and/or collateral requirements, they must be exempted for both counterparties to the trade. This would result in financial counterparties being exempt from mandatory requirements on a trade-by-trade basis, contingent upon the nature of the trade and the quality of the counterparty.

2. Should there be any other exemption from the mandatory clearing or from capital margin and/or collateral requirements for any category of end-users?

As mentioned earlier in our comments, an exception to the mandatory clearing requirement should be made for physical forwards that may be traded on exchange but

are designed, and transact, as a physical forward market (a trade for deferred shipment of the commodity). This is in contrast to a futures or swap market that has speculative participation, substantial liquidity and product offsets as opposed to delivery of the underlying commodity.

Segregation of Collateral

1. What are your views regarding a regulatory rule requiring all collateral to be held in segregated accounts?

Segregation is a necessary component of a sound risk management process. However, the approach to segregation needs to be considered carefully so that risks are adequately covered / managed without imposing a cost-prohibitive element to the centralized clearing process. Clearly, client assets pledged as collateral or margin should be segregated from clearing participant assets. However, we are of the opinion that segregation should not be imposed within client assets, as between collateral or margin posted for exchange-traded activities and collateral or margin posted for OTC activities. The key benefit of centralized clearing is in achieving economies of scale by focussing activities through a single counterparty. If for example exchange-traded activities are segregated from OTC derivatives activities, this may lead to a loss in efficiency gains from CCP clearing that would discourage market participants from using the CCP.

Therefore, although segregation is a key component to the risk management process, it is incumbent on those designing the operations of the CCP to carefully structure the segregation model so as to balance risk management and cost efficiencies.

2. Should end-users have the ability to elect segregation of collateral or margin?

We believe that end users should have the ability to elect segregation of both their positions and their collateral. In most standard CCP models, there is no explicit guarantee extended from the CCP to end-users, or clients, of its direct clearing participants. However, one of the advantages of using a CCP from a client perspective is that the client is insulated from any default events that may affect another direct clearing participant. This is an implicit guarantee that has protected clients of CCP participants during past crises. Therefore, the client has some degree of control over its credit exposure by choosing its clearing participant carefully.

Allowing end-users to segregate their collateral enhances their ability to manage their credit exposure to their direct clearing participant. In all cases, where it is possible for an end-user to move its collateral away from its direct clearing participant, the result is a gain in risk management for the end-user. Furthermore, appropriate segregation of end-user collateral is the important first step to achieving portability in a default scenario. With segregated collateral, the CCP would have the capacity to transfer both end-user positions and collateral away from a defaulting direct clearing participant and therefore minimize the market impact in a close-out situation.

In addition to the micro benefit of providing for segregated collateral, there is also a macro benefit to the financial system as a whole. As more end-users segregate their collateral from their direct clearing participants, there is less potential for re-pledging / re-hypothecation of this collateral. Ultimately, we believe that there would be less leverage in the system as the chain of collateral re-usage would be broken at that point.

It is important to recognize that any such suggested issues must be analyzed in the context of existing Canadian bankruptcy and insolvency laws. Any securities regime that seeks to minimize risks associated with collateral use and recovery in insolvency scenarios must be examined in this context and evolve in lock-step with applicable insolvency laws.

CONCLUSION

TMX is supportive of the general direction in which the CSA proposals have been framed. We applaud the commitment by the CSA to implement market reforms intended to strengthen Canadian financial markets, manage specific OTC derivative risks and implement G20 commitments in a manner appropriate for our markets without causing undue harm. We believe that OTC markets will benefit from appropriate and sensible regulatory reform, and we are ready and willing to participate in the development and implementation of these reforms in order to improve market integrity and systemic stability. We encourage the CSA to act swiftly, but prudently, in its efforts to address some of the deficiencies it has identified that are apparent in the OTC derivatives market. The need to act quickly is hastened by the implementation of the Dodd-Frank Act in the U.S., aspects of which have a direct and immediate impact on certain Canadian exchanges, clearing agencies, and market participants.

Please feel free to contact me (416) 947-4320 or Sharon Pel (416) 947-4359, with any questions regarding our comments.

Respectfully submitted;

Thomas A. Kloet
Chief Executive Officer
TMX Group Inc.

Attachment

Transparency, Market Integrity & Risk Management:

The Role of the Regulated Exchange

September 2010

Table of Contents

I. Introduction

TMX Group is Canada's largest integrated exchange group operator, and among its businesses owns and operates the Montréal Exchange (MX), the Natural Gas Exchange (NGX) and the Canadian Derivatives Clearing Corporation (CDCC). These businesses put the Group at the centre of exchange-traded derivatives markets and have offered us a unique perspective on the issues raised during and after the financial crisis. We have given considerable thought and attention to how Canada should respond to prevent similar crises from recurring, in particular with respect to the operation of less-regulated over-the-counter (OTC) derivatives markets.

