TITANIUM METALS CORP
Form 10-K
February 29, 2012

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM 10-K

x **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934:**

For the fiscal year ended December 31, 2011

Commission file number 1-14368

Titanium Metals Corporation

(Exact name of registrant as specified in its charter)

Delaware	**13-5630895**
(State or other jurisdiction of	**(IRS employer**
incorporation or organization)	**identification no.)**

5430 LBJ Freeway, Suite 1700, Dallas, Texas 75240

(Address of principal executive offices, including zip code)

Registrant s telephone number, including area code: (972) 233-1700

Securities registered pursuant to Section 12(b) of the Act:

Common Stock ($.01 par value)	**New York Stock Exchange**
(Title of each class)	**(Name of each exchange on which registered)**

Securities registered pursuant to Section 12(g) of the Act:

none

Indicate by check mark if the Registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes x No ¨

Indicate by check mark if the Registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ¨ No x

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months and (2) has been subject to such filing requirements for the past 90 days. Yes x No ¨

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months. Yes x No ¨

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of Registrant s knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K ¨

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company (as defined in Rule 12b-2 of the Act).

Large accelerated filer x Accelerated filer ¨ Non-accelerated filer ¨ Smaller reporting company ¨

Indicate by check mark whether the Registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ¨ No x

The aggregate market value of the 82.6 million shares of voting stock held by nonaffiliates of Titanium Metals Corporation as of the end of the fiscal second quarter 2011 approximated $1.5 billion. There are no shares of non-voting common stock outstanding. As of February 20, 2012, 175,179,774 shares of common stock were outstanding.

Documents incorporated by reference: The information required by Part III is incorporated by reference from the Registrant s definitive proxy statement to be filed with the Commission pursuant to Regulation 14A not later than 120 days after the end of the fiscal year covered by this report.

Forward-Looking Information

The statements contained in this Annual Report on Form 10-K (Annual Report) that are not historical facts, including, but not limited to, statements found in the Notes to Consolidated Financial Statements and in Item 1 Business, Item 1A Risk Factors, Item 2 Properties, Item 3 Legal Proceedings and Item 7 Management s Discussion and Analysis of Financial Condition and Results of Operations (MD&A), are forward-looking statements that represent our beliefs and assumptions based on currently available information. Forward-looking statements can generally be identified by the use of words such as believes, intends, may, will, looks, should, could, anticipates, expects terminology or by discussions of strategies or trends. Although we believe that the expectations reflected in such forward-looking statements are reasonable, we do not know if these expectations will prove to be correct. Such statements by their nature involve substantial risks and uncertainties that could significantly affect expected results. Actual future results could differ materially from those described in such forward-looking statements, and we disclaim any intention or obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise. Among the factors that could cause actual results to differ materially are the risks and uncertainties discussed in this Annual Report, including risks and uncertainties in those portions referenced above and those described from time to time in our other filings with the Securities and Exchange Commission (SEC) which include, but are not limited to:

the cyclicality of the commercial aerospace industry;

the performance of our customers, our vendors and us under our long-term agreements;

the existence, amendment or renewal of certain long-term agreements;

the difficulty in forecasting demand for titanium products;

global economic, financial and political conditions;

global productive capacity for titanium;

changes in product pricing and costs;

the impact of long-term contracts with vendors on our ability to reduce or increase supply;

the possibility of labor disruptions;

fluctuations in currency exchange rates;

fluctuations in the market price of marketable securities;

uncertainties associated with new product or new market development;

the availability of raw materials and services;

- changes in raw material prices and other operating costs (including energy costs);
- possible disruption of business or increases in the cost of doing business resulting from terrorist activities or global conflicts;
- possible disruption of business or increases in the cost of doing business resulting from natural disasters or other accidents impacting us, our customers or our vendors;
- competitive products and strategies; and
- other risks and uncertainties.

Should one or more of these risks materialize (or the consequences of such a development worsen), or should the underlying assumptions prove incorrect, actual results could differ materially from those forecasted or expected.

PART I

ITEM 1: BUSINESS

General. Titanium Metals Corporation is one of the world s leading producers of titanium melted and mill products. We are the only producer with major titanium production facilities in both the United States and Europe, the world s principal markets for titanium consumption. We are currently the largest U.S. producer of titanium sponge, a key raw material, and a major recycler of titanium scrap. Titanium Metals Corporation was formed in 1950 and was incorporated in Delaware in 1955. Unless otherwise indicated, references in this report to we , us or our refer to TIMET and its subsidiaries, taken as a whole.

Titanium was first manufactured for commercial use in the 1950s. Titanium s unique combination of corrosion resistance, elevated-temperature performance and high strength-to-weight ratio makes it particularly desirable for use in commercial and military aerospace applications where these qualities satisfy essential design requirements for certain critical parts such as wing supports and jet engine components. While aerospace applications have historically accounted for a substantial portion of the worldwide demand for titanium, other end-use applications for titanium in military and industrial markets have continued to develop, including the use of titanium-based alloys in armor plating, structural components, chemical plants, power plants, desalination plants and pollution control equipment. Additionally, demand for titanium in emerging markets is supported by diverse uses including oil and gas production installations, automotive, geothermal facilities and architectural applications.

Our products include titanium sponge, melted products, mill products and industrial fabrications. The titanium industry is comprised of several manufacturers that, like us, produce a relatively complete range of titanium products and a significant number of producers worldwide that manufacture a limited range of titanium mill products.

Our long-term strategy is to maximize the value of our core aerospace business while expanding our presence in non-aerospace markets and developing new applications and products. Our existing productive capacity and the availability of our secure third-party conversion capabilities allow us to efficiently respond to the industry s demand volatility. We will continue to evaluate opportunities to strategically expand our existing production and conversion capacities through internal expansion and long-term third-party arrangements, as well as potential joint ventures and acquisitions.

Titanium industry. We develop certain industry estimates based on our extensive experience within the titanium industry as well as information obtained from publicly available external resources (e.g., United States Geological Survey, International Titanium Association and Japan Titanium Society). We estimate we accounted for approximately 15% in each of 2010 and 2011 worldwide industry shipments of titanium mill products. The following chart illustrates our estimates of aggregate industry mill product shipments over the past ten years:

Industry Mill Product Shipments by Sector

(Volumes Exclude Shipments within China and Russia)

The cyclical nature of the commercial aerospace sector has been the principal driver of the historical fluctuations in titanium mill product shipment volume. Over the past 30 years, the titanium industry has had various cyclical peaks and troughs in mill product shipments. With the exception of decreased demand in 2009 resulting from the global economic downturn, over the last ten years, titanium mill product demand in the military, industrial and emerging market sectors has increased, primarily due to the continued development of innovative uses for titanium products in these industries. We estimate that industry shipments approximated 87,000 metric tons in 2010 and 108,000 metric tons in 2011. The estimated 24% increase in 2011 was driven by the continuation of strong recoveries from the global economic downturn in 2009 in the commercial aerospace and industrial sectors. We currently expect 2012 total industry mill product shipments to grow 7% to 10%, driven by continued growth in the commercial aerospace and industrial sectors.

Commercial aerospace sector Demand for titanium products within the commercial aerospace sector is derived from both jet engine components (e.g., blades, discs, rings and engine cases) and airframe components (e.g., bulkheads, tail sections, landing gear, wing supports and fasteners). The commercial aerospace sector has a significant influence on titanium companies, particularly mill product producers. Industry mill product shipments increased approximately 14% in 2011 as aircraft build rates and supply chain inventory levels increased to support current production and the anticipated increased output levels into 2012. Deliveries of titanium generally precede aircraft deliveries by about one year, and our business cycle generally correlates to this timeline, although the actual timeline can vary considerably depending on the titanium product.

Our business is more dependent on commercial aerospace demand than is the overall titanium industry. We shipped approximately 65% of our mill products to the commercial aerospace sector in 2011, whereas we estimate approximately 43% of the overall titanium industry s mill products were shipped to the commercial aerospace sector in 2011.

