Unclassified **COM/STD/DAF(2013)17**

Organisation de Coopération et de Développement Économiques
Organisation for Economic Co-operation and Development **19-Sep-2013**

English - Or. English

Directorate for Financial and Enterprise Affairs
Statistics Directorate

COM/STD/DAF(2013)17
Unclassified

Working Party on Financial Statistics

Valuing non-traded equity at market value within the Canadian system of macroeconomic accounts
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To be held on 30 September - 1 October 2013
OECD Conference Centre
Beginning at 10:00 a.m. on the first day

This document has been prepared by Joe Wilkinson (Statistics Canada) and will be presented under item 20 of the draft agenda

JT03344593

English - Or. English

VALUING UNQUOTED EQUITY AT MARKET VALUE WITHIN THE CANADIAN SYSTEM OF MACROECONOMIC ACCOUNTS

Statistics Canada has participated in a number of meetings where conceptual and theoretical discussions surrounding the valuation of unquoted shares have taken place, including having chaired the OECD Task Force on the Valuation and Measurement of Equity. The System of National Accounts 2008 (SNA2008), Balance of Payments and International Investment Position Manual 6th Edition (BPM6) and OECD Benchmark Definition of Foreign Direct Investment 4th Edition (BD4) all provide some guidance on the valuation of unlisted shares at market value[1]. Among the suggested methods are:

1. Recent transaction price
2. Net asset value
3. Present value/price to earnings ratios
4. Book values reported by enterprises with macro level adjustments by statistical compiler (market capitalization method)
5. Own funds at book value
6. Apportioning global value

The purpose of this note is not to continue the debate on the validity of these methods but to discuss the method implemented for the Canadian System of Macroeconomic Accounts (CSMA) as part of its comprehensive revision in 2012 (CSMA2012). It is accepted that it is difficult to find a reliable method for the valuation of unquoted shares. With the 2012 comprehensive revision to the Canadian System of Macroeconomic Accounts (CSMA), unlisted shares, including cross-border direct investment equity, have been revalued using a market capitalization approach which is most similar to the SNA2008 method "Book values reported by enterprises with macro level adjustments by statistical compiler".

Implementation Methodology

In the context of the Canadian National Balance Sheet Accounts (NBSA), only the equity liabilities of unlisted firms are included in the sample used to construct market value estimates of unquoted shares. This reflects the fact that most unlisted equity is between affiliates or with privately held firms. Further, only the largest of these firms are selected for revaluation of their equity component. Arguably, an unlisted firm should be priced similarly to a listed firm of similar size in the same industry. Generally, it is the large firms that more commonly use financial markets to raise funds through equity issuances. Therefore, only firms above an industry-specific size are included for revaluation of their unquoted equity in the NBSA. The size cut-offs are determined by industry, with most set for firms with assets of $250 million CDN. The equity component of all unlisted firms under this threshold was left at own funds at book value.

To calculate the market value of unquoted shares above the threshold, own funds at book value are multiplied by a market capitalization factor specific to the industry of the firm. This mark-up factor is obtained from listed companies for which both the current book and market values are observed. The same