The financial crisis was global, and international organizations are adopting recommendations and commitments to address key global issues. However, legislators, regulators and supervisors are provincial and national, and it will be these authorities, working with market operators and market participants who will be responsible for both the implementation and the success of these measures. This is a vitally important project for Canada, and its implementation will be important both for domestic markets and the international financial system.

In this paper we describe and explain how the core competencies of a combined regulated exchange and clearing house - trading, clearing, trade information warehousing, and regulation services – are designed to meet the objectives and commitments of the G20 with respect to the improvement of OTC derivatives markets. We will also point out that these core competencies exist and function in Canada today. They are also of importance to market participants for a variety of reasons that are not necessarily related to a regulatory mandate. In the event that exchange-trading and central-counterparty clearing of OTC derivatives will be mandated by law and regulation, we emphasize the need to ensure that these functions are exercised wherever possible by Canadian service providers under the supervision of Canadian regulators. This must be accompanied by linkages between Canadian and international providers in order to address the needs of international markets.

Canadian regulated exchange operators, market participants and regulators are robust, adaptable, and well-positioned to address these challenges. This is a major cooperative undertaking, and will require considerable thought, consideration, and effort. TMX Group, due to our experience and involvement in all segments of the industry, is able to provide insight from a unique perspective. We submit this paper as a contribution to the efforts of committing to and meeting the G20 objectives.

II. Regulatory and Market Proposals for the Reform of OTC Markets

The global financial crisis has prompted a coordinated and concerted response from international organizations, multilateral financial institutions, governments and regulatory and supervisory agencies. Most significant among these is the commitment of the G20 governments to implement policies and regulatory reforms to ensure recovery, to repair our financial systems and to maintain the global flow of capital. As part of these commitments, the G20 has underlined the importance of addressing issues arising from OTC derivatives markets.

Beginning with the London Declaration on Strengthening the Financial System, and continuing with the Pittsburgh Leaders' Declaration, the G20 has consistently enumerated several key objectives for improving OTC markets:

- Strengthen prudential oversight
- Improve risk management
- Increase transparency
- Promote market integrity
- Protect against market abuse
- Mitigate systemic risk
- Reinforce international cooperation

In Pittsburgh, the G20 Leaders committed to strengthening the international financial regulatory system, and specifically to "improving over-the-counter derivatives markets":

> *"All standardized OTC derivative contracts should be traded on exchanges or electronic trading platforms, where appropriate, and cleared through central counterparties by end-2012 at the latest. OTC derivatives contracts should be reported to trade repositories. Non-centrally cleared contracts should be subject to higher capital requirements. We ask the FSB and its relevant members to assess regularly implementation and whether it is sufficient to improve transparency in the derivatives markets, mitigate systemic risk, and protect against market abuse."* [1]

In the context of this broad international initiative, Canadian regulators are working towards the implementation of these recommendations through the Canadian Securities Administrators and the Canadian OTC Derivatives Working Group.

III. OTC and Exchange-traded Derivatives Markets

The financial crisis has highlighted the risks associated with less-regulated markets, and regulatory responses – beginning with the G20 commitments – have indicated that Central Counterparty (CCP) clearing and exchange trading will be mandated for many markets. Any discussion around increased regulation of these markets and the potential for mandatory exchange-trading and CCP clearing must recognize the role of OTC markets in the global economy, and the similarities and differences between OTC and exchange-traded markets.

OTC derivatives and commodity contracts are valuable, and in some instances, necessary risk transfer tools. They allow important innovation in product design, provide for the commencement and evolution of emerging markets, and enable customized solutions for the particular hedging needs of market participants.

Certain markets will possess the right combination of standardization, liquidity and user characteristics to be adapted to on-exchange trading. In fact, many derivatives that are exchange-traded today have evolved from OTC products. On-exchange trading grew as users migrated to exchange-traded instruments and in some cases substituted on-exchange for OTC products. The success of government bond futures, index futures, and equity and ETF options demonstrate products and markets that have adapted well to the standardized rules and requirements of exchange trading. The impressive growth in exchange-traded derivative activity over the past decade is clear evidence that participants have valued the benefits of on-exchange anonymity and market liquidity.

OTC and listed derivatives have co-existed through significant growth in both markets, and not every derivatives contract is ready or appropriate for migration to on-exchange trading. There is a wide diversity of OTC markets that bring together participants to trade specific asset classes, and each market will be characterized by its own combination of products and participants. A "one-size fits all" response will not be appropriate for all of these markets.

As a result, it is necessary to determine which markets can be effectively migrated to trading on a regulated exchange and CCP clearing, and which markets will be subject to trade reporting and higher capital requirements.