The Airline Monitor, a leading aerospace publication, traditionally issues worldwide forecasts each January and July for commercial aircraft deliveries, approximately one-third of which are expected to be required by the U.S. over the next 20 years. *The Airline Monitor s* most recently issued forecast (January/February 2012) estimates deliveries of large commercial aircraft (aircraft with over 100 seats) totaled 1,100 (including 218 twin aisle aircraft which require more titanium) in 2011, and the following table summarizes the forecasted deliveries of large commercial aircraft over the next five years:

	Forecasted deliveries		% increase over previous year	
Year	Total	Twin aisle	Total	Twin aisle
2012	1,240	322	13%	48%
2013	1,360	385	10%	20%
2014	1,440	425	6%	10%
2015	1,375	455	(5%)	7%
2016	1,265	520	(8%)	14%

Boeing and Airbus booked a total of 2,510 orders in 2011, and *The Airline Monitor* forecasts that aggregate new orders in 2012 will be lower than 2011. Changes in the economic environment and the financial condition of airlines can result in rescheduling or cancellation of orders. Accordingly, aircraft manufacturer backlogs are not necessarily a reliable indicator of near-term business activity but may be indicative of potential business levels over a longer-term horizon. The latest forecast from *The Airline Monitor* estimates decreases for firm order backlog for both Airbus and Boeing as deliveries are expected to be higher than orders for the next three years. Through December 31, 2011, Airbus firm order backlog is estimated at 1,092 twin aisle planes and 3,345 single aisle planes, and Boeing s firm order backlog is estimated at 1,402 twin aisle planes and 2,335 single aisle planes.

At year-end 2011, a total of 860 firm orders have been placed for the Boeing 787, a total of 253 firm orders have been placed for the Airbus A380 and a total of 555 firm orders had been placed for the Airbus A350 XWB. The 787 contains more composite materials than other Boeing aircraft, and increased utilization of composite materials in an aircraft s structural components requires additional titanium on a per unit basis. The A350 XWBs will also use composite materials and new engines similar to those used on the Boeing 787 and are expected to require significantly more titanium as compared with earlier Airbus models. In early years of the manufacturing cycle for the 787 and A350 XWB, or with any aircraft model, additional titanium is required to produce each aircraft, and as the program reaches maturity, less titanium is required for each aircraft manufactured. First deliveries for the 787 occurred in the third quarter of 2011 and first commercial flights were completed in the fourth quarter of 2011. First deliveries for the A350 XWB are currently scheduled for 2013.

Twin aisle planes (e.g., Boeing 747, 767, 777 and 787 and Airbus A330, A340, A350 and A380) tend to use a higher percentage of titanium in their airframes, engines and parts than single aisle planes (e.g., Boeing 737 and 757 and Airbus A318, A319 and A320), and new generation models require a significantly higher percentage of titanium.

Based on information we receive from airframe and engine manufacturers and other industry sources, we estimate the following titanium product purchase weights will be used for the manufacture of each of the selected aircraft in the following table. All estimated titanium purchase weights include both the airframes and engines, and purchase weights are subject to change as manufacturers and other industry sources revise their estimates.

	Approximate titanium purchased per aircraft (metric tons)
Boeing aircraft:	
737	18
777	64
747	76
787	116
Airbus aircraft:	
A320	12
A330	18
A340	32
A350 XWB	135
A380	146

Military sector Titanium shipments into the military sector are driven by government defense spending in North America and Europe. Modernization programs in India, Japan and the Middle East are also expected to contribute to the demand in the sector. Military aerospace programs were the first to utilize titanium s unique properties on a large scale, beginning in the 1950s. Titanium shipments to military aerospace markets reached a peak in the 1980s before falling to historical lows in the early 1990s after the end of the Cold War. Based on its physical and performance properties, titanium has also become widely accepted for use in applications for ground combat vehicles as well as in naval vessels. Current and anticipated future military strategy leading to light armament and mobility favor the use of titanium due to light weight and improved ballistic performance.

Airframe programs are expected to drive the military market demand for titanium through 2015. Several of today s active U.S. military programs, including the C-17, F-15, F/A-18 and F-16, are currently expected to continue in production through such date. European military programs also have active aerospace programs offering the possibility for increased titanium consumption. Production levels for the Saab Gripen, Eurofighter Typhoon and Dassault Rafale are all forecasted to remain steady through the middle or end of this decade.

In addition to the established programs, newer U.S. programs offer growth opportunities for increased titanium consumption. The F-35 Lightning II, also known as the Joint Strike Fighter, has begun low-rate initial production and assembly. Although no specific delivery schedules have been announced, according to www.F35.com, Lockheed Martin s official website of the F-35 Lightning II, procurement of the F-35 is expected to extend over the next 30 to 40 years and may include production of as many as 3,000 planes, including sales to foreign nations.

Utilization of titanium on military ground combat vehicles for armor appliqué and integrated armor and structural components continues to gain acceptance within the global military market segment. Titanium armor components provide the necessary ballistic performance while achieving a mission critical vehicle performance objective of reduced weight in new generation and legacy vehicles. In order to counteract increased global threat levels, titanium is being utilized on vehicle upgrade programs as well as in new programs. Based on active programs, as well as programs currently under evaluation, we believe titanium will continue to be used on ground combat vehicles in the military market sector. In armor and armament, we sell complete vehicle armor kits as well as plate and sheet products for fabrication into appliqué plate and reactive armor for protection of the personnel as well as the vehicle s primary structure.

Industrial and emerging markets sectors With its unique and desirable physical properties, titanium can be used in a number of other end-use markets. Established industrial uses for titanium include chemical plants, power plants, desalination plants and pollution control equipment. Rapid growth of the Chinese and other Southeast Asian economies has brought unprecedented demand for titanium-intensive industrial equipment. In order to participate in this rise in demand, we have an ownership interest in a joint venture, XI AN BAOTIMET VALINOX TUBES CO. LTD. (BAOTIMET), which produces welded titanium tubing in Xi an, China.

Titanium is accepted for many emerging market applications, including transportation, energy (including oil and gas) and architecture. Although titanium is often more expensive than other competing metals, over the entire life cycle of the application, we believe titanium is a better value alternative due to its durability, longevity and overall environmental impact. In many cases customers also find the physical properties of titanium to be attractive from the standpoint of weight, performance, design alternatives and other factors. The oil and gas market, a potentially large growth area, utilizes titanium in certain down-hole casing, critical riser components, tapered stress joints, fire suppression water pump systems and saltwater-cooling systems. Additionally, as offshore development of new oil and gas fields moves into the ultra deep-water depths and as geothermal energy production expands, market demand for titanium s light-weight, high-strength and corrosion-resistance properties is creating potential new growth opportunities. Although we estimate emerging market demand presently represents less than 5% of the total industry demand for titanium mill products, we believe the emerging market sector offers many opportunities, and we have ongoing initiatives to actively pursue and expand our presence in these markets.

We have resources dedicated to the research and development of alloys and production processes to promote the expansion of titanium use in a range of industrial and emerging market applications.

Products and operations. We are a vertically integrated titanium manufacturer whose products include:

(i) titanium sponge, the basic form of titanium metal used in titanium products;

(ii) melted products (ingot, electrode and slab), the result of melting titanium sponge and titanium scrap, either alone or with various alloys;

(iii) mill products that are forged and rolled from ingot or slab, including long products (billet and bar), flat products (plate, sheet and strip) and pipe; and

(iv) fabrications (spools, pipe fittings, manifolds, vessels, etc.) that are cut, formed, welded and assembled from titanium mill products.

All of our net sales were generated by our integrated titanium operations (our Titanium melted and mill products segment), which is our only business segment. Business and geographic financial information is included in Note 17 to the Consolidated Financial Statements.

Titanium sponge is the commercially pure, elemental form of titanium metal with a porous and sponge-like appearance. The first step in our sponge production involves combining titanium-containing feedstock ore (in the form of natural rutile derived from beach sand or an upgraded form of ilmenite) with chlorine and petroleum coke to produce titanium tetrachloride. Titanium tetrachloride is purified and then reacted with magnesium in a closed system, producing titanium sponge and residual magnesium chloride as a by-product. Our titanium sponge production facility in Henderson, Nevada uses vacuum distillation process (VDP) technology, which removes the magnesium and magnesium chloride residues by applying heat to the sponge mass while maintaining a vacuum in a chamber. The combination of heat and vacuum boils the residues from the sponge mass, and then the sponge mass is mechanically pushed out of the distillation vessel, sheared and crushed to prepare the sponge for incorporation into one of our melted products. We electrolytically separate and recycle the residual magnesium chloride to improve cost efficiency and reduce environmental impact. We use all of our internally produced titanium sponge in the production of our melted and mill products.