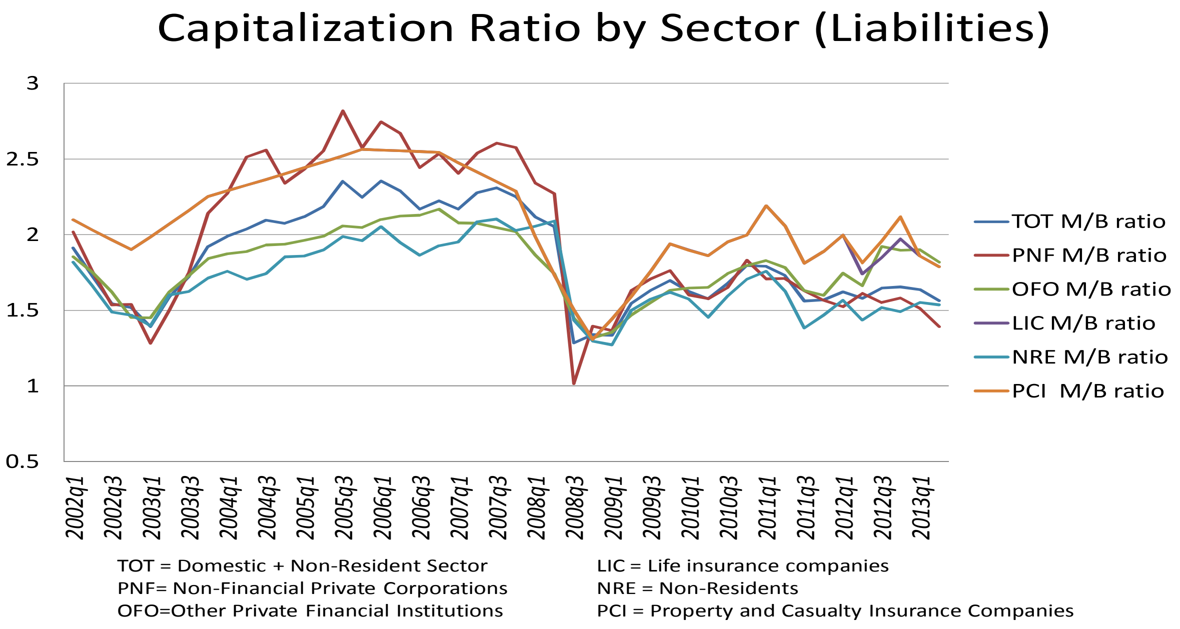
1 See SNA 2008 section 13.70 and 13.71

methodology is applied to generate market value of unlisted direct investment enterprises in Canada (Foreign Direct Investment in Canada – FDIC). Similarly, the market value of unlisted direct investment enterprises abroad (Canadian Direct Investment Abroad – CDIA) is generated from market capitalization factors built from information on foreign stock markets, mainly US.

The Process

In the initial measurement of investment at book value, we start with the unquoted equity liabilities of all operating firms or affiliates falling above the size threshold for their respective industry. From a quarterly survey of financial statements, those cells corresponding to equity liabilities (specifically, preferred shares, common shares or unit-holder's capital, contributed surplus, accumulated other comprehensive income and retained earnings) are collected and summed for these firms.

All listed firms are then removed from our estimates of unquoted shares using a procedure that matches firms in the sample to those listed on the Toronto Stock Exchange (the TSX accounts for over 95% of all listed companies by assets). The markup factor is applied and the marked up equity liabilities of the remaining unlisted companies are then aggregated by the sector of the firm in constructing the market value equity liabilities of all NBSA sectors across the economy, with most firms being private sector non-financial corporations. The markup factors by liability sector are shown in the graph below.



The change in valuation of unquoted shares (net value), reflected on the liability side of the balance sheet, must also be reflected and/or assigned on the asset side of the balance sheet as well. To properly allocate the net value to the corresponding asset side holder of the balance sheet for the NBSA, information derived from the Business Register (BR)[2] pertaining to the ownership structure of firms, including supplementary information such as the industry and sector codes of affiliates and parents, as well as their