In looking at how the exchange-traded and OTC markets have evolved, we can make some general observations about market suitability for exchange trading and CCP clearing. A high degree of standardization is required for on-exchange trading. Futures contracts are standardized as to (1) contract underlying, (2) contract size, and (3) contract maturity. Only the price of the contract is negotiable on exchange. The utility of futures contracts for participants is dependent on the liquidity of the market – there must be a sufficient number of participants and a sufficient volume of activity in order for effective price discovery and risk transfer. Other platforms exist that allow for trades to be reported, confirmed and processed for CCP clearing, but these do not provide the degree of price-discovery and transparency that are provided by exchanges.

CCP clearing has a different set of criteria. In order to ensure the effectiveness and utility of a centrally cleared solution for OTC derivatives an OTC market should satisfy the following key conditions:

- A mutually acceptable set of market participants so that the risk-return relationships are equitable to all who use the CCP.
- The CCP product offering should include OTC products that are highly traded so that economies of scale are achievable and that overall clearing costs remain relatively low.
- The market variables affecting valuation are transparent and readily observable so as to minimize the subjectivity in mark-to-market and margining computations.

OTC markets are diverse and complex. We need to have a thoughtful and inclusive discussion of the market characteristics that must be present for the successful migration of OTC markets to an organized exchange or electronic trading platform and CCP clearing.

This discussion is essential to the reform of OTC markets in Canada. One of the principal characteristics to address is standardization. It is on the basis of this discussion that Canadian regulators, market participants and infrastructure providers can determine which OTC products should be exchange-traded, cleared or reported to a trade information repository and which products or participant groups should be exempt from mandatory requirements.

With respect to exemptions from mandatory trading and clearing requirements, consideration must be given to appropriate carve outs, particularly in commodity and energy markets. Exemptions should be available to select participant groups that do not pose sufficient systemic risk concerns and who have a valid need to enter into risk mitigating derivative transactions. For instance, nonfinancial entity end-users who engage in transactions as a necessary part of hedging price risk for a primary business related to producing or using commodities may be unduly and adversely impacted by mandatory trading and clearing requirements. The capital and/or infrastructure requirements necessary for exchange-trading/clearing may be unnecessarily onerous or constraining, and impact the rates paid for services or energy by the general public. We would encourage a detailed analysis of the competing concerns raised for this group and the scope and nature of any appropriate carve-outs from a mandatory regime.

IV. Exchange Group: Core Competencies and Regulatory Objectives

An exchange group like TMX Group possesses several core competencies, including trading, clearing, data warehousing and market regulation that can be applied to both OTC and exchange-traded derivatives.

TMX Group is a publicly traded company with market capitalization and 2009 revenues in excess of $2 billion and $550 million CAD respectively. TMX Group exchanges have a proven track record in providing exchange trading and central counterparty clearing across a broad range of derivatives and commodities contracts, to a broad range of market participants. We have demonstrated the flexibility to adapt our technology and our processes to a variety of asset classes in different markets and international jurisdictions, and we have consistently worked with our participants to provide solutions that are adapted to their needs.

MX

The Montréal Exchange, a wholly owned subsidiary of TMX Group, is Canada's financial derivatives exchange. MX lists interest rate, index, equity and exchange-rate derivatives on Canadian underlyings. Approximately 94 000 futures contracts representing $60 billion CAD in notional value trade on MX futures markets every day, mainly in its three flagship products: the BAX (Three-Month Canadian Bankers Acceptance Futures), CGB (Ten-Year Canada Government Bond Futures) and the SXF (S&P/TSX 60 Futures). Another 69 000 options on Canadian stocks, ETFs, and the Canada/US exchange rate are traded on a daily basis. (Note: Data as of May, 2010)

The MX client list includes 89 approved participants in Canada, the UK and the U.S., and a significant percentage of open interest in the interest-rate complex is held by foreign participants. Approved participants include broker-dealers, futures commission merchants (FCMs) and proprietary trading firms. End-user clients include a broad international spectrum of asset managers, trading firms, pension funds, corporate treasuries, hedge funds and Commodity Trading Advisors (CTAs). All trades executed on MX are cleared and settled by the Canadian Derivatives Clearing Corporation (CDCC).

The MX is regulated by the Autorité des marchés financiers (AMF), with regulatory functions performed by the Regulatory Division, an independently-governed self-regulatory organization. In addition, the MX has exemptive relief from the CFTC in the U.S., is authorized to offer direct access to brokers in the UK, as well as a regulatory recognition from the AMF in France.

The MX has developed a sophisticated proprietary exchange software system – SOLA® – that provides trading, clearing and surveillance functions. SOLA powers MX, CDCC and the Boston Options Exchange (BOX), and has been licensed by the London Stock Exchange Group for the EDX and IDEM exchanges, and Oslo Bors.

CDCC

As the issuer, clearinghouse and guarantor of MX's exchange-traded derivatives in Canada, the Canadian Derivatives Clearing Corporation has filled a key role in the Canadian financial markets since its inception in 1975. CDCC's strategic expansion into the non-listed markets began in 2006 with the introduction of Converge®. Given the current market landscape as well as its strategic focus, CDCC is well prepared to expand its service offerings to the broader over-the-counter markets. As evidence, in 2009 CDCC was selected by the industry to provide CCP services to the broader fixed income marketplace.