Melted products (ingot, electrode and slab) are produced by melting sponge and titanium scrap, either alone or with alloys, to produce various grades of titanium products suited to the ultimate application of the product. By introducing other alloys such as vanadium, aluminum, molybdenum, tin and zirconium, the melted titanium product is engineered to produce quality grades with varying combinations of certain physical attributes such as strength-to-weight ratio, corrosion-resistance and milling compatibility. Titanium ingot is a cylindrical solid shape that, in our case, weighs up to 8 metric tons. Titanium slab is a rectangular solid shape that, in our case, weighs up to 16 metric tons. The melting process for ingot and slab is closely controlled and monitored utilizing computer control systems to maintain product quality and consistency and to meet customer specifications. In most cases, we use our ingot and slab as the intermediate material for further processing into mill products. However, we also sell melted products to our customers.

Our melted products (ingot or slab) are forged or rolled into smaller gauge materials that we generally refer to as mill products. Mill products include long products (billet and bar), flat products (plate, sheet and strip) and pipe. Our mill products can be further machined to meet customer specifications with respect to size and finish.

We also have recently acquired technology and equipment to manufacture high quality titanium and other specialty alloy PREP® (plasma rotating electrode process) powder. Powder technology is expected to allow our customers to take advantage of near-net-shape manufacturing for certain fabricated, complex parts. Construction is underway to install our PREP® equipment to be operational by the second half of 2012, providing us with a unique capability to consistently produce high quality titanium powder that our customers require.

We send certain products to various outside vendors for further processing (e.g., certain rolling, forging, finishing and other processing steps in the U.S., and certain melting and forging steps in France) before being shipped to customers. We currently utilize one U.S. supplier under a 20-year conversion services agreement, whereby they provide an annual output capacity of 4,500 metric tons of titanium mill rolling services until 2026, with our option to increase the annual output capacity to 9,000 metric tons. Additionally, another U.S. supplier provides dedicated annual forging capacity of 8,900 metric tons through at least 2019. In France, our primary processor is also a partner in our 70%-owned subsidiary, TIMET Savoie, S.A., and our agreement with them provides us with annual melt capacity of up to 3,200 metric tons and annual mill capacity up to 2,600 metric tons through 2015. These agreements and partnerships provide us with long-term secure sources for processing round and flat products, resulting in a significant increase in our existing mill product conversion capabilities, which allows us to assure our customers of our long-term ability to meet their needs.

During the production process and following the completion of manufacturing, we perform extensive testing on our products. Sonic inspection as well as chemical and mechanical testing procedures provide objective measurements of physical and metallurgical properties of our products and allow us to ensure that our products meet our customers high quality requirements, particularly in aerospace component production. We certify that our products meet customer specification at the time of shipment for substantially all customer orders.

Titanium scrap is a by-product of the forging, rolling and machining operations, and significant quantities of scrap are generated in the production process for finished titanium products and components. Scrap by-products from our mill production processes, as well as the scrap purchased from our customers or on the open metals market, is typically recycled and introduced into the melting process once the scrap is sorted and cleaned. We have the capacity to recycle over 20,000 metric tons of titanium scrap annually at our facility in Morgantown, Pennsylvania depending on the form of the scrap and end-use product mix. We believe our capability and expertise in recycling titanium scrap provides us with a competitive advantage in the titanium industry.

Distribution. We sell our products through our own sales force based in the U.S. and Europe and through independent agents and distributors worldwide. We also operate eight service centers (five in the U.S. and three in Europe), which we use to sell our products on a just-in-time basis. The service centers primarily sell value-added and customized mill products, including bar, sheet, plate, tubing and strip. We believe our service centers provide us with a competitive advantage because of our ability to foster customer relationships, customize products to suit specific customer requirements and respond quickly to customer needs.

Raw materials. The principal raw materials used in the production of titanium melted and mill products are titanium sponge, titanium scrap and alloys. The proportions and grades of sponge and scrap are sometimes dictated by the product mix or customer requirements for the end-use product; however, we generally have the operating flexibility to vary the raw material components to optimize our manufacturing efficiency and maximize our profitability. The following table summarizes our raw material usage in the production of our melted and mill products:

	2009	2010	**2011**
Internally produced sponge	27%	30%	**19%**
Purchased sponge	16%	22%	**39%**
Titanium scrap	51%	41%	**36%**
Alloys	6%	7%	**6%**
Total	100%	100%	**100%**

Sponge The primary raw materials used in the production of titanium sponge are titanium-containing feedstock ore (in the form of either natural rutile or an upgraded form of ilmenite), chlorine, magnesium and petroleum coke. Natural rutile ore is currently available from a limited number of suppliers around the world, principally located in Australia, South Africa and Sri Lanka. We purchase the majority of our supply of natural rutile from Australia and South Africa. Upgraded forms of ilmenite are widely available worldwide, including from Canada and several other countries.

Although titanium feedstock ore supplies have tightened in the past year, and are expected to tighten further in 2012 as a result of increased global demand for titanium dioxide production, we believe the availability of titanium feedstock ore will be adequate for the foreseeable future and do not anticipate any interruptions of our ore supplies. Market conditions have fostered higher market prices for all types of titanium feedstock ore and have led us to expand our sources of feedstock ore. The supply of titanium feedstock ore is expected to increase over the next three to five years as new mines and expansion projects become operational, but the timing and extent to which these increases in global supply will impact our cost and ore availability is uncertain.

We currently obtain chlorine from a single supplier near our sponge plant in Henderson, Nevada. While we do not anticipate any chlorine supply problems, we have taken steps to mitigate this risk in the event of supply disruption, including establishing the feasibility of certain equipment modifications to enable us to utilize material from alternative chlorine suppliers or to purchase and utilize an intermediate product which will allow us to eliminate the purchase of chlorine if needed. Magnesium and petroleum coke are generally available from a number of suppliers.

We are currently the largest U.S. producer of titanium sponge, with an annual sponge production capacity of approximately 12,600 metric tons of premium-grade titanium sponge at our Henderson plant. We operated our sponge plant significantly below full capacity during 2010, but we increased production volumes to full practical capacity by the end of 2011 to meet increased demand. We rely upon purchases from third parties to supplement our internally produced sponge, and the amount of sponge we purchase will vary from year to year due to, among other things, our total raw material requirements in relation to our capacity to produce sponge internally. Furthermore, while our internal sponge production was higher in 2011 as compared to 2010, our consumption of internally produced sponge, as a percentage of our total raw materials consumed, declined in 2011 as compared to 2010.

We are party to long-term sponge supply agreements that require us to make minimum annual purchases at prices that are typically negotiated annually. These long-term supply agreements, together with our current sponge production capacity in Henderson, should provide us with a total annual available sponge supply at levels ranging from 19,000 metric tons up to 24,000 metric tons through 2025, which we expect will meet our sponge supply requirements. We will continue to purchase sponge from a variety of sources in 2012, including those sources under existing supply agreements. We continuously evaluate alternatives to strategically balance our internal and external sources for titanium sponge.

Scrap We recycle titanium scrap into melted products that will be sold to our customers or used as intermediate feedstock for our mill production process. Our titanium scrap is generated from our melted and mill product production processes, purchased from certain of our customers under contractual agreements or acquired in the open metals market. Such scrap consists of alloyed and commercially pure solids and turnings. Scrap obtained through customer arrangements provides a closed-loop arrangement resulting in certainty of supply and price stability. Externally purchased scrap comes from a wide range of sources, including customers, collectors, processors and brokers. We purchased 36% of our scrap requirements from the open metals market in 2011, and we expect our open market scrap purchases to account for approximately 30% of our scrap requirements during 2012. We will continue to manage our scrap consumption and utilization percentages based upon the market values of scrap relative to sponge and alloy costs as we strive to minimize our overall product costs. We also routinely sell scrap, usually in a form or grade we cannot economically recycle for use in our production operations.

Overall market forces can significantly impact the supply or cost of externally produced scrap, as the amount of scrap generated in the supply chain varies during titanium business cycles. Early in the titanium cycle, the demand for titanium melted and mill products begins to increase the externally produced scrap requirements for titanium manufacturers. This demand precedes the increase in scrap generation by downstream customers and the supply chain. The reduced availability of scrap at this stage of the cycle places upward pressure on the market price of scrap. The opposite situation occurs when demand for titanium melted and mill products begins to decline, resulting in greater availability of scrap supply and downward pressure on the market price of scrap. During the middle of the cycle, scrap generation and consumption are in relative equilibrium, minimizing disruptions in supply or significant changes in the available supply and market price for scrap. Increasing or decreasing cycles tend to cause significant changes in both the supply and market price of scrap. These supply chain dynamics result in changes in selling prices for melted and mill products which generally tend to correspond with the changes in raw material costs.