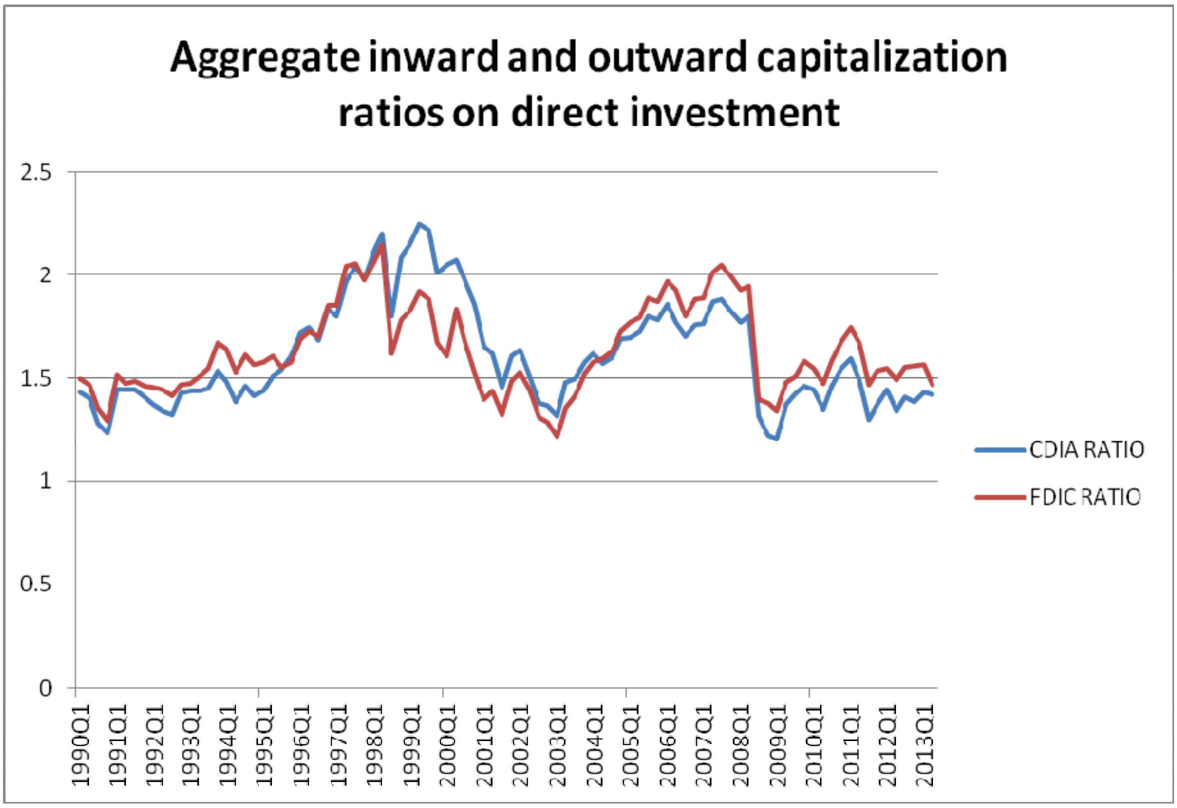
2 The Business Register is a database maintained at Statistics Canada which includes all Canadian corporations and characteristics of these corporations. One element which is maintained is the industry, CSMA sector code and residency of the ultimate parent of a corporation.

respective countries of control, was used to ascribe the liabilities of the firm or affiliate to its owner or parent. However, this methodology does not apply to the non-resident sector, where market value estimates of FDIC are generated using mark-up factors by industry and are fully consistent with those published in the International Investment Position (IIP) statement.

After reviewing the ownership information, the net value of the unquoted shares is attributed, on the asset side of the balance sheet, to the sector where the owner or parent resides. We assume 100% ownership of the original affiliate by the ultimate parent and ascribe the assets to this ultimate parent in their entirety. While investment in unquoted shares is not necessarily held by only one parent, generally these types of investments would be less widely held than marketable equities. The ultimate parent holding unquoted shares can be individuals in the household sector and these firms are usually closely held.

In constructing asset-side estimates for the household sector, we again utilize ownership information derived from the BR. In the BR, artificial holding companies are created as placeholders for family trusts and individuals. As a result, we estimate investment assets for the household sector by ascribing the equity aggregates of those operating firms and affiliates that have Canadian-controlled ultimate parents in these artificial holding companies.

Finally, the market value of Canadian Direct Investments Abroad (CDIA), shown on the liability side of non-resident sector and fully consistent with estimates published in the IIP, is further distributed across the asset side according to the NBSA sector of the Canadian parent. This essentially balances total non-resident direct investment liabilities (on the books of the foreign affiliate) with their corresponding direct investment assets (held on the books of the Canadian parent). The graph below shows the capitalization ratios for inward and outward direct investment.



Conclusion

The SNA2008 standard proposes that financial "assets and liabilities [be] recorded at current values at the time to which the balance sheet relates, not at their original valuation." (SNA2008 2:60). In other words, the value of assets and liabilities on the national balance sheet must reflect the current market value for these assets and liabilities. Statistics Canada has been producing a market value balance sheet since 2004, and while the majority of the marketable assets and liabilities were at market value, unlisted shares and foreign equity direct investment were still at book value. With the implementation of CSMA2012, both the unlisted shares and foreign direct investment for large firms are now valued at current market value, from the reference year 1990. The valuation is consistent with the valuation of foreign direct investment as per the International Investment Position statement. The graph below shows the various corporate equity components of the CNBSA at market value.