This expansion has, and will continue to be based on three key foundational elements:

- A legal and regulatory framework which provides certainty in default scenarios
- A standardized and robust risk management philosophy
- A sophisticated and flexible technology solution, which provides for short time to market on new initiatives with minimal additional technological investment on the part of users

Legal and Regulatory Framework:

- CDCC is a unique subsidiary within TMX Group, having a distinct Board of Directors with an equal balance of independent members and representatives from Senior Management of CDCC, Montréal Exchange and TMX Group.
- CDCC operates with a legal and regulatory structure that provides certainty in default scenarios and that benefits from the Payment, Clearing and Settlement Act (PCSA) in the event of insolvency proceedings
- The CDCC is recognized as a self-regulatory organization in Quebec and is under the oversight of the Autorité des marchés financiers.

Risk Management:

CDCC clearing members benefit from a robust risk management framework that includes:

- AA-rated FCM clearing model
- A two-tiered collateralization model that protects surviving Clearing Member collateral in the event of default and ultimately reduces their contingent liability as well as any systemic risks inherent in any large-scale default scenario
- Centralized business processes and collateral management thereby reducing total costs to Clearing Members
- Cross-product margining, across listed and unlisted products, so that collateral requirements are reduced and accurately reflect the economic risk profile of any Clearing Member's accounts
- A scalable risk model that is not subject to limits and/or caps.

Technology:

- The recent launch of SOLA® Clearing is a key milestone in the further development of CDCC's strategic vision.
- As a joint initiative between CDCC and TMX Group technologies, SOLA® Clearing, was designed to process a full spectrum of products. Furthermore its modular structure allows for enhanced flexibility in development and data dissemination resulting in a low implementation risk on the part of market participants.

NGX

TMX Group's wholly owned subsidiary Natural Gas Exchange Inc. (NGX), incorporated in 1993, is headquartered in Calgary, Alberta. NGX is a leading trading and clearing system for energy products in the North American market providing electronic trading, central counterparty clearing and data services to the North American natural gas, oil and electricity markets. Contracts listed for trading on NGX include physical fixed price, physical basis contracts, physical spread contracts, and physical daily and monthly index contracts along with various cash-settled contracts.

NGX has over 220 contracting parties in Canada and the U.S., who have executed the standard Contracting Party's Agreement (CPA) and transact in aggregate over CAD $70 billion/annum in gross notional value. NGX's gas and power products are available on the Intercontinental Exchange (ICE) trading platform; crude oil and physical power transactions are transacted through NGX's proprietary trading platforms. NGX is a non-intermediated market, thus all market participants represent that they enter into all transactions on the NGX Trading Platform as principal and not as agent for any other party.

NGX also provides clearing services through which it acts as central counterparty for transactions entered into, on an electronic marketplace or OTC. NGX physically settles over 25 BCF per day in natural gas with net settlement amounts of over CAD $12 billion/annum. NGX's clearing framework does not mutualize credit risk among participants but rather, contract performance is backed by the margin deposited by participants (currently CAD $2.8 billion) and the clearing house guarantee fund (CAD $100 million). There have been eight material defaults in NGX's history; all were resolved with no losses to any non-defaulting counterparty.

NGX is recognized as an exchange and clearing agency by the Alberta Securities Commission and holds exemptive relief orders from applicable securities commissions in other Canadian provinces.

In the U.S., NGX operates as an Exempt Commercial Market under Section 2(h)(3) of the Commodity Exchange Act and is registered by the U.S. Commodity Futures Trading Commission as a Derivatives Clearing Organization.

Exchange Group Core Competencies

In this paper we will discuss how a regulated exchange and clearing house can provide added value to OTC derivative and commodity markets through the application of its core competencies to regulatory requirements and the business needs of their market participants. The adaptability of these core competencies is well-suited to the complex and diverse needs of a variety of OTC markets.

1. Trading

An exchange receives and matches orders from multiple participants. A common set of rules governs order entry and trade matching for all participants in a central order book. The trading function, as described in greater detail below, provides market liquidity and efficient and transparent price discovery.

2. Clearing

A central counterparty clearing house receives trade data and arranges for the clearing and settlement of trades among participants either through open offer or novation (whereby the central counterparty becomes the counterparty for every trade - the buyer from every seller, and the seller to every buyer). As discussed below, the risk management techniques and processes employed by CCPs can dramatically reduce the risk of bilateral transactions.

3. Data Warehousing

The function whereby records of all trades, positions and open interest are maintained by the CCP or a trade information repository, with access provided to the appropriate regulatory authorities.