All of our major competitors utilize scrap as a raw material in their titanium melt operations, and steel manufacturers also use titanium scrap as an alloy to produce interstitial-free steels, stainless steels and high-strength-low-alloy steels. Prices for most forms and grades of titanium scrap increased gradually during the first half, with commercially pure grades up slightly more than alloy grades. However, during the fourth quarter of 2011, prices for all forms and grades declined to levels approximating beginning-of-year levels. With the cost of feedstock ore anticipated to be significantly higher in 2012, we would expect the price of titanium sponge to also increase in 2012. These cost increases also may lead to an increase in the cost of scrap for 2012.

Other Various alloy additions used in the production of titanium products, such as vanadium and molybdenum, are also available from a number of suppliers. Consistent demand from steel manufacturers for vanadium and molybdenum resulted in relatively stable costs for these alloys in 2011 at levels similar to those of 2010, although prices declined somewhat during the second half of 2011 as demand from the Chinese construction market decreased during this same timeframe. We expect costs of these alloys to remain stable during 2012.

Customer agreements. We have long-term agreements (LTAs) with certain major customers, including, among others, The Boeing Company (Boeing), Rolls-Royce plc and its German and U.S. affiliates (Rolls-Royce), United Technologies Corporation (UTC, Pratt & Whitney and related companies), the Safran companies (Safran, Snecma and related companies) and VALTIMET SAS. These agreements expire at various times through 2030, are subject to certain conditions and generally provide for (i) minimum market shares of the customers titanium requirements or firm annual volume commitments, (ii) formula-determined prices (including some elements based on market pricing) and (iii) price adjustments for certain raw material, labor and energy cost fluctuations. Generally, LTAs require our service and product performance to meet specified criteria and contain a number of other terms and conditions customary in transactions of these types. Certain provisions of these LTAs have been amended in the past and may be amended in the future to meet changing business conditions. Our 2011 sales revenues to customers under LTAs were 64% of our total sales revenues.

In certain events of nonperformance by us or the customer, an LTA may be terminated early. Although it is possible that some portion of the business would continue on a non-LTA basis, LTAs are designed to limit selling price volatility to the customer and to us, while providing us with a committed volume base throughout the titanium industry business cycles and certain mechanisms to adjust pricing for changes in certain cost elements. As a result, the termination or expiration without renewal of one or more of the LTAs could result in a material adverse effect on our business, results of operations, financial position or liquidity.

Markets and customer base. As discussed previously, we produce a wide range of melted and mill titanium products for our customers, and selling prices generally reflect raw material and other productions costs as well as reasonable profit margins. Selling prices are generally influenced by industry and global economic conditions. Products sold under certain LTAs with raw material indexed pricing adjustments, as well as our non-contract sales, were impacted by these factors.

The demand for our titanium products is global, and our global productive capabilities allow us to respond to our customers needs. The following table summarizes our sales revenue by geographical location:

	Year ended December 31,		
	2009	2010	**2011**
	(Percentage of total sales revenue)		
Sales revenue to customers within:			
North America	65%	64%	**60%**
Europe	27%	27%	**31%**
Other	8%	9%	**9%**
Total	100%	100%	**100%**

Further information regarding our external sales, net income, long-lived assets and total assets can be found in our Consolidated Balance Sheets, Consolidated Statements of Income and Notes 6 and 17 to the Consolidated Financial Statements.

Our concentration of customers, primarily in commercial aerospace, may impact our overall exposure to credit and other risks because all of these customers may be similarly affected by the same economic or other conditions. The following table provides supplemental sales revenue information:

	Year ended December 31,		
	2009	2010	**2011**
	(Percentage of total sales revenue)		
Ten largest customers	57%	54%	**51%**
Significant customers: (1)			
Precision Castparts Corporation (PCC(2))	15%	16%	16%
Boeing	17%	10%	
Total LTAs	64%	62%	**64%**
Significant LTAs: (1)			
Rolls-Royce (2)	13%	16%	18%
Boeing	17%	10%	

(1) Amounts are shown only in years for which the concentration is at least 10%.
(2) PCC serves as a supplier to certain commercial aerospace manufacturers, including Rolls-Royce. Certain sales we make directly to PCC also counts towards, and are reflected in, the table above as sales to Rolls-Royce under the Rolls-Royce LTA.

The following table provides supplemental sales revenue information by industry sector:

	Year ended December 31,		
	2009	2010	**2011**
	(Percentage of total sales revenue)		
Commercial aerospace	60%	62%	**63%**
Military	20%	18%	**13%**
Industrial and emerging markets	11%	13%	**17%**
Other titanium products	9%	7%	**7%**
Total	100%	100%	**100%**

The primary market for titanium products in the commercial aerospace sector consists of two major manufacturers of large commercial airframes, Boeing Commercial Airplanes Group (a unit of Boeing) and Airbus, as well as manufacturers of large commercial aircraft engines including Rolls-Royce, General Electric Aircraft Engines, Pratt & Whitney and Safran. We sell directly to these major manufacturers, as well as to companies (including forgers such as Wyman-Gordon) that use our titanium to produce parts and other materials for such manufacturers. If any of the major aerospace manufacturers were to significantly reduce aircraft and/or jet engine build rates from those currently expected, there could be a material adverse effect, both directly and indirectly, on our business, results of operations, financial position and liquidity.

The market for titanium in the military sector includes sales of melted and mill titanium products engineered for applications for military aircraft (both engines and airframes), armor and component parts, armor appliqué on ground combat vehicles and other integrated armor or structural components. We sell directly to many of the major manufacturers associated with military programs on a global basis.

Outside of commercial aerospace and military sectors, we manufacture a wide range of products for customers in the desalination, chemical, oil and gas, consumer, sporting goods, healthcare, automotive and power generation industries. Additionally, we sell certain other products such as titanium fabrications, titanium scrap and titanium tetrachloride. We will also continue to work with existing and potential customers to identify and develop new or improved applications for titanium that take advantage of its unique properties and qualities.

Our backlog was approximately $580 million at December 31, 2010 and $780 million at December 31, 2011. Over 90% of our 2011 year-end backlog is scheduled for shipment during 2012. Our order backlog may not be a reliable indicator of future business activity.

Competition. The titanium metals industry is highly competitive on a worldwide basis. Producers of melted and mill products are located primarily in the United States, Japan, France, Germany, Italy, Russia, China and the United Kingdom. There are also several producers of titani through the SEC's website at www.sec.gov. In addition, information regarding each Reference Asset may be obtained from other sources including, but not limited to, press releases, newspaper articles and other publicly disseminated documents.

The graphs below set forth the information relating to the historical performance of each Reference Asset. The graphs below show the daily historical Closing Values of each Reference Asset for the period specified. We obtained the information regarding the historical performance of each Reference Asset in the graphs below from Bloomberg Professional® Service ("Bloomberg").

We have not independently verified the accuracy or completeness of the information obtained from Bloomberg. The historical performance of each Reference Asset should not be taken as an indication of its future performance, and no assurance can be given as to the Final Value of any Reference Asset. We cannot give you assurance that the performance of the Reference Assets will result in any positive return on your initial investment.

Bank of America Corporation

According to publicly available information, Bank of America Corporation ("Bank of America") is a bank holding company and a financial holding company. Through Bank of America's banking subsidiaries and various nonbanking subsidiaries throughout the United States and in international markets, it provides banking and nonbanking financial services and products through four operating segments: Consumer Banking, Global Wealth & Investment Management, Global Banking and Global Markets, with the remaining operations recorded in All Other. The Consumer Banking segment offers credit, banking and investment products and services to consumers and small businesses. The Global Wealth & Investment Management segment consists of two primary businesses: Merrill Lynch Global Wealth Management, an advisory business providing investment management, brokerage, banking and retirement products, and U.S. Trust, Bank of America Private Wealth Management, which provides wealth management services targeted to high net worth and ultra high net worth clients and wealth, wealth structuring, investment management, trust and banking services. Global Banking includes Global Corporate Banking, Global Commercial Banking, Business Banking and Global Investment Banking and provides a range of lending-related products and services, integrated working capital management and treasury services, and underwriting and advisory services. Global Markets offers sales and trading services, including research, to institutional clients across fixed-income, credit, currency, commodity and equity businesses. The All Other segment includes asset-liability management activities, equity investments, the non-U.S. consumer credit card business, non-core mortgage loans and servicing activities, the net impact of periodic revisions to the mortgage servicing rights (MSR) valuation model for both core and non-core MSRs, other liquidating businesses, residual expense allocations and other. Information filed by Bank of America with the SEC can be located by reference to its SEC file number: 001-06523, or its CIK Code: 0000070858. Bank of America's website is bankofamerica.com. Bank of America's common stock is listed on the New York Stock Exchange under the ticker symbol "BAC."