4. Regulatory Services

The services whereby all of the other functions of the exchange and the CCP are regulated and overseen by either a self-regulatory organization (SRO) or a regulatory department engaging in self-regulatory activities. The exchange and the CCP are governed by rules that are made through a process that involves the applicable regulator(s). These rules are then enforced by the SRO, which maintains the transparency, credibility and integrity of the market through market surveillance, analysis, regular examinations of participants, approval of participants and their authorized persons, investigations and disciplinary procedures when rule violations occur.

The following table illustrates how these core competencies can be applied to address the objectives agreed to by the G20. They are mutually reinforcing when they are combined to trade, clear and regulate organized markets.

Core Competencies and the G20 Requirements

	Trading	Clearing	Data Warehousing	Regulatory Services
Strengthen Prudential Oversight		•	•	•
Improved Risk Management	•	•		•
Increase Transparency	•	•	•	•
Promote Market Integrity	•	•		•
Protect against Market Abuse	•			•
Mitigate Systemic Risk		•	•	
Reinforce International Cooperation		•		•

Mapping G20 Objectives to Core Competencies

1. Strengthen Prudential Oversight

Prudential supervision of financial institutions is aimed at reducing the risk of insolvency of financial institutions which leads to losses for their customers and instability in the financial system.

In order to adequately supervise the solvency of financial institutions regulators will be looking for greater oversight and visibility of OTC transactions, particularly in the form of the size and concentration of positions. Part of this can be achieved by regulators having access to the OTC derivatives market book - all the information concerning trades concluded in the market, and the resulting positions and exposures.

This is most efficiently accomplished through the use of a centralized entity that manages the data with a reporting function to the appropriate regulatory authorities.

This data warehousing function is currently performed by CCPs for both exchange-traded and OTC derivative contracts in the normal course of business – it is integral to the clearing and settlement process.

Exchanges and CCPs currently exercise regulatory and operational oversight of activities on their respective venues, including with reference to capital requirements and fitness requirements for membership, collateral and margin requirements and position limits – all elements that are related to prudential oversight of markets.

2. Improved Risk Management

a. Market Liquidity Risk Management

Market liquidity is the "ability to trade large size quickly, at low cost, when you want to trade."[2] Market liquidity risk is the risk that a participant will not be able to enter or exit a position immediately at a fair price. This risk is mitigated when prices and quantities are posted and executable on an organized market.

Centralized multilateral trading on an organized exchange can offer significant market liquidity benefits over the bilateral trading. Participants enter their bids and offers into a central limit order book, allowing all participants to see the quantities that are offered and bid, and the prices for those quantities. On exchanges like the Montréal Exchange, participants are able to see the five best prices at which products are bid and offered, and the quantities available at each price, enabling them to understand at a glance the price at which they can buy or sell various quantities.

In order to ensure liquidity, many exchanges require the presence of market makers on their products. Market makers must maintain continuous two-sided quotes (bid and ask) within a predefined spread. A market is created when the designated market maker quotes bids and offers over a period of time. They ensure there is a buyer for every sell order and a seller for every buy order at any time. This is contrasted with an over-the-counter search market, where participants must search among other participants for bids or offers.

In those cases where an exchange order book does not offer sufficient liquidity for large institutional transactions, futures and options exchanges often permit pre-negotiated transactions and block trade facilities that allow trades that exceed available on-screen liquidity to be negotiated bilaterally and then reported to the exchange. Prices for these transactions are required to be reasonable in the context of the current market. These facilities are established according to the transparent rules of the exchange, and these rules in turn are made according to the terms of the legislation that governs the market and under the supervision of a securities regulator. All of these facilities are designed and scrutinized to ensure that they will not have a negative impact on the integrity of the quoted market and the central limit order book.

The benefits offered by exchange trading were borne out during the financial crisis. After Lehman Brothers failed in September 2008, market liquidity deteriorated in most markets and vanished almost completely in many OTC markets (for instance, dealers in emerging-market interest rate swaps and securitised products such as CDO stopped providing quotes)[3] . In comparison, exchanged-traded markets functioned well: liquidity was affected, but the combination of transparency, centralized liquidity and CCP clearing resulted in orderly, tradable two-sided markets.

b. Operational Risk Management

The Basel Committee on Banking Supervision defines operational risk as: "The risk of loss resulting from inadequate or failed internal processes, people and systems or from external events."

In the context of derivatives markets, this includes the risk of failures at any time during the processing of a trade. These failures can result from incomplete documentation and insufficient or inefficient internal processes or controls.

Exchange trading, when combined with CCP clearing, offers the advantage of straight-through-processing (STP), which significantly mitigates operational risk. Orders are entered into the order book, trades are matched, execution reports are transmitted to participants, and trades are transmitted to the CCP clearing house for clearing and settlement. The entire workflow is automated, efficient and auditable.

CCP clearing of OTC executed transactions can offer some of these benefits as well, beginning with trade confirmations and continuing through the clearing and settlement process. The regulated nature of CCPs provides for stringent oversight and audit requirements, ensuring that operational processes and systems are aligned with industry best practices.

The STP nature of the exchange model (trading and/or clearing) will be beneficial to market participants subject to the Basel II Accord, as capital requirements in support of operational risk move from the basic indicator approach, requiring a fixed percentage of gross income, to more complex methodologies that require the internal measurement of operational risk.

c. Counterparty Risk Management

Counterparty risk is the "risk that the party with whom you are dealing will not fulfill its obligations (delivery, payment, etc.) and that you will incur a loss as a result"[4]. This can result from several factors, including the financial instability of the counterparty and the potential lack of legal certainty or enforceability of the contract.

Experience during the recent crisis points to the need for fundamental improvements in the management of counterparty risk in OTC derivatives markets. Concentrating outstanding derivatives positions of participating buyers and sellers in a limited number of CCPs can reduce counterparty risk, making the entire financial system safer.[5]

CCPs provide enhanced risk management in the form of the multilateral netting of positions, marking positions to market prices, and the management of initial and variation margin. Prudent collateral requirements established and maintained by CCPs ensure that the magnitude of market positions is directly linked to the financial capacity of the market participants.

These risk management practices work to minimize the risk that any individual counterparty will default on its obligations.

With respect to the risk of default, central counterparty clearing reduces the risk associated with bilateral contracts. The CCP is the guarantor of all the transactions conducted on the exchange, and protects clearing members or participants from counterparty credit risk.

In the case of the Lehman Bros. insolvency, the unwinding process was achieved globally through the competitive auctioning of the Lehman OTC interest rate swap portfolio. The default was managed well within the margins posted by Lehman. While the financial crisis caused massive fallout in the bilateral markets, exchange-traded and centrally cleared derivatives positions were managed efficiently. During this time CCPs around the world inherited Lehman Brothers' securities market positions as the bank defaulted on its obligations. Despite the massive market turmoil, CCPs unwound, hedged, liquidated, and transferred millions of positions and client accounts worth trillions of dollars, providing stability and certainty to already fragile markets.[6]

3. Increase Transparency

Transparency is an important concept in financial markets. In the case of exchange and CCP models, we benefit from two types of transparency: (1) market transparency, referring to the transparency of the price formation process, and (2) regulatory or post-trade transparency, referring to the value, volume and concentration of activity.

Market transparency greatly assists efficient price formation. Organized exchanges publish the prices at which participants are willing to buy and sell listed instruments. This provides a highly transparent and efficient form of price formation – all participants gather in the same venue and make price information available and public. These prices are live and fully executable, not merely indications of interest. Participants can trade at the prices that are posted on the exchange, and they are guaranteed to trade at the best posted price. When trades are concluded on the exchange, price and volume information is immediately published.

The price formation process allows market prices to be established for all the instruments that are listed on the exchange. These prices are then used to establish the market value, or "mark to market", of a participant's position. This valuation of positions is essential to the assessment of exposure and risk for both individual participants and the market as a whole.

The efficiency of transparent price-discovery on regulated exchanges is demonstrated by the wide acceptance of price indices that are computed using exchange data. Exchanges are usually regarded as a superior venue for calculating and managing benchmark price indices. These indices are utilized by the wholesale OTC markets to settle a variety of derivative products and in many instances are heavily used by the retail markets in settlement of their products. The standardization, independence, and oversight provided by regulated exchanges, as well as their access to real time data, position exchanges to be the most efficient, reliable and neutral provider price indices.

Regulatory or post-trade transparency may include access to post-trade information with respect to OTC markets. This would potentially provide regulators with a view of the OTC book held by the CCP or trade repository in order to establish the volume of activity, the size of markets and positions, and the concentration of exposure.

4. Promote Market Integrity and Protection against Market Abuse

Regulated markets are governed by rules that are established publicly and transparently pursuant to laws and regulations enforced by securities, commodities, derivatives and futures regulators.

Market rules are enforced by self-regulatory organizations that provide supervision of market conduct, regular examinations of market participants, and help to ensure market integrity. Exchanges, either directly or through regulated third party service providers, maintain sophisticated trade practice surveillance systems and infrastructures to identify and investigate potential market abuses. Position limits for listed contracts are typically established in order to monitor and reduce risk of concentration and the potential for market abuse.

In many jurisdictions, including Quebec and Ontario, the CCP is also governed by rules established under the terms of securities and derivatives legislation and regulation. Where subject to oversight similar to that applied to an exchange, the CCP will also be subject to transparent rule-making and effective supervision.

5. Mitigate Systemic Risk

Systemic risk can be defined as the risk resulting from the interlinkages or interdependencies between financial institutions or other participants, such that the failure of one entity can lead to the failure of other entities and in turn to the failure or collapse of a financial system or market.

Trading on a regulated exchange and central counterparty clearing by regulated and robust central counterparties can be an important mitigating factor against systemic risk.