TD SECURITIES (USA) LLC P-16

Historical Information

Below is a table setting forth the quarterly high, low, and period-end Closing Prices of the Reference Asset for each quarter in the period from January 1, 2009 through January 3, 2019. On January 3, 2019, the Closing Price of the Reference Asset was $24.56. The historical performance of the Reference Asset should not be taken as an indication of its future performance, and no assurance can be given as to the market price of the Reference Asset on any Call Observation Date or Contingent Interest Observation Date (including the Valuation Date).

We have not independently verified the accuracy or completeness of the information obtained from Bloomberg. The historical performance of the Reference Asset should not be taken as an indication of its future performance, and no assurance can be given as to the Final Price of the Reference Asset. We cannot give you assurance that the performance of the Reference Asset will result in any positive return on your initial investment.

Quarter Ending	Quarter Closing High	Quarter closing Low	Quarter Close	Quarter Ending	Quarter Closing High	Quarter closing Low	Quarter Close
March 31, 2009	$14.33	$3.14	$6.82	June 30, 2014	$17.34	$14.51	$15.37
June 30, 2009	$14.17	$7.05	$13.20	September 30, 2014	$17.18	$14.98	$17.05
September 30, 2009	$17.98	$11.84	$16.92	December 31, 2014	$18.13	$15.76	$17.89
December 31, 2009	$18.59	$14.58	$15.06	March 31, 2015	$17.90	$15.15	$15.39
March 31, 2010	$18.04	$14.45	$17.85	June 30, 2015	$17.67	$15.41	$17.02
June 30, 2010	$19.48	$14.37	$14.37	September 30, 2015	$18.45	$15.26	$15.58
September 30, 2010	$15.67	$12.32	$13.11	December 31, 2015	$17.95	$15.38	$16.83
December 31, 2010	$13.56	$10.95	$13.34	March 31, 2016	$16.43	$11.16	$13.52
March 31, 2011	$15.25	$13.33	$13.33	June 30, 2016	$15.11	$12.18	$13.27
June 30, 2011	$13.72	$10.50	$10.96	September 30, 2016	$16.19	$12.74	$15.65
September 30, 2011	$11.09	$6.06	$6.12	December 30, 2016	$23.16	$15.63	$22.10
December 30, 2011	$7.35	$4.99	$5.56	March 31, 2017	$25.50	$22.05	$23.59
March 30, 2012	$9.93	$5.80	$9.57	June 30, 2017	$24.32	$22.23	$24.26
June 29, 2012	$9.68	$6.83	$8.18	September 29, 2017	$25.45	$22.89	$25.34
September 28, 2012	$9.55	$7.04	$8.83	December 29, 2017	$29.88	$25.45	$29.52
December 31, 2012	$11.60	$8.93	$11.60	March 29, 2018	$32.84	$29.17	$29.99
March 28, 2013	$12.78	$11.03	$12.18	June 29, 2018	$31.22	$28.19	$28.19
June 28, 2013	$13.83	$11.44	$12.86	September 28, 2018	$31.80	$27.78	$29.46
September 30, 2013	$14.95	$12.83	$13.80	December 31, 2018	$30.43	$22.73	$24.64
December 31, 2013	$15.88	$13.69	$15.57	January 3, 2019*	$24.96	$24.56	$24.56
March 31, 2014	$17.92	$16.10	$17.20				

*This document includes information for the first quarter of 2019 for the period from January 1, 2019 through January 3, 2019. Accordingly, the "Quarterly Closing High", "Quarterly Closing Low" and "Quarterly Close" data indicated are for this shortened period only and do not reflect complete data for the first calendar quarter of 2019.

TD SECURITIES (USA) LLC P-17

The graph below illustrates the performance of the Reference Asset from January 3, 2009 to January 3, 2019.

PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS

Citigroup Inc.

According to publicly available information, Citigroup Inc. ("Citigroup") is a global diversified financial services holding company. Citigroup provides consumers, corporations, governments and institutions with a range of financial products and services, including consumer banking and credit, corporate and investment banking, securities brokerage, trade and securities services and wealth management. Citigroup currently operates, for management reporting purposes, via two primary business segments: Citicorp, consisting of Citi's Global Consumer Banking businesses and Institutional Clients Group; and Citi Holdings, consisting of businesses and portfolios of assets that Citigroup has determined are not central to its core Citicorp businesses. Citicorp is Citigroup's global bank for consumers and businesses and represents Citi's core franchises. Global Consumer Banking consists of Citigroup's four geographical consumer banking businesses that provide traditional banking services to retail customers through retail banking, commercial banking, Citi-branded cards and Citi retail services. Citigroup's Institutional Clients Group provides wholesale banking products and services, including fixed income and equity sales and trading, foreign exchange, prime brokerage, derivatives services, equity and fixed income research, corporate lending, investment banking and advisory services, private banking, cash management, trade finance and securities services. Corporate/Other includes certain unallocated costs of global staff functions (including finance, risk, human resources, legal and compliance), other corporate expenses and unallocated global operations and technology expenses, Corporate Treasury and discontinued operations. Information filed by Citigroup with the SEC can be located by reference to its SEC file number: 001-09924, or its CIK Code: 0000831001. Citigroup's website is citigroup.com. Citigroup's common stock is listed on the New York Stock Exchange under the ticker symbol "C."

Historical Information

Below is a table setting forth the quarterly high, low, and period-end Closing Prices of the Reference Asset for each quarter in the period from January 1, 2009 through January 3, 2019. On January 3, 2019, the Closing Price of the Reference Asset was $52.56. The historical performance of the Reference Asset should not be taken as an indication of its future performance, and no assurance can be given as to the market price of the Reference Asset on any Call Observation Date or Contingent Interest Observation Date (including the Valuation Date).

We have not independently verified the accuracy or completeness of the information obtained from Bloomberg. The historical performance of the Reference Asset should not be taken as an indication of its future performance, and no assurance can be given as to the Final Price of the Reference Asset. We cannot give you assurance that the performance of the Reference Asset will result in any positive return on your initial investment.

Quarter Ending	Quarter Closing High	Quarter closing Low	Quarter Close	Quarter Ending	Quarter Closing High	Quarter closing Low	Quarter Close
March 31, 2009	$74.60	$10.20	$25.30	June 30, 2014	$49.58	$45.68	$47.10
June 30, 2009	$40.20	$26.80	$29.70	September 30, 2014	$53.66	$46.90	$51.82
September 30, 2009	$52.30	$25.90	$48.40	December 31, 2014	$56.37	$49.68	$54.11
December 31, 2009	$50.00	$32.00	$33.10	March 31, 2015	$54.26	$46.95	$51.52
March 31, 2010	$43.10	$31.50	$40.50	June 30, 2015	$57.39	$51.52	$55.24
June 30, 2010	$49.70	$36.30	$37.60		$60.34	$49.00	$49.61

September 30, 2010	$43.00	$36.60	$39.00
December 31, 2010	$48.10	$39.50	$47.30
March 31, 2011	$51.30	$43.90	$44.20
June 30, 2011	$46.00	$36.81	$41.64
September 30, 2011	$42.88	$23.96	$25.62
December 30, 2011	$34.17	$23.11	$26.31
March 30, 2012	$38.08	$28.17	$36.55
June 29, 2012	$36.87	$24.82	$27.41
September 28, 2012	$34.79	$25.24	$32.72
December 31, 2012	$40.17	$32.75	$39.56
March 28, 2013	$47.60	$41.15	$44.24
June 28, 2013	$53.27	$42.50	$47.97
September 30, 2013	$53.00	$47.67	$48.51
December 31, 2013	$53.29	$47.67	$52.11
March 31, 2014	$55.20	$46.34	$47.60

September 30, 2015			
December 31, 2015	$55.87	$49.88	$51.75
March 31, 2016	$51.13	$34.98	$41.75
June 30, 2016	$47.33	$38.48	$42.39
September 30, 2016	$47.90	$40.78	$47.23
December 30, 2016	$61.09	$47.03	$59.43
March 31, 2017	$61.55	$55.68	$59.82
June 30, 2017	$66.98	$57.72	$66.88
September 29, 2017	$72.74	$65.95	$72.74
December 29, 2017	$77.10	$71.33	$74.41
March 29, 2018	$80.08	$67.50	$67.50
June 29, 2018	$72.86	$65.46	$66.92
September 28, 2018	$74.79	$66.06	$71.74
December 31, 2018	$72.62	$49.26	$52.06
January 3, 2019*	$53.53	$52.56	$52.56

*This document includes information for the first quarter of 2019 for the period from January 1, 2019 through January 3, 2019. Accordingly, the “Quarterly Closing High”, “Quarterly Closing Low” and “Quarterly Close” data indicated are for this shortened period only and do not reflect complete data for the first calendar quarter of 2019.