As described in the section on counterparty risk management, central counterparty clearing helps insulate entities from the failure of other participants, preventing the contagion that can lead to systemic failure. In the event that a clearing member does default, the CCP has transparent, robust procedures for managing the default of one or more of its clearing members, including a clearing fund and liquidity facilities. This is accomplished by the implementation of a standardized survivor-pay model which ultimately provides incentives for market participants to adopt more disciplined risk management procedures and to support the financial system during periods of financial distress.

Exchanges also have a role to play in the management of systemic risk: exchanges are able to implement price movement ceilings, circuit breakers, freeze parameters and blackout periods to manage the risk of systemic failure during market crises. Finally, exchanges and CCPs maintain extensive system safeguards, redundancy and recovery processes to allow for the orderly flow of market transactions during periods of financial and/or catastrophic events and extreme volatility,

The mitigation of systemic risk is one of the most important roles of a prudential regulator, and the systemic risk mitigation role of Canadian regulators is essential to the stability and security of the Canadian economy. It is therefore important that exchanges and CCPs be well-regulated, recognized and under the regulatory supervision of Canadian authorities. In this way, the regulatory authorities can be assured that risk management and operations are conducted according to the relevant national or provincial standards, and that authorities have an unobstructed view into the operations of the exchange and CCP and the positions and exposures of its members.

6. Reinforce International Cooperation

As OTC marketplaces are global in nature, expanding the overall market size and allowing for access to markets for regional participants are key considerations. It is important that access rules be designed to meet prudential requirements, allow access to a critical mass of local clearing members and facilitate the clearing of trades between local members and international counterparties.

This can be accomplished by developing a connected system of CCPs through the development of interoperability rules. Interoperability among CCPs would provide market participants with the opportunity to trade on a global basis, with global counterparties, but with the choice of clearing on a local basis. This interoperability, or linkage, allows transactions that are booked between a Canadian firm and a foreign firm to have the relevant legs of the transaction booked at the appropriate clearing house, while meeting both the business needs of the participants and the regulatory objectives of both jurisdictions.

The development of linked CCPs offers other benefits to the international system as well. Multiple linked CCPs will mitigate the risk of over-concentration of activity in a single clearing house. They will also minimize contagion – the default of a clearing member in one CCP will be managed and contained by local clearing risk management tools and procedures, and will not spread to other counterparties. Each systemically important CCP will benefit from the additional protection of central bank liquidity. Finally, multiple linked CCPs limit the risk of the “too big to fail” phenomenon for any given CCP and allow for a more robust risk management framework on a global basis.

Domestic clearing with international linkage offers significant benefits:

- Domestic regulatory authorities will have greater transparency of the exposures assumed by their domestic participants. This will lead to better crisis and systemic risk management.
- Domestic market participants will have access to international trading counterparties through a connected network of CCPs. This will increase trading opportunities and greatly reduce the credit and legal risks associated with cross-border trading.
- Efficient use of capital and collateral as all trading (both domestic and international) is centralized through a single CCP.
- Achieving critical mass of transactional volumes through a domestic CCP will also ensure that total clearing costs remain relatively low.

International cooperation and coordination is also essential to minimizing the risk of regulatory arbitrage. In the absence of coordination between lawmakers, regulators and supervisors in different jurisdictions, in particular the borderless North American commodities marketplace, there is a risk that activities closely regulated in one jurisdiction will be driven to a jurisdiction that is less regulated, or that significant disconnects between the Canadian and U.S. regulatory regime will negatively impact the security and survival of the Canadian markets. Regulatory authorities and lawmakers must work together to ensure that regulation does not differ between jurisdictions to the extent that activity will be driven from one venue to another because of significant differences in regulation, in particular a more permissive regime. In light of impending U.S. reform expected to be enacted in 2010, the timing of Canadian reform may be critical for Canadian participants and marketplaces thoroughly interconnected with those in the U.S.

Along similar lines, it is important that capital requirements and accounting rules related to derivatives transactions be aligned with regulatory objectives in order to provide the appropriate incentives. Capital requirements, collateralization requirements and hedge accounting should reflect the multiple forms of risk mitigation that are afforded by exchange trading and CCP clearing.

V. Core Competencies – Added Value for Business Requirements

While the focus of this paper is the role of exchange group core competencies in the improvement of OTC markets, we do not want to neglect the important commercial and efficiency benefits to market participants. The impressive growth in exchange-traded derivative activity over the past decade is clear evidence that participants have valued the benefits of on-exchange anonymity, market liquidity, and central counterparty risk management.

The table below illustrates how the exchange group's core competencies map to the markets business requirements:

Core Competencies and Business Requirements

	Trading Function	Clearing Function	Data Warehousing
Electronic Trading	•		
Liquidity	•	•	
Centralized Business Processes	•	•	•
Multilateral Exposure Netting		•	
Efficient Use of Capital		•	
Efficient Use of Collateral		•	
Risk Mutualization		•	
Scalability	•	•	

1. Electronic Trading

The rapid and widespread adoption of electronic trading in many markets provides evidence of its benefits for market participants. Electronic trading allows participants to easily and efficiently access the marketplace. From the perspective of trade execution, electronic markets provide a level playing field in terms of a fair and transparent market model, efficient price discovery, market liquidity and anonymity. With the surveillance of electronic markets market abuse can be prevented, and the centralization of business processes provides operational efficiencies. Finally, additional efficiencies and trading opportunities are provided by the ability to view and trade on multiple live markets through a single electronic trading system.

2. Liquidity

As discussed earlier in this paper, market liquidity is the "ability to trade large size quickly, at low cost, when you want to trade."[7] Multilateral trading on an organized exchange allows the aggregation of bids and offers in a central limit order book, allowing all participants to see the quantities that are offered and bid, and the prices for those quantities. This is much more efficient for participants than searching for liquidity among individual counterparties. Exchanges also ensure liquidity by providing market makers who will post continuous two-sided markets. Where posted liquidity is not sufficient for the needs of large wholesale trades, exchanges can offer facilities for block trades or crosses.

3. Centralized Business Processes

Centralized business processes for all derivatives activities at the settlement level provide operational efficiencies and a reduction in overhead costs for participants.

4. Multilateral Exposure Netting

All bilateral relationships are collapsed into a single counterparty exposure, providing a more accurate view of total net exposures.

5. Efficient Use of Capital

One of the most important business advantages of CCP clearing is multilateral netting, which allows for (1) minimal use of regulatory capital for non-direct clearing counterparties and (2) a zero capital charge for trades against direct clearing counterparties

6. Efficient Use of Collateral

Multilateral netting minimizes the collateral calls made by a CCP since margin calls are netted down from all activities against the CCP as the legal counterparty. This is contrasted with the multitude of bilateral relationships that must be managed in traditional OTC markets.

7. Risk Mutualization

The management of counterparty risk through the use of a CCP, as discussed above, provides significant commercial benefits to participants. The risk of loss due to default is a shared obligation of all the members of the CCP.

8. Scalability

A participant is not subject to credit exposure limits in relation to any given counterparty as is the case in bilateral OTC markets. The only limitation on the ability to trade is the availability of collateral to support the trading activities of those using the CCP.

VI. Conclusion and Recommendations

Our analysis demonstrates that the core competencies of an exchange-group, such as TMX Group, can be clearly mapped to the achievement of the G20 objectives, and to the business needs of market participants, and we offer the following key recommendations to regulators:

1. The core competencies of regulated exchanges and clearing houses, including electronic trading, CCP clearing, trade information warehousing and self-regulation should be leveraged to achieve both G20 objectives and the business requirements of market participants in order to reduce and manage risk.

2. A key element of the reform of OTC markets will be a determination of the market characteristics that will qualify a product for (1) trading on an organized exchange, (2) central counterparty clearing, and (3) reporting to a trade information repository. Market participants, regulators, central bank representatives and exchange group operators should be engaged in the design of solutions that are appropriate to the markets being addressed

3. Regulatory oversight of markets is essential to the achievement of the G20 objectives. The use of well-regulated exchanges and CCPs should be favoured in OTC market reform efforts.

4. Canadian regulatory and self-regulatory structures already exist for these purposes. The use of domestic facilities with international linkages will provide Canadian authorities and market participants with the best tools – supervisory, regulatory, and reporting – to ensure that their regulatory objectives are being met, while facilitating both market access for local participants and international trading activity.

5. Canadian implementation of international regulatory objectives should be coordinated with international implementation in order to ensure a consistent level of regulation among jurisdictions in the global derivatives markets and the avoidance of regulatory arbitrage. Capital requirements and accounting rules should be aligned with the stated G20 commitments to the exchange trading and CCP clearing of OTC derivatives.

In conclusion, TMX Group supports international and Canadian efforts to enhance transparency, improve risk management and strengthen the regulation and oversight of OTC derivatives activity subject to appropriate carve outs for select products or groups of participants. Exchange trading and central counterparty clearing have an important role to play in enhancing transparency, managing risk, protecting market integrity and defending against market abuse, and in mitigating systemic risk. We believe that as exchange and clearing house operators, we can make a significant contribution to these efforts.

We will continue to work closely with our market participants to address the challenges of a new environment, applying our capacity for innovation and our expertise to new products and new markets.

1 Leaders' Statement: The Pittsburgh Summit, September 24-25, 2009

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5 Cecchetti, S.G., J. Gyntelberg, and M. Hollanders (2009), "Central Counterparties for Over the Counter Derivatives," BIS Quarterly Review, September, pp.45-58 http://www.bis.org/publ/qtrpdf/r_qt0909f.pdf

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7 Harris, page 394.

Equities
Toronto Stock Exchange
TSX Venture Exchange
Equicom

Derivatives
Montréal Exchange
CDCC
Montréal Climate Exchange

Fixed Income
Shorcan

Energy
NGX

Data
TMX Datalinx
PC Bond