TD SECURITIES (USA) LLC P-19

The graph below illustrates the performance of the Reference Asset from January 3, 2009 to January 3, 2019.

PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS

TD SECURITIES (USA) LLC P-20

Wells Fargo & Company

According to publicly available information, Wells Fargo & Company ("Wells Fargo") is a financial services company, financial holding company and a bank holding company. Wells Fargo, through its subsidiaries, provides retail, commercial and corporate banking services through banking stores and offices, the internet and other distribution channels to individuals, businesses and institutions in the U.S. and other countries. Wells Fargo provides other financial services through subsidiaries engaged in various businesses, principally wholesale banking, mortgage banking, consumer finance, equipment leasing, agricultural finance, commercial finance, securities brokerage and investment banking, insurance agency and brokerage services, computer and data processing services, trust services, investment advisory services, mortgage-backed securities servicing and venture capital investment. Wells Fargo operates in three reportable segments: Community Banking; Wholesale Banking; and Wealth, Brokerage and Retirement. The Community Banking segment offers line of diversified financial products and services for consumers and small businesses including checking and savings accounts, credit and debit cards, and automobile, student, and small business lending. The Wholesale Banking segment provides a line of commercial, corporate, capital markets, cash management and real estate banking products and services to businesses across the United States and to financial institutions globally. The Wealth, Brokerage and Retirement segment provides a range of personalized wealth management, investment and retirement products and services to clients across U.S. based businesses including Wells Fargo Advisors, The Private Bank, Abbot Downing, Wells Fargo Institutional Retirement and Trust, and Wells Fargo Asset Management. Information filed by Wells Fargo with the SEC can be located by reference to its SEC file number: 001-02979, or its CIK Code: 0000072971. Wells Fargo's website is wellsfargo.com. Wells Fargo's common stock is listed on the New York Stock Exchange under the ticker symbol "WFC."

Historical Information

Below is a table setting forth the quarterly high, low, and period-end Closing Prices of the Reference Asset for each quarter in the period from January 1, 2009 through January 3, 2019. On January 3, 2019, the Closing Price of the Reference Asset was $46.57. The historical performance of the Reference Asset should not be taken as an indication of its future performance, and no assurance can be given as to the market price of the Reference Asset on any Call Observation Date or Contingent Interest Observation Date (including the Valuation Date).

We have not independently verified the accuracy or completeness of the information obtained from Bloomberg. The historical performance of the Reference Asset should not be taken as an indication of its future performance, and no assurance can be given as to the Final Price of the Reference Asset. We cannot give you assurance that the performance of the Reference Asset will result in any positive return on your initial investment.

Quarter Ending	Quarter Closing High	Quarter closing Low	Quarter Close	Quarter Ending	Quarter Closing High	Quarter closing Low	Quarter Close
March 31, 2009	$30.00	$8.12	$14.24	June 30, 2014	$52.98	$47.71	$52.56
June 30, 2009	$28.18	$14.48	$24.26	September 30, 2014	$53.36	$49.70	$51.87
September 30, 2009	$29.41	$22.87	$28.18	December 31, 2014	$55.71	$47.85	$54.82
December 31, 2009	$31.38	$25.32	$26.99	March 31, 2015	$56.17	$50.72	$54.40
March 31, 2010	$31.22	$26.43	$31.12	June 30, 2015	$57.91	$53.94	$56.24

June 30, 2010	$33.88	$25.60	$25.60	September 30, 2015	$58.52	$50.02	$51.35
September 30, 2010	$28.57	$23.25	$25.13	December 31, 2015	$55.97	$51.26	$54.36
December 31, 2010	$31.31	$23.59	$30.99	March 31, 2016	$52.91	$45.16	$48.36
March 31, 2011	$34.10	$31.20	$31.70	June 30, 2016	$51.11	$45.01	$47.33
June 30, 2011	$32.40	$25.36	$28.06	September 30, 2016	$50.80	$44.28	$44.28
September 30, 2011	$29.38	$22.88	$24.12	December 30, 2016	$57.29	$43.75	$55.11
December 30, 2011	$27.80	$23.18	$27.56	March 31, 2017	$59.73	$53.78	$55.66
March 30, 2012	$34.47	$28.43	$34.14	June 30, 2017	$55.78	$51.14	$55.41
June 29, 2012	$34.51	$30.05	$33.44	September 29, 2017	$55.78	$49.58	$55.15
September 28, 2012	$36.13	$32.85	$34.53	December 29, 2017	$61.61	$53.19	$60.67
December 31, 2012	$35.97	$31.43	$34.18	March 29, 2018	$65.93	$50.98	$52.41
March 28, 2013	$38.20	$34.66	$36.99	June 29, 2018	$56.18	$50.39	$55.44
June 28, 2013	$41.56	$36.27	$41.27	September 28, 2018	$59.19	$52.56	$52.56
September 30, 2013	$44.63	$41.08	$41.32	December 31, 2018	$54.46	$43.60	$46.08
December 31, 2013	$45.54	$40.24	$45.40	January 3, 2019*	$46.94	$46.57	$46.57
March 31, 2014	$49.74	$44.23	$49.74				

*This document includes information for the first quarter of 2019 for the period from January 1, 2019 through January 3, 2019. Accordingly, the “Quarterly Closing High”, “Quarterly Closing Low” and “Quarterly Close” data indicated are for this shortened period only and do not reflect complete data for the first calendar quarter of 2019.

TD SECURITIES (USA) LLC P-21

The graph below illustrates the performance of the Reference Asset from January 3, 2009 to January 3, 2019.

PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS

Supplemental Discussion of U.S. Federal Income Tax Consequences

The U.S. federal income tax consequences of your investment in the Notes are uncertain. No statutory, regulatory, judicial or administrative authority directly discusses the characterization for U.S. federal income tax purposes of securities with terms that are substantially the same as the Notes. Some of these tax consequences are summarized below, but we urge you to read the more detailed discussion under "Supplemental Discussion of U.S. Federal Income Tax Consequences" in the product prospectus supplement and to discuss the tax consequences of your particular situation with your tax advisor. This discussion is based upon the Internal Revenue Code of 1986, as amended (the "Code"), final, temporary and proposed U.S. Treasury Department (the "Treasury") regulations, rulings and decisions, in each case, as available and in effect as of the date hereof, all of which are subject to change, possibly with retroactive effect. This discussion applies to you only if you are a U.S. holder, as defined in the product prospectus supplement. An investment in the Notes is not appropriate for non-U.S. holders and we will not attempt to ascertain the tax consequences to non-U.S. holders of the purchase, ownership or disposition of the Notes. Tax consequences under state, local and non-U.S. laws are not addressed herein. No ruling from the U.S. Internal Revenue Service (the "IRS") has been sought as to the U.S. federal income tax consequences of your investment in the Notes, and the following discussion is not binding on the IRS.

U.S. Tax Treatment. Pursuant to the terms of the Notes, TD and you agree, in the absence of a statutory or regulatory change or an administrative determination or judicial ruling to the contrary, to treat the Notes as pre-paid derivative contracts with respect to the Reference Assets. If your Notes are so treated, any Contingent Interest Payments paid on the Notes (including any Contingent Interest Payments paid on or with respect to the Maturity Date) would be treated as ordinary income includable in income by you in accordance with your regular method of accounting for U.S. federal income tax purposes. Holders are urged to consult their tax advisors concerning the significance, and the potential impact, of the above considerations.

Upon the taxable disposition of your Notes, you generally should recognize gain or loss equal to the difference between the amount realized on such taxable disposition (adjusted for amounts or proceeds attributable to any accrued and unpaid Contingent Interest Payments, which would be treated as ordinary income) and your tax basis in the Note. Your tax basis in a Note generally should equal your cost for the Note. Such gain or loss should generally be long-term capital gain or loss if you have held your Notes for more than one year (otherwise such gain or loss should be short-term capital gain or loss if held for one year or less). The deductibility of capital losses is subject to limitations. Although uncertain, it is possible that proceeds received from the sale or exchange of your Notes prior to a Contingent Interest Payment Date, but that could be attributed to an expected Contingent Interest Payment, could be treated as ordinary income. You should consult your tax advisor regarding this risk.

Based on certain factual representations received from us, our special U.S. tax counsel, Cadwalader, Wickersham & Taft LLP, is of the opinion that it would be reasonable to treat your Notes in the manner described above. However, because there is no authority that specifically addresses the tax treatment of the Notes, it is possible that your Notes could alternatively be treated for tax purposes as a single contingent payment debt instrument, or pursuant to some other characterization, such that the timing and character of your income from the Notes could differ materially and adversely from the treatment described above, as described further under "Supplemental Discussion of U.S. Federal Income Tax Consequences – Alternative Treatments" in the product prospectus supplement.

Except to the extent otherwise required by law, TD intends to treat your Notes for U.S. federal income tax purposes in accordance with the treatment described above and under "Supplemental Discussion of U.S. Federal Income Tax Consequences" in the product prospectus supplement, unless and until such time as the Treasury and the IRS determine that some other treatment is more appropriate.

Notice 2008-2. In 2007, the IRS released a notice that may affect the taxation of holders of the Notes. According to Notice 2008-2, the IRS and the Treasury are actively considering whether the holder of an instrument similar to the Notes should be required to accrue ordinary income on a current basis, and they are seeking taxpayer comments on the subject. It is not possible to determine what guidance they will ultimately issue, if any. It is possible, however, that under such guidance, holders of the Notes will ultimately be required to accrue income currently and this could be applied on a retroactive basis. The IRS and the Treasury are also considering other relevant issues, including whether additional gain or loss from such instruments should be treated as ordinary or capital, and whether the special "constructive ownership rules" of Section 1260 of the Code should be applied to such instruments. You are urged to consult your tax advisor concerning the significance, and the potential impact, of the above considerations.

Medicare Tax on Net Investment Income. U.S. holders that are individuals, estates, and certain trusts are subject to an additional 3.8% tax on all or a portion of their "net investment income" or "undistributed net investment income" in the case of an estate or trust, which may include any income or gain with respect to the Notes, to the extent of their net investment income or undistributed net investment income (as the case may be) that when added to their other modified adjusted gross income, exceeds $200,000 for an unmarried individual, $250,000 for a married taxpayer filing a joint return (or a surviving spouse), $125,000 for a married individual filing a separate return or the dollar amount at which the highest tax bracket begins for an estate or trust. The 3.8% Medicare tax is determined in a different manner than the income tax. You should consult your tax advisors as to the consequences of the 3.8% Medicare tax to your investment in the Notes.

Specified Foreign Financial Assets. U.S. holders may be subject to reporting obligations with respect to their Notes if they do not hold their Notes in an account maintained by a financial institution and the aggregate value of their Notes and certain other “specified foreign financial assets” (applying certain attribution rules) exceeds an applicable threshold. Significant penalties can apply if a U.S. holder is required to disclose its Notes and fails to do so.

Proposed Legislation. In 2007, legislation was introduced in Congress that, if it had been enacted, would have required holders of Notes purchased after the bill was enacted to accrue interest income over the term of the Notes despite the fact that there may be no interest payments over the term of the Notes.

Furthermore, in 2013, the House Ways and Means Committee released in draft form certain proposed legislation relating to financial instruments. If it had been enacted, the effect of this legislation generally would have been to require instruments such as the Notes to be marked to market on an annual basis with all gains and losses to be treated as ordinary, subject to certain exceptions.

It is impossible to predict whether any similar or identical bills will be enacted in the future, or whether any such bill would affect the tax treatment of your Notes. You are urged to consult your tax advisor regarding the possible changes in law and their possible impact on the tax treatment of your Notes.

You are urged to consult your tax advisor concerning the application of U.S. federal income tax laws to an investment in the Notes, as well as any tax consequences of the purchase, beneficial ownership and disposition of the Notes arising under the laws of any state, local, non-U.S. or other taxing jurisdiction (including that of TD).

Supplemental Discussion of Canadian Tax Consequences

The following section supersedes and replaces in its entirety the section of the Offering Circular Supplement under “Supplemental Discussion of Canadian Tax Consequences”.

In the opinion of Osler, Hoskin & Harcourt LLP, special Canadian tax counsel to TD, the following is, as of the date hereof, a summary of certain Canadian federal income tax considerations under the *Income Tax Act* (Canada) (the “Canadian Tax Act”) and Income Tax Regulations issued thereunder (the “Canadian Tax Regulations”) generally applicable to a holder who acquires beneficial ownership of a Note pursuant to this pricing supplement, and who, for purposes of the Canadian Tax Act and any applicable income tax convention, at all relevant times, is not resident and is not deemed to be resident in Canada, and who, for purposes of the Canadian Tax Act, at all relevant times, (i) deals at arm’s length with the Issuer and any Canadian resident (or deemed Canadian resident) to whom the holder disposes of the Note, (ii) is entitled to receive all payments (including any interest and principal) made on the Note as beneficial owner, (iii) is not, and deals at arm’s length with each person who is, a “specified shareholder” of the Issuer for purposes of the thin capitalization rules in the Canadian Tax Act, (iv) holds the Note as capital property, (v) does not use or hold and is not deemed to use or hold the Note in or in the course of carrying on a business in Canada and (vi) is not an insurer carrying on an insurance business in Canada and elsewhere (a “Non-resident Holder”).

This summary is based upon the current provisions of the Canadian Tax Act and the Canadian Tax Regulations in force as of the date hereof, all specific proposals to amend the Canadian Tax Act and the Canadian Tax Regulations publicly announced by or on behalf of the Minister of Finance (Canada) prior to the date hereof (the “Tax Proposals”) and counsel’s understanding of the current administrative policies and assessing practices of the Canada Revenue Agency (“CRA”) published in writing by the CRA prior to the date hereof. This summary is not exhaustive of all possible Canadian federal income tax considerations relevant to an investment in Notes and, except for the Tax Proposals, does not take into account or anticipate any changes in law or CRA administrative policies or assessing practices, whether by way of legislative, governmental or judicial decision or action, nor does it take into account or consider any other federal tax considerations or any provincial, territorial or foreign tax considerations, which may differ materially from those discussed herein. While this summary assumes that the Tax Proposals will be enacted in the form proposed, no assurance can be given that this will be the case, and no assurance can be given that judicial, legislative or administrative changes will not modify or change the statements below.

The following is only a general summary of certain Canadian non-resident withholding and other tax provisions which may affect a Non-resident Holder of the Notes described in this Pricing Supplement. This summary is not, and is not intended to be, and should not be construed to be, legal or tax advice to any particular Non-resident Holder and no representation with respect to the income tax consequences to any particular Non-resident Holder is made. Persons considering investing in Notes should consult their own tax advisors with respect to the tax consequences of acquiring, holding and disposing of Notes having regard to their own particular circumstances.

Based in part on the published administrative position of the CRA, any amount in excess of the Principal Amount of a Note paid or credited or deemed for purposes of the Canadian Tax Act to be paid or credited to a Non-resident Holder on the Note should not be subject to Canadian non-resident withholding tax. Should payments with respect to the Notes become subject to such withholding tax, TD will withhold tax at the applicable statutory rate and will not make payments of any additional amounts.

Generally, there are no other Canadian taxes on income (including taxable capital gains) payable by a Non-resident Holder under the Canadian Tax Act solely as a consequence of the acquisition, ownership or disposition of a Note.

TD SECURITIES (USA) LLC P-24

Supplemental Plan of Distribution (Conflicts of Interest)

We have appointed TDS, an affiliate of TD, as the Agent for the sale of the Notes. Pursuant to the terms of a distribution agreement, TDS will purchase the Notes from TD at the public offering price less the underwriting discount set forth on the cover page of this pricing supplement and may use all or a portion of that commission to allow selling concessions to other registered broker-dealers in connection with the distribution of the Notes. Certain dealers who purchase the Notes for sale to certain fee-based advisory accounts may forego some or all of their selling concessions, fees or commissions. The public offering price for investors purchasing the Notes in these accounts may be as low as $995.00 (99.50%) per Note. The underwriting discount represents the selling concessions for other dealers in connection with the distribution of the Notes. The other dealers may forgo, in their sole discretion, some or all of their selling concessions. TD will reimburse TDS for certain expenses in connection with its role in the offer and sale of the Notes, and TD will pay TDS a fee in connection with its role in the offer and sale of the Notes.

Conflicts of Interest. TDS is an affiliate of TD and, as such, has a ''conflict of interest'' in this offering within the meaning of Financial Industry Regulatory Authority, Inc. ("FINRA") Rule 5121. In addition, TD will receive the net proceeds from the initial public offering of the Notes, thus creating an additional conflict of interest within the meaning of FINRA Rule 5121. This offering of the Notes will be conducted in compliance with the provisions of FINRA Rule 5121. In accordance with FINRA Rule 5121, neither TDS nor any other affiliated agent of ours is permitted to sell the Notes in this offering to an account over which it exercises discretionary authority without the prior specific written approval of the account holder.

We, TDS, another of our affiliates or third parties may use this pricing supplement in the initial sale of the Notes. In addition, we, TDS, another of our affiliates or third parties may use this pricing supplement in a market-making transaction in the Notes after their initial sale. ***If a purchaser buys the Notes from us, TDS, another of our affiliates or third parties, this pricing supplement is being used in a market-making transaction unless we, TDS, another of our affiliates or third parties informs such purchaser otherwise in the confirmation of sale.***

Prohibition of Sales to European Economic Area Retail Investors

The Notes are not intended to be offered, sold or otherwise made available to and should not be offered, sold or otherwise made available to any retail investor in the European Economic Area ("EEA"). For these purposes, a retail investor means a person who is one (or more) of: (i) a retail client as defined in point (11) of Article 4(1) of Directive 2014/65/EU, as amended ("MiFID II"); (ii) a customer within the meaning of Directive 2002/92/EC, as amended, where that customer would not qualify as a professional client as defined in point (10) of Article 4(1) of MiFID II; or (iii) not a qualified investor as defined in Directive 2003/71/EC, as amended. Consequently no key information document required by Regulation (EU) No 1286/2014, as amended (the "PRIIPs Regulation"), for offering or selling the Notes or otherwise making them available to retail investors in the EEA has been prepared and therefore offering or selling the Notes or otherwise making them available to any retail investor in the EEA may be unlawful under the PRIIPs Regulation.

Additional Information Regarding the Estimated Value of the Notes

The final terms for the Notes will be determined on the date the Notes are initially priced for sale to the public, which we refer to as the Pricing Date, based on prevailing market conditions on the Pricing Date, and will be communicated to investors in a final pricing supplement.

The economic terms of the Notes are based on our internal funding rate (which is our internal borrowing rate based on variables such as market benchmarks and our appetite for borrowing), and several factors, including any sales commissions expected to be paid to TDS or another affiliate of ours, any selling concessions, discounts, commissions or fees expected to be allowed or paid to non-affiliated intermediaries, the estimated profit that we or any of our affiliates expect to earn in connection with structuring the Notes, estimated costs which we may incur in connection with the Notes and the estimated cost which we may incur in hedging our obligations under the Notes. Because our internal funding rate generally represents a discount from the levels at which our benchmark debt securities trade in the secondary market, the use of an internal funding rate for the Notes rather than the levels at which our benchmark debt securities trade in the secondary market is expected to have an adverse effect on the economic terms of the Notes.

On the cover page of this pricing supplement, we have provided the initial estimated value range for the Notes. This range of estimated values was determined by reference to our internal pricing models which take into account a number of variables and are based on a number of assumptions, which may or may not materialize, typically including volatility, interest rates (forecasted, current and historical rates), price-sensitivity analysis, time to maturity of the Notes, and our internal funding rate. For more information about the initial estimated value, see “Additional Risk Factors” beginning on page P-8. Because our internal funding rate generally represents a discount from the levels at which our benchmark debt securities trade in the secondary market, the use of an internal funding rate for the Notes rather than the levels at which our benchmark debt securities trade in the secondary market is expected, assuming all other economic terms are held constant, to increase the estimated value of the Notes. For more information see the discussion under “Additional Risk Factors — The Estimated Value of Your Notes Is Based on Our Internal Funding Rate.”

Our estimated value on the Pricing Date is not a prediction of the price at which the Notes may trade in the secondary market, nor will it be the price at which the Agent may buy or sell the Notes in the secondary market. Subject to normal market and funding conditions, the Agent or another affiliate of ours intends to offer to purchase the Notes in the secondary market but it is not obligated to do so.

Assuming that all relevant factors remain constant after the Pricing Date, the price at which the Agent may initially buy or sell the Notes in the secondary market, if any, may exceed our estimated value on the Pricing Date for a temporary period expected to be approximately 3 months after the Issue Date because, in our discretion, we may elect to effectively reimburse to investors a portion of the estimated cost of hedging our obligations under the Notes and other costs in connection with the Notes which we will no longer expect to incur over the term of the Notes. We made such discretionary election and determined this temporary reimbursement period on the basis of a number of factors, including the tenor of the Notes and any agreement we may have with the distributors of the Notes. The amount of our estimated costs which we effectively reimburse to investors in this way may not be allocated ratably throughout the reimbursement period, and we may discontinue such reimbursement at any time or revise the duration of the reimbursement period after the Issue Date of the Notes based on changes in market conditions and other factors that cannot be predicted.

We urge you to read the “Additional Risk Factors” beginning on page P-8 of this pricing supplement.

Events of Default

The indenture provides holders of Notes with remedies if we fail to perform specific obligations, such as making payments on the Notes, or if we become bankrupt. Holders should review the applicable provisions and understand which of our actions would trigger an event of default and which actions would not.

Under the indenture, “event of default” means any of the following:

- we default in the payment of the principal of or interest on, as applicable, any note of that series and, in each case, the default continues for a period of 30 Business Days; or
- we become insolvent or bankrupt or subject to the provisions of the Winding-up and Restructuring Act (Canada), or any statute hereafter enacted in substitution therefor, as such act, or substituted act, may be amended from time to time, (ii) we go into liquidation, either voluntary or under an order of a court of competent jurisdiction or (iii) we pass a resolution for our winding-up, liquidation or dissolution (with certain exceptions).

The indenture permits the issuance of notes in one or more series, and, in many cases, whether an event of default has occurred is determined on a series by series basis. For purposes of this section, with respect to notes issued on or after September 23, 2018, “series” refers to notes having identical terms, except as to issue date, principal amount and, if applicable, the date from which interest begins to accrue.

The indenture provides that:

- if an event of default due to the default in payment of principal of or, if applicable, any premium or interest on, any series of senior notes issued under the indenture, or due to any event of default referred to in the last bullet of the preceding paragraph applicable to the senior notes of that series but not applicable to all outstanding senior notes issued under the indenture, occurs and is continuing, either the trustee or the holders of not less than 25% in aggregate principal amount of the outstanding senior notes of each affected series, voting as a single class, by notice in writing to TD, may declare the principal of (or such other amount as may be specified) all senior notes of each affected series and, if applicable, interest accrued thereon to be due and payable immediately; and
- if an event of default due to specified events of bankruptcy, insolvency, winding up or liquidation of TD, occurs and is continuing, either the trustee or the holders of not less than 25% in aggregate principal amount of all outstanding senior notes issued under the senior debt indenture, treated as one class, by notice in writing to TD may declare the principal of (or such other amount as may be specified) all those senior notes and, if applicable, interest accrued thereon to be due and payable immediately.

Annulment of Acceleration and Waiver of Defaults.

In some circumstances, if any and all events of default under the indenture, other than the non-payment of the principal of the securities that has become due as a result of an acceleration, have been cured, waived or otherwise remedied, then the holders of a majority in aggregate principal amount of all series of outstanding senior notes affected, voting as one class, may annul past declarations of acceleration of or waive past defaults of the senior notes.

Differences in Events of Default

Notes issued by us prior to September 23, 2018, such as the Series A notes and the Series B notes, contain events of default that are different from those set forth above. In particular, the events of default applicable to the Series A notes and the Series B notes do not provide for a 30-business-day cure period with respect to any failure by us to pay the principal of or, if applicable, interest on those senior notes. Accordingly, if we fail to pay the principal of any series of Series A notes or Series B notes when due, the holders of such notes would be entitled to declare their securities due and payable following a 7-day cure period, whereas holders of Series C notes, Series D notes or Series E notes would not be entitled to accelerate the notes until 30 Business Days after our failure to pay the principal of the notes. In addition, if we fail to pay, if applicable, interest on any series of Series A notes or Series B notes when due, the holders of such notes would be entitled to declare their securities due and payable following a 30-calendar day cure period, whereas holders of Series C notes, Series D notes or Series E notes would not be entitled to accelerate the notes until 30 Business Days after our failure to pay, if applicable, the interest on the notes.